SPECIAL STUDY No. 10

The Take-Over of Canadian Firms, 1945-61

An Empirical Analysis

by

Grant L. Reuber and Frank Roseman

prepared for the Economic Council of Canada

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This is one of a series of studies which have been prepared as background papers for the Economic Council of Canada. Although published under the auspices of the Council, the views expressed in the paper are those of the authors.

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PREFACE

In this Study we present a new body of comprehensive statistical information on business mergers in Canada from 1945 to 1961. These data were gathered by means of an official questionnaire conducted by the Office of the Director of Investigation and Research under the Combines Investigation Act and were made available to us through the Economic Council of Canada. The data cover both international and domestic mergers. This information is not only unique for Canada, but no comparable information is available for any other country.

Work began on this Study during the summer of 1965. More than a year and a half was spent processing the questionnaire data. The first step was to organize a satisfactory system for codifying the information taken from the completed questionnaire forms and transferring this information to magnetic tape for processing by electronic computer. These arrangements were worked out by Ralph Sultan of Harvard University, R. M. Davidson of the Director's Office and Mr. Roseman. The second very laborious step was to edit each questionnaire form and transfer the data it contained to the code forms developed for this purpose.

The editorial work was carried out by university students specially employed for the purpose. Pains were taken to ensure that answers given in response to the questionnaire were interpreted and codified in a uniform manner. In our judgment a high degree of confidence can be placed in those portions of the data that are quantitative in nature or that fit into easily defined categories. Other portions of the data relating to broader questions, such as the information on types of mergers, warrant less confidence. Warning flags are posted at various points in the text where data of more doubtful reliability provide the basis of the discussion.

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We freely acknowledge that we have not exhausted the research potential of this new information. Our investigation represents a first pass at the data, as it were. Rather than attempt to develop the analysis further on our own, it seemed preferable to publish the Study in its present form, thereby making the figures available generally for research in this area and, hopefully, unleashing other economists on this information as well. In order to facilitate this development, we have made the data available in as much detail as was feasible.

It is a pleasure to acknowledge the generous assistance we have received from many persons in the course of preparing this Study. Among those to whom we feel a special obligation are the following: C. E. Beigie, R. E. Caves, R. M. Davidson, J. J. Deutsch, B. Lacombe, D. L. McQueen, G. Rosenbluth, A. J. R. Smith, R. Sultan, D. Walters, D. A. White, F. Wildgen, T. A. Wilson.

University of Western Ontario,
London, Canada.
January 1969.

Grant L. Reuber
Frank Roseman

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CHAPTER 1

INTRODUCTION

1. Foreign Investment and Ownership in Canada

Foreign investment is a perennial issue of public policy in this country, arousing much interest and discussion. Particular attention has been given over the years to direct investment and the foreign ownership and control of Canadian industry. In the discussions on these topics many complex and difficult questions have been raised with important economic, political and social implications. As valid and convincing answers to these questions have been sought, the need for more and better theoretical and empirical analysis has become apparent. At the same time it is evident that, in the final analysis, one's view on these matters to an important degree is a matter of judgment reflecting the relative priorities that are placed on the numerous objectives of Canadian society, and the relative importance that one attaches to the various pieces of empirical and theoretical evidence bearing on these questions. Within this context, the purpose of the present Study is limited to providing new factual information on the acquisition of Canadian firms by foreign firms during the period from 1945 to 1961. As such, the Study does not deal with many other aspects of this general subject that have evoked considerable interest over the years. 1/

1/ For a much wider-ranging discussion of the general issue of foreign ownership and control in Canada, the reader is referred to Foreign Ownership and the Structure of Canadian Industry, Report of the Task Force on the Structure of Canadian Industry, Ottawa, Queen's Printer, 1968.

The Take-Over of Canadian Firms, 1945-61

With the substantial growth since 1939 in the international flow of direct investment and the growing importance of the large, integrated international corporation, the issue of foreign ownership and control of domestic industry has become more important not only in Canada but also in other countries. Europeans, for example, in recent years have expressed considerable concern about the "take-over" of European industry by U.S. investors and have adopted a number of policies designed to arrest this development.[1/] The issue has also received much attention in many less-developed countries. Although the present Study relates exclusively to Canada, its findings are relevant to the discussions of this issue in other countries as well.

A merger may be defined as the acquisition by one or more firms, whether by purchase of shares or lease of assets or otherwise, of control over the business of another firm.[2/] It normally results in an increase in the size of the acquiring firm, a reduction in the total number of firms engaged in a certain line or lines of business, and a consequent increase in the degree of industrial concentration. Where the acquiring firm is located in a different country than the acquired firm, there is also likely, other things being equal, to be a rise in the percentage of foreign control of industry in the country of the acquired firm. It is important to note, however, that mergers are not the only way in which these effects can occur. Firms in an industry can grow bigger and acquire a larger percentage share of the total market by means of internal

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1/ See, as examples, Christopher Layton, Trans-Atlantic Investments, Boulogne-sur-Seine, France, The Atlantic Institute, 1967; and J. J. Servan-Schreiber, The American Challenge, New York, Atheneum, 1968.

2/ A more precise definition is provided in section 3 below. The terms "acquisition" and "merger" are used interchangeably throughout this Study.

expansion not involving the acquisition of other firms. This applies just as much to foreign-controlled firms as to domestically-controlled ones. Thus, a foreign-controlled firm may, by profitable reinvestment of undistributed earnings, and without drawing further funds from its foreign parent, increase its share of the market and in this way bring about rises in both industrial concentration and the percentage of foreign control of domestic industry.

From 1945 to 1961, 639 foreign acquisitions took place in Canada of which almost 500 were acquisitions of firms previously controlled in Canada. These international mergers may be compared with a total of 1,187 domestic mergers and a total population of domestic firms that grew from about 27,000 in 1945 to over 100,000 in 1961. In no year from 1945 to 1961 did the number of acquisitions of Canadian firms by foreign firms exceed one-tenth of 1 per cent of the total population of firms in Canada.

Unfortunately no comparable figures are available on the number of mergers occurring in Canada since 1961. Such evidence as is available suggests that, while the number of mergers of all kinds increased from 1961 to 1965, the ratio of foreign to domestic mergers did not increase after 1961 and may actually have declined somewhat.[1/]

The foreign acquisition of Canadian firms was reflected in the inflow of foreign capital from 1945 to 1961. However, the inflow for acquisitions was but one of a number of forms in which foreign capital entered Canada during this period. As is evident from Table 1-1, the inflow for acquisitions throughout the period consistently

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1/ See Chapter 7, section 5.

accounted for only part of the net inflow of capital for direct investment purposes. At its peak in 1955, the inflow for acquisitions accounted for some 38 per cent of total net direct investment and for the period as a whole it averaged about 16 per cent of direct investment. The remaining portion was accounted for by flows of additional foreign funds into Canadian firms already controlled abroad. It may be noted, too, that there are important forms other than direct investment in which foreign capital enters Canada: e.g. portfolio investment in Canadian equities insufficient to give control over the companies concerned; long-term borrowing abroad by Canadian governments and private borrowers; and many forms of short-term borrowing. If direct investment tends to attract more than a proportionate share of public attention, it is doubtless because, unlike other forms of capital inflow mentioned, it is associated with the acquisition or reinforcement of foreign control of Canadian industry.

No advanced economy has as high a degree of foreign control of its industry as has Canada. Some indication of the striking difference in this respect between Canada and the countries of Western Europe is given by the figures presented in Table 1-2. As these figures indicate, in 1966 U.S. direct investment accounted for over 40 per cent of new investment in plant and equipment in Canada compared with 6 per cent for Britain and the Common Market countries.

At present non-residents control about a third of the major sectors of Canadian industry, including control of about three-quarters of the oil and gas industry and three-fifths of mining and smelting and Canadian manufacturing. These figures are approximately twice as large as in 1926, as shown in Table 1-3. The big increase in foreign control occurred prior to 1957; since then the ratio in manufacturing has crept upwards a bit further, while the ratios in most other sectors have either stabilized or declined slightly.

Table 1-1

NET FOREIGN CAPITAL MOVEMENTS TO CANADA, 1945-61
($ Million)

	Total Net Capital Movement[1]	Total Net Capital Movements in Long-Term Forms[1]	Total Net Direct Investment[1]	Estimated Total Inflow for Acquisitions[2]
1945				12.8
1946	- 363	- 715[3]	26	6.4
1947	- 49	- 721[3]	67	4.4
1948	- 451	43[3]	86	4.4
1949	- 177	- 31	107	5.6
1950	334	608	258	9.2
1951	517	665	289	35.3
1952	- 164	448	269	12.4
1953	443	618	363	30.2
1954	432	579	311	79.2
1955	698	410	343	130.1
1956	1,366	1,424	479	121.3
1957	1,455	1,301	446	75.9
1958	1,131	1,112	372	28.5
1959	1,504	1,148	470	69.5
1960	1,243	900	600	160.8
1961	982	910	445	93.9

(1) Bank of Canada, Statistical Summary.

(2) Series shown in note to Table A-6.

(3) Dominion Bureau of Statistics, The Canadian Balance of International Payments, 1963, 1964 and 1965 and International Investment Position.

Table 1-2

PERCENTAGE OF NEW INVESTMENT IN PLANT AND EQUIPMENT ACCOUNTED FOR BY U. S. DIRECT INVESTMENT, 1966

Canada	41
Europe	6
Common Market	5
Belgium	8
France	4
West Germany	5
Italy	3
Netherlands	11
Britain	10

Source: Christopher Layton, Trans-Atlantic Investments, Boulogne-sur-Seine, France, The Atlantic Institute, 1967, Table C, p. 14.

Table 1-3

NON-RESIDENT CONTROL
AS A PERCENTAGE OF SELECTED CANADIAN INDUSTRIES,
SELECTED YEARS, 1926-63

	Percentage of Total Control by All Non-Residents					Percentage of Total Control by U. S. Residents				
	1926	1939	1948	1957	1963	1926	1939	1948	1957	1963
Manufacturing	35	38	43	56	60	30	32	39	43	46
Petroleum and natural gas				76	74				70	62
Mining and smelting	38	42	40	61	59	32	38	37	52	52
Railways	3	3	3	2	2	3	3	3	2	2
Other utilities	20	26	24	5	4	20	26	24	4	4
Total of above and merchandising	17	21	25	32	34	15	19	22	27	27

Source: Dominion Bureau of Statistics, The Canadian Balance of International Payments, 1963, 1964 and 1965 and International Investment Position, Table XIV, p. 127. These estimates are based on the estimated book value of capital employed in each industry.

All told, about four-fifths of the foreign control over Canadian industry is exercised by U.S. residents.

The acquisition of Canadian firms by non-residents from 1945 to 1961 contributed to the increase that occurred in foreign control over Canadian industry during this period. It is important to recognize, however, that most of the increase in the share of Canadian industry controlled abroad reflects mainly: (i) the growth of firms that non-residents controlled prior to 1945; (ii) the growth of firms after they were acquired by non-residents during the period from 1945 to 1961; and (iii) the growth of new enterprises established by non-residents. By comparison, foreign acquisitions at the time they were acquired are relatively unimportant. Taken at their value at the time they were acquired, foreign acquisitions from 1945 to 1961 account for a relatively small share of the total value of assets controlled by non-residents in various sectors of Canadian industry in 1962, as shown in Table 1-4.

Table 1-4

TOTAL VALUE OF ASSETS OF FIRMS ACQUIRED BY NON-RESIDENTS FROM 1945 TO 1961 AS A PERCENTAGE OF THE VALUE OF ASSETS CONTROLLED BY NON-RESIDENTS IN 1962

Manufacturing	12
Mining	2
Construction	5
Transportation	38
Trade	6
Finance	.02

Source: Table 3-4.

2. Objectives and Approach of the Study

Despite the interest and concern that the issue of foreign ownership and control has evoked in Canada over many years, our knowledge in this area remains meagre and inadequate. Until about a decade ago, the main factual evidence on the subject consisted of a pioneering study written in the 1930's by Messrs. Marshall, Southard and Taylor, together with a few unpublished Ph. D. theses, the data on Canada's foreign investment position published by the Dominion Bureau of Statistics, and some miscellaneous evidence.[1/] Within the past decade a number of analytical studies have appeared in which the policies, practices and performance of foreign-owned firms have been examined and compared with resident-owned firms. A. E. Safarian's work is a major contribution in this area.[2/] In addition, some work has been done, notably by R. G. Penner, to try to assess the benefits of foreign investment to Canada.[3/]

The present Study has two main objectives. The first is to present new data that make it feasible to evaluate in a meaningful way the relative importance of foreign acquisitions of Canadian firms and the leading characteristics of both the acquired and acquiring firms.

1/ Herbert Marshall, Frank A. Southard, Jr., and Kenneth W. Taylor, Canadian-American Industry: A Study in International Investment, New Haven, Yale University Press, 1936; Dominion Bureau of Statistics, Canada's International Investment Position.

2/ A. E. Safarian, Foreign Ownership of Canadian Industry, Toronto, McGraw-Hill, 1966, and the references cited there.

3/ Rudolph G. Penner, "The Benefits of Foreign Investment in Canada, 1950 to 1956", The Canadian Journal of Economics and Political Science, XXXII: 2, May 1966, pp. 172-183.

The second purpose is to identify and to evaluate the importance of the factors that have had an influence on the number of foreign acquisitions that occurred from 1945 to 1961. A few remarks are made in passing on evidence relating to the economic consequences of foreign acquisitions but no attempt is made to examine this question systematically and in detail. No attention at all is given to many other questions that have been raised in connection with the general issue of the foreign ownership and control of Canadian industry.

A central feature of the research strategy adopted for this Study is the use of domestic mergers as a control group against which to evaluate the characteristics of international mergers and the factors giving rise to merger activity. International mergers may be viewed as part of the general phenomenon of industrial mergers common in industrialized countries. Many of the same factors that lead to domestic mergers seem likely also to lead to international mergers. Accordingly, much of the theory and empirical evidence that has emerged from the study of mergers in the United States, Britain and elsewhere, is directly relevant to an analysis of international mergers. Moreover, if one wishes to understand what effect international boundaries have on the characteristics of international mergers and the factors influencing merger activity, it seems highly desirable to compare international mergers with domestic mergers going on simultaneously. As a method of evaluating the characteristics, determinants and consequences of international mergers, this comparative approach seems more promising than an approach focusing on international mergers alone.

An important by-product of this approach is that it sheds considerable light on the phenomenon of domestic mergers as well -- a subject that warrants attention in its own right from the standpoint of public policy. This consideration provides a further justification for the approach adopted.

3. Data and Definitions

The data presented in this Study were provided to the authors by the Department of Consumer and Corporate Affairs.[1/] The data were collected through an official questionnaire survey conducted by the office of the Director of Investigation and Research under the Combines Investigation Act. This office maintains a day-to-day record of acquisitions reported in the financial press, daily newspapers in the larger cities, and a large number of trade journals. The questionnaire was provided to all companies known from public sources to have made at least one acquisition and to be conducting business in a sector of the economy to which the Act applies. Any companies that made acquisitions that did not come to the attention of the Director slipped through the survey net. It is likely that the number of acquisitions missed for this reason is small. In addition, firms in the service sectors of the economy, except for transportation, were largely excluded -- e.g. financial institutions, most utilities, advertising agencies, real estate companies -- since they are not covered by the Act. However, a number of acquisitions in sectors not covered by the Act are included in the data because the acquiring companies or their subsidiaries engaged in activities falling within the jurisdiction of the Act or made acquisitions in sectors covered by the Act.

All tables and charts showing the distribution of merger activity by industry divisions are subject to the qualification that the coverage in the industries not covered by the Act is incomplete and varies from industry to industry.

[1/] Initially by the Department of Justice. Since this Study began, the office of the Director of Investigation and Research has been transferred from the Department of Justice to the Department of Consumer and Corporate Affairs.

Although the data do not include all acquisitions in Canada from 1945 to 1961, it is important to recognize that they include virtually every acquisition in those sectors of the economy covered by the Act. All companies that were approached were required to return separate questionnaires for each of the acquisitions they made between 1945 and 1961 inclusive. Because of this, many acquisitions came to light that had not been reported in the press and in trade journals.

The data collected on acquired companies relate only to companies for which the amount paid exceeded $10,000 and which had physical assets that could sustain an independent operation. This means that a number of acquired non-operating companies were excluded in the mining and petroleum industries that were valuable because of the mineral and petroleum rights held by these companies.

Sales of parts of firms that met the above criteria were also included as acquisitions and represent an important segment of the total number of acquisitions -- more than 15 per cent of foreign acquisitions and 6 per cent of domestic acquisitions. The majority of the firms that sold part of their assets or operations ultimately ceased doing business.[1/]

The terms "merger" and "acquisition" have been used interchangeably in this Study. Strict usage would require the term "merger" to be reserved for situations where two or more firms amalgamate, each giving up its previous identity, and "acquisition" for situations where one firm, maintaining its own identity, acquires other firms as subsidiaries that may or may not lose their identity. For present purposes these distinctions are not very important, as indicated in Chapter 4, and for stylistic reasons the terms have been assumed to be synonymous. In all cases involving the merger of two or more

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1/ Table A-3.

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companies, the larger of the companies was labeled the acquiring company and the smaller one(s) the acquired.

No predetermined percentage of ownership or control by the acquiring firm was defined to distinguish situations where mergers occur from situations where one firm invests in another without seeking deliberately to influence the policies of the firm in which it has invested. Since the acquiring firm returned a questionnaire in each case in which it felt that it had gained control over a firm, its decision in the matter was taken to be the best guide. In virtually all acquisitions a very substantial share of ownership was attained. There are only nine cases in which the acquiring firm held less than 50 per cent ownership at the reporting date, which generally was in 1961 and 1962 but was as late as 1965 in a small number of acquisitions. The firms were also asked to report all cases in which they held a 10 per cent or greater ownership interest in another firm. Among other things, this information made it unlikely that cases of substantial ownership shares without "control" could pass unnoticed and unquestioned. There were no returns in which a majority ownership share was not considered to constitute control.

A foreign acquisition is defined as one in which a foreign-controlled company, with or without Canadian operations either directly or through a Canadian subsidiary, acquires a company or division in Canada.[1/] The purchase of a company or division in Canada by a Canadian-controlled company is defined as a domestic acquisition. Both definitions apply regardless of the nationality of the ownership and control of the acquired company prior to the acquisition. In other words, all the

[1/] In the majority of acquisitions -- about 72 per cent -- foreign acquisitions were made indirectly through a Canadian-based subsidiary. See Table A-4 for the distribution of the possibilities specified in the definition.

acquired companies in this Study were located in Canada. In most cases the acquired company had been owned and controlled by Canadians, but in a significant number of cases -- 18 per cent of the foreign acquisitions and 6 per cent of the domestic acquisitions -- the acquired companies had been under foreign control.[1/]

Among the questions included in the questionnaire survey were questions concerned with the size, profitability, DBS industry classification, geographical location, market rank and range of products sold by the acquired and the acquiring firm. Other questions dealt with reasons for the acquisition and the economies obtained by it. It is evident that the replies warrant varying degrees of confidence. In most cases, the questions dealt with information that was readily available to the firm and did not give rise to problems of interpretation. The size and DBS industry classification of the acquired and acquiring firms are examples of such questions. Other questions, such as those concerned with the reasons for the acquisition or the classification of acquisitions into different types of mergers by the editors of the questionnaires, are subject to differences of interpretation and opinion. The percentage of responses to different questions also varied. Some questions, such as the year of the acquisition, were answered by virtually all firms. By contrast, less than half of the questionnaires reported the profit rate of the acquired firms. In the discussion that follows, an attempt has been made to identify explicitly data that in the opinion of the authors are open to some question for any or all of these reasons.

4. Organization of the Study

The remainder of this Study is organized as follows. Chapter 2 briefly summarizes the main findings of our investigation. In Chapter 3 data on the number of mergers

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[1/] Table A-1.

are presented and the relative importance of international and domestic mergers is reviewed in relation to four yardsticks of comparison. The leading characteristics of international and domestic mergers are examined in Chapter 4, giving particular emphasis to differences and similarities between these two types of merger. In Chapters 5 and 6 the discussion focuses on the relationship between firm and industry characteristics and the number of mergers. And in Chapter 7 an attempt is made to identify and measure the influence of various general economic influences on merger activity. The data on mergers are provided in the Statistical Appendix.[1/] In some cases these data have been annotated with explanatory comments.

1/ All tables are numbered by chapter and table number -- e.g. Table 1-1. Appendix tables are identified by A--, e.g. Table 5A-1 in the Appendix to Chapter 5, and Table A-1 in the Statistical Appendix.

CHAPTER 2

SUMMARY OF FINDINGS

1. The number of foreign and domestic acquisitions from 1945 to 1961 is shown graphically in Chart 2-1. In total, 639 international mergers and 1,187 domestic mergers occurred in Canada from 1945 to 1961. On this showing, domestic acquisitions outnumbered foreign acquisitions by 2 to 1 for the period as a whole. Prior to 1954 this ratio was 2 1/2 to 1; after 1954 it was roughly 1 1/2 to 1. The average value of foreign acquisitions (total price paid ÷ number) increased some four to five times from 1945-50 to 1960-61, compared with a twofold increase in the average value of domestic acquisitions and a similar increase in the price of new investment goods.

2. The number of foreign acquisitions in Canada during this period may be considered small when compared with the number of firms in Canada, the number of mergers in North America and the percentage of the industrial labour force working in the acquired firms.

3. The relationship between the inflow of foreign capital for purposes of acquiring Canadian firms and the inflow of total direct investment and Canada's balance of foreign indebtedness is shown graphically in Chart 2-2.

4. Summary evidence on the leading characteristics of foreign and domestic mergers is presented graphically in Charts 2-3 to 2-9. The characteristics in question are: the size of firms, the industrial distribution of firms, the extent to which acquisitions are concentrated in the hands of a relatively few acquiring companies and the profitability of acquired firms.

CHART 2-1

NUMBER OF FOREIGN AND DOMESTIC ACQUISITIONS,
1945-61

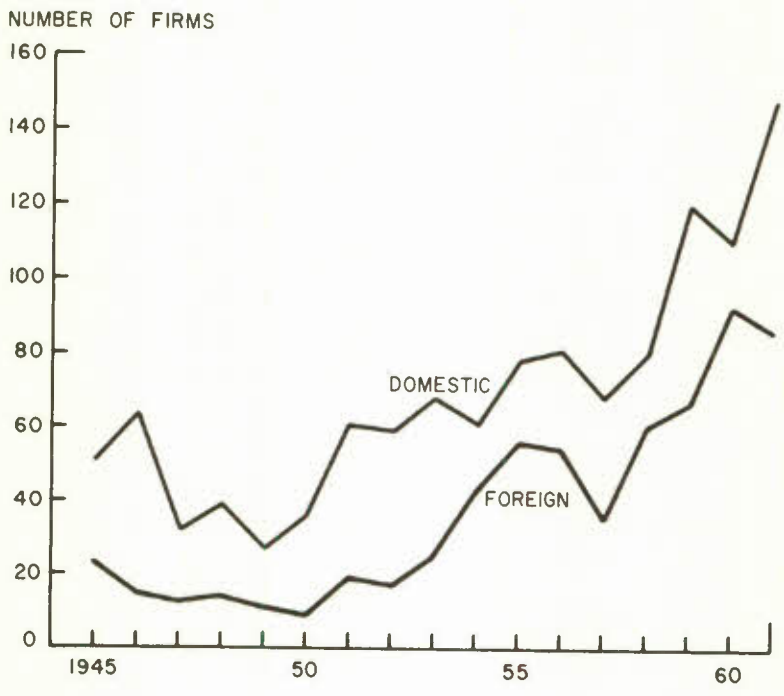
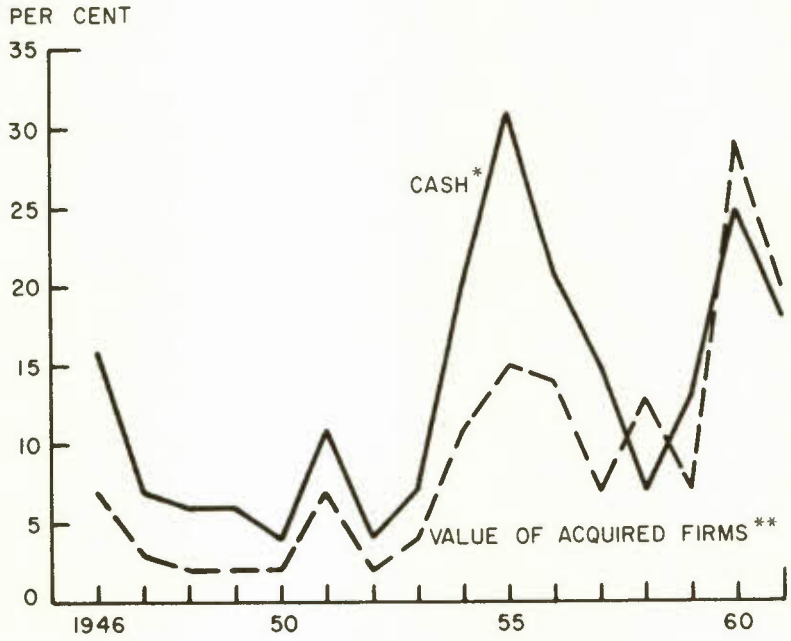


CHART 2-2

VALUE OF FIRMS ACQUIRED IN INTERNATIONAL MERGERS
IN RELATION TO FOREIGN DIRECT INVESTMENT
IN CANADA



* Cash (Series II) as a Percentage of Direct Investment in Canada

** Value of Acquired Firms as a Percentage of the Change in the Value of Total Non-Resident Direct Investment in Canada Controlled by Non-Residents.

CHART 2-3

SIZE DISTRIBUTION OF ACQUIRED FIRMS, CLASSIFIED BY SALES AND ASSETS PRIOR TO MERGER, 1945-61

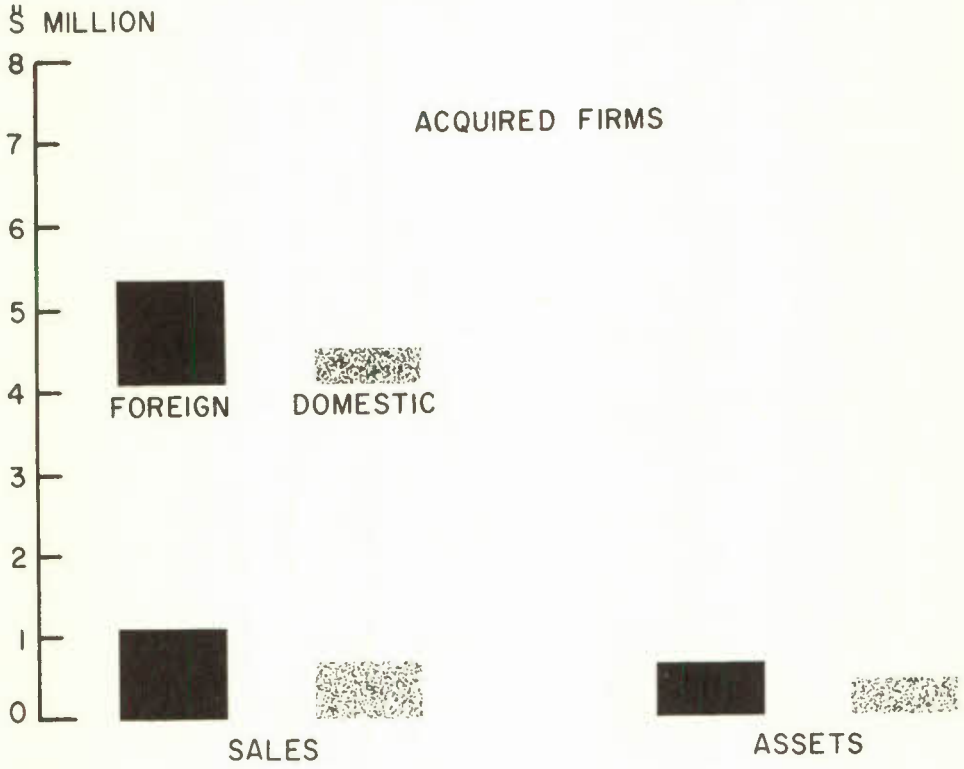


CHART 2-4

**SIZE DISTRIBUTION OF ACQUIRED FIRMS,
CLASSIFIED BY NUMBER OF EMPLOYEES PRIOR TO MERGER,
1945-61**

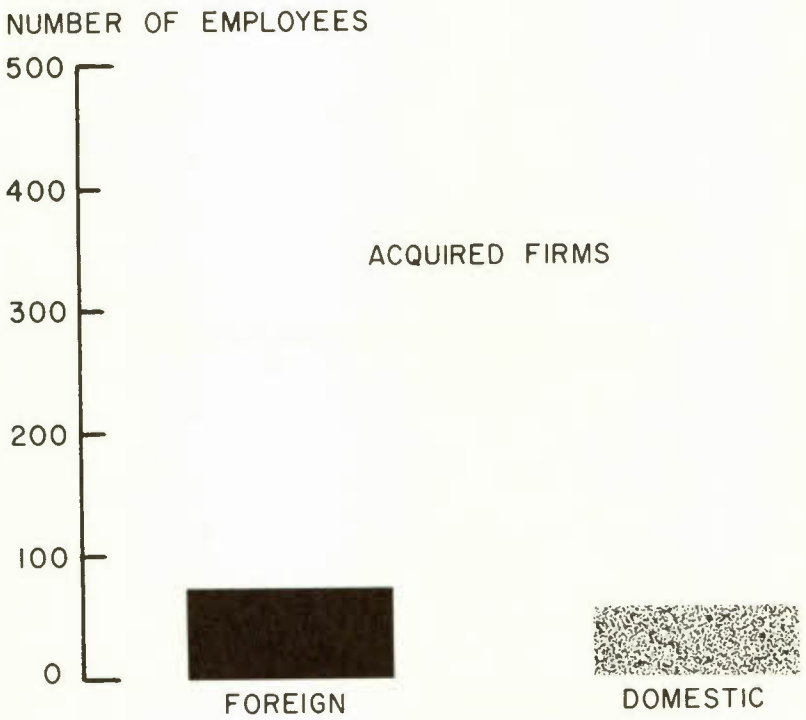
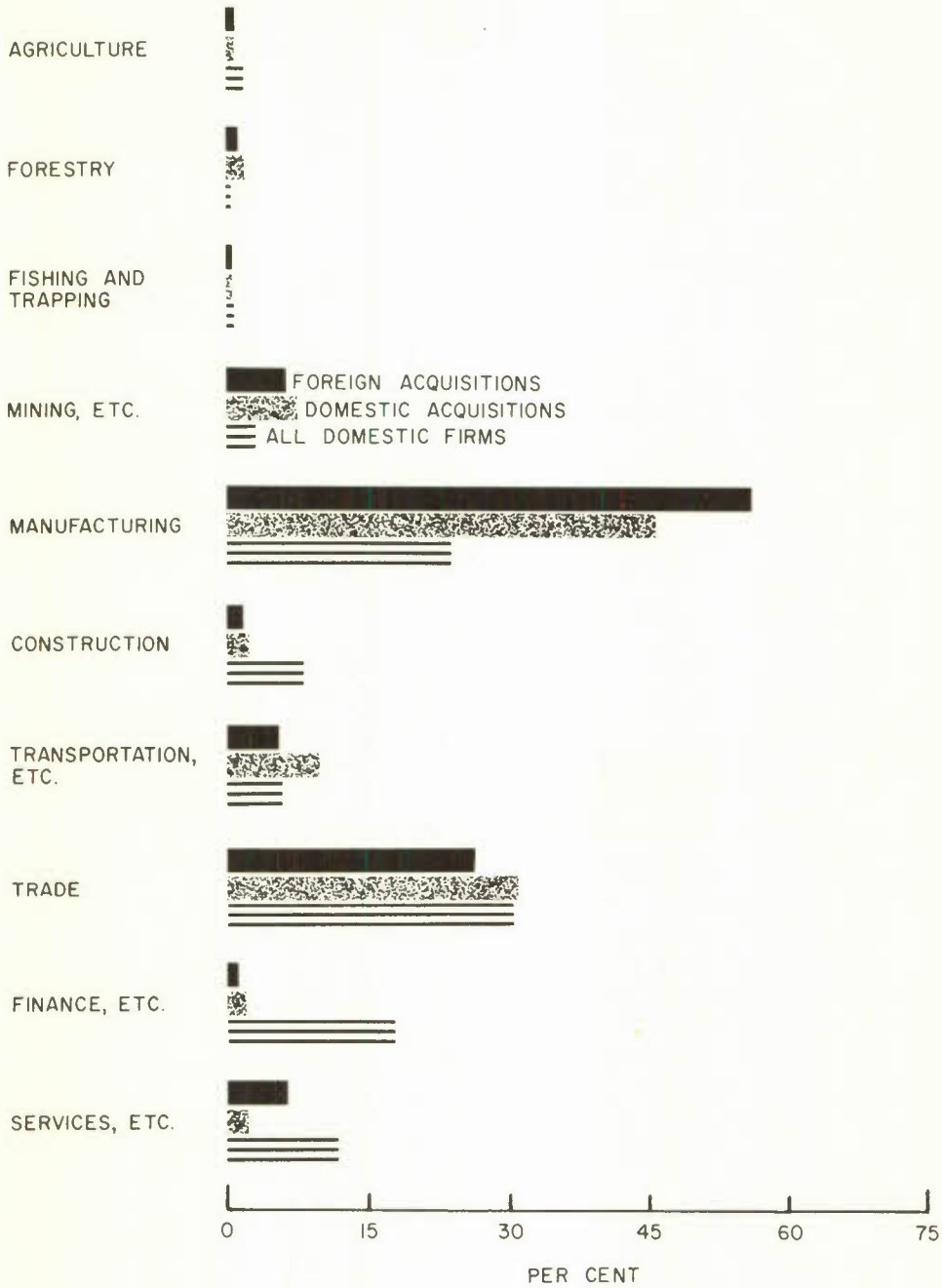


CHART 2-5

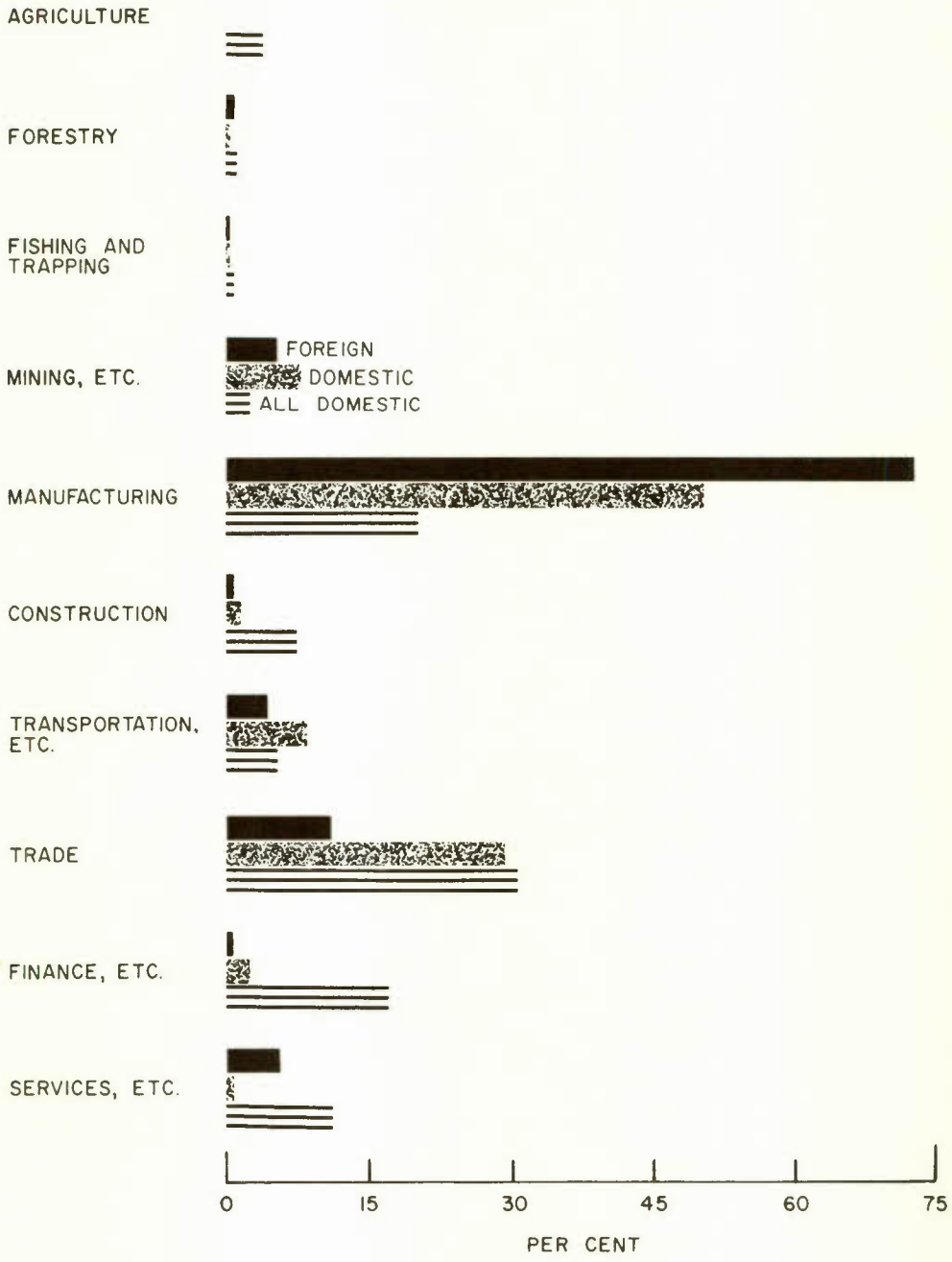
PERCENTAGE DISTRIBUTION OF NUMBER OF ACQUIRED FIRMS AND TOTAL NUMBER OF DOMESTIC FIRMS, BY INDUSTRY DIVISION, 1945-61*



* As pointed out in Chapter 1, the coverage of the questionnaire is less complete for those sectors that do not come under the jurisdiction of the Combines Investigation Act.

CHART 2-6

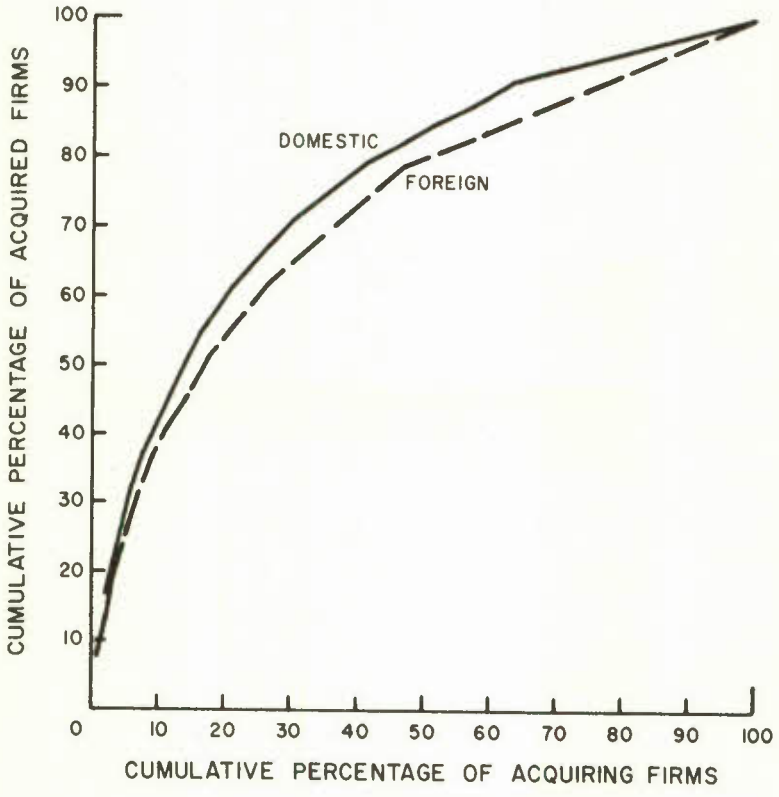
PERCENTAGE DISTRIBUTION OF NUMBER OF ACQUIRING FIRMS AND TOTAL NUMBER OF DOMESTIC FIRMS, BY INDUSTRY DIVISION, 1945-61*



* As pointed out in Chapter 1, the coverage of the questionnaire is less complete for those sectors that do not come under the jurisdiction of the Combines Investigation Act.

CHART 2-7

CONCENTRATION OF ACQUISITIONS BY ACQUIRING FIRMS, 1945-61*



* The figures required to convert the percentages into numbers of acquired and acquiring are: foreign acquiring -- 258, domestic acquiring -- 300, foreign acquired -- 639 and domestic acquired -- 1,187.

CHART 2-8

PERCENTAGE OF ACQUIRED FIRMS
THAT WERE INCURRING LOSSES,
1945-61

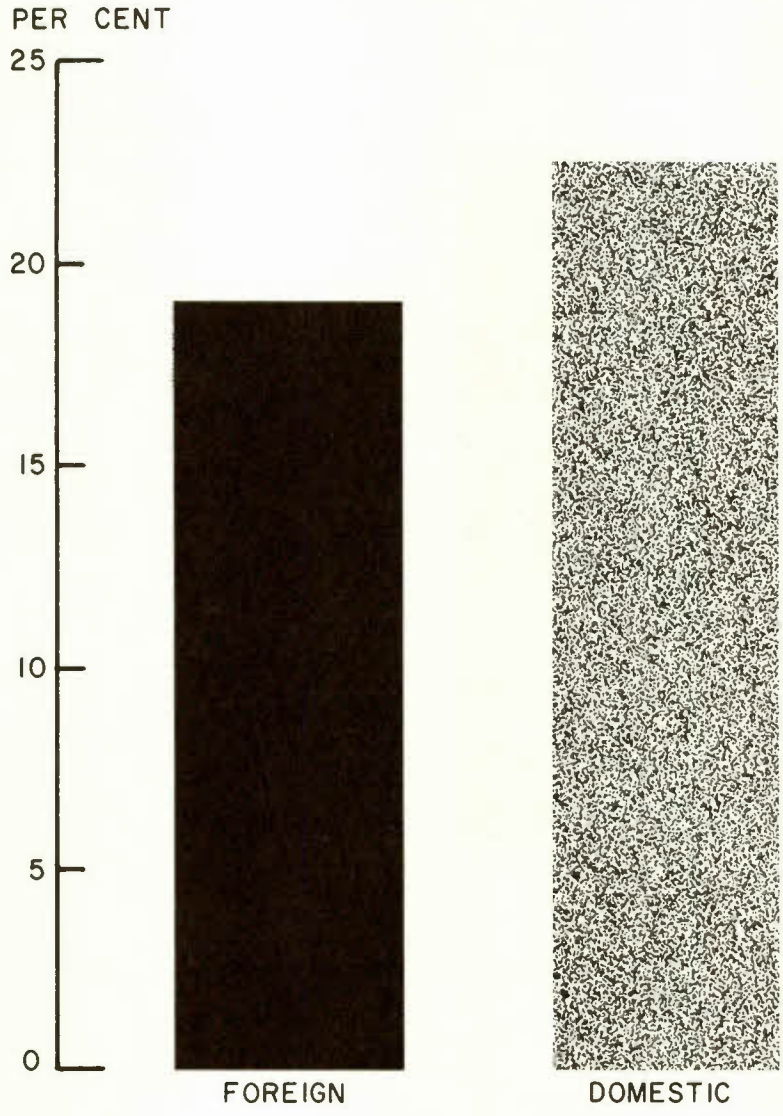
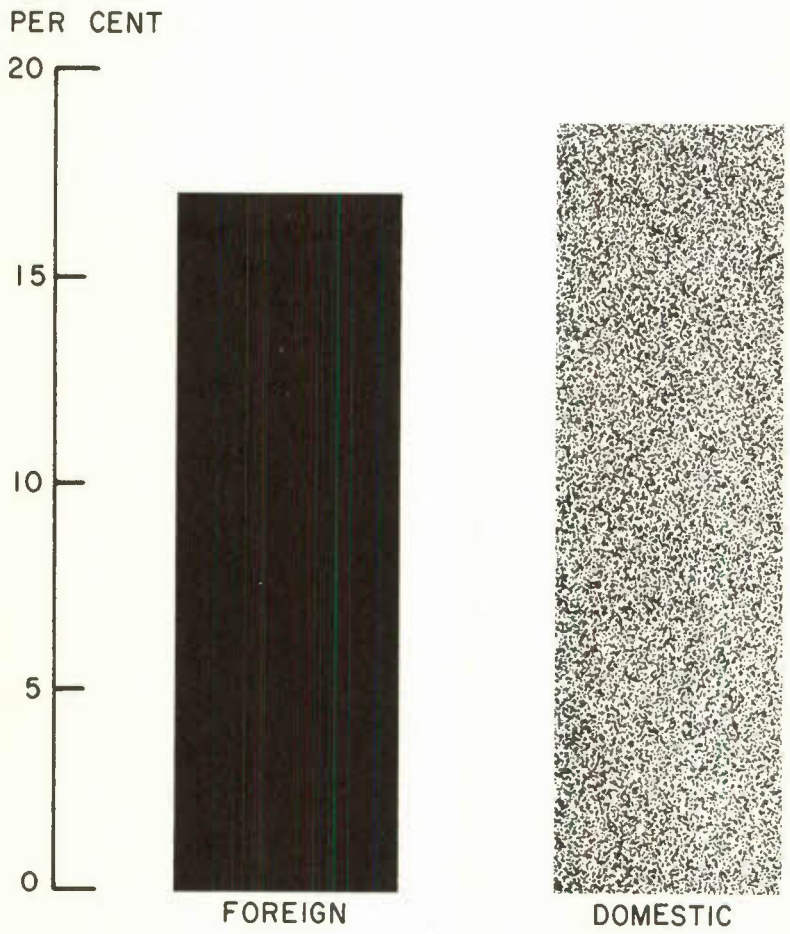


CHART 2-9

MEDIAN PROFIT RATE OF ACQUIRED FIRMS
THAT WERE EARNING PROFITS,
1945-61*



* Profit rates are defined as the reported book profit as a percentage of reported net worth.

The median age and size of firms acquired in foreign and domestic mergers were as follows:

	Foreign Mergers	Domestic Mergers
Age (years)	14.3	13.7
Size: Sales ($ million)	1.1	0.7
Assets ($ million)	0.7	0.4
Employees (number)	54	43

5. The industrial distribution of both foreign and domestic mergers was concentrated in the manufacturing and trade sectors. The evidence on concentration indicates that merger activity was concentrated in the hands of relatively few firms, though a large majority of firms acquired no more than two firms each. Merger activity was more concentrated among domestic acquiring firms than among foreign acquiring firms.

6. The profitability of firms acquired in foreign and domestic mergers may be summarized in the following manner:[1/]

	Foreign Mergers	Domestic Mergers
Median profit rate of acquired firms earning a profit (%)	17.0	18.7
Percentage of acquired firms incurring losses	19.0	22.8

7. The evidence available for the period 1945 to 1961 suggests that in any given industry, foreign-controlled firms tended to account for a larger percentage of acquisitions than of control of assets. However, there is evidence

1/ Profit rates are defined as the reported book profit as a percentage of reported net worth.

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that the difference between these two ratios is fairly uniform across industries, and may in part reflect the size characteristics of foreign- and domestically-controlled companies. Putting the same point another way, one can say that after one makes allowance for a common difference among all industries between the distribution of merger activity and the degree of foreign control, the distribution of mergers between foreign and domestic acquisitions in any industry was proportional to the distribution of resident- and non-resident-controlled companies already in existence in that industry in Canada. Extending this relationship one can say further that the number of foreign acquisitions in any industry was:

(a) positively related to the number of foreign-controlled firms already in the industry;

(b) positively related to the number of domestic mergers occurring in the industry; and

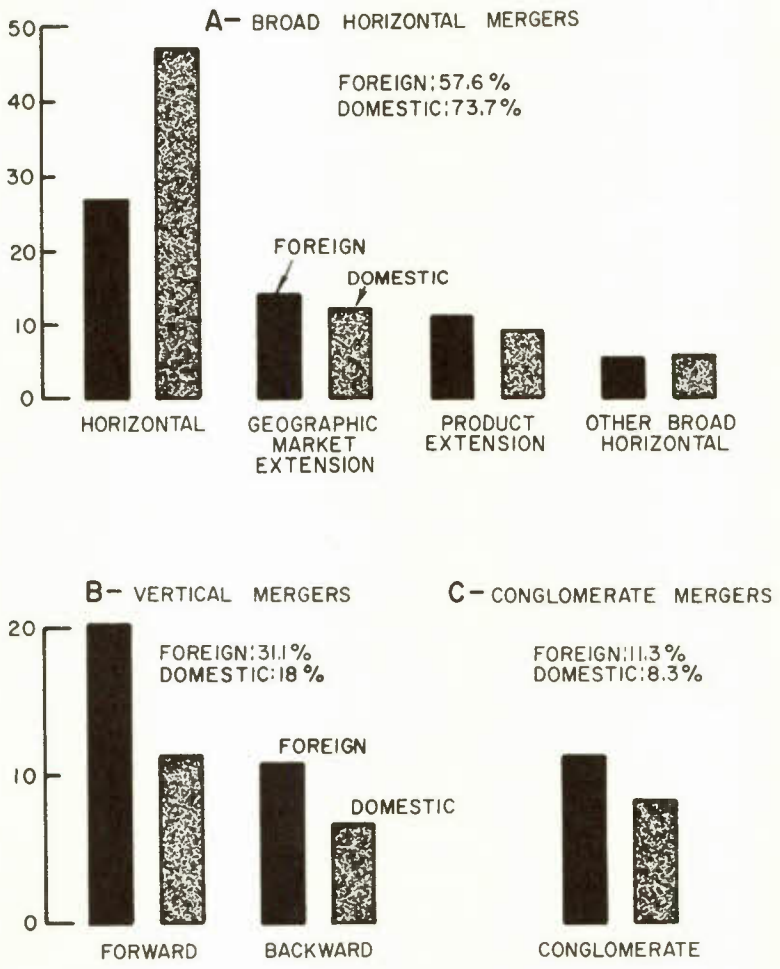
(c) negatively related to the number of domestically-controlled firms in the industry.

8. The reasons for mergers reported by acquiring firms on the questionnaire, while subject to considerable uncertainty, indicate that supply reasons were relatively more important for domestic acquisitions than for foreign acquisitions.

9. The data on the market relationships between merging firms indicate that about 74 per cent of domestic mergers represented broad horizontal mergers, and 58 per cent of foreign mergers fell into this category. Most of the remaining mergers were vertical mergers. Chart 2-10 shows the distribution of acquisitions by type of market relationship as defined in Chapter 5.

CHART 2-10

PERCENTAGE DISTRIBUTION OF THE TYPES OF MERGERS, 1945-61



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10. The questionnaire data suggest that economies of scale were not an important consideration explaining merger activity, though on this point also the data are open to question. To the extent that scale economies were important the main emphasis seems to have been on reducing overhead administrative costs.

11. There is fairly strong evidence of a relationship between general economic conditions and the number of mergers. Where foreign mergers are concerned, the influence of general economic conditions from 1945 to 1961 seems to have arisen for the most part from factors influencing foreign demand for Canadian firms and, on the supply side, from the level of economic activity and financial conditions in Canada. Our "best" estimate, in several respects, indicates that about 92 per cent of the year-to-year variation in the number of foreign mergers from 1945 to 1961 can be explained in terms of variations in:

(a) the number of mergers occurring in the United States;

(b) corporate liquidity, represented by the supply of internally generated corporate funds in Canada; and

(c) the number of commercial failures in Canada.

12. The inclusion of the number of mergers in the United States reflects the hypothesis that the demand of U.S. firms for Canadian companies is simply a spill-over of their demand for firms in the United States and consequently of the level of merger activity in that country. As merger activity expanded in the United States, the number of acquisitions by U.S. firms in Canada also tended to increase during this period, and vice versa. The level of corporate liquidity and the

number of business failures, on the other hand, reflect domestic economic conditions in Canada. As the level of corporate liquidity declined, domestic firms apparently were induced to accept affiliation with other firms at prices that foreign acquiring firms found attractive. As a consequence, corporate liquidity was associated negatively with the number of foreign acquisitions. The number of business failures, on the other hand, was positively associated with the number of foreign mergers, as one might expect. As profits fell and losses arose and as, in some cases, bankruptcy became imminent, firms evidently were willing to sell out at prices that foreign buyers were willing to pay. The number of bankruptcies may be viewed as reflecting, in part at least, the general level of economic activity in the country.

13. The year-to-year variations in the number of domestic mergers in Canada from 1945 to 1961 can "best" be explained, according to our evidence, by two factors:

(a) variations in Canadian stock market prices, reflecting business expectations about profit prospects;

(b) variations in level of corporate liquidity, represented by the supply of internally generated funds in Canada's corporate sector.

Together, these two variables explain about 89 per cent of the variation in the number of domestic mergers from 1945 to 1961. The estimated relationship indicates that the number of domestic mergers was positively associated with stock market prices and negatively associated with the level of corporate liquidity. This evidence of the influence of general economic conditions on the number of domestic mergers is consistent with the evidence of the influence of general economic conditions on the number of international mergers.

CHAPTER 3

THE NUMBER AND RELATIVE IMPORTANCE OF INTERNATIONAL MERGERS

1. Annual Number of Mergers, 1945 to 1961

Table 3-1 shows the annual number of acquisitions in Canada by foreign firms, by U.S. firms and by domestic firms, together with the total number of domestic firms in existence. In columns 7 through 13 various ratios are shown, based on these data. Several points might be particularly noted. First, for the period as a whole the number of firms acquired by foreign firms amounts to a little over half of the number of firms acquired through domestic take-overs. At the same time, in no year from 1945 to 1961 did the number of firms taken over in international mergers exceed more than one-tenth of 1 per cent of all the firms in Canada. Second, if one compares averages for quinquennia, it is apparent from column 12 that the number of firms taken over through foreign mergers increased relative to the total number of firms in Canada after 1955, though the year-to-year variation for the entire period was considerable. Third, the growth in foreign take-overs was more pronounced than the growth of domestic take-overs, as shown by column 7. Relative to the number of domestic firms, the number of domestic mergers, if anything, was somewhat less after 1950 than from 1945 to 1950. Fourth, it is evident from column 9 that the ratio of total acquired firms to total acquired Canadian firms entering international mergers has not changed very much, on average, over this period. Finally, take-overs by U.S. firms have, if anything, decreased slightly in relation to the total number of international mergers, as shown by column 10.

Table 3-1

NUMBER OF ACQUIRED FIRMS AND NUMBER OF CANADIAN FIRMS, BY YEAR, 1945-61

Year	Total	Number of Foreign Acquisitions of Canadian Firms	Number of Foreign Acquisitions by U.S. Firms	Number of Domestic Acquisitions	Number of Domestic Firms	Ratios (2)/(5)	(3)/(5)	(3)/(2)	(4)/(2)	(4)/(5)	Ratios x 100 (2)/(6)	(5)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1945	23	17	20	51	27,229	.45	.33	.74	.87	.39	.08	.19
1946	15	11	9	64	30,442	.23	.17	.73	.60	.14	.05	.21
1947	13	10	9	32	34,087	.41	.31	.77	.69	.28	.04	.09
1948	14	8	12	39	35,960	.36	.21	.57	.86	.31	.04	.11
1949	11	5	6	27	37,467	.41	.19	.45	.55	.22	.03	.07
	76	51	56	213	33,037 (av.)	.37	.24	.65	.71	.27	.24	.67
1950	9	7	6	36	40,545	.25	.19	.78	.67	.17	.02	.09
1951	19	14	14	61	43,365	.31	.23	.74	.74	.23	.04	.14
1952	17	16	10	59	45,777	.29	.27	.94	.59	.17	.04	.13
1953	25	21	14	68	49,745	.37	.31	.84	.56	.21	.05	.14
1954	43	29	24	61	54,434	.70	.48	.67	.56	.39	.08	.11
	113	87	68	285	46,773.2 (av.)	.38	.30	.79	.62	.23	.23	.61
1955	56	45	32	78	59,773	.72	.58	.80	.57	.41	.09	.13
1956	54	38	34	81	67,480	.67	.47	.70	.63	.42	.08	.12
1957	35	27	19	68	73,823	.51	.40	.77	.54	.28	.05	.09
1958	60	36	46	80	80,770	.75	.45	.60	.77	.58	.07	.10
1959	66	53	46	120	88,806	.55	.44	.80	.70	.38	.07	.14
	271	199	177	427	74,130.4 (av.)	.64	.47	.73	.64	.41	.36	.58
1960	93	67	52	110	97,549	.85	.61	.72	.56	.47	.10	.11
1961	86	69	63	148	106,309	.58	.47	.80	.73	.43	.08	.14
	179	136	115	258	101,929 (av.)	.72	.54	.76	.65	.45	.18	.25
Total	639	473	416	1,183								

Source: Table A-6 excluding firms in X and Y categories; Taxation Statistics, Department of National Revenue. Figure in column 6 includes both profit and loss companies.

Relative Importance of International Mergers

Table 3-2 shows the average value of acquired firms (total price paid ÷ total number of acquired firms) by year from 1945 to 1961, together with the implicit GNE price index for new fixed business investment. As indicated by the data, the average value of firms entering international mergers had increased on the order of four to five times from 1945-50 to 1960-61, and the average value of firms acquired in domestic mergers had about doubled. During the same period, prices of new investment goods had approximately doubled. It will also be observed that in the 1945-50 period the average value of the acquired firms taken over in international transactions was somewhat less than for those taken over in domestic transactions. By the end of the 1950's the average value of internationally acquired firms was appreciably larger than the average value of domestically acquired firms.

2. Relative Importance of Mergers

For present purposes the relative importance of international Canadian mergers will be assessed in relation to four yardsticks: the number of firms in Canada and the United States; the number of mergers in Canada and the United States; the number of employees in Canada; and Canada's annual net foreign investment and balance of international indebtedness.

(a) Number of Firms

As already indicated, about 650 international mergers and about 1,200 domestic mergers occurred in Canada from 1945 to 1961. According to taxation data, about 100,000 companies filed tax returns in 1961 in Canada and about 1,200,000 companies filed tax returns in the United States in the same year. Cast against this background, the number of mergers in Canada has been very small.

Table 3-2

AVERAGE VALUE OF ACQUIRED FIRMS, BY YEAR, 1945-61

Year	Average Value of Foreign Acquisitions ($ Thousand) Total	of Canadian Firms	Average Value of Domestic Acquisitions ($ Thousand)	Ratios (2)/(4)	(3)/(4)	(2)/(3)	GNE Implicit Deflator for Gross Fixed Business Investment (1945=100)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1945	755	960	348	2.17	2.76	.79	100.0
1946	528	494	719	.73	.69	1.07	103.6
1947	339	352	276	1.23	1.28	.96	115.0
1948	317	276	1,059	.30	.26	1.15	130.9
1949	513	213	1,057	.49	.20	2.41	137.7
	490.4	459.0	691.8	.98	1.04	1.28	117.4
1950	1,060	1,305	1,012	1.05	1.29	.81	145.6
1951	1,977	1,955	1,192	1.66	1.64	1.01	165.2
1952	946	986	603	1.57	1.64	.96	170.9
1953	1,210	1,253	744	1.63	1.68	.97	175.3
1954	1,949	1,059	852	2.29	1.24	1.84	176.9
	1,428.4	1,311.6	880.6	1.64	1.50	1.12	166.8
1955	2,631	2,497	1,270	2.07	1.97	1.05	180.6
1956	3,004	2,257	573	5.24	3.94	1.33	190.2
1957	2,697	3,229	2,438	1.11	1.32	.84	197.0
1958	1,650	879	2,099	.79	.42	1.88	201.2
1959	1,093	1,170	1,632	.67	.72	.93	207.0
	2,215.0	2,006.4	1,602.4	1.98	1.67	1.21	195.2
1960	3,000	3,592	1,803	1.66	1.99	.84	211.4
1961	1,981	1,301	972	2.04	1.34	1.52	213.2
	2,490.5	2,446.5	1,387.5	1.85	1.67	1.18	212.3

Source: Table A-6, column 7 divided by column 2; Dominion Bureau of Statistics, National Accounts, Income and Expenditure.

Moreover, it is important to note that although the ratio of the number of companies in the United States to the number of companies in Canada was about 12 to 1, the number of foreign mergers in Canada was outnumbered by the number of domestic mergers in a ratio of about 1 to 2. In this sense there is at least some prima facie evidence that the Canada-U.S. border has mattered substantially. It has apparently served very effectively to limit the take-over of Canadian firms by U.S. firms. Otherwise one might expect the ratio of foreign to domestic mergers to approximate more closely the ratio of the number of companies in the two countries.

Before one could accept the result of such an aggregative comparison with a great deal of confidence, one would wish to expose it to more detailed analysis. It is possible that other factors unrelated to the political boundary may explain some or most of the differences in these ratios.

Unfortunately, it has not been possible to undertake such a detailed analysis for purposes of this Study. However, in order to make some allowance for the possible influence of distance and differences in industrial structure related to climate, one can make a comparison with the number of U.S. firms in only those states that border on Canada.[1/] According to taxation data, about 525,000 firms filed tax returns from these states in 1961. On this basis the ratio of the number of companies in border states to the number of companies in Canada was 5 to 1. This evidence reinforces the conclusion that the Canada-U.S. border has mattered substantially in the sense explained earlier.

1/ The number of firms filing tax returns with internal revenue districts located in: Washington, Idaho, Montana, North Dakota, Minnesota, Wisconsin, Illinois, Michigan, Ohio, Pennsylvania, New York, Vermont, New Hampshire and Maine.

(b) Number of Mergers: Canada versus United States

Another way of evaluating the importance of international mergers in Canada is to consider these mergers in relation to domestic mergers in Canada and domestic mergers in the United States. A detailed comparison of international and domestic mergers in Canada will be given in Chapter 4. Here we are concerned only with a comparison between Canada and the United States.

From the figures given earlier, it will be observed that Canadian mergers from 1945 to 1961 were equal to about 1.8 per cent of the number of Canadian companies in 1961. Applying the same ratio to the number of U.S. firms, one arrives at a hypothetical figure of about 22,000 mergers for the United States for the same time period. This is over two-and-a-half times greater than the actual number of U.S. mergers, as reported in the Federal Trade Commission series.[1/] Unfortunately, this series is very incomplete and it is far from clear by how much the series understates the number of mergers. There seems to be some reason to believe, however, that the series covers more than half the mergers that took place in the United States during this period. If this is correct, the evidence suggests that relatively more mergers have occurred in Canada than in the United States in the sense that the ratio of the number of mergers to the number of firms has been greater for Canada than for the United States.

(c) Number of Employees

The internationally acquired firms that reported the number of their employees, as shown in Table A-26,

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1/ U.S. Congress, Senate, Hearings before the Subcommittee on Antitrust and Monopoly of the Committee of the Judiciary, S. Res. 40, 89th Congress, 1st Session, March 16, 17, 18, April 13, 14, 15 and 21, 1965, Economic Concentration, Part 2, "Mergers and Other Factors

in total provided jobs for about 105,000 employees when they were taken over. The firms acquired in domestic mergers, which reported their figures, in total provided jobs for 115,000 employees at the time of take-over between 1945 and 1961. In mid-1953 -- midway between 1945 and 1961 -- the labour force engaged in private non-agricultural production in Canada was roughly four million. Consequently, one can say that something like 2.6 per cent of the industrial labour force was involved in international mergers at the time when such mergers took place, and about 2.9 per cent of the industrial labour force was involved in domestic mergers.

Affecting Industry Concentration", Washington, U.S. Government Printing Office, 1965, Appendix 1, p. 847. How much the Federal Trade Commission series understates the total number of mergers is uncertain. The series includes only manufacturing and mining mergers mentioned in Moody's Industrial Manual and the Standard Corporation's figures. In the commentary on this point, W. F. Mueller of the Federal Trade Commission notes that the number of mergers indicated for 1964 was approximately doubled when they consulted a wider range of sources (1,700 versus 854). He also points out that mergers in the dairy industry alone, for which comprehensive data are available for some years, exceeded the total number of recorded mergers in manufacturing and mining as indicated by the FTC series, even though the dairy industry accounted for less than 3 per cent of total sales in manufacturing (see p. 504 of Mueller's testimony).

(d) Balance of Payments and International Indebtedness

Table 3-3 summarizes several comparisons relating to foreign capital flows and foreign indebtedness. Since the figures shown in the balance-of-payments statement for foreign investment reflect almost entirely cash transfers, only the cash payment involved in international merger transactions is compared to these balance-of-payments series. Moreover, as explained in Table A-6, two cash payments series are suggested by our data. These series generally agree fairly well, but in a few years quite substantial differences are indicated. In Table 3-3, therefore, both series have been related to the balance-of-payments figures for investment (cash) flows (columns 2 through 7). It should also be noted that in about a quarter of the cases foreign firms acquired Canadian firms from other foreign firms. These cash transactions are excluded in Table 3-3 since it seems unlikely that cash was transferred to Canada as a result of these transactions. In column 8 of Table 3-3 the total value of mergers for each year is related to the annual change in Canada's net balance of international indebtedness on direct investment, as shown by DBS data on Canada's balance of international indebtedness.

Two points might be noted in connection with Table 3-3. For many individual years the ratios are probably greater than many people would have guessed in the absence of data. Investment, of course, still enters the country, whether through mergers or through some other device. However, it is evident that transfers for the immediate purpose of mergers have been a significant part of direct investment. Secondly, it will be observed that the relative importance of transfers via mergers has fluctuated considerably from year to year. This instability reflects in part at least variability over time in the number and value of foreign mergers.

Table 3-3

VALUE OF FIRMS ACQUIRED IN INTERNATIONAL MERGERS
IN RELATION TO FOREIGN INVESTMENT IN CANADA
AND CANADA'S BALANCE OF INTERNATIONAL INDEBTEDNESS, 1945-61

	Cash as Percentage of Direct Investment in Canada		Cash as Percentage of Net Direct Investment in Canada		Cash as Percentage of Net Long-Term Private Investment in Canada		Total Value of Acquired Firms in Foreign Mergers as Percentage of the Annual Change in Direct Investment in Canada Controlled by Non-Residents
	Series I	Series II	Series I	Series II	Series I	Series II	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1946	16	16	24	25			7
1947	7	7	7	6			3
1948	6	6	5	5	4	4	2
1949	6	6	5	5	6	6	2
1950	2	4	2	4	1	2	2
1951	11	11	12	12	6	6	7
1952	3	4	4	5	3	3	2
1953	7	7	8	8	6	6	4
1954	19	20	24	25	16	17	11
1955	25	31	30	38	35	45	15
1956	21	21	26	25	10	10	14
1957	3	15	3	17	1	6	7
1958	6	7	7	8	3	3	13
1959	13	13	15	15	6	6	7
1960	22	25	24	27	17	20	29
1961	14	18	17	21	10	13	20

Source: Table A-6; Series I is based on column 3 in Table A-6; Series II is based on the series in the note to Table A-6; total value of acquired firms, including non-Canadian firms, from Table A-6; total net direct investment in Canada, Dominion Bureau of Statistics; long-term investment = net direct investment in Canada + net trade in Canadian securities + net trade in foreign securities, DBS; annual change in direct investment in Canada controlled by non-residents, DBS. Each of the ratios shown in this Table is somewhat understated since for 65 mergers from 1945 to 1961 the amount of cash payment was not reported in the questionnaire.

Further information on the relationship between foreign mergers and foreign control is given in Table 3-4. These figures show the total value of assets of firms acquired by foreigners from 1945 to 1961 as a percentage of the total value of assets controlled in 1961 (1960), by major industry. Three points should be noted in connection with these figures. First, the assets included in column 2 relate only to those acquisitions where a foreign firm purchased a firm that was previously controlled in Canada and to those acquisitions for which the nationality of ownership was not reported (59 cases). The figures exclude the foreign acquisition of a firm in Canada that was previously controlled by another foreign firm since such a transaction between two foreign companies presumably does not affect the foreign control of Canadian firms.

Secondly, it is necessary to allow for the effect of rising prices from 1945 to 1961 on the value of acquired assets if one wishes to compare these figures with the total value of assets controlled by non-residents in 1962. To illustrate, suppose a foreign firm bought a Canadian plant valued at $1,000,000 in 1945. The value of the plant in 1961 will have increased to $2,096,000, other things being equal, simply as a consequence of the general increase in price levels. If, now, one compares the value of the plant at 1945 prices with the value of assets controlled by non-residents reckoned at 1962 prices, the comparison will understate the proportion of non-resident control accounted for by acquisitions. In order to overcome this difficulty, the value of acquisitions and assets have been adjusted for price changes from 1945 to 1962, expressing both in constant dollars valued at 1949 prices. This adjustment is based on the implicit GNE price index for business investment. The ratio of the value of assets acquired to the value of assets controlled by non-residents on a constant 1949 dollar basis is shown in column 4 of Table 3-4.1/

1/ The year 1962 is the first year for which data are available under the Corporations and Labour Unions Returns Act.

Table 3-4

TOTAL VALUE OF ASSETS OF FIRMS ACQUIRED BY FOREIGNERS AS PERCENTAGE OF ASSETS CONTROLLED BY NON-RESIDENTS, BY MAJOR INDUSTRY

	Value of Assets Controlled by Non-Residents 1962[1]	Total Value of Assets of Firms Acquired by Foreigners, 1945-61	(2) as Percentage of (1)	Total Value of Deflated Assets Acquired ÷ Total Value of Deflated Assets Controlled by Non-Residents in 1962 (1949=100)
	(1) ($ Million)	(2)	(3)	(4)
Manufacturing	13,841.4	1,396.3	10.1	12.3
Food and beverages	816.4	126.4	15.5	20.9
Tobacco	316.7	4.3	1.3	3.3
Rubber	280.6	0.9	0.3	0.4
Leather	35.9	20.5	57.1	67.0
Textiles, knitting, clothing	319.1	24.7	7.8	18.4
Wood	287.8	71.5	24.9	30.4
Furniture	33.9	2.3	6.7	8.8
Paper	1,514.9	143.1	9.4	13.8
Printing and publishing	56.5	9.5	16.8	20.6
Primary metal	2,171.4	216.8	10.0	11.1
Metal fabricating	556.1	13.2	2.4	4.8
Machinery	601.7	28.2	4.7	6.0
Transportation equipment	1,231.0	86.7	7.0	8.7
Electrical products	801.2	34.8	4.3	5.6
Nonmetallic mineral products	431.3	119.0	27.6	29.8
Petroleum and coal products	2,825.2	459.9	16.3	18.0
Chemicals	1,267.9	11.4	0.9	1.1
Miscellaneous	293.8	23.1	7.9	9.0
Mining	4,109.2	64.0	1.6	1.7
Construction	312.9	14.0	4.5	4.9
Transportation[2]	663.9	240.0	36.1	38.0
Trade	2,260.2	100.5	4.4	5.9
Finance	5,284.4	0.8	0.02	0.02

(1) Corporations and Labour Unions Returns Act, Annual Report for 1962, Ottawa, Queen's Printer, 1965.
(2) Includes storage and communication.

Thirdly, in 132 cases the questionnaire respondents did not report the book value of assets acquired. In 110 cases these values were estimated on the basis of figures given on the total amount paid for the acquired companies in the manufacturing wholesale trade, retail trade, transportation and other sectors of the economy.

It is apparent that foreign acquisitions from 1945 to 1961, valued at the time of the acquisition, account for only a small part of the total value of assets controlled by non-residents in various sectors of Canadian industry. For manufacturing the ratio is 12 per cent, for mining and trade 5 per cent, for transportation 36 per cent, for construction 4 per cent, and for finance almost zero. Within the manufacturing category the largest ratios occur for leather, wood, paper, and nonmetallic minerals.

CHAPTER 4

LEADING CHARACTERISTICS OF MERGING FIRMS

1. Introductory Outline

This Chapter has a twofold purpose: first, to provide a quantitative description of the leading characteristics of acquired and acquiring firms participating in international and domestic mergers; and second, to compare the characteristics of firms entering international and domestic mergers and, where feasible statistically, to compare the characteristics of each of these groups of firms with those for all firms in Canada. For our purposes, we have chosen to concentrate on five characteristics: the age of firms, the size of firms, the industrial distribution of firms, the number of firms acquired by acquiring companies and the profit rates earned by firms. Other characteristics might have been explored had more time and resources been available. We feel that those characteristics that have been analyzed are among the more interesting to be considered, but no particular claim is made for giving these priority over others.

2. Profile of Merging Firms from 1945 to 1961

From 1945 to 1961, 639 foreign acquisitions of Canadian firms were reported. The nationality of 59 of the acquired firms is uncertain. Of the remainder, 82 per cent of the acquired firms were Canadian, 13 per cent were American and 5 per cent were British. Of the acquiring firms, 65 per cent were American, 27 per cent British and 8 per cent were from other countries (Table A-1).

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Four-fifths of these mergers consisted of a single firm buying out a single firm (Table A-3). Over 73 per cent of the foreign acquisitions were made indirectly through Canadian-based subsidiaries (Table A-4) most of whose head offices were located in Ontario and Quebec (Table A-2).

How does this general picture for foreign mergers compare with the picture for domestic mergers? During the same period -- 1945 to 1961 -- 1,187 domestic mergers took place in Canada. In this case the nationality of 82 acquired firms is uncertain. Of the remainder, 93 per cent of the acquired firms were Canadian, 4 per cent were American and 3 per cent were British (Table A-1). Over 85 per cent of these domestic mergers consisted of a single firm acquiring a single firm (Table A-3). About 64 per cent of the head offices of the acquiring firms were located in Ontario and Quebec (Table A-2).

(a) Age Characteristics

The age distribution of firms acquired in international and domestic mergers is shown in Table 4-1. The median age of the acquired firms by industry division and by two-digit manufacturing industry, is shown in Table 4-2. Five points might be particularly noted.

Table 4-1

AGE DISTRIBUTION OF ACQUIRED FIRMS, 1945-61

Years	International Mergers				Domestic Mergers	
	Total		Firms of Canadian Nationality		Total	
	% of total for which data available	Cumulative total (%)	% of total for which data available	Cumulative total (%)	% of total for which data available	Cumulative total (%)
1- 5	16.4	16.4	22.1	22.1	23.7	23.7
6-10	19.5	35.9	18.7	40.8	19.3	43.0
11-15	16.7	52.6	15.8	56.5	9.7	52.7
16-20	7.2	59.8	5.9	62.4	8.6	61.3
21-25	7.1	66.9	8.3	70.7	6.8	68.1
26-30	9.0	75.9	7.4	78.2	8.2	76.3
31-35	5.7	81.6	6.3	84.5	8.1	84.4
36-40	5.3	86.9	4.5	89.0	5.0	89.4
41-45	4.0	90.9	4.1	93.0	3.2	92.6
46-50	2.9	93.8	2.5	95.5	2.7	95.3
50+	6.2	100.0	4.5	100.0	4.7	100.0
Median value	14.3		12.9		13.7	

Source: Table A-24, excluding X and Y categories.

Table 4-2

MEDIAN AGE OF ACQUIRED FIRMS,[1] 1945-61

	Foreign	Domestic
Aggregate, 1945-61	14.3	13.7
Mining, etc.	15.9	7.3
Manufacturing	19.0	17.5
Transportation, etc.	10.6	8.0
Trade	16.4	14.0
Other industry divisions	9.1	11.1
Food and beverage	17	19
Leather	29	27
Wood	10	22
Paper	24	25
Primary metal	10	4
Metal fabricating	17	14
Machinery	17	8
Transportation equipment	15	12
Electrical products	21	17
Nonmetallic mineral products	11	6
Chemical and chemical products	22	15
Miscellaneous manufacturing	13	26
Other manufacturing industries	21	25

[1] Excluding X and Y, there were more than 20 firms acquired in foreign and domestic acquisitions, respectively, in each of the industry divisions reported separately in the Table. Within the manufacturing division, only industries with 10 or more acquisitions are shown separately.

First, slightly more than half of the acquired firms in both domestic and foreign mergers were less than 15 years old at the time of the merger. Secondly, within the group of acquired firms less than 15 years old, there is an interesting difference in pattern between foreign and domestic mergers. Acquired firms entering into domestic mergers were younger than those entering into foreign mergers. The disparity, as shown in Table 4-1, is greatest in the 1-5-year class, where the percentage of acquired firms entering domestic mergers is eight percentage points above those entering foreign mergers, and in the 11-15-year class, where the opposite, roughly, is true. Thirdly, there is considerable variation in the median age of acquired firms among the industry divisions, with those in manufacturing and trade considerably older than the acquired firms in the extractive industries, transportation and the "other industry divisions". Fourthly, with the exception of the extractive industries and "other industry divisions", the median age of the firms acquired in foreign mergers was about two years more than that of the firms acquired in domestic mergers. Finally, the 1.5 year difference in the manufacturing division is sustained at the level of the manufacturing industries, in the sense that the median age of firms acquired in foreign mergers was greater in eight of the 13 industries (including "other manufacturing industries").

(b) Size Characteristics

Data on the general size characteristics of acquired and acquiring firms are summarized in Tables 4-3 through 4-6, measuring size in three ways: size of sales, size of assets and size of labour force. Several interesting features are indicated by these data. For firms acquired in foreign mergers, these figures indicate that, of those firms for which data are available, about half had fewer than 50 employees, assets under $700,000 and sales of about $1 million. Three-quarters had fewer than 200 employees and about two-thirds had assets under $1.5 million. The picture is roughly the

same for firms acquired in domestic acquisitions, except that, on average, they were apparently smaller than the firms acquired in foreign mergers: the average size of sales is 10 per cent smaller, the average size of assets is 68 per cent smaller and the average number of employees is 31 per cent less. The differences in the median values are of the same orders of magnitude for assets and employees; for sales, the difference increases from 10 per cent to 57 per cent. 1/ At the same time the average size of the firm acquired in both international and domestic mergers from 1945 to 1961 appears to have been substantially larger than the average size of all Canadian firms in existence during this period. Taxation data suggest that the average asset size of all Canadian firms during this period was about $722,000 and the average value of sales about $555,000. 2/ On the basis of mean size, the

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1/ Because the distributions are highly skewed in the direction of the larger classes, the value of the mean is consistently larger than the value of the median. In the case of the acquiring firms, the mean is as much as five times more than the median in some instances. However, for the most part, both characteristics of the distributions operate in the same direction in comparisons of foreign and domestic acquisitions.

2/ Taxation Statistics, 1946 and 1963, Department of National Revenue. These figures are the average for 1945 and 1961 of:

i) Total Assets of all profit and loss companies submitting tax returns, divided by total number of profit and loss companies;

ii) Total Sales (1961) ["Gross Sales or Revenue (1945)"]of all profit and loss companies submitting tax returns, divided by total number of profit and loss companies.

Data for these calculations are given in Table H of the 1946 publication and Table 4 of the 1963 publication.

average asset size of the firms acquired in foreign acquisitions was almost seven times larger than the average asset size of all Canadian firms and the corresponding figure based on sales indicates that firms acquired in foreign mergers were over eight times larger. 1/ Comparing firms acquired in domestic mergers with all Canadian firms one finds that, judged in terms of sales, domestically acquired firms were almost six times larger than all Canadian firms and, judged in terms of assets, they were five times larger than all Canadian firms. 2/

1/ This comparison is biased to some extent because only firms with net assets of $10,000 or more are included among acquired firms. It is considered unlikely, however, that this bias is sufficiently great to alter the basic impression conveyed by the figures.

2/ From 18 per cent to 35 per cent of the questionnaire returns on foreign and domestic mergers did not give information on the sales and assets of the acquired firms. It is very likely that the nonresponses represent mergers in which the acquired firms were smaller than the average. However, even if the total number of acquisitions, rather than just the acquisitions for which information was given, is used in computing the mean, the very large difference between the average size of acquired firms and the average value of all firms in the economy would persist.

Table 4-3

SIZE DISTRIBUTION OF ACQUIRED FIRMS,
CLASSIFIED BY SALES AND ASSETS PRIOR TO MERGER, 1945-61

	Sales						Assets					
	International				Domestic		International				Domestic	
	Total		Canadian Firms		Total		Total		Canadian Firms		Total	
($ Thousand)	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0-100	10.2	10.2	10.8	10.8	14.7	14.7	13.9	13.9	15.5	15.5	24.4	24.4
101-200	6.3	16.5	5.9	16.7	9.2	23.9	10.4	24.3	10.6	26.0	11.1	35.5
201-400	10.8	27.3	11.1	27.8	12.8	36.7	14.1	38.4	14.7	40.7	16.9	52.4
401-800	16.5	43.8	17.0	44.7	16.3	53.0	16.8	55.2	16.0	56.7	14.4	66.7
801-1,600	17.3	61.1	17.4	62.2	15.4	68.4	14.1	69.3	15.5	72.2	11.1	77.9
1,601-3,200	15.7	76.9	15.5	77.6	13.6	82.0	12.1	81.4	10.8	83.0	9.8	87.6
3,201-6,400	9.7	86.5	8.8	86.5	7.6	89.7	9.2	90.6	8.5	91.5	5.3	92.9
6,401-12,800	6.5	93.0	6.6	93.1	5.3	95.0	3.7	94.3	3.9	95.4	3.0	96.0
12,801-25,600	3.8	96.8	3.7	96.8	2.3	97.3	2.2	96.5	1.5	96.9	2.5	98.4
25,601-51,200	2.7	99.4	2.5	99.3	1.4	98.7	2.0	98.4	1.3	98.2	1.0	99.4
51,201-102,400	0.2	99.6	0.2	99.5	0.4	99.1	0.8	99.2	0.8	99.0	0.2	99.7
102,401-204,800	0.2	99.8	0.2	99.8	0.8	99.9	0.4	99.6	0.5	99.5	0.3	100.0
204,801-409,600	0.2	100.0	0.2	100.0	0.1	100.0	0.4	100.0	0.5	100.0	--	100.0
Average size ($ million)	4.5		4.6		4.1		4.7		4.6		2.8	
Median value ($ million)	1.1		1.0		0.7		0.7		1.3		0.4	

Source: Table A-27, excluding firms in the X and Y categories.

Table 4-4

SIZE DISTRIBUTION OF ACQUIRING FIRMS,
CLASSIFIED BY SALES AND ASSETS PRIOR TO MERGER, 1945-61

	Sales				Assets			
	International		Domestic		International		Domestic	
($ Thousand)	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0-100	11.5	11.5	3.0	3.0	14.8	14.8	0.7	0.7
101-200	0.9	12.3	1.0	4.0	0.7	15.5	2.4	3.2
201-400	2.5	14.8	3.3	7.3	3.1	18.6	2.7	5.9
401-800	3.5	18.3	3.0	10.3	3.7	22.3	3.6	9.5
801-1,600	4.9	23.3	8.2	18.5	5.6	27.9	8.6	18.1
1,601-3,200	9.9	33.2	8.9	27.3	9.9	37.8	13.2	31.3
3,201-6,400	12.5	45.7	12.1	39.4	11.2	49.1	18.5	49.9
6,401-12,800	12.7	58.4	14.7	54.1	11.1	60.1	12.8	62.7
12,801-25,600	13.8	72.1	13.4	67.5	10.2	70.4	11.9	74.6
25,601-51,200	5.6	77.8	12.9	80.4	9.7	80.1	7.5	82.0
51,201-102,400	6.7	84.5	6.6	87.1	7.0	87.1	7.8	89.8
102,401-204,800	8.1	92.6	5.7	92.8	9.0	96.1	5.1	94.9
204,801-409,600	5.6	98.2	3.7	96.5	2.9	99.0	3.5	98.3
409,601-819,200	1.2	99.5	3.2	99.7	0.3	99.3	0.5	98.8
819,201-1,638,400	0.5	100.0	0.3	100.0	0.7	100.0	1.2	100.0
Average size ($ million)	51.0 (56.3)*		54.9		42.0 (48.8)*		47.6	
Median value ($ million)	8.6 (11.0)*		11.0		7.0 (11.0)*		6.5	

*Figures in parentheses indicate the average and median value when firms that did not have any operations in Canada prior to making an acquisition are excluded. Such firms comprise virtually all of the firms in the 0-100 category.

Source: Table A-27, excluding firms in the X and Y categories.

Table 4-5

SIZE DISTRIBUTION OF ACQUIRED AND ACQUIRING FIRMS,
CLASSIFIED BY NUMBER OF EMPLOYEES PRIOR TO MERGER, 1945-61

Number of Employees	Acquired						Acquiring			
	International				Domestic		International		Domestic	
	Total		Canadian Firms		Total		Total		Total	
	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0-25	34.7	34.7	34.8	34.8	39.4	39.4	19.4	19.4	10.4	10.4
26-50	13.9	48.6	13.4	48.1	14.5	53.9	3.8	23.2	5.6	16.0
51-75	9.2	57.8	9.9	58.0	7.3	61.3	2.4	25.7	2.9	19.0
76-100	4.9	62.7	4.3	62.2	5.9	67.2	2.8	28.4	2.1	21.1
101-150	9.0	71.6	9.0	71.3	10.0	77.2	4.2	32.6	5.9	27.0
151-200	4.7	76.3	5.1	76.3	4.4	81.6	3.5	36.1	5.9	32.9
201-300	6.7	83.1	7.2	83.5	5.8	87.4	7.0	43.1	8.1	41.0
301-500	6.7	89.8	6.7	90.2	4.8	92.2	9.4	52.5	8.7	49.7
501-1,000	5.7	95.5	5.3	95.5	4.0	96.3	12.9	65.4	15.0	64.7
1,001-2,000	2.2	97.8	2.1	97.6	2.6	98.9	7.9	73.3	16.4	81.1
2,001-5,000	1.8	99.6	1.9	99.5	0.7	99.6	14.3	87.6	7.8	88.9
5,001-10,000	0.4	100.0	0.1	100.0	0.4	100.0	7.2	94.8	5.3	94.2
10,001-20,000	--	100.0	--	--	--	100.0	4.9	99.7	3.4	97.6
20,001-50,000	--	100.0	--	--	--	100.0	0.3	100.0	1.0	98.6
50,001-100,000	--	100.0	--	--	--	100.0	--	100.0	1.4	100.0
Average number of employees	256		254		194		2,038 (2,378)*		3,255	
Median number	54		55		43		448 (676)*		511	

*Figures in parentheses indicate the average and median value when firms that did not have any operations in Canada prior to making an acquisition are excluded. Such firms comprise virtually all of the firms in the 0-100 category.

Source: Table A-26, excluding firms in the X and Y categories.

Table 4-6

AVERAGE SIZE OF FIRMS ACQUIRED
IN FOREIGN (F) AND DOMESTIC (D) ACQUISITIONS, (1) 1945-61

Aggregate Data, Industry Division and Manufacturing Industry	Sales				Assets				Employees			
	Mean		Median		Mean		Median		Mean		Median	
	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)
	($ Million)				($ Million)				(Number)			
Aggregate	4.5	4.1	1.1	.7	4.7	2.8	.7	.4	256	194	54	43
Mining, etc.	1.7	.7	.4	.2	6.5	2.4	4.4	.7	126	61	24	17
Manufacturing	5.9	4.4	1.4	.9	5.7	3.5	.9	.5	320	242	94	73
Transportation, etc.	2.2	2.7	.7	.3	10.5	2.2	.4	.3	198	76	62	24
Trade	2.4	5.2	.7	.9	1.0	1.2	.3	.2	116	169	20	24
Services, etc.	1.6	1.0	.1	2.4	1.2	.7	.6	2.4	177	91	12	50
Other industry divisions	2.9	3.1	.4	.7	1.3	4.8	.3	.6	241	171	23	27
Food and beverage	7.0	3.7	1.9	1.0	4.3	1.9	.8	.3	180	184	74	66
Leather	2.5	1.6	1.6	1.2	1.1	1.2	.8	.8	288	134	199	132
Wood	6.4	1.5	1.4	.8	5.4	2.7	1.5	.7	312	173	174	95
Paper	8.0	14.0	3.2	1.6	10.2	14.8	1.5	1.2	630	749	174	112
Metal fabricating	1.2	2.1	.8	1.0	.7	1.5	.5	.8	80	168	58	119
Electrical products	3.7	2.3	2.4	1.9	2.0	1.2	1.7	.7	257	167	174	100
Nonmetallic mineral products	4.3	5.7	1.0	2.0	7.0	3.8	1.2	.8	305	261	124	44
Chemical and chemical products	.9	1.6	.6	.6	.6	2.1	.5	.5	46	144	34	28
Miscellaneous manufacturing	3.2	.9	2.0	.6	1.9	.5	1.0	.3	170	104	112	62
Other manufacturing industries	10.7	4.4	2.0	.7	10.8	3.5	1.4	.5	510	228	135	112

(1) Excluding X and Y, there were more than 20 firms acquired in foreign and domestic acquisitions, respectively, in each of the industry divisions reported separately in the Table. Within the manufacturing division, only industries with 10 or more acquisitions are shown separately.

The data on the size characteristics of acquiring firms are complicated by the fact that in a significant number of acquisitions the foreign acquiring firms did not have any assets or employees in Canada prior to making an acquisition. Different results are obtained in comparing the size of acquiring foreign and domestic firms depending on whether firms that did not have any operations in Canada prior to making an acquisition are included or excluded.[1/] If those firms are included in comparing the means and medians, the acquiring domestic firms were larger with respect to the rate of sales and employees and the average size of assets. The foreign acquiring firms were only larger when one compares median asset values. If one omits firms that did not have assets in Canada prior to making an acquisition, the size picture is reversed. Foreign acquirers had larger mean and median assets, somewhat larger mean sales and the same median sales as domestic acquirers. Measuring size in terms of employees, the mean and the median yield conflicting results with large differences. The average size of acquiring domestic firms was 36 per cent higher, but there was a 32 per cent difference in favour of the foreign firms when the median values are compared. Although at first blush it may seem somewhat surprising that foreign acquiring firms are not considerably larger than domestic acquiring firms, it should be remembered that the data for foreign firms refer to their Canadian operations only and do not encompass the total operations of these acquiring companies. If all their foreign operations were included as well as their Canadian operations, this picture would probably be different, with foreign acquiring firms showing up as relatively much larger in size.

[1/] Acquiring firms with sales in the form of exports were included in calculating the median and mean sales of foreign firms even when the firms did not have any assets or employees in Canada.

(c) Industrial Distribution

The distribution of acquiring and acquired companies is summarized in Tables 4-7 and 4-8, together with the distribution of all domestic companies. If one looks at the industry division breakdown shown in Table 4-7, the major point that stands out is the considerable difference between the distribution of all domestic firms and the distributions of acquired and acquiring firms in foreign and domestic mergers. There is apparently a much stronger tendency for mergers to occur in the manufacturing and mining industry divisions than there is in the other divisions. In both of these divisions the percentage of acquired firms was more than twice as large as the percentage of all domestic firms located in these industries. The reverse tendency is apparent in the construction, finance and service divisions, in which a relatively small percentage of mergers occurred compared with the percentage of all domestic firms in these industries.

If one ranks the industry divisions in terms of the percentage of acquired firms in each, there is a close correspondence between the distribution of firms acquired in foreign mergers and the distribution of firms acquired in domestic mergers: manufacturing followed by trade is the most important in both distributions, and thereafter there are only small differences in rank.

A considerably wider disparity is evident between the distribution of acquiring firms participating in international mergers and those participating in domestic mergers. The manufacturing and service divisions are much less important for domestic acquiring firms, and other sectors are correspondingly more important.

Table 4-7

PERCENTAGE DISTRIBUTION OF ACQUIRED AND ACQUIRING FIRMS AND ALL DOMESTIC FIRMS, BY INDUSTRY DIVISION, 1945-61

No.	Division	Acquired			Acquiring		All Domestic Firms
		International		Domestic	International	Domestic	
		Total	Canadian Firms	Total	Total	Total	
		(Per cent)					
1.	Agriculture	0.2	0.2	0.3	--	--	1.4
2.	Forestry	1.3	1.7	1.7	0.3	0.1	.5
3.	Fishing and trapping	--	--	--	--	--	.5
4.	Mining, etc.	6.0	4.5	7.4	5.2	8.0	2.9
5.	Manufacturing	55.5	55.5	45.7	72.9	50.1	23.3
6.	Construction	1.1	1.5	1.4	0.5	1.0	7.3
7.	Transportation, etc.	4.3	5.3	9.3	4.3	8.6	5.0
8.	Trade	25.2	28.1	31.0	10.8	29.0	30.6
9.	Finance, etc.	0.5	0.6	1.2	0.3	2.4	17.2
10.	Services, etc.	6.0	2.6	1.9	5.7	0.8	11.4
		100.0	100.0	100.0	100.0	100.0	100.0

Source: Table A-7, excluding firms in the X and Y categories; Taxation Statistics, 1947 and 1963, Department of National Revenue, Tables C and Z respectively. Figures shown in the last column are the average of the percentage distributions in 1945 and 1961.

Leading Characteristics of Merging Firms

One of the notable features of Table 4-8 is the wide distribution of foreign acquisitions: these occurred in each of the manufacturing industries.[1/] Nine industries accounted for 5 per cent or more of total foreign acquisitions in the manufacturing sector. Firms acquired in domestic acquisitions were, save for the tobacco industry, also widely dispersed throughout the manufacturing industries. But in contrast to foreign mergers, the industrial distribution of firms acquired in domestic mergers is much more concentrated. The major reason for the difference is the heavy concentration of domestic acquisitions in the food and beverage industry, which contained approximately one-third of the acquired and acquiring firms. Another noteworthy feature of the industrial distribution of mergers indicated by Table 4-8 is the heavier concentration of foreign merger activity relative to domestic mergers within the electrical and chemical industries.

In the Appendix to this Chapter, annual data from 1945 to 1961 are presented, showing the number of acquired and acquiring firms entering both international and domestic mergers, broken down by industry division and manufacturing industry. No attempt will be made to comment on these figures in detail but two points might be especially noted. First, both acquired and acquiring firms entering foreign mergers have been highly concentrated over the years in the manufacturing and trade divisions. Although domestic mergers have also been concentrated in these divisions, more domestic merger activity is evident for other sectors. Secondly, within the manufacturing division it is evident that merger activity, both domestic and foreign, has continued to be widely dispersed among various manufacturing industries.

1/ This is perhaps not surprising given the length of time being considered and the widespread foreign ownership in manufacturing.

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Table 4-8

PERCENTAGE DISTRIBUTION OF ACQUIRED AND ACQUIRING FIRMS AND ALL DOMESTIC FIRMS IN MANUFACTURING INDUSTRIES, 1945-61

No.	Industry	Acquired			Acquiring		All Domestic Firms
		International		Domestic	International	Domestic	
		Total	Canadian Firms	Total	Total	Total	
		(Per cent)					
1.	Food and beverages	11.6	12.5	34.1	9.1	33.3	15.1
2.	Tobacco	1.1	1.1	--	0.9	--	0.3
3.	Rubber	1.7	1.1	0.7	3.0	1.8	0.5
4.	Leather	3.7	4.6	2.8	2.2	1.8	2.4
5.	Textiles	2.3	2.7	4.2	1.3	3.2	3.8
6.	Knitting mills	0.8	1.1	1.7	0.2	1.8	1.4
7.	Clothing	2.3	3.0	1.7	2.2	1.7	9.6
8.	Wood	4.8	4.6	5.2	3.0	6.6	9.4
9.	Furniture	0.8	1.1	0.9	0.2	0.2	3.5
10.	Paper	8.8	8.4	7.9	7.3	10.8	2.5
11.	Printing, etc.	1.7	1.9	9.6	2.4	8.4	9.8
12.	Primary metal	2.8	3.4	2.4	1.7	8.2	2.1
13.	Metal fabricating	8.8	8.4	7.2	8.6	2.5	11.0
14.	Machinery	6.8	5.3	2.0	5.2	2.7	4.8
15.	Transport equipment	5.4	5.7	2.0	5.4	3.4	2.9
16.	Electrical products	9.6	7.6	2.9	9.5	1.7	2.7
17.	Nonmetallic mineral products	6.2	7.2	5.7	6.0	5.6	5.1
18.	Petroleum and coal products	2.5	3.0	1.1	13.2	2.7	0.3
19.	Chemicals	13.3	11.4	5.0	14.9	1.8	5.6
20.	Miscellaneous	5.1	5.7	2.9	3.7	1.8	7.1
		100.0	100.0	100.0	100.0	100.0	100.0

Source: Table A-8, excluding firms in X and Y categories; Taxation Statistics, 1947 and 1963, Department of National Revenue, Tables C and Z respectively. Figures shown in the last column are the average of the percentage distributions in 1945 and 1961.

(d) Number of Firms Acquired by Acquiring Firms

Another aspect of merger activity to be considered is the extent to which this activity is concentrated in the hands of a few acquiring companies. The degree of this concentration is indicated in Table 4-9. The figure for international mergers indicates that over half of the acquiring firms purchased only one firm and about three-quarters purchased one or two. About 10 per cent of the acquiring companies purchased five or more firms. By contrast, domestic mergers seem to be more highly concentrated. About 23 per cent of the acquiring companies purchased five or more companies; only a third purchased one company and less than 60 per cent purchased one or two companies.

A somewhat different way of examining the same data is to inquire as to the number of acquired firms accounted for by the firms that made numerous acquisitions. The nine acquiring firms that engaged in 10 or more foreign acquisitions represented 3.5 per cent of the acquiring firms but accounted for 20 per cent of the foreign acquisitions. Twenty-six firms engaged in 10 or more domestic acquisitions; they represented 8.7 per cent of the acquiring firms and made 39.3 per cent of the acquisitions. Moving up the distributions, one finds that 29 acquiring firms that made five foreign acquisitions or more represented less than 10 per cent of the acquiring firms and made 37.2 per cent of the acquisitions. There were 69 firms that made five domestic acquisitions or more. These represented about 18 per cent of acquiring firms and accounted for 57.4 per cent of the acquisitions.

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Table 4-9

NUMBER OF FIRMS ACQUIRED BY ACQUIRING FIRMS, 1945-61

Number of Acquired Firms	International			Domestic		
	Number of Acquiring Firms	Per Cent	Cum. Per Cent	Number of Acquiring Firms	Per Cent	Cum. Per Cent
1	137	53.1	53.1	110	36.7	36.7
2	52	20.2	73.3	65	21.7	58.4
3	23	8.9	82.2	35	11.7	70.1
4	17	6.6	88.8	21	7.0	77.1
5	5	1.9	90.7	15	5.0	82.1
6	6	2.3	93.0	6	2.0	84.1
7	2	0.8	93.8	9	3.0	87.1
8	2	0.8	94.6	3	1.0	88.1
9	5	1.9	96.5	10	3.3	91.4
10	3	1.2	97.7	3	1.0	92.4
11	1	0.4	98.1	3	1.0	93.4
12	3	1.2	99.3	3	1.0	94.4
13	0	--		2	0.7	95.1
14	0	--		0	--	
15	0	--		3	1.0	96.1
16	0	--		3	1.0	97.1
17	0	--		2	0.7	97.8
18	0	--		1	0.3	98.1
19	0	--		0	--	
20+	2	0.8	100.0	6	2.0	100.0

Source: Table A-33, excluding firms in X and Y categories.

(e) Profit Rates

The distributions of the profit rates earned by the acquired firms are shown in Tables 4-10 and 4-11, and by the acquiring firms in Table 4-12. Consideration of profit rates has been divided into two separate parts: the percentage of firms incurring losses prior to the merger, and the distribution of net profit rates of the firms that were earning a positive return on their net worth. Profit rates are defined as reported book profit as a percentage of reported net worth.

The two distributions yield conflicting answers to the question of whether firms acquired in foreign or domestic mergers were more profitable. A somewhat greater percentage of the firms acquired in domestic acquisitions were incurring losses (22.8 per cent compared with 19 per cent), but the profit rate earned by them was a bit higher (18.7 per cent versus 17.0 per cent). Mixed results are also obtained for trade and manufacturing when the data are considered at a more disaggregative level. However, in mining and "other industry divisions" the firms acquired in foreign acquisitions appear to have been more profitable, and/or there was a smaller percentage of them that were incurring losses than the firms acquired in domestic acquisitions.

One of the striking features of the profit picture considered by industry division is the extent to which the firms acquired in mining were less profitable than the ones acquired in the other divisions; more than two-fifths of the firms acquired in both foreign and domestic acquisitions were incurring losses and the median profit rate of firms acquired in domestic acquisitions was about one-fourth of the median rate earned in the other divisions. The median rate of the firms acquired in foreign acquisitions was also much lower than the median rate earned in the other divisions.

Table 4-10

DISTRIBUTION OF PROFIT RATES OF ACQUIRED FIRMS PRIOR TO MERGER,[1] 1945-61

Net Profit as Percentage of Net Worth	International Mergers				Domestic Mergers	
	Total		Firms of Canadian Nationality		Total	
	% of total for which data available	Cumulative total (%)	% of total for which data available	Cumulative total (%)	% of total for which data available	Cumulative total (%)
1- 5	13.5	13.5	15.5	15.5	15.8	15.8
6-10	16.6	30.1	16.7	32.2	10.5	26.3
11-15	15.0	45.1	15.5	47.7	15.2	41.5
16-20	12.5	57.7	11.2	58.9	11.6	53.0
21-25	8.8	66.4	7.4	66.3	10.5	63.5
26-30	7.5	73.9	7.4	73.6	8.0	71.5
31-35	6.3	80.2	5.0	78.7	5.7	77.2
36-40	6.0	86.2	6.2	84.9	4.6	81.9
41-45	2.5	88.7	3.5	88.4	2.1	84.0
46-50	2.8	91.5	2.3	90.7	2.7	86.7
51-55	1.6	93.0	1.9	92.6	2.7	89.4
56-60	1.3	94.3	1.2	93.8	1.3	90.7
61-65	0.3	94.6	0.4	94.2	1.5	92.1
66-70	0.6	95.2	1.2	95.3	2.1	94.2
71-75	1.3	96.5	0.8	96.1	1.3	95.5
76-80	0.6	97.1	0.8	96.9	0.8	96.3
81-85	--	97.1	--	96.9	0.6	97.0
86-90	--	97.1	--	96.9	0.2	97.2
91-95	0.3	97.4	0.4	97.3	--	97.2
95+	2.5	100.0	2.7	100.0	2.7	100.0
Percentage of firms incurring losses	19.0		17.6		22.8	
Median rate	17.0		16.0		18.7	

[1] The nonresponse rate was very high for this part of the questionnaire: 38 per cent and 47 per cent of the returns on foreign and domestic acquisitions respectively.

Source: Table A-25, excluding X and Y categories.

Table 4-11

MEDIAN PROFIT RATES OF ACQUIRED FIRMS AND PERCENTAGE OF ACQUIRED FIRMS WHICH INCURRED LOSSES, 1945-61[1]

Aggregate Data, Industry Division and Manufacturing Industry	Percentage of Acquired Firms Which Were Incurring Losses		Median Profit Rate of Acquired Firms Which Were Earning Positive Profits	
	Foreign	Domestic	Foreign	Domestic
Aggregate	19.0	22.8	17.0	18.7
Mining	43.5	42.6	10.0	4.7
Manufacturing	17.9	23.4	16.5	19.3
Trade	19.0	13.3	21.1	19.6
Other industry division	8.0	21.2	25.0	21.7
Food and beverage	9.1	24.2	22.5	18.1
Leather	25.0	45.5	15.0	11.3
Wood	14.3	15.8	13.8	25.8
Paper	10.7	7.1	18.8	20.4
Metal fabricating	37.5	16.7	17.5	20.0
Electrical products	20.0	27.3	18.1	31.3
Nonmetallic mineral products	28.6	21.7	27.5	30.8
Chemical and chemical products	12.5	47.1	11.9	10.0
Other manufacturing industries	15.6	24.0	14.4	17.7

(1) Excluding X and Y, there were more than 20 firms acquired in foreign and domestic acquisitions, respectively, in each of the industry divisions reported separately in the Table. Within the manufacturing division, only industries with 10 or more acquisitions are shown separately.

Table 4-12

DISTRIBUTION OF PROFIT RATES OF ACQUIRING FIRMS PRIOR TO MERGER, 1945-61

Net Profit as Percentage of Net Worth	International Mergers		Domestic Mergers	
	% of total for which data available	Cumulative total (%)	% of total for which data available	Cumulative total (%)
1- 5	22.3	22.3	10.4	10.4
6-10	12.9	35.2	14.7	25.1
11-15	20.7	55.9	23.6	48.7
16-20	16.3	72.2	14.4	63.1
21-25	8.7	80.9	11.2	74.3
26-30	5.4	86.3	9.9	84.2
31-35	3.4	89.7	7.6	91.9
36-40	2.8	92.5	1.9	93.8
41-45	1.6	94.1	2.2	96.0
46-50	1.4	95.5	1.1	97.1
51-55	0.4	95.9	0.3	97.4
56-60	--	95.9	0.5	97.9
61-65	0.6	96.5	0.2	98.1
66-70	1.0	97.5	0.2	98.3
71-75	--	97.5	--	98.3
76-80	0.2	97.7	0.6	98.9
81-85	--	97.7	0.2	99.1
86-90	--	97.7	--	99.1
91-95	0.2	97.9	0.1	99.2
95+	2.0	100.0	0.7	100.0
Percentage of firms incurring losses	10.6		8.4	
Median rate	13.6		15.5	

Source: Table A-25, excluding X and Y categories.

When one compares the profit rates earned by the acquiring and acquired firms, it is interesting to discover that the median profit rate of the acquired firm was higher than the rate earned by the acquiring firms. There was a 3.2 percentage point difference in domestic acquisitions and a 3.4 percentage point difference in foreign acquisitions. On the other hand, as might be expected, far fewer of the acquiring firms were incurring losses than the acquired firms: 10.6 per cent compared with 19 per cent in foreign acquisitions and 8.4 per cent versus 22.8 per cent in domestic acquisitions.

Based on both aspects of the distributions, the firms that engaged in domestic acquisitions were somewhat more profitable than the firms that made foreign acquisitions. There is approximately a two percentage point difference in the median rate of profit and in the relative number of firms that were incurring losses.

Appendix to Chapter 4

NUMBER OF FIRMS ENTERING MERGERS BY INDUSTRIAL DIVISION AND MANUFACTURING INDUSTRY, BY YEARS, 1945-61

These Appendix Tables assign numbers to the Industry Divisions and Manufacturing Industry as follows:

Industry Division

1. Agriculture
2. Forestry
3. Fishing and trapping
4. Mining, etc.
5. Manufacturing
6. Construction
7. Transportation, etc.
8. Trade
9. Finance, etc.
10. Services, etc.

Manufacturing Industry

1. Food and beverages
2. Tobacco
3. Rubber
4. Leather
5. Textiles
6. Knitting mills
7. Clothing
8. Wood
9. Furniture
10. Paper
11. Printing, etc.
12. Primary metal
13. Metal fabricating
14. Machinery
15. Transport equipment
16. Electrical products
17. Nonmetallic mineral products
18. Petroleum and coal products
19. Chemicals
20. Miscellaneous

Table 4A-1

NUMBER OF ACQUIRED COMPANIES, 1945-61
CLASSIFIED BY INDUSTRY DIVISION

Year	Industry Division 1	2	3	4	5	6	7	8	9	10
A. Total Foreign Mergers										
1945		1			16	1		3		2
1946		2			8		1	3		1
1947					7			5		1
1948		1		1	8			1		2
1949					6			1		4
1950					5		1	1		2
1951	1			2	11		1	3		1
1952				1	11		1	4		
1953					15			9		1
1954				1	23		4	14		1
1955		1		4	36	1	4	8		1
1956				5	23	1	9	6		10
1957				1	25	1	1	7		
1958				11	29		1	18		1
1959		1		3	41	1		19		1
1960		1		6	46		1	30	2	5
1961		1		3	42	2	3	28	1	5
Total	1	8	0	38	352	7	27	160	3	38
B. Canadian Companies Acquired in International Mergers										
1945		1			12	1		3		
1946		2			6			3		
1947					5			5		
1948		1			4			1		1
1949					4			1		
1950					5			1		1
1951	1			1	8		1	3		
1952				1	10		1	4		
1953					12			8		1
1954					14		4	11		
1955		1		2	28	1	4	8		
1956				2	19	1	9	5		2
1957				1	18	1	1	6		
1958				5	16		1	14		
1959		1		3	29	1		18		1
1960		1		4	36		1	18	2	4
1961		1		2	35	2	3	23	1	2
Total	1	8	0	21	261	7	25	132	3	12

continued...

Table 4A-1 (cont'd.)

Year	Industry Division 1	2	3	4	5	6	7	8	9	10
C. Domestic Mergers										
1945				1	36	2	2	10		
1946		9		1	39		4	8		3
1947					17		1	8		6
1948		1			16		6	16		
1949	1			1	13		1	10		
1950		1		2	23		4	6		
1951		4		3	25		14	15		
1952				10	30		1	18		
1953		1		4	25	3	7	25	2	1
1954				10	27	1	7	16		
1955				6	31		1	32	5	3
1956	1	1		6	35	1	9	25		2
1957		1		9	31		9	17		1
1958		1		4	29	3	12	28	2	
1959		1		8	61	2	7	38	2	1
1960	1			11	42	1	11	38	2	4
1961	1	1		12	59	3	13	56	1	1
Total	4	21	0	88	539	16	109	366	14	22

Table 4A-2

NUMBER OF ACQUIRING COMPANIES, 1945-61
CLASSIFIED BY INDUSTRY DIVISION

Year	Industry Division									
	1	2	3	4	5	6	7	8	9	10
A. Total Foreign Mergers										
1945					19			2		2
1946					12			1		1
1947					9			3		1
1948				1	10			1		2
1949					6			1		4
1950					4		1	1		2
1951				1	13		1	3		1
1952				1	11		1	3		
1953					18			6		1
1954				1	32		4	4	1	1
1955				3	40	1	4	6		1
1956				5	27		9	3		10
1957				1	29	1	1	3		
1958				11	36		1	11		1
1959		1		3	55		1	6		
1960				4	77		1	6	1	2
1961		1		2	63	1	3	8		7
Total	0	2	0	33	461	3	27	68	2	36
B. Domestic Mergers										
1945				1	35		3	12		
1946					53		4	7		
1947					17		1	8		
1948				1	16		6	16		
1949				1	15		1	9		
1950				1	21		3	6	5	
1951				4	28		13	16		
1952				10	31		2	13	3	
1953				4	29	3	6	24	2	
1954				12	27	1	4	14	3	
1955				5	34		2	34	3	
1956				7	40	1	7	22	2	1
1957				9	32		8	13	3	2
1958				4	38	2	12	23	1	
1959		1		9	60	1	9	38	2	
1960				14	51	2	12	29	2	
1961				12	63	2	9	58	3	
Total	0	1	0	94	590	12	102	342	29	3

Table 4A-3

NUMBER OF ACQUIRED COMPANIES, 1945-61
CLASSIFIED BY MANUFACTURING INDUSTRY

Year	Manufacturing Industry																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A. Total Foreign Mergers																				
1945				1				1	1	4			2			2	2		3	
1946	3	1			1					1			1				1			
1947	1												1			1	1		3	
1948	3							1					1	1	1	1				
1949											2					1	1		2	
1950													1	1	2	1				
1951	2		2		1			3		1		1		1						
1952	3				1							1	1			1	1	1	1	1
1953								1		4	1			3		3			3	
1954	3		1	1	1		1	1		3				1	1	5	2	2		1
1955	2		2	3			1	3		3		1	5	3	2	5	2	1	3	1
1956	2			1	1				1	3		1	3	1	1		1	3	4	1
1957	1						1			4		3		1	6	1	3		3	2
1958	6	2	1	1	1			2					4		2	3	3		2	2
1959	4			2	2	3	2	2		3		1	6	2	2	4	1		6	2
1960	6	1		1			1	2		1	2		5	5		3	2	2	8	7
1961	5			3			2	1	1	4	1	2	1	5	2	3	2		9	1
Total	41	4	6	13	8	3	8	17	3	31	6	10	31	24	19	34	22	9	47	18
B. Canadian Companies Acquired in International Mergers																				
1945				1				1	1	3			2			1	2		1	
1946	1	1			1					1			1				1			
1947	1															1	1		2	
1948	1							1					1		1					
1949											1						1		2	
1950													1	1	2	1				
1951	2		1					2		1		1		1						
1952	3				1							1	1				1	1	1	1
1953								1		3	1			1		3			3	
1954	3			1	1		1			2						2	2	2		
1955	2		1	3			1	3		2		1	5	2	2	3	2	1		1
1956	2			1	1				1	2		1	2	1	1		1	2	3	1
1957							1			2		3		1	4	1	2		2	2
1958	5	2	1		1			1					1		1	1	1		1	1
1959	3			2	2	3	2	1		2			4	2	2	1	1		4	1
1960	5			1			1	1		1	2		4	2		3	2	2	5	7
1961	5			3			2	1	1	3	1	2		3	2	3	2		6	1
Total	33	3	3	12	7	3	8	12	3	22	5	9	22	14	15	20	19	8	30	15

continued...

Table 4A-3 (cont'd.)

Year	Manufacturing Industry																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C. Domestic Mergers																				
1945	23				1	1	2	2		2	1		2		1		1			
1946	21			1	3			4		1		1	1	2	2	1	1		1	
1947	10			1				2						1	2				1	
1948	7			2	1	1		1			2						2			
1949	3				1		1	1		1	2	1	1			1				1
1950	5									3	3	1	3	2		1	1	1	1	2
1951	6			2			1	4			2		3		2	1		1	2	1
1952	9		1	2	2		2	3		1	3	1	2	1		1	1			1
1953	14							1	1	3	2	1					2			1
1954	8			2		1	1	1	1	4	4	1	2					1		1
1955	14		1		1	2		2	1	1	3		2			2	1		1	
1956	11				4			1		5	2	1	5		1	1	3			1
1957	6		1	1	1					3	10			2			3	1	2	1
1958	9				2			2			1	2	4		1	1	1	1	3	2
1959	14			3	5	2	2			6	7	2	5			2	3	1	8	1
1960	6				2	1		3		10	5		4		1	3	4		2	2
1961	18		1	1		1		1	2	3	4	2	5	3	1	2	8		5	2
Total	184	0	4	15	23	9	9	28	5	43	51	13	39	11	11	16	31	6	26	16

Table 4A-4

NUMBER OF ACQUIRING COMPANIES, 1945-61
CLASSIFIED BY MANUFACTURING INDUSTRY

Year	Manufacturing Industry																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A. Total Foreign Mergers																				
1945			1					1		4			3	1		2	4		3	
1946	3	1	1		1					2			1				1	2		
1947	2		1								1		1				2		2	
1948	3									2				1		3		1		
1949											2					1	1		2	
1950													1		2	1				
1951	3		1		1			1		2		1	1	1		1		1		
1952	3											1		1		2	1		2	1
1953			1							3	1		1	3		2		3	4	
1954	1		2	1			1	3		2	2		2	2	3	4	2	5	1	1
1955	2		3	2			1	3		3		1	3	1	3	6	2	5	5	1
1956	3		1	1						1	1	1	2	1	2	1	3	4	5	1
1957							1			1	1	2	4		7	1	4	1	4	3
1958	6	2	2		1					3			3	1	1	4	1	6	4	2
1959	4			2	3	1	3	2		4			6	4	4	4	1	3	14	1
1960	7	1	1	1			1	2		2	2		9	4		8	2	19	13	5
1961	5			3			3	2	1	5	1	2	3	4	3	5	4	11	10	1
Total	42	4	14	10	6	1	10	14	1	34	11	8	40	24	25	45	28	61	69	16
B. Domestic Mergers																				
1945	22		1		1	1	1	2		1	1	2				1		2		
1946	27			1	3			11		2				4	3		1	1		
1947	11			1						1					2					2
1948	8			2		1		1			2						2			
1949	4					1		2		2	3			1	1					1
1950	7									3	3	1	1	1	2	1		1		1
1951	8			1		1		4		4	2	1	3		2					2
1952	14				2	1	1	1		3	3	4					1			1
1953	15		1				2	3		2	3	1					1		1	
1954	8		1	1		1	1	1	1	3	4	4	1		1					
1955	10		1		1	1	2	1		3	3	3		2		1	2	4	1	
1956	8				4		1	4		5	2	4	3	1	1	1	4		1	1
1957	5		1	1	1		1	2		1	9	1	1				4	1	3	1
1958	8		2	1	1	1		2		2	1	9	1	2	1	1	3	1	1	1
1959	13			3	3	3	1	3		9	8	8	1		3	1	2	1	1	
1960	7				3			2		16	4	3	2	4	2	1	4	3		
1961	21		4							6	2	8	2	1	2	3	9	2	2	1
Total	196	0	11	11	19	11	10	39	1	63	50	49	15	16	20	10	33	16	10	11

CHAPTER 5

FIRM AND INDUSTRY CHARACTERISTICS AND THE REASONS FOR MERGERS

The remainder of this Study focuses on the reasons for mergers. In this Chapter the reasons for mergers as reported in the questionnaire survey are considered together with supplementary evidence on profit rates, the incidence of losses, types of mergers and realized or anticipated economies resulting from mergers. The next Chapter is concerned with the relationship between the degree of foreign control in various Canadian industries and the number of foreign and domestic mergers occurring within these industries. In Chapter 7 attention shifts from the influence of firm and industry characteristics on the number of mergers to the influence of general economic conditions.

1. The Reported Reasons for Mergers

In explaining mergers it is necessary to consider how a difference may arise between the price that a seller is willing to accept and a buyer is willing to pay, thereby making a merger transaction feasible. This issue is discussed in greater detail in Chapter 7. Suffice it to note here that if the reasons for mergers given in response to the questionnaire make sense, they should explain why the acquired firm was worth less to its owners than to the acquiring firm. Thus any reason that explains why the supply price is lower and/or the demand price is higher than it otherwise would be qualifies as a merger "cause". One of the factors that determines the amount that an acquiring firm is willing to pay is the cost to it of reaching the same position as that of the acquired firm through internal expansion. Hence, reasons that indicate why the

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acquisition route is preferred to internal growth also qualify as "causes" in that they help to explain why buyers are willing to meet the reservation prices of sellers of firms.

(a) The Data

The data on the reported reasons for mergers are based on the responses to the following query: "the reasons which led the reporting company or firm in this instance to choose the merger route to expansion rather than to rely on internal growth".

The answers to this question give rise to problems. Did the persons charged with filling out the questionnaire know the considerations that led the firm to buy rather than build? Hopefully, the respondents only attempted an answer when they had this information. Were they conscientious and forthright in their responses? There is a strong presumption that firms would be reluctant to report a desire to increase their market power or an attempt to avoid an intensification of competition as a consideration in their decision. Further difficulties are associated with the task of translating written statements into a form that can be processed by the computer.

It can be expected that the replies to this question are biased in the direction of stressing those reasons which place the acquisitions in the best possible light from an anti-monopoly policy point of view. This does not mean, however, that the reasons that were given are false; more likely they are incomplete. Thus, although the strength of some of the reasons for mergers may be inferred from other information, it is possible to arrive at some assessment of the relative importance of the reasons that were reported.

An answer to the foregoing question was attempted in 78 per cent of the questionnaire returns on domestic acquisitions and in about 83 per cent of the returns on

foreign acquisitions. Slightly more than half of each set of reasons ranked first in Table 5-1, and a somewhat higher percentage of the reasons in lower ranks, are based on answers that seemed satisfactory. The rest of the answers have been reported under "Other Reasons for Acquisitions" in Table A-31. "Reasons" and "Other Reasons" are discussed together in this section unless a distinction is made explicitly.

The answers to this question generally consisted of one or two paragraphs. A large number of categories were set up by the editors of the questionnaires after perusal of the responses and on the basis of general knowledge of the motivations for mergers. Each of the categories was assigned a code number and, in the early stages of coding, allowance was made for additional categories. The reasons shown in Table 5-1 comprise all the responses that were reported.

Firms usually gave more than one identifiable reason. Of the returns that gave at least one identifiable reason for domestic acquisitions, 59 per cent gave a second identifiable reason and 15 per cent a third reason. The percentages were similar for foreign acquisitions, with 51 per cent of the firms giving a second identifiable reason and 18 per cent giving a third reason. Allowance was made for a total of five reasons in constructing the data sheet. The editors were instructed to rank the reasons according to the emphasis placed on them by the respondents. No distinction was made between "Reasons" and "Other Reasons" in establishing the ranks.

The coded reasons may be interpreted in two ways: by the ranks established by the editors; or, disregarding ranks, in terms of the number of times a class of reasons was reported. For example, the response that the "owner or owners wanted to sell" accounted for 27.9 per cent of the total number of first-ranked reasons, for domestic acquisitions, 16.2 per cent of the total number of second-ranked reasons and 10.1 per cent of the total number of

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third-ranked reasons. When it is recognized that there are usually several reasons for a merger, one may wish to consider the number of times "owner or owners wanted to sell" was a factor, wherever it was ranked. On this basis, this reason accounts for 33.7 per cent of the domestic acquisitions in which an identifiable reason was reported. Both approaches have been used in Table 5-1. Columns 1 and 2 show the number of times each reason was ranked first as a percentage of the total number of times any reason was ranked first. Columns 3 and 4 show the number of times each reason was identified, regardless of rank, as a percentage of the total number of times any reason was given for mergers.

(b) The Distribution of the Reasons for Mergers: "Other Reasons"

As noted above, the reported reasons for mergers have been divided into two classes: those responses that were classified as answers to the question asked -- why buy rather than build? -- and those that were not. The latter have been placed under the heading "Other Reasons for Acquisitions". Apart from the reasons relating to cost reduction (row 12 of Table 5-1), the "Other Reasons" merely describe the direction of expansion. They throw some light on the types of mergers, but not on the reasons why mergers occurred. Merger types are discussed in a systematic way in the next section.

(c) The Distribution of the Reasons for Mergers: The Supply of Firms

The most frequent response was that the "owner or owners wanted to sell". This reason along with "to acquire a business available at a bargain price" pertains to the supply of firms. All the other reasons relate to the demand for firms. On this basis, supply considerations were of considerably more importance in domestic acquisitions than in foreign acquisitions, with 34.8 per cent (323 acquisitions) of the firms reported as up for sale, compared with

27.0 per cent (142 acquisitions) in foreign acquisitions.[1] When only the reasons that were ranked first are considered, the supply side accounted for 28.5 per cent (264 acquisitions) and 20.3 per cent (105 acquisitions) of domestic and foreign acquisitions, respectively.

If one gives all ranks equal weight, and places the figures for domestic acquisitions first, the considerations given for "owner or owners wanted to sell" are distributed as follows: no identifiable reason, 39.8 and 49.3 per cent; retirement, 19.9 and 16.9 per cent; financial difficulties, 26.4 and 11.8 per cent; competitive difficulties, 6.5 and 2.2 per cent; other reasons, 7.4 and 19.9 per cent.[2] The distribution of the detailed reasons given for firms wanting to sell is undoubtedly influenced by the fact that it was the acquiring firms that answered the questionnaire.[3] These firms reported on what they knew about the firms that they acquired: whether or not they had been for sale, their financial and competitive health, and on one of the more obvious personal factors that might cause owners to want to sell -- the desire to retire.

As was noted in Chapter 4, 22.8 per cent and 19.0 per cent of the firms acquired in domestic and foreign acquisitions, respectively, for which profit information was reported, were incurring losses in the period prior to their acquisition. The hypothesis that is investigated in Table 5-2 is that the acquisitions for which supply reasons were reported were more heavily represented by firms incurring losses than for those earning positive profits.

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[1] Double-counting, as explained in the note to Table 5-1, has been eliminated.

[2] Table A-31.

[3] There may have been cases where an owner of the acquired firm was kept on after the acquisition and participated in providing questionnaire answers.

Table 5-1

PERCENTAGE FREQUENCY DISTRIBUTION OF REPORTED REASONS FOR ACQUISITIONS

Reason	Number of Times Reason Was Ranked First as Percentage of Total Number of Times Any Reason Was Ranked First		Number of Times Reason Was Identified as Percentage of Total Number of Times All Reasons Were Identified	
	Foreign	Domestic	Foreign*	Domestic*
	(1)	(2)	(3)	(4)
1. Reasons directly related to the competitive situation	0.9	1.7	5.9	8.4
2. To acquire something unique to acquired (or to firms like acquired)	8.2	8.1	21.3	18.3
3. Owner(s) wanted to sell	19.5	27.9	25.6	33.7
4. Belief better management would increase profits	0.4	0.2	0.4	1.7
5. To acquire a business available at a bargain price	0.4	0.6	1.5	2.7
6. Cheaper and less risky to buy rather than build	6.5	11.9	20.3	24.8
7. To be able to float stock or obtain funds more easily	--	0.5	--	2.4
8. Acquisition made because of the merger of parent companies	7.8	--	8.0	--
9. To expand without additional capital (by exchange of shares)	0.2	0.3	0.2	0.4
10. To take advantage of tax laws	0.9	0.4	1.1	0.8
11. To get control of liquid assets of the acquired company	0.2	0.2	0.2	0.3
Other Reasons for Acquisitions				
12. To achieve economies of scale or to reduce costs	1.3	5.0	4.7	7.1
13. To increase size in order to improve bargaining power as a buyer	-	0.1	--	0.4
14. To make an investment	2.7	4.1	4.0	4.5
15. To expand productive capacity or operations	7.2	10.6	12.3	13.5
16. To establish a manufacturing plant in Canada	5.5	--	7.6	--

continued...

Table 5-1(cont'd.)

Reason	Number of Times Reason Was Ranked First as Percentage of Total Number of Times Any Reason Was Ranked First		Number of Times Reason Was Identified as Percentage of Total Number of Times All Reasons Were Identified	
	Foreign	Domestic	Foreign*	Domestic*
	(1)	(2)	(3)	(4)
17. To organize new integrated enterprise or amalgamation	0.8	2.3	0.8	2.6
18. To diversify into new field	4.7	4.5	6.5	4.9
19. To diversify by adding related or complementary products or services	10.4	7.5	14.2	10.0
20. To disperse into wider geographic markets in same or related lines	5.7	4.6	12.9	8.7
21. To establish or ensure continuation of a sales outlet	10.1	4.8	13.5	10.9
22. To establish or ensure continuation of a supply source	5.3	2.4	7.2	4.1
23. To ensure or provide needed service (transportation, drilling warehouse, etc.)	1.3	1.8	3.2	5.6

*Columns 3 and 4 were derived by adding across ranks, subtracting the number of repetitions which resulted where two or more elements in a set of individual reasons were reported in one acquisition and dividing by the number of acquisitions for which at least one identifiable reason was reported. The sets of reasons numbered 1-3, 6 and 12 are each composed of several non-mutually-exclusive reasons. It would be double-counting to count a set of reasons more than once as an explanation of acquisitions for these composite classes. As instances, more than one source of cost reduction or more than one reason for wanting to sell were often reported and were each coded under separate ranks (see Table A-33). Therefore, it is only appropriate to add across ranks for a class of reasons if one is interested in the number of times the class was mentioned; but it is inappropriate if one is trying to determine the number (or percentage) of acquisitions in which the class was mentioned. The number of repetitions which occurred for the classes of reasons numbered 1-3, 6 and 12 are listed below.

	Foreign	Domestic
Reasons directly related to the competitive situation	None	None
To acquire something unique to acquired	8	10
Owner(s) wanted to sell	55	1
Cheaper and less risky to buy	29	27
To achieve cost reductions	None	43

It might also be of interest to note the number of times "owner(s) wanted to sell" and "to acquire a business available at a bargain price" were both mentioned. The numbers were: foreign -- 1 and domestic -- 14.

Source: Table A-33.

Table 5-2

PERCENTAGE DISTRIBUTION OF SUPPLY AND DEMAND REASONS
AMONG ACQUIRED FIRMS
EARNING POSITIVE AND NEGATIVE PROFITS

	At Least One Supply Reason (Per cent)	Demand Reason(s) Only (Per cent)	No Reason(X) (Per cent)
Domestic Acquisitions			
Losses	30.7 (34.7)*	57.9 (65.3)*	11.4
Profits	23.8 (27.5)*	62.7 (72.5)*	13.5
Foreign Acquisitions			
Losses	13.5 (16.7)*	67.6 (83.3)*	18.9
Profits	20.1 (23.7)*	64.6 (76.3)*	15.4

*The cases where no reason (X) was given were excluded in the calculation of the percentages of supply and demand reasons.

Source: Cross-tabulation of reported profits of acquired firms with the reasons given for the mergers.

The hypothesis is supported for domestic acquisitions: a supply reason was given for 30.7 per cent of the acquisitions where the acquired firms were incurring losses and for 23.8 per cent of the cases where positive profits were shown. But the difference in these percentages, along with the large proportion of cases where firms were incurring losses and no supply reason was given, indicates that the presence of losses accounted for a small part of the supply reasons. And for foreign acquisitions the corresponding figures are contrary to the hypothesis. If one compares foreign and domestic acquisitions, the distribution of reasons where firms were earning positive profits is fairly similar, but there is a wide difference in the cases where losses were reported. The latter result is rooted in the relative importance of financial difficulties in supply reasons among foreign (11.8 per cent) and domestic (26.4 per cent) acquisitions. For one reason or another, losses by acquired firms were mentioned as a reason for acquisitions far less frequently in foreign acquisitions.

(d) The Distribution of the Reasons for Mergers: The Demand for Firms

In aggregate the demand reasons for domestic and foreign acquisitions, as presented in columns 3 and 4 of Table 5-1, are quite similar. Two sets of reasons on why it was cheaper to buy rather than build stand out: (i) it was "cheaper and less risky...", and (ii) in order "to acquire something unique...". The first reason was given for 20.5 per cent of foreign acquisitions and for 24.8 per cent of domestic acquisitions, and the corresponding percentages for the second reason were 21.3 and 18.5. None of the other reasons were given in more than 4 per cent of the replies. "Cheaper and less risky" is ambiguous and it is not surprising that it was ranked as relatively important. When firms are expanding their markets, the acquisition of new plant, equipment and know-how to satisfy newly acquired markets obviously may provide advantages in speed and certainty that have a value.

Furthermore, by acquiring a firm, the acquiring firm may eliminate some of its competition, thereby reducing its costs and risks.

There is a major difference between domestic and foreign acquisitions in the "acquisition made because of the merger of parent companies". This reason shows up only for foreign acquisitions. The acquisitions for which this reason was given may be taken to represent one set of circumstances in which conditions in the United States or other countries directly determined foreign acquisitions.

"To be able to obtain funds more easily" appears only in the reasons for domestic acquisitions. But it was a relatively unimportant factor, appearing for 2.1 per cent of the acquisitions for which a reason was given.

When the two major demand reasons are considered in greater detail, there are some appreciable differences between domestic and foreign mergers. If one gives all ranks equal weight, the breakdown of why it was "cheaper and less risky..." is:

	Domestic %	Foreign %
It was faster	22.2 (48.3)	41.2 (51.9)
It provided an immediate assured market	19.1 (41.5)	31.6 (39.8)
It would otherwise have taken too long to acquire knowledge of the production process	3.9 (8.5)	1.5 (1.9)
The acquiring firm was unfamiliar with the market	0.7 (1.7)	5.1 (6.5)
A combination of the above or other	54.1	20.6

The large percentages in the residual category call for even greater caution than usual in reaching a conclusion. This category has been excluded in the figures in parentheses. Two points stand out in these figures: a lack of familiarity with the market was of more importance in foreign acquisitions; in domestic acquisitions there was a greater concern to gain a knowledge of production processes. The relative importance of these factors was minor, however, and there was a marked similarity between domestic and foreign mergers in respect to the numerically more important reasons.

The distribution of reasons within the class "to acquire something unique to (the) acquired (or to firms like the acquired)" is:

	Domestic %	Foreign %
An outstanding man or group of men	12.2 (17.1)	24.2 (30.2)
Know-how or processes	12.8 (17.8)	16.7 (20.8)
Necessary licences or permits from regulating authorities	20.6 (28.7)	16.7 (20.8)
Well-known brands or trade marks	17.8 (24.8)	6.7 (8.3)
Trade connections	8.3 (11.6)	5.8 (19.8)
A combination of the above or other	28.3	20.0

Different features of the acquired firm were of interest to the acquiring firm in foreign and domestic acquisitions, as reflected in the sizeable differences in all save one category in the foregoing distributions. The importance

of licences or permits to foreign- or domestically-controlled firms clearly depends on the nature of the industry. In trucking, for example, the acquired firm's franchise may be considered one of its most important assets. Brands or trade marks and trade connections both reflect the acquired firm's market position. A relatively greater concern in foreign mergers with the quality of the management of the acquired firm is reflected in the figures of the first row.

A summary of the major difference between foreign and domestic acquisitions was that those aspects that may be considered internal to the firm -- management and processes -- were of relatively more importance for foreign acquisitions, and the external aspects of the firm -- permits, trade marks and market connections -- were of relatively more importance for domestic acquisitions.

However, to maintain a proper perspective it should be noted that, once the residual categories are excluded, the percentages that have been reported in each of the subcategories of "it was faster and less risky" and "to acquire something unique..." relate to about one-ninth and one-sixth, respectively, of the total number of domestic and foreign acquisitions.

The competitive reasons (row 1 of Table 5-1) for domestic acquisitions that were mentioned were "to expand without disturbing (the) competitive situation" and the "market (was) too small to support another competitor". The latter reason, along with "to forestall acquisition by a competitor", accounted for most of the reasons related to the competitive situation in foreign acquisitions.

2. Types of Mergers

Merger types are defined in terms of the market relationship between firms entering a merger; they describe the direction of expansion of the acquiring firm.

Market relationships have been divided into four major categories in this Study: (1) broad horizontal; (2) vertical forward; (3) vertical backward; and (4) conglomerate.

The relative importance of mergers from 1945-61 classified within these four broad categories is as follows:

	Foreign Mergers %		Domestic Mergers %	
Broad Horizontal	58		74	
Vertical -- forward	20)		11)	
-- backward	11)	31	7)	18
Conglomerate	11		8	
	100		100	

Horizontal mergers were predominant in both foreign and domestic mergers. At the same time, vertical mergers, especially those reaching forward to markets, were substantially more important in foreign merger activity than in domestic merger activity.

Each of these categories, in turn, has been further subdivided. The broad horizontal category in Table 5-3 includes successively weaker horizontal relationships:

(1) The first subcategory "horizontal" conforms to the usual definition: the acquiring and acquired firms sell the same product in the same market -- i. e. they are competitors.

(2) In a "geographic market extension" acquisition, the acquiring and the acquired firms sell the same product(s), but in different geographical markets.

(3) In a "product extension" acquisition, the acquiring and acquired firms each sell part of what might be termed a full line.

(4) The last three subcategories in the class of broad horizontal acquisitions -- "competing, but different materials", "same three-digit industry" and "same two-digit industry" -- are meant to capture market relationships that, in the opinion of the questionnaire editors, contained elements of a competitive relationship but were too weak to be defined as narrowly "horizontal". However, just because the merging firms were in the same three-digit or two-digit industry was not, by itself, considered a sufficient justification for placing the merger in one of these two weaker horizontal categories.

In practice, there is often no clearly defined line between "horizontal" acquisitions, on the one hand, and "geographic market extension" and "product extension" acquisitions, on the other. Whether an acquisition is treated as horizontal or as falling within one of the two closely related categories depends on the extent to which firms overlap in the geographic and product markets in which they sell. Where there is a significant amount of overlap, disagreement among observers as to whether an acquisition belongs in the product or market extension categories or should be labeled as horizontal is a question of degree rather than of kind. However, more important than the possible existence of elements of a horizontal relationship in "geographic market" and "product extension" acquisitions is the potential for a competitive relationship that exists between the acquiring and the acquired firms. Several factors may determine the direction of expansion of a firm. But it is very likely that firms considering expansion will first investigate the possibilities of broadening their market(s), either geographically or by increasing their range of products.

Table 5-3

PERCENTAGE DISTRIBUTION OF TYPES OF MERGERS [1]

	Foreign %	Domestic %
Broad Horizontal		
Horizontal	26.8	47.1
Geographic market extension	14.1	12.0
Product extension	11.1	9.0
Competing, but different materials	0.5	0.8
Same three-digit industry	2.3	1.1
Same two-digit industry	2.7	3.8
Subtotal	57.6	73.7
Vertical Forward		
Sales	16.5	7.4
Service or service and sales	1.8	1.3
Assembly or fabrication	0.5	0.5
Processing plants	1.3	0.5
Other	0.2	1.5
Subtotal	20.3	11.3
Vertical Backward		
Parts	1.7	0.3
Materials	5.3	2.6
Services	0.5	0.7
Final commodities	1.5	2.3
Other	1.8	0.9
Subtotal	10.8	6.7
Conglomerate		
Jointness in selling	1.0	0.1
Same raw material	0.3	0.3
Same or similar processes	0.3	0.1
Other	9.7	7.8
Subtotal	11.3	8.3

[1] See Appendix to this Chapter for the procedure followed in classifying types of mergers.

Vertical mergers are defined as the acquisition of suppliers or customers. Where a customer is bought, the acquiring firm is thought of as moving a step closer to the final consumer and the acquisition is called "forward". Similarly, a vertical "backward" acquisition occurs when a supplier is acquired. The two classes of vertical acquisitions have been divided into four subcategories plus a catch-all category in Table 5-3. In a broad way, the subcategories describe what the acquired firm was buying from or selling (type of product, or service) to the acquiring firm.

The final broad category of merger types is a residual class that is defined as the absence of a recognizable horizontal or vertical market relationship. Unlike vertical and broad horizontal acquisitions, the reasons for acquisitions are less likely to be found in the market relationship between the acquiring and acquired firms. Certainly the opportunities for increased market power and for cost savings in production, distribution and selling are more difficult to see. One is forced to look beyond these possibilities to such things as the nature of the managements, capital structure and research departments of the acquiring and acquired firms, to find possible reasons why the firms are worth more when they are combined under one management than when they are separate. Moreover, the latter variables may also be important in other types of acquisitions; for example, if capital structure considerations are important in conglomerate merger decisions, a priori it is not apparent why they should not be just as important in horizontal and vertical mergers as in conglomerate mergers. The one explanation of conglomerate mergers that is not applicable to other types of acquisitions is the absence of a recognizable market relationship and the reduction of risk through diversification of product lines and markets. By buying firms in industries other than those in which it is operating, the acquiring firm is able to reduce its vulnerability to changes in tastes and technology, because any adverse effects caused by such changes are

unlikely to extend over the entire range of the firm's activities. However, the importance of this consideration is uncertain.

In order to differentiate somewhat among conglomerate acquisitions, three types of relationships between the acquiring and the acquired firms were specified: (1) jointness in selling; (2) same raw material; and (3) same or similar processes. Unfortunately, the addition of these categories did little to lift the veil; they captured only a handful of the acquisitions and the rest fell into the residual category.

There are considerable differences between foreign and domestic acquisitions when classified by the relative importance of various market relationships. Most marked is the difference in the narrow horizontal category, accounting for 47 per cent of domestic acquisitions compared with 27 per cent of foreign acquisitions. The other market relationships are relatively more important for foreign acquisitions. This is particularly striking for the vertical forward category where the difference is approximately nine percentage points, but it is also true for the vertical backward, conglomerate, geographic market extension and product extension categories where the differences range from two to four percentage points.

Part of the differences noted appears to be due to the relative importance of what have been termed "complex" and "simple" acquisitions and to the very different distribution of market relationships in these two kinds of acquisitions. The distinction between complex and simple acquisitions is based on the number of four-digit industries in which the acquiring firm was operating at the time when it made an acquisition. The acquisition was termed simple if it was operating in one industry, and complex if it was operating in more than one industry. Approximately 57 per cent and 80 per cent of the domestic and foreign

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acquisitions, respectively, were complex.[1] When the acquisitions are divided into simple and complex acquisitions, the following comparisons are obtained:[2]

	Simple Acquisitions		Complex Acquisitions	
	Foreign %	Domestic %	Foreign %	Domestic %
Horizontal	37.6	66.8	24.2	32.4
Geographic market extension	22.2	10.4	12.2	13.2
Product extension	11.1	5.8	11.2	11.3
Other broad horizontal	6.8	3.8	5.2	7.1
Vertical forward	4.3	5.0	24.2	15.9
Vertical backward	10.3	3.8	11.0	8.9
Conglomerate	7.7	4.4	12.2	11.1

Comparing foreign and domestic complex acquisitions, one observes a high degree of similarity in most of the categories. However, the two points of difference that

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[1] Table A-9.

[2] As may be noted in Tables A-9 to A-13, the acquisitions were coded by the editors as either simple or complex. Here the market relationships derived from Table 5-3 were merely divided using the original coding.

show up in Table 5-3 are still evident, though the differences are somewhat modified: there are relatively more horizontal domestic acquisitions and relatively more vertical forward foreign acquisitions. If one considers only simple acquisitions there are also large differences in the various subcategories of horizontal and vertical mergers. Differences between the distributions for simple and complex acquisitions are also apparent.

The percentage size distributions of the assets of the acquired firms are shown for types of market relationships in Table 5-4. A number of differences in the size of firms acquired in foreign and domestic acquisitions are apparent in this Table. The acquired firms in domestic acquisitions were smaller than those in foreign acquisitions in both horizontal and geographic market extension mergers. Also, although the differences are not as large, the same conclusion holds, roughly, for product extension, other broad horizontal and vertical forward mergers. In the case of vertical backward mergers, there was a somewhat greater concentration in the smaller classes of firms acquired in foreign acquisitions than of those acquired in domestic acquisitions, but firms acquired in foreign acquisitions also were more highly concentrated in the largest class. Thus only in the case of conglomerate acquisitions may one conclude that the firms acquired in domestic acquisitions were larger, on the whole, than the firms acquired in foreign acquisitions.

The Table also permits a size comparison to be made between different types of mergers. Turning first to the foreign acquisitions, one may conclude that the firms acquired in vertical forward mergers were smaller than those acquired in the other merger categories. However, it is difficult to reach any decision about the merger category which contained the largest acquired firms. This is a rather important point, because it indicates that the Combines Investigation Act did not affect the identity of the acquiring firms with respect to the size of the acquired firms.

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Table 5-4

TYPES OF MARKET RELATIONSHIPS AND PERCENTAGE DISTRIBUTION OF BOOK VALUE OF ASSETS OF ACQUIRED FIRM

	Horizontal		Geographic Market Extension		Product Extension		Other Broad Horizontal		Vertical Forward		Vertical Backward		Conglomerate	
($ Thousand)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)
0-100	9.2	27.5	9.6	40.2	8.6	15.1	6.9	14.5	26.4	33.7	12.9	7.9	10.9	8.7
101-200	13.8	11.8	4.1	15.0	13.8	11.6	3.4	10.9	6.6	9.9	12.9	9.5	9.1	8.7
201-400	17.7	15.8	12.3	10.3	5.2	23.3	13.8	20.0	17.6	15.8	11.3	20.6	16.4	17.4
401-800	13.8	14.2	19.2	18.7	22.4	15.1	17.2	10.9	16.5	9.9	8.1	17.5	21.8	8.7
801-1,600	11.5	9.8	13.7	6.5	13.8	15.1	31.0	10.9	14.3	13.9	14.5	17.5	14.5	13.0
1,601-3,200	10.8	10.5	12.3	3.7	15.5	4.7	13.8	12.7	9.9	7.9	11.3	11.1	14.5	21.7
3,201-6,400	10.8	4.2	13.7	2.8	12.1	7.0	0.0	5.5	4.4	3.0	8.1	4.8	10.9	15.9
6,401-13,800	3.1	2.0	4.1	1.9	3.4	3.5	6.9	7.3	2.2	3.0	6.5	4.8	1.8	4.3
13,801-25,600	3.8	2.8	4.1	0.9	1.7	3.5	3.4	3.6	1.1	0.0	0.0	3.2	0.0	1.4
25,601-51,200	3.1	1.2	2.7	0.0	3.4	0.0	3.4	0.0	0.0	2.0	1.6	3.2	0.0	0.0
More than 51,200	2.3	0.2	4.1	0.0	0.0	1.2	0.0	3.6	1.1	1.0	12.9	0.0	0.0	0.0

In particular, it is noteworthy that conglomerate acquisitions were no larger (and perhaps smaller) than the other types of acquisitions. The situation is more ambiguous in the case of domestic acquisitions. There were relatively fewer acquisitions in the smaller classes in the conglomerate category than in the other merger categories. However, there were no conglomerate acquisitions in the two largest classes and all but 5.7 per cent of the conglomerate acquisitions involved acquired firms that held less than $6,401,000 worth of assets. A horizontal or vertical market relationship was evident in the majority of the largest acquisitions, with a fair number of them contained in the narrow horizontal category. 1/

3. Economies Resulting from the Acquisitions

The economies resulting from mergers are of interest both as a cause and as an effect of mergers. Economies were included as a cause in Table 5-1, and are included as an effect in Table 5-5. Generally, the economies obtained from mergers are the economies of being or growing bigger rather than from merging per se. This is why economies were placed with "Other Reasons for Acquisitions" in Table 5-1. The economies reported in Table 5-5 should be regarded as those that occurred from expanding via merger in the various directions discussed under types of acquisitions. Since it is not known whether the merger route to expansion affords the same cost savings as those that may be obtained through internal expansion, no inferences can be drawn from this evidence about economies of scale based on internal expansion.

1/ The market position of the acquiring and acquired firms are reported in a number of tables in the Statistical Appendix. But unfortunately the data are very incomplete. In most cases the market share and the ranks of the merging firms are unknown. As a result, it was not considered worthwhile to report on that part of the Statistical Appendix in the body of this Study.

Table 5-5

PERCENTAGE FREQUENCY DISTRIBUTION OF REPORTED ECONOMIES RESULTING FROM ACQUISITION

Reason	Number of Times Economy Was Ranked First as a Percentage of the Total Number of Times Any Economy Was Ranked First		Number of Times Economy Was Identified as a Percentage of the Total Number of Times All Economies Were Identified	
	Foreign	Domestic	Foreign	Domestic
	(1)	(2)	(3)	(4)
Economies Through Integration of Plants				
1. One of the plants was closed, but no details added	0.2	0.5	0.5	0.7
2. One of the plants was closed and remaining plant(s) considerably improved or enlarged	--	--	--	--
3. One of the plants was closed and production concentrated in larger or more modern plant	0.2	0.5	0.2	0.5
4. Number of products produced in each plant reduced (greater specialization)	--	0.4	--	0.7
5. Other	1.9	5.7	3.6	7.8
Economies and Transportation				
6. More rational location of plants	0.2	1.1	0.7	1.6
7. Can combine or co-ordinate shipments	0.7	0.3	0.7	0.5
8. Other or not specified	1.7	1.7	1.9	2.4
Economies in Promotion, Selling, or Distribution				
9. Advertising	0.2	0.3	0.5	1.1
10. Combining salesmen's routes or delivery routes	--	0.7	0.5	3.7
11. Other or not specified	3.1	4.4	5.3	7.5
Economies Through Integration of Nonmanufacturing Establishments				
12. Warehouses	--	0.8	--	1.6
13. Terminals and transport routes when trucks involved	--	1.1	--	1.6
14. Other	--	0.9	1.0	4.5

continued...

Table 5-5 (cont'd.)

Reason	Number of Times Economy Was Ranked First as a Percentage of the Total Number of Times any Economy Was Ranked First		Number of Times Economy Was Identified as a Percentage of the Total Number of Times All Economies Were Identified	
	Foreign	Domestic	Foreign	Domestic
	(1)	(2)	(3)	(4)
Products Formerly Purchased on Market Now Produced Internally				
15. Formerly were purchased in Canada	0.5	--	0.5	--
16. Formerly were imported	0.5	--	0.7	--
17. Formerly were purchased in Canada and imported	--	--	--	--
18. Economies in administration (same office staff handles acquiring and acquired, etc.)	21.3	19.4	25.1	27.8
19. Economies through better or more elaborate management (more specialists, etc.) in acquiring company	2.4	6.0	3.6	8.7
20. Less cost than establishing new facilities	6.5	3.1	8.9	4.1
21. Economies in use of raw materials	0.2	1.5	1.0	3.6
22. Volume buying, but reason why an advantage not specified	0.2	2.5	1.0	2.8
23. Greater bargaining power because of volume buying	2.9	4.1	5.0	6.6
24. Financing available at lower cost	0.2	1.3	0.2	3.7
25. Better bargaining position in selling	--	0.4	--	0.9
26. Market possibilities, but no elaboration	0.7	2.0	1.2	3.5
27. Negligible or no economies	49.0	31.0	49.3	31.3
28. Not applicable was response of firm	4.8	4.4	5.3	4.4
29. Some economies anticipated but not realized	2.4	5.7	3.3	11.1

Source: Table A-34.

The heading on the questionnaire that solicited information on economies asked for "details of the economies, if any, secured by the merger which were not otherwise obtainable". The nonresponse rate was approximately 35 per cent of the returns for both foreign and domestic acquisitions. The procedures followed in coding the responses were exactly the same as those described for the coding of the reasons for acquisitions. Also, Table 5-5 was constructed in the same way as Table 5-1.

An oft-expressed defence of horizontal mergers and, to a lesser extent, vertical mergers is that they permit the achievement of economies of size. The defence would appear to be particularly appropriate in Canada, given that it is often claimed that plants are too small or, where they are large, that the output mix produced in them is too diversified to reap fully potential economies of scale. Based on the economies reported, one can say that these problems in Canadian manufacturing apparently were not solved to any considerable extent by the acquisitions that occurred from 1945 to 1961. Negligible or no economies were reported in 56 per cent of the foreign acquisitions and in 41 per cent of the domestic acquisitions. The economies were much more concentrated in head office activities than at the level of the plant. Economies in administration were reported under one rank or another in approximately one-quarter of the foreign and domestic acquisitions (row 18). In an additional 8.7 per cent of the domestic acquisitions and 3.6 per cent of the foreign acquisitions, improvements in management were specified.

The percentage of acquisitions for which cost savings at the level of the plant were reported was small, especially for foreign acquisitions. Furthermore, when cost savings were reported, no details were provided in the majority of the cases. Thus, although savings in production and distribution may be associated with the economies reported in rows 1 to 14 and 21, their sources are not well defined.

A distinction between private and social benefit should be made for a number of the reported economies. For instance, greater bargaining power (row 23) in the markets in which the firm buys entails the transfer of income from one group of producers to another. Whether society approves of the transfer depends on the identity of the buyers and sellers. Similarly, the effect on resource use depends on the level of the prices paid before the bargaining power was obtained. Also relevant is the relative market positions of the buying firm's competitors. In all cases in which there is not a reduction in the amount of resources needed to produce a given output, as in rows 9 and 20 to 26, there is no presumption that private and social gains are in the same direction.

Liberally interpreted, the evidence suggests that there were savings in production and physical distribution in 35.7 per cent of the domestic acquisitions. Economies in administration and management were reported for a similar percentage of domestic acquisitions. For foreign acquisitions the corresponding figures are 15 per cent and 30 per cent, respectively. It should be kept in mind that the various sources of economies were reported for the same acquisitions in a number of cases.

For these economies, which are more clearly in the direction of more efficient resource use, the key unanswered question is the magnitude of the savings rather than their source. The data are unyielding on this point. However, the large percentage of acquisitions for which negligible or no economies were reported, and their nature when they were, create the "feel" that economies were not an important consideration, and certainly not one about which the firms were either willing or able to provide detailed replies.

Since the question of economies is of some importance, the qualifications that apply to the foregoing

conclusion should be noted. First, the question to which the firms were responding was somewhat obscure. This may perhaps explain the nature of the responses as well as the high nonresponse rate. Second, there is some question about the quality of the responses. Unless the person filling out the questionnaire had a comprehensive knowledge of the operations of the companies, was willing to spend some time thinking about the question, and perhaps even engage in some research, it is doubtful if he could be expected to provide a complete and accurate answer.

The final qualification relates to the rather small percentage of responses that could be interpreted as reporting savings in production costs. The merger path is not the most direct one to follow in the exploitation of economies of size in production. If plants are too small for maximum efficiency, placing them under common ownership will not help to make them bigger -- at least not immediately. Only over a period of years may it be possible to consolidate production in larger plants. Thus the questionnaire returns may have understated the extent of the economies in production because of the lag in their realization. There is, however, one counter-argument that must be considered. If the merging firms were duplicating the production of more than one product, they might have been able to lengthen the production runs by increasing the specialization of output within the different plants. One might expect this to take less time to accomplish than the building of new facilities. It is therefore striking that no cases of increased specialization were reported for foreign acquisitions,and less than 1 per cent of domestic acquisitions referred to increased specialization.

Appendix to Chapter 5

1. Procedure Followed in Classifying Types of Mergers

In specifying the market relationship, a complication arises when the merging firms are operating in more than one market, since how one specifies the relationship may depend on what part of their activities one compares. The approach that was adopted here was to allow for multiple relationships based on different parts of the firms' operations. Allowance was made for a market relationship between the following activities of the merging firms:

(1) between their main activities;

(2) between the main activity of the acquired firm and the subsidiary operation of the acquiring firm that was most closely connected with the main activity of the acquired firm;

(3) between the main activity of the acquired firm and the most important subsidiary operation of the acquiring firm that was connected with the main activity of the acquired firm;

(4) between the subsidiary activity of the acquired firm and the main activity of the acquiring firm;

(5) between the subsidiary activity of the acquired firm and the subsidiary activity of the acquiring firm that was most closely connected with the subsidiary activity of the acquired firm.

In establishing the connections and defining the market relationships, vertically integrated firms were treated as though each of the steps of extraction, production, or distribution was a separate activity. This approach creates ambiguities in defining "main" and "subsidiary" operations, and also affects the market relationships established for

each of the identified connections. For example, assume that a retail outlet (gasoline station or a distributor of heating fuel) is acquired by an integrated oil company. If refining or extraction is interpreted as the main activity of the acquiring firm, the relationship between the main activities of the merging companies would be vertical forward, and the relationship between the main activity of the acquired firm and the subsidiary activity of the acquiring firm would be horizontal. If the main activity of the acquiring firm was interpreted to be in distribution, the market relationships for the two connections -- between the main activities and between the subsidiary and main activities -- would be reversed. Of course, a difference of opinion about what was the main and subsidiary activity could also affect the other market relationships, vertical backward and conglomerate. No rule was established for determining what constituted the main and subsidiary activities of the companies. Each case was decided by examining the value of sales of the different products (value added figures were not available).

Figures on these various subgroup market relationships are presented in Tables A-9 to A-13. In roughly 95 per cent of the acquisitions the acquired firm operated in only one industry, and hence engaged in only one activity. Thus the acquisitions included in Tables A-12 and A-13 that deal with the subsidiary activities of the acquired firms are relatively unimportant. In the discussion that follows, attention is focused on the relationships based on the acquired firm's main activity. 1/

Table 5-3 was constructed by examining the market relationships between the main activity of the acquired firm and the activities of the acquiring firm, starting with

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1/ The total number of foreign and domestic acquisitions on which the percentages are based is 601 and 1,173, respectively. Out of the total of foreign acquisitions,

its main activity. Where a vertical or broad horizontal relationship existed between the main activities of the firms, it was entered as the market relationship for the acquisition. Where the merger was classified as conglomerate, the relationship between the main activity of the acquired firm and the subsidiary operation of the acquiring firm that was most closely connected with the main activity of the acquired firm was examined. If there was a vertical or horizontal relationship between those activities, it was recorded as the merger type for the acquisition; otherwise, the acquisition was placed in the

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586 are based on the main activity of the acquirer and 15 on the subsidiary activity of the acquirer most closely related to the main activity of the acquired. That is, 15 of the 83 acquisitions classified as conglomerate in Table A-9 (based on the main activities of the merging firms) were placed in the broad horizontal or in a vertical category in Table A-10 (based on the subsidiary activity of the acquiring firm that was most closely related to the main activity of the acquired). The 15 acquisitions were distributed as follows: horizontal -- 4; product extension -- 6; same three-digit -- 1; vertical backward to materials and to final commodities -- 3 and 1, respectively.

Turning to domestic acquisitions, 74 of the 171 acquisitions classified as conglomerate in Table A-9 were placed in the broad horizontal or in a vertical category in Table A-10. The 74 acquisitions were distributed as follows: horizontal -- 33; geographic market extension -- 14; product extension -- 10; competing, but different materials -- 1; same three-digit industry -- 2; same two-digit industry -- 6; vertical forward to sales, assembly and other -- 1, 1 and 2, respectively; vertical backward to services, final commodities and other -- 1, 1 and 2, respectively.

conglomerate category used by the editors for describing the relationship between the main activities. Therefore, there was no recognizable vertical or horizontal relationship between the main activity of the acquired and the activities of the acquirer in any of the acquisitions placed in the conglomerate category.

2. Supplementary Comments and Data on Types of Mergers

A secondary vertical or broad horizontal market relationship existed for 19 per cent of the foreign and 15 per cent of the domestic acquisitions classified as vertical or in the broad horizontal category shown in Table 5-3. The secondary market relationships are shown in Table 5A-1 as percentages of each of the market relationships in Table 5-3. By combining Tables 5-3 and 5A-1, one may obtain a virtually complete picture[1/] of the market relationships between acquiring and acquired firms. For example, there was a secondary market relationship in 8.0 per cent of the foreign acquisitions shown as horizontal in Table 5-3. Therefore, the following categories for acquisitions may be classified as horizontal with respect to the merging firms' most important activities: horizontal (only) -- 92.0 per cent; horizontal-geographic market extension -- 0.6 per cent; horizontal-product extension -- 3.7 per cent; and horizontal-vertical backward -- 3.7 per cent. When each of the foregoing percentages is multiplied by .268 (the share of the acquisition in Table 5-3 classified as horizontal) they are converted

1/ The two tables do not exhaust all the market relationships because there was a handful of acquisitions in which there were three nonconglomerate market relationships with respect to the main activity of the acquired firm. Also, the market relationships involving the acquired firm's subsidiary activities have not been included in our discussion.

to percentages of all foreign acquisitions. Secondary market relationships were most common for acquisitions initially classified as vertical -- approximately 40 per cent for both foreign and domestic acquisitions. The combination of vertical and broad horizontal indicates acquisitions by firms vertically integrated to some degree.

Combinations such as horizontal-product extension in Table 5A-1 highlight the important, if obvious, point that the classification of mergers is imprecise and leaves considerable difference of opinion over the category in which an acquisition belongs. In the context of the present Study, it cannot be assumed that the concept of an activity was uniformly applied. What may have been classified as an activity in one instance may have been considered to be two activities (or more, conceivably) in another instance, with the result that one market relationship would be specified in one instance (e. g. only horizontal or only product extension) and two relationships in the second (e. g. horizontal-product extension or vice versa). In addition, the same acquisition might also have been placed in different market relationship categories where there were elements of several market relationships in one acquisition, say horizontal, geographic market extension and product extension.

Tables 5A-2 and 5A-3 provide a picture of the relationship between the main activities of the merging firms. However, in contrast to the previous tables, the relationships of the main activities are classified in terms of their location by sectors and two-digit industries, rather than from the viewpoint of narrowly defined "theoretical" industries.

Consistent with the importance of the broad horizontal category in Table 5-3, acquiring firms made most of their acquisitions in the same sector or industry in which their main activity was located: 84 per cent of the domestic acquisitions and 79 per cent of the foreign acquisitions were of firms in the same sector as the acquiring

firm.[1] Similarly, when the firms located in manufacturing acquired firms whose main activity was in manufacturing, they tended to acquire firms in the same two-digit industry.[2] This was true in 80 per cent of both the foreign and domestic acquisitions.

However, the firms located in the manufacturing sector were most prone to make acquisitions in other sectors, with 20 per cent and 27 per cent of them doing so in domestic and foreign acquisitions, respectively. The major part of these foreign acquisitions and more than half of these domestic acquisitions were concentrated in the trade sector. The matrix in the top right-hand quarter of Table 5A-2 and Table 5A-3 makes it possible to identify the location of the manufacturing firms and the sectors in which they made acquisitions. Firms located in most of the 20 industries made acquisitions in the trade sector, but the distribution among industries is very different for the domestic and foreign acquisitions. Two industries -- petroleum and coal products, and chemicals -- accounted for 62 of the 95 foreign acquisitions. The domestic acquisitions are more equally distributed as well as being concentrated in different industries. Of the 66 domestic acquisitions, 12 of the acquiring firms were located in the food and beverage industry, 10 in primary metal and 8 in petroleum and coal products. Apart from the distinct difference between foreign- and domestically-controlled firms in the primary metal industry, much of the difference in patterns is due to proportions of foreign and domestic control of the two-digit industries.

Most of the vertical forward acquisitions of sales and/or service outlets in Table 5-3 can probably be traced to the acquisitions by firms located in the manufacturing sector of firms located in the trade sector.

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[1] See the matrix in the top left-hand corner of Table 5A-3 and Table 5A-4.

[2] See the matrix in the bottom right-hand corner of Table 5A-3 and Table 5A-4.

The vertical backward acquisitions in Table 5-3 may also be roughly traced in Table 5A-2 and Table 5A-3. Acquisitions by firms located in manufacturing of firms in forestry and in mining, quarrying, oil wells, probably account for many of the acquisitions of firms supplying materials. A similar correspondence probably exists for: (a) the acquisitions of firms in manufacturing by firms in trade, and (b) the acquisitions classified as vertical backward to final commodities in Table 5-3. Further, in many of the cases where the acquiring and acquired firms are classified in different sectors, the acquiring firm was vertically integrated and was operating in both sectors. It is only when the firms are classified according to their main activity that the acquiring firm appears to be moving across sectors via acquisition.

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Table 5A-1

COMBINATIONS OF MARKET RELATIONSHIPS

	Market Relationships in Table 5-3											
	Horizontal		Geographic Market Extension		Product Extension		Other Broad Horizontal		Vertical Forward		Vertical Backward	
	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)	(F)	(D)
	(Per cent)											
Secondary Market Relationship												
Horizontal				0.7	4.5	4.8			19.7	27.8	36.9	26.6
Geographic Market Extension	0.6				1.5	2.9			18.0	15.8	1.5	3.8
Product Extension	3.7	1.4	3.5	9.7					0.8			2.5
Other Broad Horizontal											3.1	6.3
Vertical Forward		4.2	1.2	6.4		2.9	9.1	7.5				1.3
Vertical Backward	3.7	2.0	1.2	0.7	3.0			6.0	0.8			
Total	8.0	7.6	5.9	8.5	9.0	10.6	9.1	13.5	39.3	43.6	41.5	40.5

Table 5A-2

THE INDUSTRIAL DIVISIONS AND TWO-DIGIT MANUFACTURING INDUSTRIES
OF THE ACQUIRED AND ACQUIRING FIRMS IN DOMESTIC ACQUISITIONS

	Acquiring																																		
	Industries													Manufacturing																						
	1	2	3	4	5	6	7	8	9	10	X	Y	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	X	Y	Total
Acquired																																			
Industries																																			
1	0	0	0	0	2	0	2	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
2	0	1	0	0	20	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	12	0	7	0	0	0	0	0	0	0	1	0	0	0	1	21
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	78	8	0	0	2	0	0	0	0	88	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	2	3	0	0	0	80	88
5	0	0	0	8	471	2	9	37	13	1	0	0	541	178	0	8	10	19	11	5	19	1	45	47	28	12	10	18	10	26	4	10	11	0	69	541
6	0	0	0	0	1	10	1	4	0	0	0	0	16	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	15	16
7	0	0	0	4	12	0	84	4	6	0	0	0	110	1	0	0	0	0	0	0	0	0	1	1	9	0	0	0	0	0	0	0	0	0	98	110
8	0	0	0	4	66	0	2	292	2	0	1	0	367	12	0	3	1	0	0	4	7	0	5	0	10	3	6	2	0	4	8	1	0	1	300	367
9	0	0	0	1	3	0	1	2	7	0	0	0	14	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	11	14
10	0	0	0	0	9	0	3	2	1	8	0	0	23	4	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	14	23
X	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	95	593	12	102	343	29	9	3	0	1, 187	197	0	11	11	19	11	10	39	1	64	50	49	15	16	20	10	33	16	11	11	3	590	1, 187
Manufacturing																																			
1	0	0	0	0	167	0	2	15	0	1	0	0	185	165	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	17	185
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	4	0	0	0	0	0	0	0	4	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	4
4	0	0	0	0	11	0	0	2	2	0	0	0	15	2	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	15
5	0	0	0	0	21	0	0	2	0	0	0	0	23	0	0	0	1	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	23
6	0	0	0	0	7	0	0	2	0	0	0	0	9	0	0	0	0	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9
7	0	0	0	0	7	0	0	2	0	0	0	0	9	0	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9
8	0	0	0	2	24	0	0	2	0	0	0	0	28	0	0	0	0	0	0	0	15	0	6	0	0	0	0	0	0	0	2	0	1	0	4	28
9	0	0	0	0	3	0	0	1	1	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	2	5
10	0	0	0	0	39	0	0	3	1	0	0	0	43	3	0	1	0	0	0	0	2	0	33	0	0	0	0	0	0	0	0	0	0	0	4	43
11	0	0	0	0	49	0	0	1	2	0	0	0	52	0	0	0	0	0	0	0	0	0	3	46	0	0	0	0	0	0	0	0	0	0	3	52
12	0	0	0	0	12	0	0	1	0	0	0	0	13	0	0	1	0	0	0	0	0	0	0	0	9	0	1	0	1	0	0	0	0	0	1	13
13	0	0	0	0	32	1	2	1	3	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	12	11	4	2	1	1	0	0	1	0	7	39
14	0	0	0	0	6	0	0	2	3	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	5	11
15	0	0	0	0	10	0	1	0	0	0	0	0	11	0	0	1	1	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	1	0	1	11
16	0	0	0	1	15	0	0	0	0	0	0	0	16	1	0	0	0	0	0	0	0	0	0	0	2	0	2	2	8	0	0	0	0	0	1	16
17	0	0	0	2	27	1	0	0	1	0	0	0	31	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	24	0	0	0	0	4	31
18	0	0	0	3	2	0	1	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	4	6
19	0	0	0	0	23	0	3	1	0	0	0	0	27	6	0	0	0	0	0	0	1	0	2	0	3	0	0	3	0	0	0	8	0	0	4	27
20	0	0	0	0	14	0	0	2	0	0	0	0	16	0	0	2	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	8	0	2	16
X	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	3
Y	0	1	0	87	119	10	93	306	16	8	1	0	641	19	0	3	1	0	0	5	20	0	16	3	21	3	6	2	0	7	12	1	0	1	521	641
Total	0	1	0	95	593	12	102	343	29	9	3	0	1, 187	197	0	11	11	19	11	10	39	1	64	50	49	15	16	20	10	33	16	11	11	3	590	1, 187

Table 5A-3

THE INDUSTRIAL DIVISIONS AND TWO-DIGIT MANUFACTURING INDUSTRIES
OF THE ACQUIRED AND ACQUIRING FIRMS IN FOREIGN ACQUISITIONS

Acquired Industries	Acquiring Industries												
	1	2	3	4	5	6	7	8	9	10	X	Y	Total
1	0	0	0	0	1	0	0	0	0	0	0	0	1
2	0	2	0	0	6	0	0	0	0	0	0	0	8
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	27	11	0	0	0	0	0	0	0	38
5	0	0	0	3	337	0	0	5	1	1	3	2	352
6	0	0	0	0	4	3	0	0	0	0	0	0	7
7	0	0	0	1	2	0	24	0	0	0	0	0	27
8	0	0	0	1	95	0	0	59	1	3	0	0	159
9	0	0	0	1	1	0	0	1	0	0	0	0	3
10	0	0	0	0	1	0	3	1	0	32	0	1	38
X	0	0	0	0	3	0	0	2	0	0	0	0	5
Y	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	33	461	3	27	68	2	36	3	3	638
Manufacturing													
1	0	0	0	0	41	0	0	0	0	0	0	0	41
2	0	0	0	0	4	0	0	0	0	0	0	0	4
3	0	0	0	0	5	0	0	1	0	0	0	0	6
4	0	0	0	0	13	0	0	0	0	0	0	0	13
5	0	0	0	0	8	0	0	0	0	0	0	0	8
6	0	0	0	0	3	0	0	0	0	0	0	0	3
7	0	0	0	1	6	0	0	0	0	0	0	1	8
8	0	0	0	0	17	0	0	0	0	0	0	0	17
9	0	0	0	0	3	0	0	0	0	0	0	0	3
10	0	0	0	0	30	0	0	0	0	1	0	0	31
11	0	0	0	0	6	0	0	0	0	0	0	0	6
12	0	0	0	0	10	0	0	0	0	0	0	0	10
13	0	0	0	1	28	0	0	2	0	0	0	0	31
14	0	0	0	0	22	0	0	0	0	0	2	0	24
15	0	0	0	0	19	0	0	0	0	0	0	0	19
16	0	0	0	0	31	0	0	0	0	1	0	0	32
17	0	0	0	0	21	0	0	0	0	0	0	1	22
18	0	0	0	3	6	0	0	0	0	0	0	0	9
19	0	0	0	0	47	0	0	0	0	0	0	0	47
20	0	0	0	0	17	0	0	0	1	0	0	0	18
X	0	0	0	0	4	0	0	1	0	0	0	0	5
Y	0	2	0	28	120	3	27	62	1	35	1	1	280
Total	0	2	0	33	461	3	27	66	2	36	4	3	637

Acquired Industries	Acquiring Manufacturing																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	X	Y	Total
1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	2	8
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	9	0	1	0	25	38
5	39	4	12	10	6	1	7	10	1	25	10	8	35	20	24	34	21	6	51	13	3	12	352
6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	3	7
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	25	27
8	2	0	2	0	0	0	1	3	0	4	1	0	5	3	0	8	2	44	18	1	2	64	160
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	36	38
10	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	5
X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	42	4	14	10	6	1	10	14	1	34	11	8	40	24	25	45	28	61	69	16	5	171	639
Manufacturing																							
1	38	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	41
2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	6
4	0	0	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	^	0	0	13
5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	8
6	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
8	0	0	0	0	0	0	0	10	0	5	0	0	1	0	0	0	0	0	1	0	0	0	17
9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	3
10	0	0	1	0	0	0	0	0	0	18	4	0	6	0	0	0	0	0	1	0	1	0	31
11	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6
12	0	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	0	0	0	0	0	0	10
13	0	0	0	0	0	0	0	0	0	0	0	0	20	4	1	3	0	0	0	0	0	3	31
14	0	0	0	0	0	0	0	0	0	0	0	0	1	13	4	2	0	0	2	0	2	0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	15	1	0	0	0	0	0	0	19
16	1	0	1	0	0	0	0	0	0	0	0	0	1	2	1	26	0	0	0	0	0	3	34
17	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	1	16	0	0	0	0	1	22
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	9
19	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	42	0	0	0	47
20	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	13	0	1	18
X	0	0	1	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	5
Y	9	1	0	5	4	1	10	7	54	17	3	2	158	280									
Total	34	11	8	40	24	25	46	27	62	68	16	5	171	639									

CHAPTER 6

FOREIGN CONTROL VERSUS OTHER FACTORS AFFECTING THE INCIDENCE OF MERGER ACTIVITY AMONG MANUFACTURING INDUSTRIES

1. Three Hypotheses

The reasons for foreign and domestic acquisitions are examined in this Chapter by investigating the influence of foreign control compared with other factors on the distribution of foreign and domestic acquisitions among various manufacturing industries.

Assume that a country has two industries, X and Y, and that non-residents control 10 per cent of the firms in industry X and 50 per cent of the firms in industry Y. If we further assume that foreign- and domestically-controlled firms have an equal propensity to engage in merger activity, are equally well placed to buy up other firms, and have equal advantages to gain from mergers, one would expect to find that approximately 10 per cent of the mergers in industry X and 50 per cent of the mergers in industry Y are foreign mergers, as we have defined them, and that the remainder are domestic mergers. In other words, on the assumptions made, one would expect the distribution of foreign and domestic acquisitions between industries X and Y to be directly proportional to the initial distribution of foreign- and domestically-controlled firms between industries X and Y. Such a finding would imply that the nationality of control of acquiring firms is in itself irrelevant as a determinant of the interindustry mix of merger activity. If one found

that the cross-sectional distribution of merger activity among industries was related in direct proportion to the distribution of control among industries, one could conclude that the deviations from the proportional relationship reflected a variety of market and cost factors impinging on both foreign and domestic acquiring firms and on acquired firms. If, on the other hand, one found that the relationship was not proportional, one would conclude that these deviations reflected not only market and cost factors, but also an independent influence of foreign control on merger activity in various industries.

In its simplest form, the hypothesis being posed implies that the ratio of the number of foreign mergers to total mergers, domestic plus foreign, $\left(\frac{N}{N + M}\right)$ in any industry, i, is directly proportional to the ratio of foreign control in that industry:

$$(6.1) \qquad \frac{N_i}{N_i + M_i} = \frac{F_{in}}{F_{in} + F_{im}}$$

where F_{in} and F_{im} indicate the number of foreign- and domestically-controlled firms in industry i. A second variant of this hypothesis allows for the possibility that there is a constant difference between these two ratios. In this form the hypothesis may be restated as follows: the ratio of the number of foreign to total mergers in any industry is proportional to the ratio of foreign control in that industry after allowance is made for a constant differential between these two ratios:

$$(6.2) \qquad \frac{N_i}{N_i + M_i} = \alpha + \frac{F_{in}}{F_{in} + F_{im}}$$

This formulation implies that even if there is no foreign control in industry i, α (100) per cent of the mergers in industry i will be foreign mergers, and that this ratio increases above α by the amount of any increase in the ratio of foreign control. For example, if in industry i the ratio is 10 per cent, the predicted ratio of foreign to total mergers is $\alpha + .10$. This hypothesis may be interpreted as suggesting that foreign firms enjoy a

common advantage in all industries over domestic firms in making acquisitions, which is reflected in the constant term α. Once this common factor has been allowed for, the cross-sectional distribution of acquisitions coincides exactly with the cross-sectional distribution of foreign ownership, and foreign control per se does not afford additional advantages in any industry over and above the common advantage equally available in all industries.

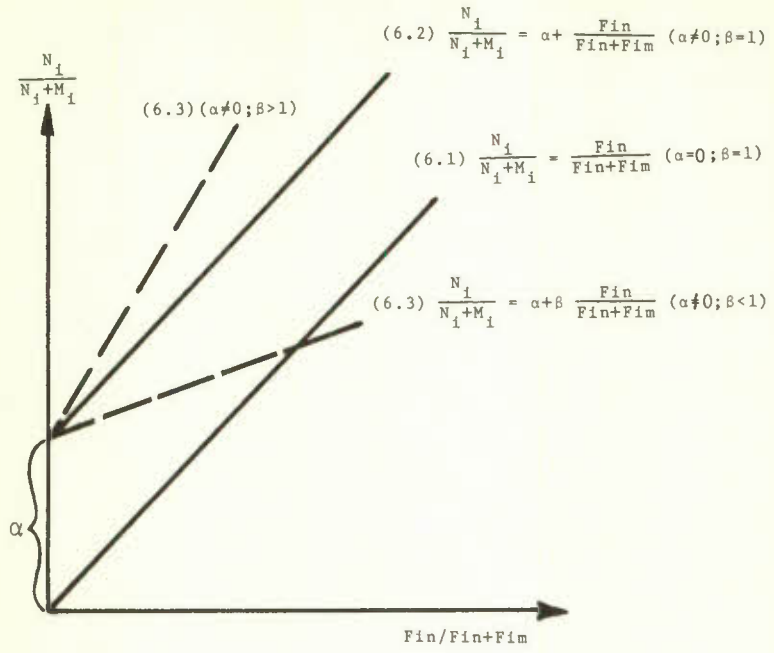
A third variant of the hypothesis is that the degree of foreign merger activity is not independent of the level of foreign control in various industries.

$$(6.3) \qquad \frac{N_i}{N_i + M_i} = \alpha + \beta \frac{F_{in}}{F_{in} + F_{im}}$$

where β is significantly different from 1.0. This hypothesis allows for the possibility that foreign acquisitions are influenced in various industries not only by a factor, α, common to all industries, but also that the degree of foreign control in any particular industry exercises a special influence of its own. Allowance having been made for the common factor, α, the ratio of foreign mergers to total mergers is not proportional to the ratio of foreign control.[1/]

The differences between these three hypotheses are illustrated graphically in the following Figure.

1/ A fourth possible hypothesis is that there is no systematic relationship between the degree of control and the ratio of foreign mergers in which case β is not significantly different from zero.



If either hypothesis (6.1) or (6.2) holds and β is not significantly different from 1.0, one may conclude that the evidence is consistent with the view that interindustry variations in merger activity are independent of the degree of foreign control per se and largely reflect market and cost conditions confronting various industries.

In order to test these hypotheses, one may fit equation (6.3) and examine the value of the parameters α and β. If the first hypothesis holds, α will not be significantly different from zero and β will not be significantly different from 1.0. If the second hypothesis holds, α will be significantly different from zero and β will not be significantly different from 1.0. And if the third hypothesis holds, α will be significantly different from zero and β will be significantly different from 1.0.

Before applying this test it is necessary to specify what variable to use to measure control. Since the number of acquisitions is the dependent variable, the number of firms is the closest corresponding measure of control. A problem might arise, however, if the average size of foreign-controlled firms making acquisitions during the sample period was substantially different from the average size of domestically-controlled firms. Our evidence is somewhat uncertain on this point. According to Table 4-4 above, the average size of acquiring firms, judged in terms of assets and sales, was less than the average size of domestic acquiring firms. However, as indicated in Chapter 4 these figures include only the size of that portion of the acquiring foreign firm situated in Canada and do not reflect the total size of the acquiring firms. If their foreign, as well as their domestic, operations were included in the size comparisons, the foreign acquiring firms would be larger than domestic acquiring firms, in some industries at least. Moreover, our estimates of the degree of foreign control are based on company data, not on firm data. As indicated below, foreign-controlled companies in Canada generally (including those not making acquisitions but who might nevertheless be a force in the market for firms) were considerably larger on average than all domestically-controlled companies. In order to allow for the possibility that the relative difference in size in acquiring foreign and domestic companies may have influenced the number of mergers, the value of company assets was included in the analysis.

Before discussing data and the analysis itself, it will be helpful to indicate the notation and definitions that have been used in the remainder of this Chapter.

N = number of foreign acquisitions

M = number of domestic acquisitions

N_{is}, M_{is} = the respective number of foreign and domestic acquisitions <u>in</u> the ith industry

N_{ib}, M_{ib} = the respective number of foreign and domestic acquisitions <u>made</u> by firms located in the ith industry

N_{ih}, M_{ih} = the number of foreign and domestic acquisitions in the ith industry where both the acquiring and acquired firms were located in the ith industry

F_{in} = the number of foreign-controlled companies in the ith industry

F_{im} = the number of domestically-controlled companies in the ith industry

A_{in} = the value of foreign-controlled company assets in the ith industry

A_{im} = the value of domestically-controlled company assets in the ith industry

S_{in} = the average size of foreign-controlled companies in the ith industry

S_{it} = the average size of all companies in the ith industry

$\bar{R}^2$ = coefficient of multiple determination, adjusted for degrees of freedom

t = ratios shown in square brackets

n = number of observations = 18 (17 in log-linear relations)

The number of acquisitions may be measured in terms of N_{ib} or N_{is} or N_{ih}. In our estimates, all three have been employed as the dependent variable:

$$\frac{N_{ib}}{N_{ib} + M_{ib}} \; ; \quad \frac{N_{ih}}{N_{ih} + M_{ih}} \; ; \quad \frac{N_{is}}{N_{is} + M_{is}} \; .$$

Attention is focused mainly on the first and second of these ratios. The first ratio tests the three hypotheses in terms of the number of acquisitions made by firms in the ith industry. This allows for circumstances that cause firms in an industry to make acquisitions outside the industry, as occurred in the case of most conglomerate and vertical acquisitions.[1/] A somewhat more limited set of merger forces is allowed for in the second ratio since it reflects only those forces that result in the merger of firms in the same industry. However, it makes for a simpler and more direct test to limit the hypothesis to those cases where the acquiring and acquired firms are in the same industry. The difficulty with the third ratio is that there is no logical reason why there should be a relation between the number of acquired firms in an industry and the number of acquisitions made by acquiring firms in that industry, except when the buyer and seller are in the same industry. Since about 75 per cent of the acquired firms in the manufacturing sector were acquired by firms in the same two-digit industry as the acquired firm, one would expect the results from using these three ratios as the dependent variable to be somewhat similar.

1/ However, since the analysis is conducted at the level of two-digit industries, some acquisitions were classified as conglomerate or vertical when the acquiring and acquired firms were in the same industry.

2. The Data

The relevant ratios required to apply the test are presented in Table 6-1. Columns 1 and 2 are based on the number of acquisitions over the period 1945 to 1961, columns 3 and 4 on the distribution of control in 1962 -- the earliest year for which this information is available for two-digit industries. The hypothesis is based on the direction of causation running from columns 3 and 4 to columns 1 and 2. But in using an end-of-period year to measure the distribution of control, there is an effect on columns 3 and 4 running from columns 1 and 2 as well. Acquisitions from 1945 to 1961 had some impact on the distribution of control of assets and firms. However, to the extent that this effect is unevenly distributed among industries, the bias introduced is unsystematic and may not bias the statistical results in the direction of supporting the hypothesis.[1/] Furthermore, there is no reason to believe that F_{in} and A_{in} were more affected by N_{is} than F_{im} and A_{im} were by M_{is}, and hence there is no obvious bias when the test is based on the ratios used in equations (6.1) and (6.3).

The reporting firms were asked to specify the "nationality of the controlling interest in the acquired and acquiring companies or firms immediately before the merger". There were no questions relating to the percentage of foreign ownership. In constructing columns 3 and 4, foreign control was assumed when 50 per cent or more of the ownership was held abroad. The data for the estimated equations reported in this section are also based on the same criterion of control. A second set of equations, based on the assumption that 25 per cent ownership constitutes control, was also run.

1/ See Table 3-4 for an indication of the impact foreign acquisitions had on foreign control.

These equations are reported in the Appendix to this Chapter. The differences in the estimated equations when 50 per cent ownership and 25 per cent ownership are assumed are minor.

It is recognized that there are difficulties associated with testing the hypotheses at the level of the two-digit industry. Apart from the tobacco industry, and perhaps petroleum and coal products, the breadth of the two-digit industries is such that it may not be concluded that any two firms in the same two-digit industry are in the same market environment -- even allowing for the more obvious differences between firms, such as size. If, for any two-digit industry, foreign and domestic firms are not distributed among the industries within the industry in the same proportion as for the two-digit classification as a whole, there is a possibility of obtaining statistical results that are inconsistent with one or other hypothesis even though the hypothesis is valid. On the other hand, there is also the possibility that the average results for each two-digit industry may be more consistent with one of the hypotheses than the results for the finer industry classifications would be. Further weaknesses in the data are pointed out below, and should be taken into account in evaluating the results of our tests.

3. The Results

Inspection of columns 1 and 2 of Table 6-1 with 3 is sufficient for one to reject the simple proposition that the percentage of acquisitions accounted for by foreign-controlled firms in any industry during the sample period was equal to the percentage of companies in that industry that were under foreign control. Comparison of columns 2 and 3 reveals that the percentage of foreign acquisitions was higher than the percentage of companies under foreign control in 17 out of the 18 industries, with the difference exceeding 12 percentage points in 15 of the 17 industries. This consistent pattern

is accurately summarized by the difference of 20 percentage points in the average percentages for each column given in the last row of the Table. The differences between columns 1 and 3 are equally large and in the same direction.

This conclusion is confirmed by equations (6.4) and (6.5). The simple proportionality hypothesis reflected in equation (6.1) implies intercept values of zero and slope coefficients of one. The positive and significant intercept terms of equations (6.4) and (6.5) are therefore inconsistent with a simple proportionality hypothesis. In this connection it is also noteworthy that the mean difference between $\frac{N_{ib}}{M_{ib} + N_{ib}}$ and $\frac{F_{in}}{F_{im} + F_{in}}$ is 18.4 per cent, which approximates the intercept term of equation (6.4), and the mean difference between $\frac{N_{ih}}{N_{ih} + M_{ih}}$ and $\frac{F_{in}}{F_{in} + F_{im}}$ is 20.8 per cent, which is comparable to the intercept term of equation (6.5).

$$(6.4) \qquad \frac{N_{ib}}{N_{ib} + M_{ib}} = \underset{[2.41]}{0.191} + \underset{[4.79]}{0.890} \frac{F_{in}}{F_{in} + F_{im}} \qquad \bar{R}^2 = .56$$

$$(6.5) \qquad \frac{N_{ih}}{N_{ih} + M_{ih}} = \underset{[3.43]}{0.206} + \underset{[7.15]}{1.004} \frac{F_{in}}{F_{in} + F_{im}} \qquad \bar{R}^2 = .75$$

Table 6-1

THE PERCENTAGE DISTRIBUTION OF FOREIGN ACQUISITIONS AND FOREIGN-CONTROLLED FIRMS AND ASSETS BY TWO-DIGIT INDUSTRIES

Industry	$\frac{N_b}{N_b + M_b}$	$\frac{N_h}{N_h + M_h}$	$\frac{F_n(1)}{F_n + F_m}$	$\frac{A_n(1)}{A_n + A_m}$
	(1)	(2)	(3)	(4)
Food and beverage	17.57	18.72	12.82	26.15
Tobacco	100.00	100.00	66.67	85.34
Rubber	56.00	80.00	68.18	91.97
Leather	47.62	52.94	13.19	27.07
Textile, knitting and clothing	29.82	33.33	13.29	30.66
Wood	26.42	40.00	9.86	27.98
Furniture and fixtures	50.00	50.00	11.63	21.47
Paper	34.69	35.29	35.15	40.91
Printing and publishing	18.03	11.54	12.27	10.94
Primary metal	14.04	47.06	33.59	60.17
Metal fabricating	72.73	64.52	31.99	51.34
Machinery	60.00	86.67	51.15	63.69
Transportation equipment	55.56	68.18	48.06	84.23
Electrical products	81.48	76.47	57.04	66.63
Nonmetallic mineral products	45.90	40.00	26.28	51.07
Petroleum and coal products	79.22	87.50	69.44	99.35
Chemical	86.25	84.00	62.47	76.40
Miscellaneous manufacturing	60.71	61.90	42.42	64.61
Average	52.00	57.70	37.00	54.40

(1) The number of firms and the volume of assets are based on corporations with a minimum of $250,000 worth of assets. Since it is the activity of the acquiring firms that is being studied, the omission of the smaller companies does not create any problems; only four of the reporting firms had less than $200,000 worth of assets, and 21 reported assets worth $400,000 or less.

Source: For columns 1 and 2, Table 5A-2 and Table 5A-3; for columns 3 and 4, Corporations and Labour Unions Returns Act, 1962, Ottawa, Queen's Printer, 1965, Tables 4A-22A.

This evidence is, however, fully consistent with the second variant of the hypothesis which implies that the α is significantly different from zero and β is not significantly different from 1.0. For equation (6.4) the probability of mistakenly rejecting the hypothesis $\beta = 1$ is approximately 50 chances in 100, and for equation (6.5) it is about 97 chances in 100. In short, the statistical evidence gives more reason, using conventional confidence levels, for provisionally accepting the hypothesis that $\beta = 1$ than for rejecting the hypothesis. However, the "best" point estimate of course is the estimate obtained in the equation. In summary, our evidence suggests that once a common differential between the ratio of foreign to domestic merger activity and the ratio of foreign to domestic control has been allowed in all industries, the interindustry mix of merger activity is largely independent of the degree of foreign control and seems to reflect mainly market and cost conditions.

A possible explanation for the common difference between the ratio of foreign to total mergers and the degree of foreign control, as reflected by α, is the difference between Canadian and foreign, especially U.S., tax laws. In the time available, we have not been able to investigate this possibility.

Another possible explanation for the consistent difference between the ratio of foreign mergers to total mergers and the ratio indicating foreign control -- as reflected by the intercept term, α -- is a difference in the average size of foreign- and domestically-controlled companies. This possibility is suggested by comparing columns 3 and 4. On average, the percentage of assets controlled was 17 percentage points higher than that of the number of firms, with the direction of the difference maintained in all but one of the 18 industries. Foreign-controlled companies were larger, on average, than domestically-controlled companies.

Furthermore, a comparison of column 4 with columns 1 and 2 indicates smaller and far less consistent differences between column 3 and columns 1 and 2.

The effect of the size of companies on merger activity by foreign-controlled firms is investigated in three different ways. First, $\frac{F_{in}}{F_{in} + F_{im}}$ and $\frac{A_{in}}{A_{in} + A_{im}}$ are both included as explanatory variables in equations (6.6) and (6.7). However, the percentage of assets and the percentage of companies are highly collinear ($r = .95$) and as a result the t-ratio for both variables is reduced, though the value of β in equation (6.6) remains significant. In both equations, the value of α remains significantly different from zero. Secondly, $\frac{A_{in}}{A_{in} + A_{im}}$ is used as an explanatory variable by itself in equations (6.8) and (6.9). The values α are less than in equations (6.4) and (6.5), and only one of them is significant at the 5 per cent confidence level. At the same time, the estimated values of β are significantly less than 1.0, indicating that changes in $\frac{A_{in}}{A_{in} + A_{im}}$ were less than proportional to changes in $\frac{F_{in}}{F_{in} + F_{im}}$ Thirdly, the ratio of the average size of foreign-controlled companies to the average size of all companies was included along with $\frac{F_{in}}{F_{in} + F_{im}}$ as an explanatory variable. The regression equations are numbered (6.10) and (6.11). Although $\frac{S_{in}}{S_{it}}$ is not a useful variable for explaining differences between industries (it is clearly insignificant), its effect on the intercept terms and their t-values is consistent with the view that the positive

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intercept term in equations (6.4) and (6.5) may be due to the difference in the average size of foreign- and domestically-controlled firms. But of course this result must be interpreted with caution. It is not clear why, or whether, adding the ratio of average firm size to $\frac{F_{in}}{F_{in} + F_{im}}$ is a better procedure for capturing the effect of average firm size than, say, weighting $\frac{F_{in}}{F_{in} + F_{im}}$ through multiplying it by $\frac{S_{in}}{S_{it}}$. The latter approach results in equations (6.8) and (6.9).

$$(6.6)\quad \frac{N_{ib}}{N_{ib} + M_{ib}} = \underset{[2.27]}{0.226} + \underset{[2.04]}{1.237}\ \frac{F_{in}}{F_{in} + F_{im}} - \underset{[0.60]}{0.300}\ \frac{A_{in}}{A_{in} + A_{im}} \qquad \bar{R}^2 = .55$$

$$(6.7)\quad \frac{N_{ih}}{N_{ih} + M_{ih}} = \underset{[2.40]}{0.181} + \underset{[1.65]}{0.757}\ \frac{F_{in}}{F_{in} + F_{im}} + \underset{[0.57]}{0.213}\ \frac{A_{in}}{A_{in} + A_{im}} \qquad \bar{R}^2 = .74$$

$$(6.8)\quad \frac{N_{ib}}{N_{ib} + M_{ib}} = \underset{[1.54]}{0.158} + \underset{[3.90]}{0.664}\ \frac{A_{in}}{A_{in} + A_{im}} \qquad \bar{R}^2 = .46$$

$$(6.9)\quad \frac{N_{ih}}{N_{ih} + M_{ih}} = \underset{[1.86]}{0.139} + \underset{[6.48]}{0.803}\ \frac{A_{in}}{A_{in} + A_{im}} \qquad \bar{R}^2 = .71$$

$$(6.10)\quad \frac{N_{ib}}{N_{ib} + M_{ib}} = \underset{[0.62]}{0.153} + \underset{[3.80]}{0.913}\ \frac{F_{in}}{F_{in} + F_{im}} + \underset{[0.16]}{0.018}\ \frac{S_{in}}{S_{it}} \qquad \bar{R}^2 = .54$$

$$(6.11)\quad \frac{N_{ih}}{N_{ih} + M_{ih}} = \underset{[0.36]}{0.062} + \underset{[7.01]}{1.171}\ \frac{F_{in}}{F_{in} + F_{im}} + \underset{[1.67]}{0.126}\ \frac{S_{in}}{S_{it}} \qquad \bar{R}^2 = .77$$

It is evident that there was a much closer relationship between $\frac{N_{ih}}{N_{ih} + M_{ih}}$ and $\frac{F_{in}}{F_{in} + F_{im}}$ than there was between the latter and $\frac{N_{ib}}{N_{ib} + M_{ib}}$. One possible reason for the difference is that the causal chain from the percentage of foreign acquisitions to the percentage of firms that are foreign controlled is stronger for horizontal acquisitions. The difference may also be due to more uniform behaviour on the part of firms with regard to horizontal acquisitions (which encompass some vertical acquisitions when the industry is defined at the two-digit level) than to all types of acquisitions. However, an important part of the explanation probably lies in the nature of the data. As interpreted in the questionnaire data, the "firm" encompassed the total Canadian operations of the acquiring firm. The "firm" under the Corporations and Labour Unions Returns Act refers to each separately incorporated enterprise and each wholly owned subsidiary. The allocation of firms to industries by the questionnaire was based on the firms' main activity. In those instances in which an acquisition was related to the subsidiary activity that lay outside the two-digit industry in which the main activity occurred, the nature of the main activity was unrelated to the acquisition. However, this possibility does not exist where merger activity is measured by N_{ih}, because the acquired firm was located in the industry in which the acquirer was classified by definition.

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4. Extension of the Results: Estimated Equations for N_b and N_h

Equation (6.3) may be written as $N_{ib} = \frac{F_{in}}{F_{im}} \cdot M_{ib}$ and $N_{ih} = \frac{F_{in}}{F_{im}} \cdot M_{ih}$ and these equations may be estimated in log-linear form,[1] the expected signs of the regression coefficients for the explanatory variables are plus for F_{in}, M_{ib} and M_{ih} and minus for F_{im}.

Using logarithms of the variables, the following estimates were derived:

$$(6.12)\quad \log N_{ib} = \underset{[0.11]}{-0.032} + \underset{[5.03]}{0.972}\log F_{in} + \underset{[4.07]}{0.484}\log M_{ib} - \underset{[3.89]}{0.513}\log F_{im} \qquad \bar{R}^2 = .73$$

$$(6.13)\quad \log N_{ih} = \underset{[0.30]}{-0.070} + \underset{[6.47]}{0.873}\log F_{in} + \underset{[4.37]}{0.441}\log M_{ih} - \underset{[3.48]}{0.418}\log F_{im} \qquad \bar{R}^2 = .82$$

The signs of the coefficients conform to those that were expected and the coefficient for each variable is highly significant statistically. Using equation (6.12) as an example, one can interpret the equation as follows: given the number of domestically-controlled firms and the number of domestic acquisitions, a 10 per cent difference in the number of foreign-controlled firms between industries is associated with an 8.7 per cent increase in the number of foreign horizontal mergers. Similarly, ceteris paribus, a 10 per cent difference, respectively, in the number of domestic acquisitions and the number of domestically-controlled firms, is associated with a 4.4 per cent increase and a 4.2 per cent decrease, respectively, in the number of foreign acquisitions.

[1] The reason why N_{ib} and N_{ih} were added to the denominator originally was the existence of a zero value for M_{ib} and M_{ih} in the tobacco products industry. This industry is not included in the present regressions.

Unfortunately, the use of an end-of-period year introduces a certain bias; both $\log F_{in}$ and $\log F_{im}$ are affected by $\log N_{ib}$ and $\log N_{ih}$. This difficulty cannot be avoided. Nevertheless, the high level of statistical significance associated with the estimated parameters cannot be dismissed on the ground that it mainly reflects the direction of causation flowing from $\log N_{ih}$ and $\log N_{ib}$ to $\log F_{in}$ and $\log F_{im}$.

The hypotheses, of course, are not very enlightening from the standpoint of explaining foreign acquisitions that were undertaken by firms without any Canadian operations prior to the acquisition. These acquisitions appear to account for about 11 per cent of the foreign acquisitions.[1/] No attempt was made to identify and delete these acquisitions, though it may be wise to do so in future work employing narrower industry classifications than have been used in this Chapter.

5. Concluding Comments

What emerges from this evidence may be summed up as follows:

(a) There appears to be a uniform difference (α) for all industries between the ratio of foreign to total mergers and the ratio of foreign control. There is some tentative evidence to suggest that this difference may reflect the generally larger size of foreign-controlled firms compared with domestically-controlled firms.

(b) Once this factor, common to all industries, has been allowed for, the evidence is consistent with the view that the ratio of foreign to total mergers

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1/ Table A-4.

is proportional to the ratio of foreign control. As already indicated, this implies that differences in the degree of merger activity in various industries reflect market and cost conditions rather than differences in foreign control per se.

(c) The equations that have been fitted "explain" between half and four-fifths of the interindustry mix of merger activity. This means that a significant portion of the interindustry mix of merger activity remains to be explained in terms of other factors. One way of approaching this task in future research would be to try to explain the deviations from the equations fitted here in terms of various market and cost variables.

Appendix to Chapter 6

1. Simple Correlation Coefficients

	$\frac{N_{ih}}{N_{ih}+M_{ih}}$	$\frac{N_{is}}{N_{is}+M_{is}}$	$\frac{F_{in}}{F_{in}+F_{im}}$	$\frac{A_{in}}{A_{in}+A_{im}}$
$\frac{N_{ib}}{N_{ib}+M_{ib}}$	.89	.84	.77	.70
$\frac{N_{ih}}{N_{ih}+M_{ih}}$		.93	.87	.85
$\frac{N_{is}}{N_{is}+M_{is}}$			.83	.80
$\frac{F_{in}}{F_{in}+F_{im}}$				.95

	$\log N_{ih}$	$\log N_{is}$	$\log M_{ib}$	$\log M_{ih}$	$\log M_{is}$	$\log F_{in}$	$\log F_{im}$
$\log N_{ib}$	.86	.82	.57	.38	.50	.65	.12
$\log N_{ih}$		.96	.61	.63	.66	.80	.42
$\log N_{is}$			.57	.59	.69	.86	.52
$\log M_{ib}$				.81	.83	.40	.53
$\log M_{ih}$					.93	.48	.78
$\log M_{is}$						.60	.85
$\log F_{in}$							.57

2. When 25 per cent ownership was assumed to constitute control, the following results were obtained:

$$(6A.1)\quad \frac{N_{ib}}{N_{ib}+M_{ib}} = \underset{[2.06]}{0.179} + \underset{[4.45]}{0.848}\frac{F_{in}}{F_{in}+F_{im}} \qquad \bar{R}^2 = .53$$

$$(6A.2)\quad \frac{N_{ib}}{N_{ib}+M_{ib}} = \underset{[0.97]}{0.192} + \underset{[3.58]}{0.839}\frac{F_{in}}{F_{in}+F_{im}} - \underset{[0.07]}{0.005}S_i \qquad \bar{R}^2 = .49$$

$$(6A.3)\quad \frac{N_{ih}}{N_{ih}+M_{ih}} = \underset{[2.80]}{0.190} + \underset{[6.45]}{0.961}\frac{F_{in}}{F_{in}+F_{im}} \qquad \bar{R}^2 = .70$$

$$(6A.4)\quad \frac{N_{ih}}{N_{ih}+M_{ih}} = \underset{[0.41]}{0.062} + \underset{[5.91]}{1.054}\frac{F_{in}}{F_{in}+F_{im}} + \underset{[0.96]}{0.054}S_i \qquad \bar{R}^2 = .70$$

$$(6A.5)\quad \log N_{ib} = \underset{[0.51]}{0.154} + \underset{[5.14]}{1.052}\log F_{in} - \underset{[4.15]}{0.532}\log F_{im} + \underset{[3.77]}{0.442}\log M_{ib} \qquad \bar{R}^2 = .74$$

$$(6A.6)\quad \log N_{ih} = \underset{[0.90]}{0.217} + \underset{[6.42]}{0.934}\log F_{in} + \underset{[3.90]}{0.391}\log M_{ih} - \underset{[3.51]}{0.407}\log F_{im} \qquad \bar{R}^2 = .82$$

CHAPTER 7

THE INFLUENCE OF GENERAL ECONOMIC CONDITIONS ON THE NUMBER OF MERGERS

1. Introduction

In the two preceding Chapters attention has focused mainly on firm and industry characteristics and the relationship between these characteristics and the number of mergers. Here we propose to look across the particulars of firms and industries to consider what effect, if any, changes in the general economic environment may have had on merger activity from 1945 to 1961. To put it more technically, in this Chapter we concentrate on broad macro-economic relationships in contrast to previous Chapters where the emphasis was on micro-economic relationships.

A basic issue to be considered in explaining why mergers take place is why the buyer believes it worth his while to buy a firm at the price at which the seller is prepared to sell it. Merger transactions may be assumed to reflect differences in the demand and supply conditions confronting buyers and sellers that lead to differences in the expected profitability of firms as seen by buyers and sellers. On the demand side, there may be differences in expectations about market demand, differences in access to information, differences in access to markets, and so forth. On the supply side, there may be differences in access to financial resources, differences in access to factor inputs, differences in access to technology and managerial talent, differences in risk and attitudes to risk-bearing, differences in the

length of the planning horizon, as well as other factors. For the most part, smaller firms seem to be subject to more stringent constraints on both the demand and supply sides than larger firms with the result that larger firms tend to absorb smaller firms.[1/]

The view that merger transactions reflect differences in the demand and supply conditions facing buyers and sellers can be readily adapted to explain international mergers. In this situation, the question is not only why the buyer believes the firm is worth more than the seller, and consequently why he is willing to pay the price at which the seller is willing to sell. There is also the further question of why a foreign buyer believes the firm is worth more than potential domestic buyers, and consequently why the foreign buyer is willing to buy the domestic firm at a price that potential domestic buyers are not prepared to pay. Again, the answer can be sought in terms of differences in the demand and supply conditions faced by foreign buyers and by potential domestic buyers.

One can think of the net present value of a firm as being equal to the discounted value of the future net profits of the firm, or:

$$(7.1)\quad NPV = \frac{R_1 - C_1}{(1 + r_1)} + \frac{R_2 - C_2}{(1 + r_1)^2} + \ldots + \frac{R_n - C_n}{(1 + r_n)^n}$$

where NPV is the net present value of the firm, R is total annual expected gross revenue in future years, C is total annual expected costs in future years gross of interest and amortization, r is the expected opportunity cost of capital in future years, and n is the number of years over which returns are discounted, reflecting the planning horizon of the buyer or seller.

1/ For a fuller discussion, see E. T. Penrose, The Theory of the Growth of the Firm, New York, John Wiley and Sons, 1959, p. 156 ff.

NPV_b and NPV_s represent the net present values placed upon any firm by potential domestic buyers and the potential seller, respectively. In order for a merger transaction to occur in a perfectly competitive market, NPV_b must be greater than NPV_s; NPV_b cannot be less than NPV_s since in this situation the buyer will not be prepared to pay enough to overcome the reservation price of the seller.[1/] The differences in market circumstances and constraints impinging upon buyers and sellers, such as those already referred to, are reflected in the different values assumed for R, C, r and n, which results in buyers and sellers placing different valuations on firms.

A necessary condition for a foreign merger to occur under competitive market conditions is that the net present value of the firm as seen by the foreign buyer, NPV_f, exceeds the maximum net present value of the firm to all potential domestic buyers and the minimum net present value to the domestic seller. As in the case of domestic mergers, it is apparent that differences in the market circumstances and constraints bearing on foreign buyers compared with those bearing on domestic buyers and sellers may readily give rise to situations where NPV_f exceeds both NPV_b for all potential domestic buyers and NPV_s. Moreover, when the possibility of international transactions is introduced into the picture, it is evident that exchange rate considerations may also be a factor influencing the valuations placed on firms by buyers and sellers.

A related question is why potential buyers, domestic or foreign, do not choose to establish new facilities rather than to buy existing facilities. Presumably, this is because the NPV_s for firms that are taken over is

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1/ Here and elsewhere, we abstract from the direct and imputed costs of merger transactions.

less than the cost of establishing fully comparable facilities anew (including the goodwill and other intangibles associated with a going concern) and of overcoming barriers to entry.

This conceptual framework is very simple, of course, and would require further elaboration for purposes of detailed firm and industry analysis. Nevertheless, in this simple form it provides a framework for considering how changes in general economic conditions may influence the number of mergers. Because of differences in their characteristics and in the market conditions and constraints that they face, changes in general economic conditions can be expected to have differential effects on potential buyers and sellers. These differential effects will be reflected in differences in the impact of changes in economic conditions on R, C, r and n, and consequently on NPV_s, NPV_b and NPV_f which, in turn, will affect the number of mergers that take place.

In the empirical analysis that follows we have attempted to identify the particular features of the general economic environment to which the number of mergers seems to be especially sensitive and to evaluate the relative importance of changes in these factors in explaining merger activity. The investigation of these questions is based on time-series analysis, applied by fitting a series of linear equations by ordinary least squares to annual data for the period from 1945 to 1961. The first part of the analysis can to some extent be characterized as a search procedure designed to identify the most likely factors explaining variations in the total number of international mergers during the sample period. Having derived two relationships that seemed to explain changes in the total number of international mergers satisfactorily, both relationships were subjected to three tests. The first test is to determine how plausible each explanation of international mergers looks in the light of the results obtained when the same relationship is fitted to data on the number of domestic mergers

in Canada. The second test is to see how well each relationship stands up to disaggregation when each is rerun on the main components of international mergers. The third test is to assess the predictive power of each estimated relationship. A few of the estimates that were fitted in the process of deriving our two "best" estimates are presented in the Appendix to this Chapter together with some supplementary notes on these experiments and detailed information about the statistical data employed in the regression estimates.[1/]

Throughout this analysis we have concentrated on the number of mergers. The main alternative that was considered was the value of mergers. Limitations of time and resources made it impossible to pursue the analysis along both avenues. We opted for the number of mergers rather than the value of mergers, on the ground that our concern is with the factors influencing merger activity and that for this purpose the number of mergers is preferable. The value of mergers can be expected to vary widely because of the particular size of firms taken over; yet the size of the firms taken over may have little or no relation to the reasons why firms are taken over, which is our principal interest. A few preliminary tests were run on the value of mergers. These seemed inconclusive and unpromising, largely, it seemed, because of unsystematic year-to-year variations in the average value of the firms taken over. It is freely acknowledged, however, that it may prove illuminating in future research to consider the value of mergers as well as the number of mergers.

2. Estimated Relationships

In the series of experiments undertaken to explain variations over time in the number of international

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1/ Other equations that were fitted are available from the authors upon request.

mergers in Canada, consideration was given to the following explanatory variables:

i) the number of mergers in the United States (A);

ii) the number of commercial failures in Canada (F);

iii) the supply of funds generated internally in Canadian corporations (L);

iv) the level of business activity in Canada, as reflected by the level of unemployment (U), or the index of industrial production in manufacturing (I), or profits per unit of manufacturing output (Π);

v) the level of common stock prices in Canada (Z);

vi) deviations in Canada's foreign exchange rate from \$1.00 Can. = \$1.00 U.S. (x);

vii) the level of short-term interest rate in Canada (i);

viii) the level of short-term interest rates in the United States (i_a);

ix) the difference in short-term interest rates between Canada and the United States (i');

x) the difference between the level of stock market prices in Canada and the United States (Z');

xi) the income velocity of circulation (V = money stock ÷ GNP);

xii) a time trend (t).

These experiments provide considerable evidence that general economic conditions in Canada and the United States had a significant influence on the number of foreign mergers that took place in Canada from 1945 to 1961.

The three major influences that seem to have been important are the factors influencing merger activity in the United States, the level of economic activity in Canada, and financial circumstances in Canada. It proved more difficult to nail down the specific variables that most accurately reflect the relationship between these three general influences and the number of international mergers in Canada, N. The two "best" hypotheses that emerged from our tests are as follows:

$$(7.2)\quad N = 3.32355 + \underset{[5.15]}{0.06770A} + \underset{[3.40]}{0.03290F} - \underset{[2.17]}{20.46221L}$$

$$\bar{R}^2 = .92 \qquad D.W. = 2.77 \qquad S.E. = 7.43$$

$$(7.3)\quad N = 41.94603 - \underset{[7.51]}{2.15884Z'} + \underset{[2.07]}{0.33441Z} - \underset{[5.45]}{19.44272i_a} + \underset{[3.90]}{5.07986t} - \underset{[3.46]}{8.01457U}$$

$$\bar{R}^2 = .97 \qquad D.W. = 2.30 \qquad S.E. = 4.99$$

or

$$(7.3a)\quad N = 52.75491 - \underset{[7.50]}{2.33058Z'} - \underset{[4.78]}{19.22958i_a} + \underset{[5.88]}{6.76391t} - \underset{[3.20]}{8.34426U}$$

$$\bar{R}^2 = .96 \qquad D.W. = 1.90 \qquad S.E. = 5.63$$

Here, as elsewhere in this Study, t-ratios are shown in square brackets below the associated parameters. $\bar{R}^2$ is the coefficient of multiple determination, adjusted for degrees of freedom; D.W. is the Durbin-Watson

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statistic;[1/] and S.E. is the standard error of estimate. We have followed the convention of regarding regression coefficients that are equal to or greater than twice the associated standard error, as indicated by t-ratios of 2.0 or more, as being significantly different from zero. This level of statistical significance implies that if a parameter passes our test the chances are about 95 out of 100 or better that the evidence of a systematic relationship is not the result of chance. A Scottish verdict of "not proved" is pronounced on relationships in which the estimated parameters do not warrant this degree of confidence, as indicated by their t-ratios. In these cases our evidence should be

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1/ The simple least squares model assumes that the residuals between actual values of the dependent variable and the estimated values are randomly distributed. The Durbin-Watson statistic may be used to test for significant autocorrelation in the computed residuals of a regression equation. Tables for evaluating the Durbin-Watson statistic are given in J. Durbin and H. S. Watson, "Testing for Serial Correlation in Least Squares Regression, II", Biometrika, LXXVI, 1951, pp. 159-178, and H. Theil and A. L. Nagar, "Testing the Independence of Regression Disturbances", Journal of American Statistical Association, LVI, 1961, pp. 793-806. There is no evidence of significant negative autocorrelation in the residuals at the 95 per cent confidence level for equations (7.2) and (7.3).

interpreted as indicating only that we have been unable to ascertain a significant relationship and should not be interpreted as proving that no relationship exists.1/

The simple correlation coefficients between the variables included in the foregoing equations as well as in other tests are given in the Appendix to this Chapter. It is evident from these estimates that there is considerable multicollinearity between the explanatory variables used in our tests. Multicollinearity does not bias the parameter estimates, but it can be expected to increase the estimated standard errors of the parameters and to reduce the estimated t-ratios, thereby rendering the t-tests less powerful than in the absence of high multicollinearity. This means that, following the procedure

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1/ With 15 or fewer degrees of freedom, t-ratios of 2.0 imply a level of statistical significance somewhat below the 95 per cent confidence level, as indicated by the following figures giving precise estimates of t at the 95 and 99 per cent level of confidence.

	Confidence levels	
	95%	99%
15 degrees of freedom		
two-tailed test	2.13	2.95
one-tailed test	1.75	2.60
Equation (7.2)		
13 degrees of freedom		
two-tailed test	2.16	3.01
one-tailed test	1.77	2.65
Equation (7.3)		
11 degrees of freedom		
two-tailed test	2.20	3.11
one-tailed test	1.80	2.72

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adopted for this Study, one is in danger of rejecting significant relationships as insignificant on the basis of the estimated t-ratios. On the other hand, if, despite the intercorrelation between explanatory variables, these variables show up as statistically significant, one can conclude that they are even more significant than the statistical tests suggest. Of the explanatory variables shown in equations (7.2) and (7.3) the greatest intercorrelation is between F and L (r = .97). 1/

The simple relationships over time between the more important variables suggested by our analysis are shown graphically in Charts 7-1 and 7-2.

1/ In order to try to overcome the problem of multicollinearity, a number of equations were fitted using first differences, as reported in the Appendix. None of these estimates proved to be satisfactory. In addition, the estimates were, in effect, run against detrended values of the variables by including a time trend, in the regression. The regression coefficient for t is statistically significant in equation (7.3); it was not statistically significant when included in equation (7.2), as is evident from equation 3 shown in the Appendix to this Chapter.

CHART 7-1

THE NUMBER OF FOREIGN MERGERS IN CANADA,
CANADIAN CORPORATE LIQUIDITY, AND COMMERCIAL FAILURES,
AND THE NUMBER OF MERGERS IN THE UNITED STATES,
1945-61

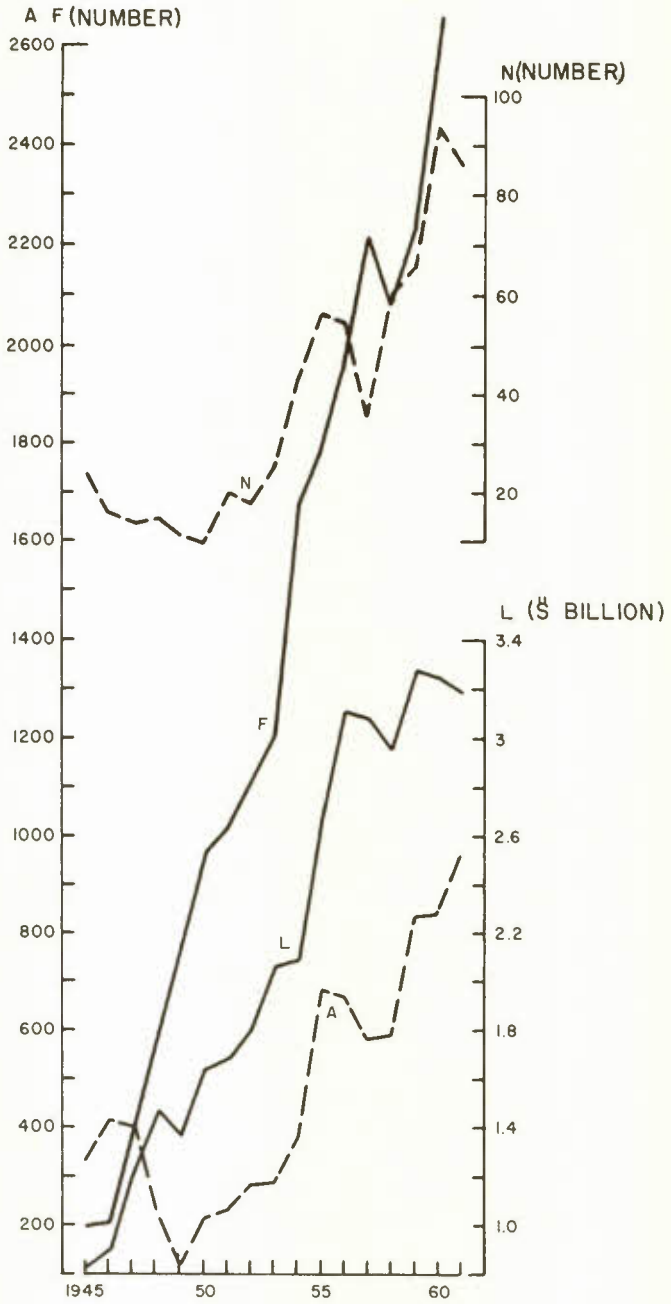
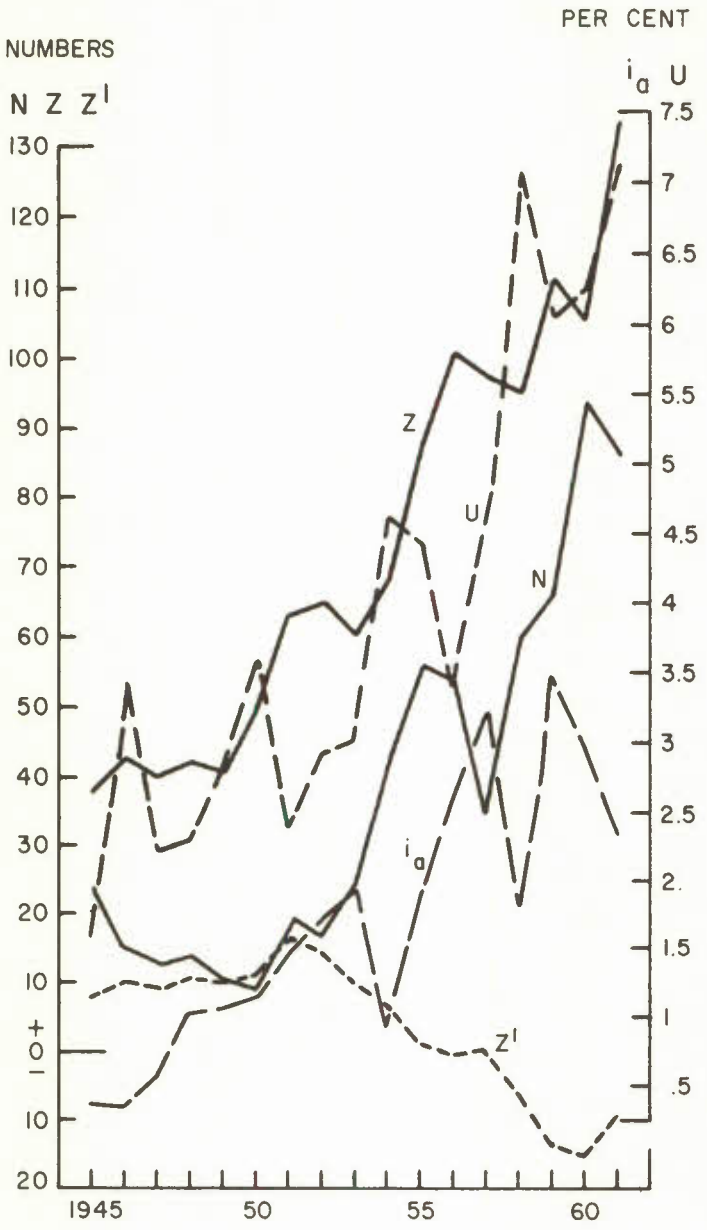


CHART 7-2

THE NUMBER OF FOREIGN MERGERS IN CANADA,
STOCK MARKET PRICES, INTEREST RATES AND UNEMPLOYMENT LEVELS,
1945-61



Equation (7.2) suggests that about 92 per cent of the year-to-year variation in the number of international mergers in Canada, N, from 1945 to 1961 can be explained by variations in: i) the number of mergers in the United States, A; ii) the number of commercial failures in Canada, F; and iii) the supply of internally generated funds in Canadian corporations, L. Equation (7.3) suggests that about 97 per cent of the variation in the number of international mergers during this period can be explained in terms of variations in: i) the differential between stock market prices in Canada and the United States, Z'; ii) the level of Canadian stock market prices, Z; iii) the unemployment rate in Canada, U; iv) credit conditions in the United States as reflected in short-term interest rates, i_a; and v) a secular time trend, t. These hypotheses were judged "best" using as criteria the reasonableness of the sign and the size of the regression coefficients, the statistical significance of the regression coefficients, the value of $\bar{R}^2$ and the evidence provided by the Durbin-Watson statistic on the randomness of the distribution of the estimated residuals. On these criteria there is little reason for regarding one of these relationships as superior to the other. However, as indicated later in this Chapter, equation (7.2) may be viewed as standing up somewhat better to the tests to which both hypotheses were subjected and hence may be regarded as our "best" explanation of the relationship between general economic conditions and the number of international mergers in Canada.

In Chapter 1 it was suggested that foreign acquisition of Canadian firms may simply be a manifestation of a general phenomenon of mergers taking place in North America. If, in fact, foreign mergers in Canada are a part of this general phenomenon, one would expect to find the significant positive relationship between the number of foreign mergers in Canada, N, and the number of mergers in the United States, A, shown in equation (7.2). A may be viewed as an indicator of the propensity of U.S. firms to merge, reflecting their views about

the long-run economic outlook, the most efficient way to expand, the desire to establish a monopoly or oligopoly, attitudes about trends in the enforcement of merger laws and legislative action, and so forth. In the literature on mergers in the United States, reference is frequently made to the merger "waves" which have occurred, and attempts have been made to explain these waves in terms of underlying business motivation such as merger for monopoly and merger for oligopoly.[1/] These discussions suggest that variation in the number of mergers in the United States has reflected changes in the underlying attitudes and motivation of businessmen towards mergers. If this is true within the United States, it is equally plausible to expect the propensity of U. S. businessmen to engage in merger activity to be a determinant of the number of international mergers in Canada. Moreover, variations in the numbers of mergers in the United States may serve as an appropriate index of changes in a variety of economic factors influencing the willingness of U. S. firms to undertake mergers -- e. g. changes in credit conditions in the United States and changes in the business outlook.

To the extent that A reflects underlying attitudes to mergers in the United States and the influence of

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[1/] Economic Concentration, op. cit., testimony by Meuller, pp. 505-508; Ralph L. Nelson, Merger Movements in American Industry 1895-1956, National Bureau of Economic Research, Princeton, Princeton University Press, 1959, Chapter 5; Jesse W. Markham, "Survey of the Evidence and Findings on Mergers", Business Concentration and Price Policy, National Bureau of Economic Research, Princeton, Princeton University Press, 1955, pp. 146-154; George J. Stigler, "Monopoly and Oligopoly by Merger", Readings in Industrial Organization and Public Policy, The American Economic Association, Richard B. Heflebower and George W. Stocking, eds., Homewood, Illinois, Richard D. Irwin, Inc., 1958, pp. 69-80.

contemporary market conditions on merger activity, A can be expected to reflect changes in the demand by U. S. firms for firms in Canada. By including A as an explanatory variable in this relationship, as already suggested, one is in effect directly posing the hypothesis that U. S. acquisitions of Canadian firms are simply a spillover of merger activity in the United States; the acquisition of firms in Canada is assumed to be conditioned by much the same factors as the acquisition of firms within the United States.

The other explanatory variables included in equation (7.2) relate to economic conditions within Canada. The supply of internally generated funds in Canadian corporations, L, is negatively related to N, indicating that as Canadian corporate liquidity is reduced the number of international mergers is likely to increase. This result also seems quite plausible. As internally generated funds become less readily available among Canadian corporations, the opportunity cost of capital can be expected to rise from the standpoint both of potential domestic buyers of Canadian firms and of sellers of Canadian firms.[1/] A rise in r in equation (7.1) implies that both NPV_s and NPV_b decline -- in other words, Canadian firms become relatively cheaper to buy. To some extent, at least, the supply of internally generated funds in the United States can be expected to vary independently of the supply of internally generated funds in Canada. Moreover, the influence of changes in the supply of internally generated funds in the United States is to some extent taken into account separately via variations in A. Apart from these considerations, since many acquiring foreign firms are larger than acquired firms,[2/] and since tighter financial conditions can be expected to impinge less heavily on

1/ For an elaboration of this view, see James S. Duesenberry, Business Cycles and Economic Growth, New York, McGraw-Hill, 1958, Chapter 5.

2/ We refer here to the size of the entire parent firm and not to the size of the parent firm's operation in Canada only, as reported in Chapter 4.

larger than on smaller firms, a general tightening of liquidity in North America can be expected to place foreign firms at an advantage relative to potential domestic buyers and sellers. This means that NPV_b and NPV_s can be expected to decrease relative to NPV_f as liquidity in North America generally is impaired, thereby bringing more foreign buyers into the market and increasing the incentives for those already actively in the market for Canadian firms.

The number of business failures in Canada, F, is positively related to the number of international mergers. When business failures are increasing and profits are low, reflecting more difficult business conditions in the country, one might expect more Canadian owners to be more eager to sell their firms, and these firms can then probably be bought more cheaply. There are at least three reasons for believing that this supply effect will predominate and that a positive relationship is to be expected. First, F relates to economic conditions in Canada and hence is likely to be more directly reflected in the actions of the acquired company than in the actions of the foreign acquiring company which will be influenced not only by Canadian economic conditions but also by conditions abroad. Secondly, to the extent that mergers are influenced by business expectations on the demand side, this influence will be reflected in A, leaving F to capture mainly the partial effect of current profitability on the supply side. Thirdly, as pointed out earlier, owners may prefer to hold on to firms for noneconomic reasons, such as remaining their own boss, even if it would be in their financial interest to sell out. This preference can only be indulged, however, up to the point where bankruptcy is imminent; at that point the pressure to liquidate the business can no longer be resisted. Hence, as the total number of bankruptcies increase, one can expect the number of mergers to increase also.[1/]

1/ The number of acquired firms includes only firms that are operating businesses or firms in the process of being liquidated. The purchase of charters of defunct firms and firms that are no longer actively in business is not included.

To sum up, equation (7.2) indicates that the demand of U.S. firms for Canadian companies, in part at least, can be regarded as a spillover of their demand for firms in the United States and, consequently, of the level of merger activity in that country. This influence appears to be conditioned by two domestic influences -- the level of corporate liquidity, reflecting Canadian financial conditions, and the number of bankruptcies, reflecting the level of business activity in Canada.

Equation (7.3) does not lend itself as easily as equation (7.2) to sorting out the influence of the propensity of U.S. firms to merge, on the one hand, and domestic factors, on the other. Nevertheless, it is consistent with equation (7.2) in pointing to the same general influences on the number of international mergers in Canada, even though the particular variables included in the relationship are different. Two of the variables included in equation (7.3) directly reflect circumstances in the United States. The other three variables relate to Canada. These variables, however, probably also indirectly reflect economic circumstances in the United States to some degree because of the close correlation between the level of economic activity, the economic outlook and secular trend factors in Canada and in the United States. Furthermore, the evidence presented in Chapter 5 indicates that the number of international mergers is closely and systematically related to the number of domestic mergers and the number of firms. This implies that factors that affect domestic merger activity in Canada can also be expected to affect the number of international mergers.

Turning to the specific variables included in equation (7.3), one finds a number of studies in the United States which indicate that mergers are positively

related to the current level of economic activity.[1] The main reason for this may be that during periods of rapid expansion the differences in the demand and supply constraints bearing on firms become more important, with the result that more firms are in a position to buy out other firms at prices that are mutually advantageous. For example, during a period of rapid expansion, a large firm may be able to exploit the expansion more profitably than a small firm because of its larger and more capable corps of managers, easier access to credit, better knowledge of markets, and so forth. Similarly, a foreign firm may have access to more and better managerial resources, to cheaper and more easily available credit, to cheaper factor inputs, to better market promotional facilities, and to larger markets than domestic firms. As a consequence, during an expansion, the constraints limiting the expansion of a domestic firm prior to merging are probably greater than the constraints on the same firm after it has been absorbed by a larger foreign firm.

The selection of an appropriate indicator of economic activity leaves room for some uncertainty. For our purposes we tested three possibilities: the level of unemployment, U; the index of industrial production in manufacturing, I; and profits per unit of manufacturing output, Π. Neither of the latter two was statistically significant in either equation (7.2) or (7.3). U was less satisfactory than F in equation (7.2) and more satisfactory than F in equation (7.3). Since unemployment rates in the United States and Canada are highly correlated, variations in U can be expected to reflect variations both in the demand of U.S. buyers for Canadian firms and in the supply of firms up for sale in Canada.

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[1] Economic Concentration, op. cit., testimony by Meuller, pp. 505-508; Nelson, loc. cit., Markham, loc. cit.

Economic Conditions & the Number of Mergers

The studies already cited in connection with the level of economic activity also suggest a close positive relationship between mergers in the United States and the level of industrial stock prices in the United States. Several reasons have been advanced to explain this relationship:1/

(a) Stock market prices serve as a proxy to reflect business expectations about the future level of economic activity and profits; when business prospects are favourable, businesses have an incentive to expand and the cheapest way to expand frequently is via mergers.

(b) In prosperous times, large companies may generate more loanable funds than they can profitably absorb internally. Accordingly, they buy into other companies, viewing acquisitions as the best investment opportunity open to them.

(c) Small firms wishing to expand find it very difficult and costly to raise sufficient capital through the credit and equity market to exploit fully the investment opportunities they see. The most effective way to raise the necessary capital is to sell out to a large firm which can raise capital much more easily and cheaply. In the same way, small firms in these circumstances may also be much more constrained relative to large firms in respect to management, skilled labour, and other inputs.

1/ Meuller, loc. cit. ; Nelson, loc. cit.

These reasons can be summarized within the theoretical framework introduced earlier as follows: stock market prices reflect expected levels of economic activity and profits; when economic expansion and high profits are generally expected, as reflected by higher stock market prices, firms seek to expand; it is cheaper for them to expand by taking over existing firms than by building new firms; and they are able to buy firms at advantageous prices because the firms they take over are constrained in various ways which precludes them from taking advantage of the expected expansion as effectively as they can when these constraints are relaxed via merger.

As is evident from equation (7.3), the regression coefficient of Z falls just short of being significant at the 95 per cent confidence level (on a two-tailed test). When equation (7.3) is re-estimated omitting Z to obtain equation (7.3a), the value of $\bar{R}^2$ remains virtually the same, indicating that Z contributes very little to the explanatory power of equation (7.3).

The difference between the level of the stock market price for Canada and for the United States, Z', is negatively related to N. This result can be rationalized on the ground that variations in Z' reflect variations in differences in the opportunity cost of capital in the two countries, although it is recognized that variations in Z' may reflect many other influences as well. As capital becomes more expensive in Canada relative to the United States, for example, stock prices in Canada can be expected to decline in Canada relative to stock prices in the United States. At the same time, because of the increase in the cost of capital in Canada relative to the United States, NPV_s and NPV_b can be expected to decline relative to NPV_f, thereby tending to increase the number of foreign mergers. This implies the plausible assumption that capital is more mobile domestically than internationally; otherwise differential changes in the cost of capital would not occur.

The U.S. Treasury bill rate, i_a, is negatively associated with N.[1/] This variable may be viewed as a proxy for credit conditions in the United States. In accordance with the theoretical framework outlined earlier, as credit conditions tighten up, raising the opportunity cost of capital in the United States, the price that U.S. buyers are willing to pay Canadian firms can be expected to decline, and vice versa.

Finally, time, t, was included in the equation (7.3) to take account of a variety of broad secular factors that may be important but about which we know relatively little that can be taken into account quantitatively. Among these secular factors are changes in business attitudes towards mergers generally, attitudes towards foreign investment, changes in the size of the Canadian economy and business relative to foreign economies and business, changes in market imperfections in capital markets, changes in business attitudes to risk, changes in business attitudes regarding future profits, and so forth.

In concluding this section, it may be noted that when the F and U were added singly and in combination to equation (7.3) the parameters of both proved to be insignificant. At the same time, when Z', t, and U were included as a group, in pairs and singly, in equation (7.2), the regression coefficients for these variables were also insignificant.[2/]

1/ When the differential between Canadian and U.S. Treasury bill notes, i', and the Canadian Treasury bill rate, i, are added separately to equation (7.3), neither is statistically significant.

2/ Z' and i_a were omitted from this test on the ground that the U.S. components of Z' and i_a are already reflected in A.

3. Tests Based on Data for Domestic Mergers

The procedure adopted to test the hypotheses developed in the previous section with data relating to domestic mergers was simply to rerun the analysis described in section 2, substituting the number of domestic mergers, M, for the number of international mergers, N, as the dependent variable. The purpose of this test was twofold: i) to ascertain whether the same variables that explain N in our "best" explanations also explain M; and ii) if not, to consider whether the differences in the "best" equations explaining M and N, respectively, are plausible.

When equations (7.2) and (7.3) were refitted substituting M for N, equations (7.4) and (7.5) were obtained:

$$(7.4)\quad M = 25.32219 + \underset{[4.00]}{0.09885A} + \underset{[1.26]}{0.02291F} - \underset{[0.92]}{16.21973L}$$

$$\bar{R}^2 = .81 \qquad D.W. = 2.02 \qquad S.E. = 13.95$$

$$(7.5)\quad M = 4.43229 + \underset{[3.18]}{1.40011Z} - \underset{[0.90]}{3.19034t} - \underset{[0.92]}{0.72287Z'} - \underset{[0.57]}{5.49453i_a} + \underset{[0.19]}{1.18710U}$$

$$\bar{R}^2 = .82 \qquad D.W. = 1.23 \qquad S.E. = 13.58$$

As an explanation of M, these equations are unsatisfactory in several respects. For one thing, all variables except Z and A fall short of being statistically significant by the criterion we have adopted. The significance of A, the number of mergers in the United States, is implausible since it is looked upon as reflecting the tendency of U.S. firms to engage in merger activity. Presumably the tendency of U.S. and Canadian

firms to merge might be highly correlated, so that A may serve as a proxy for the propensity of Canadian firms to merge as well; but this relationship seems somewhat tenuous. In addition, it will be noted that the values of $\bar{R}^2$ for both equations are substantially less than for the corresponding equations explaining foreign mergers.

In further tests, profits per unit of output in manufacturing in Canada, Π, the three-month Treasury bill rate in Canada, i, the ratio of money supply to GNP, V, and the index of industrial production in manufacturing, I, were added to equations (7.4) and (7.5) in an attempt to arrive at a more satisfactory explanation of M. The best explanation of M emerging from these tests, on the criteria noted in the previous section, is given in equation (7.6):

$$(7.6)\quad M = 2.44178 + \underset{[6.31]}{1.89396}Z - \underset{[3.19]}{32.52104}L$$

$$\bar{R}^2 = .89 \qquad D.W. = 1.69 \qquad S.E. = 10.84$$

According to equation (7.6), approximately 89 per cent of the variation in M can be explained by variations in Canadian stock market prices, Z, and the supply of internally generated funds in Canadian corporations, L. How reasonable is this explanation of domestic mergers and how consistent is it with the hypothesis derived to explain international mergers?

Reference has already been made to evidence suggesting a strong positive association between the number of domestic mergers in the United States and stock market prices, Z, and the reasons why one might expect such an association have been reviewed. In these explanations, stock market prices are assumed to reflect business expectations about future economic activity and profits. Two supplementary pieces of evidence can be adduced to support this point of view.

First, an attempt was made to test whether the relationship between stock market prices and the number of mergers might reflect some peculiarity in the way in which payment was made. It is far from clear why one would expect such a relationship to exist. Nevertheless, it is sometimes suggested in popular discussions that, as stock market prices rise, acquiring companies can buy out firms more readily. Although it is difficult to make much sense out of the hypothesis, the suggestion seems to be that there is something about the means of payment that influences mergers. As a test of this, a linear regression was fitted to data from 1945 to 1961, using as the dependent variable the number of acquired firms for which stock was paid as a proportion of the number of acquired firms for which no stock was paid. The explanatory variable in one test was stock market prices, Z, and in a second test the explanatory variable was stock market prices, Z, internally generated funds, L, and the short-term rate of interest, i. Such tests were run for both international and domestic mergers. In every instance, the estimated regression coefficients proved to be highly insignificant with t-ratios consistently well below 1.0 for all explanatory variables and very low values for $\bar{R}^2$. From these tests it seems that there is little reason for believing that the means of payment, whether stock or other assets, has any significant influence on the number of mergers.

Secondly, recent work on econometric models in Canada suggests a significant positive relationship between investment in plant and equipment and stock market prices. This evidence is consistent with the view that increases in stock market prices reflect an anticipated improvement in future business prospects. This is fully consistent with our finding that, as stock market prices rise, businessmen increase their investment in existing plant and equipment through mergers as they expand their activities to exploit expected future demand, and vice versa.

The rationalization for including L in equation (7.6) has also been reviewed earlier. The negative association between M and L indicates that a reduction in internally generated corporate funds is associated with an increase in mergers. This suggests, as one would expect from other evidence, that variations in internally generated funds have a greater impact on the supply of firms available for sale at given prices than on demand by acquiring firms. Since, by our definition, acquiring firms are generally larger than the acquired firms, their access to external sources of funds is likely to be easier and cheaper than for acquired firms.1/ Accordingly, variations in the liquidity constraint are likely to be reflected to a greater extent on the supply side of the market.

No significant relation was found between the number of business failures, F, and the number of domestic mergers, M. This result is questionable. A priori, it seems at least as likely that owners of failing businesses should sell to domestic buyers as to foreign buyers. This is especially so because, as shown earlier, domestic buyers acquire somewhat smaller and newer firms than foreign buyers, and because, as our earlier evidence also indicates, the variation in rates of return in these smaller and newer firms is greater than for other firms.

1/ Employment, Growth and Price Levels, "Answers to Questions on Monetary Policy and Debt Management", Hearings, Joint Economic Committee, Part 6C, 86th Congress, 1st Session, Washington, U.S. Government Printing Office, 1959, pp. 1773-1774; Annual Report, 1959, Bank of Canada, p. 6; John H. Young and John F. Helliwell, "The Effects of Monetary Policy on Corporations", Report of the Royal Commission on Banking and Finance, Appendix Volume, 1964, Ottawa, Queen's Printer, 1965, p. 387.

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In order to ensure that the failure to find a significant relationship between F and M does not reflect the high multicollinearity between F and L, equation (7.6) was rerun substituting F for L. Not only is the regression coefficient for F insignificant in equation (7.7), but also it has the wrong sign.

$$(7.7)\quad M = -13.71964 + \underset{[4.48]}{1.56934}Z - \underset{[1.76]}{0.02177}F$$

$$\bar{R}^2 = .84 \qquad D.W. = .92 \qquad S.E. = 12.88$$

When considered in relation to international mergers, as explained earlier, changes in F seem likely to be reflected mainly in the supply price of Canadian firms. In the case of domestic mergers, however, changes in F are likely to be reflected in both the demand and supply price of firms. Not only are rising business failures, for example, likely to lower the reservation prices of potential domestic sellers, rising failures can also be expected to lower the reservation prices of potential domestic buyers. Given that changes in F may lead to shifts in both demand and supply in the same direction, it is possible that the demand and supply effects largely cancel each other out and that the methods we have employed are incapable of identifying the relationship that may exist between F and M.

In another set of tests, M was added to equations (7.2) and (7.3) to see whether foreign mergers in Canada might be viewed simply as an extension of domestic mergers, with some influence being exercised by other factors as well. The estimated parameter for M was not statistically significant when M was added to equation (7.2) but was significant when added to equation (7.3). In addition, when A was added to equation (7.6) the estimated regression coefficient was not statistically significant. In the relationship explaining variations in N, A was included as a proxy for the demand by U.S.

firms for Canadian firms. In the case of domestic mergers, effective demand arises from Canadian buyers and it is implausible to expect a significant relationship to exist between A and M, even though statistically such a relationship may be indicated, as in equations (7.4) and (7.5), because of high intercorrelation between the demand of U.S. and Canadian buyers for Canadian firms. Both these findings -- no significant relationship between M and N when M is added to our "best" explanation of N, and no significant relationship between A and M when A is added to our "best" explanation of M -- tend to reinforce the credibility of our findings.

The relationships between M, N, A, Z and L over time are shown graphically in Chart 7-3.

4. Tests Based on Disaggregated Data

All of the analysis presented up to this point has been based on data for the total number of international and domestic mergers. It is widely recognized that analysis of aggregative data may lead to spurious results arising simply as a consequence of some peculiarity inherent in the way the components are put together or because of the special characteristics of a few components of the aggregate that are not shared by other components. In general, one can say that more confidence is warranted in findings that hold not only at the aggregative level but also in respect to the main components of the aggregate data that one is trying to explain. Put another way, a test of the validity of an explanation of changes in aggregative data is whether the same explanation holds for the main components of the aggregative data.

CHART 7-3a

THE NUMBER OF FOREIGN AND DOMESTIC MERGERS IN CANADA, AND THE NUMBER OF MERGERS IN THE UNITED STATES, 1945-61

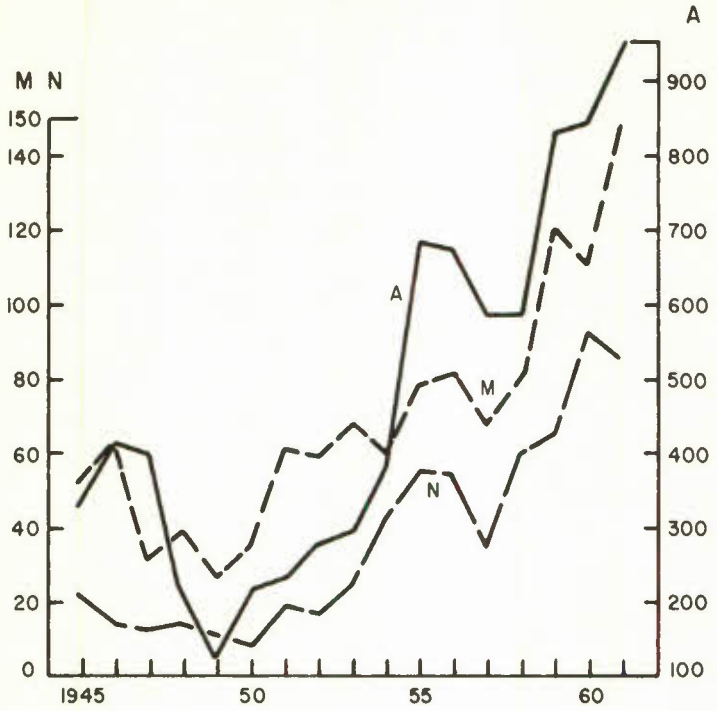
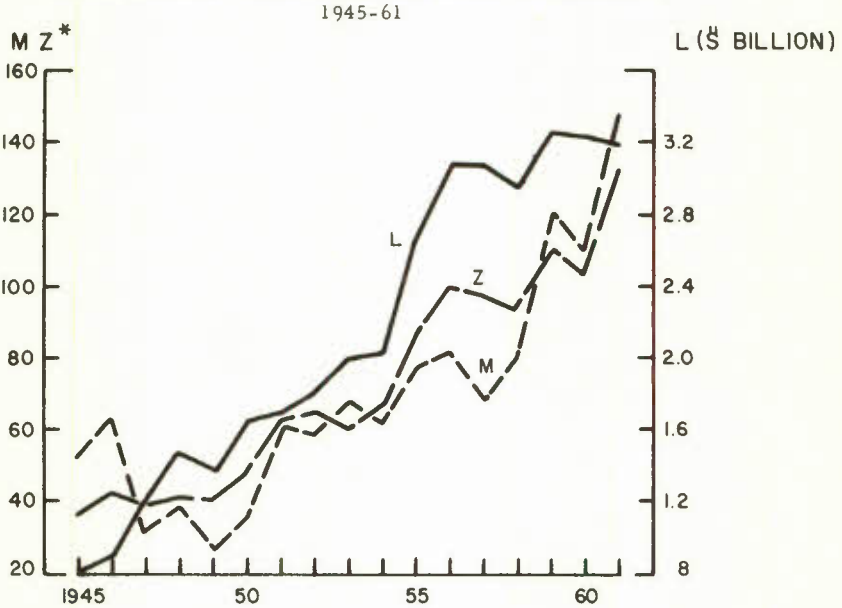


CHART 7-3b

THE NUMBER OF DOMESTIC MERGERS IN CANADA, STOCK MARKET PRICES AND CORPORATE LIQUIDITY, 1945-61



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The total number of international and domestic mergers can obviously be classified in many different ways. For the purpose of running tests on various components, we have elected to reclassify the total number of mergers, by years, in the following ways:

I. International mergers:

(a) the number of Canadian firms only, N_c, as shown in column 3 of Table 3-1;

(b) the number of firms acquired in the manufacturing division of industry, N_5, and in the trade division of industry, N_8, as shown in the Appendix to Chapter 4, Table 4A-1, columns 5 and 8 ;

(c) the number of Canadian firms acquired in the manufacturing division of industry, N_{c_5}, and in the trade division of industry, N_{c_8}, as shown in the Appendix to Chapter 4, Table 4A-1, columns 5 and 8 ;

(d) the number of firms acquired in broad horizontal mergers, N_h, and in nonhorizontal mergers, N_{nh}.

II. Domestic mergers:

(e) the number of firms acquired in the manufacturing division of industry, M_5, and in the trade division of industry, M_8, as shown in the Appendix to Chapter 4, Table 4A-1, columns 5 and 8 ;

(f) the number of firms acquired in broad horizontal mergers, M_h, and in nonhorizontal mergers, M_{nh}.

The tests made consist of fitting linear equations as before with the various components enumerated above as the dependent variable and with the same explanatory variables as in the corresponding equations that were fitted to aggregative data for international and domestic mergers. The purpose of these tests was to ascertain how the parameters, t-ratios and $\overline{R}^2$ for the equations relating to the components compare with those for the equations explaining the total number of international and domestic mergers.

The estimated equations are given in the Appendix to this Chapter (equations 7A.11 to 7A.28). The following points might be especially noted in connection with the tests based on equations (7.2) and (7.6):

(a) In all equations based on equation (7.6) explaining some component of domestic mergers, the regression coefficient for Z is highly significant and has a positive sign. The coefficient for L is significant in two cases and insignificant in two cases; it consistently has a negative sign.

(b) With one exception the value of $\overline{R}^2$ for all of these equations exceeds .79. In the exceptional case the value of $\overline{R}^2$ is .71.

(c) All the signs of the coefficients of all the variables included in the fitted equations based on equation (7.2), explaining the various components of international mergers, are consistent and also have the same signs as the corresponding coefficients in the aggregate equation.

(d) The sign of the constant term for all equations explaining international mergers is positive, with one exception (7A.27), relating to horizontal mergers. The sign of the constant term for two of the equations explaining domestic mergers is negative, and for the other two it is positive.

(e) Although the estimated regression coefficients for each explanatory variable included in the various equations explaining international mergers are of the same general order of magnitude, it is evident that they differ somewhat from equation to equation. This is scarcely surprising. One can speculate on various reasons for these differences, but it would require more time than has been available for this Study to try to nail down these reasons empirically.

(f) Except for equations 7A.24 and 7A.26, the Durbin-Watson statistic gives no evidence of significant autocorrelation in the computed residuals for any of the disaggregated equations at the 5 per cent level of confidence.

A comparison of the disaggregative equations based on equation (7.2) with those based on equation (7.3) suggests that the former is a "better" estimate from two standpoints. First, as indicated by Table 7-1, the signs of A, F and L remain the same consistently in all the disaggregative equations and coincide with the signs estimated in equation (7.2). This is not true of the disaggregative equations based on equation (7.3): both Z and U switch signs in one (not the same) estimate. Secondly, the parameters retain their significance to a greater extent in disaggregative equations based on equation (7.2) than in those based on equation (7.3). The value for $\bar{R}^2$ for both sets of equations is very similar. The differences between corresponding equations are certainly too small to be statistically significant; nevertheless, it may be noted that, of the seven sets of equations shown in Table 7-1, the value of $\bar{R}^2$ is greater for five of the equations based on equation (7.2).

Table 7-1

COMPARISON OF SIGNS AND T-RATIOS OF ESTIMATED REGRESSION COEFFICIENTS FOR EXPLANATORY VARIABLES INCLUDED IN REGRESSION EQUATIONS FITTED TO COMPONENTS OF N

Components of N	Equation (7.2)				Equation (7.3)					
	A	F	L	$\bar{R}^2$	Z	Z'	i_a	U	t	$\bar{R}^2$
N_c	+*	+*	-*	.94	+*	-*	-*	+*	+	.93
N_5	+*	+*	-	.90	+	-*	-	-	+	.89
N_8	+*	+*	-*	.84	-	-*	-x	-	+*	.83
N_{c5}	+*	+*	-	.91	+	-*	-	-	+	.85
N_{c8}	+*	+*	-x	.79	+	-x	-	+	+	.82
N_h	+*	+	-	.87	+x	-*	-*	-*	+*	.94
N_{nh}	+*	+*	-*	.90	+	-*	-*	-	+	.88
N	+*	+*	-*	.92	+x	-*	-*	-*	+*	.97

\+ = plus sign for the estimated regression coefficient;

\- = minus sign for the estimated regression coefficient;

* indicates coefficient significant at the 95 per cent level of confidence on a two-tailed test;

x indicates a t-ratio of 2.0 or greater but not significant at the 95 per cent level of confidence.

Source: Equations 7A.11 to 7A.17 and 7A.22 to 7A.28 in the Appendix to this Chapter.

Another interesting point that emerges from these disaggregative equations which may warrant further investigation is the difference in performance between equation (7.2) and (7.3) when applied to horizontal and nonhorizontal international mergers (equations 7A.16, 7A.17, 7A.27 and 7A.28 in the Appendix). As is evident from Table 7-1, the coefficients of all the explanatory variables have t-ratios greater than 2.0 when equation (7.3) is fitted to explain N_h; only the coefficient of A has a t-ratio greater than 2.0 when equation (7.2) is fitted to explain N_h. When fitted to explain N_{nh}, the performance of these relationships is reversed: the coefficients of all the explanatory variables included in equation (7.2) have t-ratios greater than 2.0, and only two coefficients in equation (7.3) -- for Z' and i_a -- have t-ratios greater than 2.0.

5. Predictive Tests

Initially it was our hope that the data on the number of firms could be updated from 1962 to 1965 from published sources and that the predictive power of our estimates could be tested against data for the post-1961 period. Unfortunately it proved impossible to update the data in a comprehensive fashion. The figures that one can derive from published sources apparently are not nearly as complete as those derived from the questionnaire for 1945 to 1961. The differences between the two series are large and unsystematic as indicated by the following comparison.

	Questionnaire Data		Published Data		Difference	
	Foreign (1)	Domestic (2)	Foreign (3)	Domestic (4)	(1)-(3) (5)	(2)-(4) (6)
1959	66	120	51	79	15	41
1960	93	110	80	82	13	28
1961	86	147	39	86	47	61
1962	--	--	67	119		
1963	--	--	37	96		
1964	--	--	76	120		
1965	--	--	70	159		

Because of the lack of comprehensive data for the period after 1961, another type of predictive test was applied. Equations (7.2) and (7.3) explaining foreign acquisitions, and equation (7.6) explaining domestic acquisitions, were refitted for two subperiods: 1947-61 and 1945-59. From these refitted equations, estimated values of N and M were derived for the two years at the beginning and at the end of the period, respectively. The predicted values of N and M were then compared with actual values as well as with predicted values obtained from three "naive" models. As a predictive test, this procedure is less satisfactory than the procedure we initially hoped to follow. This is because data for the years we predict have been used to develop the hypotheses which we wish to test.

"Naive" models serve as a standard against which to judge the predictive power of estimated relationships. Three such models have been employed. The first "naive" model simply assumes that the number of mergers in any given year will be the same as in the year before.

$$(7.8)\quad \hat{N}_t = N_{t-1}$$

$$(7.9)\quad \hat{M}_t = M_{t-1},$$

where $\hat{N}_t$ and $\hat{M}_t$ are the estimated number of foreign and domestic mergers, respectively, in time, t, and N_{t-1} and M_{t-1} are the actual number of foreign and domestic mergers, respectively, in time, t-1.

The second "naive" model assumes that the number of foreign mergers in any given year is a constant fraction of domestic mergers. When predicting 1945 and 1946, this fraction is assumed to be equal to the ratio of foreign to domestic mergers from 1947 to 1951; and for the predictions for 1960 and 1961 this fraction is assumed to be equal to the ratio of foreign to domestic mergers from 1955 to 1959.

$$(7.10)\quad \hat{N}_t = \frac{\bar{N}}{\bar{M}} \cdot M_t \,.$$

When this second "naive" model is applied to predict the number of domestic mergers in Canada, the same convention is followed. In this case it is assumed that the ratio of domestic to foreign mergers remains constant in relationship to the number of foreign mergers.

$$(7.11)\quad \hat{M}_t = \frac{\bar{M}}{\bar{N}} \cdot N_t \,.$$

The third "naive" model assumes that the number of firms acquired in foreign and domestic mergers in Canada remains a constant fraction of the number of mergers in the United States,

$$(7.12)\quad \hat{N}_t = \frac{\bar{N}}{\bar{A}} \cdot A_t \,,$$

$$(7.13)\quad \hat{M}_t = \frac{\bar{M}}{\bar{A}} \cdot A_t \,,$$

where $\bar{N}$ and $\bar{M}$ are the average number of foreign and domestic mergers in Canada, and $\bar{A}$ is the average number of domestic mergers in the United States from 1947 to 1951 when predicting 1945 and 1946, and from 1955 to 1959 when predicting 1960 and 1961.

Table 7-2 presents the results of our predictive tests, together with the refitted equations on which the estimated values of N are based. These tests indicate that equation (7.2) is a better predictor than equation (7.3) and than any of the three "naive" models.[1/] This conclusion is indicated by the value of the root mean of the squared deviations. (The smaller the size of this figure, the better the prediction.) Equation (7.3) outperforms the three "naive" models in predicting 1960 and 1961 but performs substantially worse in predicting 1945 and 1946.

Secondly, if one compares the root mean of the squared deviations with the computed standard errors of the two estimates, one finds that the root mean for equation (7.2) in both cases falls within the standard error of estimate. For equation (7.3) the root mean in both cases is more than twice the standard error of estimate. On this basis also, equation (7.2) outperforms equation (7.3).

Thirdly, if one compares the stability of the coefficients of the estimated regression coefficients shown at the bottom of Table 7-2, it will be noted that the coefficients for equation (7.2) exhibit much greater stability than the coefficients for equation (7.3). This provides a further reason for preferring equation (7.2) to equation (7.3).

Table 7-3 presents the results of the predictive tests made on equation (7.6). This estimate outperforms all the "naive" estimates with one exception. The value of the root mean of the squared deviations is somewhat more than the standard error of estimate.

1/ The prediction based on equation (7.2) is slightly inferior to predictions based on two of the naive models for 1945 and 1946 but very much better than any of the predictions based on naive models for 1960 and 1961.

Table 7-2

PREDICTIVE POWER OF FITTED REGRESSIONS
AND OF NAIVE MODELS OF INTERNATIONAL MERGERS

	Actual N	Estimated N_t		Naive Models			Deviations				
		(Eq. 7.2)[a]	(Eq. 7.3)[b]	$\hat{N}_t = N_{t-1}$	$\hat{N}_t = \frac{\bar{N}}{\bar{M}} \cdot M_t$[c]	$\hat{N}_t = \frac{\bar{N}}{\bar{A}} \cdot A_t$[c]					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)-(2)	(1)-(3)	(1)-(4)	(1)-(5)	(1)-(6)
1945	23	13.7	16	n.a.	17	18	9.3	7		6	5
1946	15	17.8	1	23	22	23	-2.8	14	-8	-7	-8
	Sum of squared deviations						94.3	245		85	8.9
	Root mean of squared deviations[d]						6.8	10.1		6.5	6.7
1960	93	82.7	75	66	70	68	10.3	18	27	23	25
1961	86	86.3	89	93	93	77	-0.3	-3	-7	-7	9
	Sum of squared deviations						106.2	333	778	578	706
	Root mean of squared deviations[d]						7.3	12.9	19.7	17.0	18.8

(a) Equation 7.2, 1947-61: $N = .91 + 0.065A + 0.032F - 18.527L$ $\quad \bar{R}^2 = .93$ D.W. = 2.86 S.E. = 7.60
[3.58] [3.32] [1.78]

1945-59: $N = 0.32 + 0.065A + 0.026F - 14.112L$ $\quad \bar{R}^2 = .85$ D.W. = 2.67 S.E. = 7.68
[3.85] [1.64] [0.94]

(b) Equation 7.3, 1947-61: $N = 43.91 + 7.33t - 2.14Z' - 20.65i_a - 10.27U + 0.16Z$ $\quad \bar{R}^2 = .97$ D.W. = 1.80 S.E. = 4.70
[4.22] [6.80] [5.76] [3.83] [.89]

1945-59: $N = 24.81 + 3.45t - 1.61Z' - 18.70i_a - 6.16U + 0.61Z$ $\quad \bar{R}^2 = .97$ D.W. = 2.48 S.E. = 3.22
[3.64] [6.92] [7.55] [3.92] [4.09]

(c) Means for 1945, 46 predictions based on 1947-51; and means for 1960, 61 predictions based on 1955-59.

(d) $\sqrt{\frac{\text{Sum of squared deviations}}{2}}$

Table 7-3

PREDICTIVE POWER OF FITTED REGRESSION AND OF NAIVE MODELS OF DOMESTIC MERGERS

	Actual M	Estimated M_t[a] (Eq. 7.6)	Naive Models $\hat{M}_t = M_{t-1}$	Naive Models $\hat{M}_t = \frac{\overline{M}}{\overline{N}} \cdot N_t$[b]	Naive Models $\hat{M}_t = \frac{\overline{M}}{\overline{A}} \cdot A_t$[b]	Deviations (1)-(2)	Deviations (1)-(3)	Deviations (1)-(4)	Deviations (1)-(5)
	(1)	(2)	(3)	(4)	(5)				
1945	51	38.3	n.a.	68	54	12.7		-17	-3
1946	64	46.4	51	44	68	17.6	13	20	-4
	Sum of squared deviations					471.1		689	25
	Root mean of squared deviations[c]					15.3		18.6	3.5
1960	110	91.6	120	204	107	18.4	-10	-94	3
1961	147	150.8	110	188	121	-3.8	37	-41	26
	Sum of squared deviations					353.0	1,469	10,517	685
	Root mean of squared deviations[c]					13.3	27.1	72.5	18.5

(a) Equation 7.6, 1947-61: $M = -5.62 + 1.66Z - 21.89L$; $[4.79]$ $[1.69]$; $\bar{R}^2 = .90$ D. W. = 1.43 S. E. = 10.90

1945-59: $M = 4.22 + 2.02Z - 37.91L$; $[4.18]$ $[2.58]$; $\bar{R}^2 = .80$ D. W. = 1.90 S. E. = 10.57

(b) Means for 1945, 46 predictions based on 1947-51 and means for 1960, 61 predictions based on 1955-59.

(c) $\sqrt{\frac{\text{Sum of squared deviations}}{2}}$

Additional evidence on the estimates based on equations (7.2), (7.3) and (7.6) is presented graphically in Charts 7-4, 7-5 and 7-6. Each Chart shows the actual number of mergers, the number of mergers as estimated by our fitted regression equation and the difference between the actual and the estimated number of mergers. As already indicated by the value of $\bar{R}^2$, equation (7.3) gives a closer fit (i.e. the residuals are smaller) than either equation (7.2) or equation (7.6). The visual evidence, confirmed by statistical evidence, gives no indication of systematic autocorrelation in the error terms.

Since the value of $\bar{R}^2$ for equation (7.3) is higher than for equation (7.2), it is to be expected that the root mean of the squared deviations for the full period from 1945 to 1961 will also be lower for equation (7.3) than (7.2). As is evident from Table 7-4, for the period as a whole, both estimates outperform by a considerable margin the three "naive" models introduced earlier. The estimated relationship explaining domestic mergers also outperforms these naive models in terms of its predictive power for the period as a whole.

Table 7-4

COMPARISON OF ROOT MEAN SQUARED DEVIATION BETWEEN ACTUAL AND ESTIMATED NUMBER OF MERGERS AS DERIVED FROM THREE ESTIMATED MODELS AND THREE NAIVE MODELS, 1945-61

	Model		Root Mean Squared Deviation (Actual-Estimated) 1945-61
International Mergers	Equation (7.2)	estimated	6.5
	Equation (7.3)	estimated	4.0
	Equation (7.8)	naive	12.6
	Equation (7.9)(1)	naive	13.6
	Equation (7.10)(1)	naive	11.4
Domestic Mergers	Equation (7.6)	estimated	9.8
	Equation (7.11)	naive	19.2
	Equation (7.12)(1)	naive	25.3
	Equation (7.13)(1)	naive	15.5

(1) The mean values for M, N and A required to apply these models were calculated for the full period 1945 to 1961.

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CHART 7-4

THE NUMBER OF FOREIGN MERGERS IN CANADA, 1945-61:
ACTUAL AND ESTIMATED FROM EQUATION (7.2)

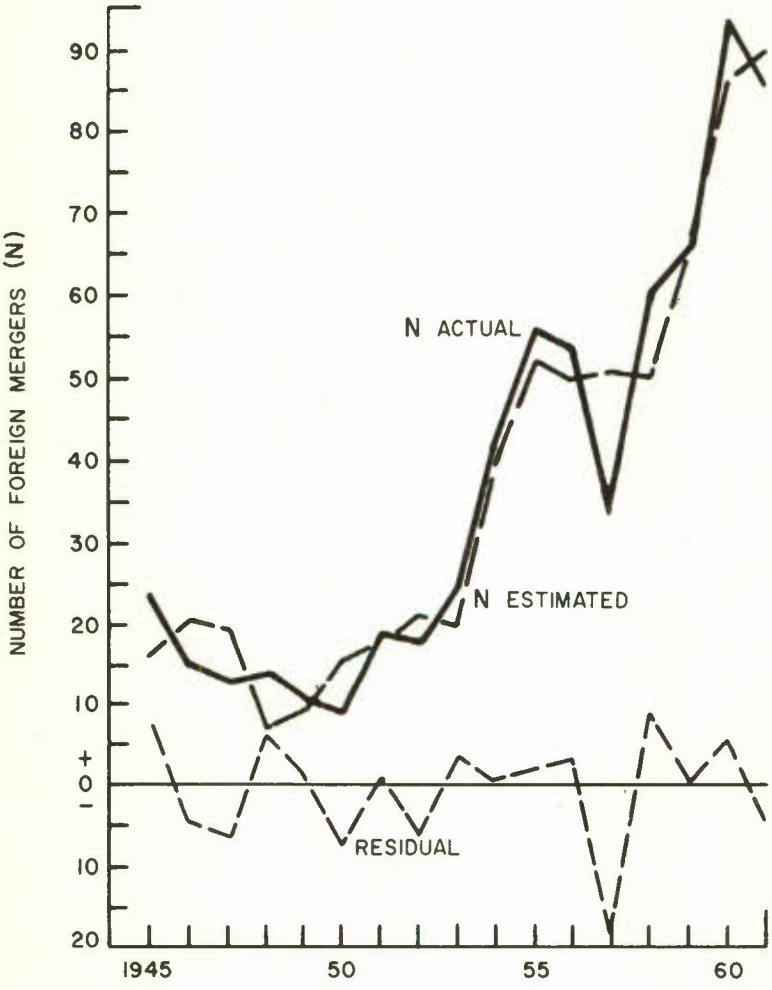

CHART 7-5

THE NUMBER OF FOREIGN MERGERS IN CANADA, 1945-61:
ACTUAL AND ESTIMATED FROM EQUATION (7. 3)

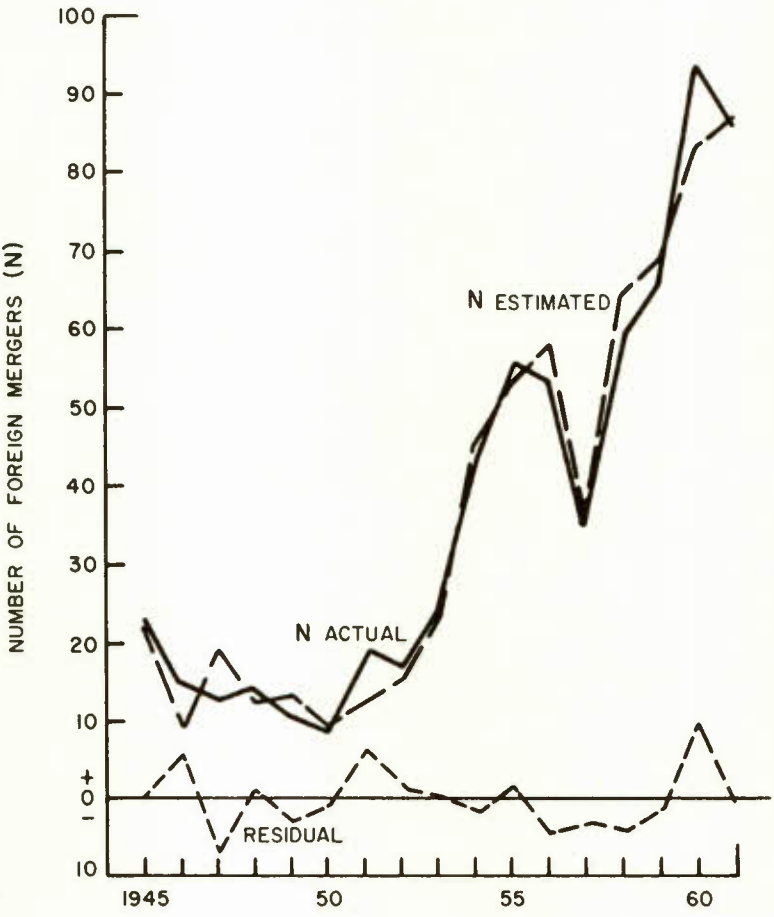

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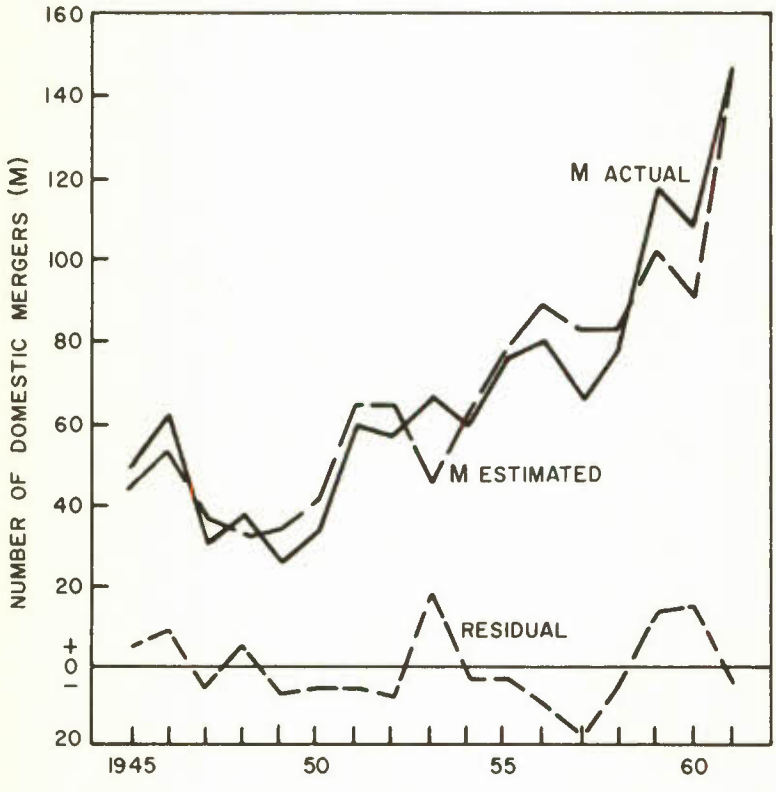
CHART 7-6

THE NUMBER OF DOMESTIC MERGERS IN CANADA, 1945-61:
ACTUAL AND ESTIMATED FROM EQUATION (7. 6)



6. Recapitulation

In this Chapter we have reported on an extensive series of tests designed to ascertain the influence on the number of international mergers exercised by general economic conditions. Considerable evidence has been found to suggest that such an influence exists. In the main it appears to arise from factors influencing the demand of foreign, mainly U.S., firms, for Canadian firms, and from the level of economic activity and credit conditions in Canada. It has been more difficult to pin down precisely what particular aspect of general economic conditions is most closely associated with foreign mergers in Canada. Our "best" estimate in some respects is that variations in foreign mergers in Canada can be explained by variations in the number of mergers in the United States, the number of commercial failures in Canada and the supply of internally generated funds in Canada's corporate sector. In effect, this can be interpreted as saying that foreign mergers in Canada are governed by the same factors governing domestic mergers in the United States, conditioned by the level of activity in Canada and Canadian credit conditions.

Variations in the number of domestic mergers in Canada, according to our evidence, can best be explained by variations in stock market prices in Canada, reflecting business expectations, and internally generated funds in Canada's corporate sector, reflecting Canadian credit conditions.

Appendix to Chapter 7

1. Variables and Data

t - time. 1945 = 1 to 1961 = 17.

I - Total Index of Industrial Production. Bank of Canada, Statistical Summary.

x - 100.0 -- exchange rate (average noon spot rate). Bank of Canada, Statistical Summary.

Π - Profit per Unit of Output = Index of corporate profits in manufacturing before tax/Index of manufacturing production (before 1965 revisions). DBS, Canadian Statistical Review.

U - Unemployment as Percentage of the Labour Force. Bank of Canada, Statistical Summary.

A - Number of U.S. Mergers. Economic Concentration, Hearings before the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary, U.S. Senate, 89th Congress, 1965, Part 2, "Mergers and Other Factors Affecting Industry Concentration", Appendix 1, p. 847.

F - Total Number of Commercial Failures. DBS, Canadian Statistical Review.

L - Corporate retained profits + Corporate depreciation allowances. DBS, National Accounts.

V - Money Supply/GNP. Bank of Canada, Statistical Summary.

i - 3-month Treasury Bill Rate, average of Wednesdays. Bank of Canada, Statistical Summary.

i_a - U.S. 3-month Treasury Bill Rate. U.S. Department of Commerce, Historical Statistics of the United States, Survey of Current Business.

i' - $i - i_a$.

Z - DBS Index of Common Stock Prices, "Investors Index, Total". Bank of Canada, Statistical Summary.

Z_a - U.S. Standard and Poor's Industrials Index (converted to the same base as DBS Index). Bank of Canada, Statistical Summary.

Z' - $Z - Z_a$.

M - Number of domestic mergers. Appendix.

M_5 - Number of domestic mergers in manufacturing. Appendix.

M_8 - Number of domestic mergers in trade. Appendix.

M_h - Number of horizontal domestic mergers. Appendix.

M_{nh} - Number of nonhorizontal domestic mergers. Appendix.

N - Number of foreign mergers. Appendix.

N_c - Number of Canadian firms acquired in foreign mergers. Appendix.

N_5 - Number of foreign mergers in manufacturing. Appendix.

N_8 - Number of foreign mergers in trade. Appendix.

N_{c5} - Number of Canadian firms in manufacturing acquired in foreign mergers. Appendix.

N_{c8} - Number of Canadian firms in trade acquired in foreign mergers. Appendix.

N_h - Number of horizontal foreign mergers. Appendix.

N_{nh} - Number of nonhorizontal foreign mergers. Appendix.

Mean Value and Standard Deviations of Variables, 1945-61

	Mean	Standard Deviation
I	128.08	30.13
i	1.71	1.38
x	- 0.69	4.50
Π	106.78	12.70
U	3.97	1.72
Z	72.57	29.66
i'	0.01	0.58
Z'	4.37	9.69
A	476.00	251.82
F	1,407.35	841.47
L	2.16	0.87
V	0.44	0.08
N	37.59	27.05
N_c	27.82	20.58
N_5	20.71	13.81
N_8	9.41	9.22
N_{c5}	15.35	10.74
N_{c8}	7.76	6.75
N_h	22.00	15.61
N_{nh}	15.59	12.05
M	69.53	32.02
M_5	31.71	13.24
M_8	21.53	13.50
M_h	47.59	19.96
M_{nh}	21.94	13.40
i_a	1.70	0.95

Simple Correlation Coefficients

	N	t	I	i	x	Π	U	Z	i'	Z'	A	F	L	M	V
t	.88														
I	.88	.99													
i	.77	.88	.91												
x	.52	.69	.67	.68											
Π	-.03	.28	.25	.14	.20										
U	.86	.88	.83	.73	.52	.08									
Z	.90	.96	.97	.88	.59	.22	.85								
i'	.72	.67	.69	.84	.52	-.27	.71	.71							
Z'	-.92	-.81	-.82	-.84	-.51	.13	-.84	-.83	-.83						
A	.93	.81	.84	.81	.49	-.03	.80	.90	.79	-.91					
F	.90	.99	.98	.87	.67	.23	.86	.95	.66	-.83	.82				
L	.86	.98	.99	.91	.72	.30	.82	.95	.68	-.82	.82	.97			
M	.90	.83	.84	.78	.41	.05	.81	.91	.71	-.82	.91	.81	.78		
V	-.48	-.73	-.74	-.60	-.53	-.60	-.42	-.66	-.25	.30	-.36	-.70	-.71	-.50	
i_a	.69	.87	.90	.94	.67	.36	.63	.85	.61	-.72	.70	.86	.91	.70	-.72

2. Fitted Regression Equations

(7A.1) $N = 6.00570 + 0.07750A + 0.03563F - 17.63471L$
$[4.24] \quad [3.42] \quad [1.73]$
$- 0.23841Z$
$[0.78]$
$\bar{R}^2 = .92 \quad D.W. = 2.86 \quad S.E. = 7.54$

(7A.2) $N = -3.24268 + 0.07183A + 0.03051F - 13.86105L$
$[5,25] \quad [3.08] \quad [1.23]$
$- 3.68321i$
$[1.05]$
$\bar{R}^2 = .93 \quad D.W. = 2.43 \quad S.E. = 7.40$

(7A.3) $N = 3.57383 + 0.06788A + 0.03033F - 21.32887L$
$[4.96] \quad [1.87] \quad [2.00]$
$+ 0.57421t$
$[0.20]$
$\bar{R}^2 = .92 \quad D.W. = 2.77 \quad S.E. = 7.72$

(7A.4) $N = 2.33806 + 0.06660A + 0.03177F - 19.91775L$
$[4.52] \quad [2.75] \quad [1.96]$
$+ 0.48709U$
$[0.20]$
$\bar{R}^2 = .92 \quad D.W. = 2.77 \quad S.E. = 7.72$

(7A.5) $N = 2.82887 + 0.06850A + 0.03281F - 20.34696L$
$[4.17] \quad [3.24] \quad [2.06]$
$- 0.48508i'$
$[0.09]$
$\bar{R}^2 = .92 \quad D.W. = 2.75 \quad S.E. = 7.73$

(7A.6) $N = 10.96277 + 0.08768A + 0.02534F - 21.06496L$
$[3.42] \quad [1.43] \quad [1.65]$
$- 0.42139Z + 3.15254t - 0.75354U$
$[1.03] \quad [0.71] \quad [0.24]$
$\bar{R}^2 = .91 \quad D.W. = 2.88 \quad S.E. = 8.04$

(7A.7) $N = 0.79241 + 0.05782A + 0.03061F - 18.84095L + 0.09996M$
[2.88] [2.92] [1.90] [0.66]
$\bar{R}^2 = .92$ D.W. = 2.76 S.E. = 7.59

(7A.8) $N = 41.00356 - 2.00513Z' + 0.21264M + 5.75825t - 18.27438i_a - 8.26699U + 0.03669Z$
[7.86] [2.25] [4.99] [5.91] [4.16] [0.19]
$\bar{R}^2 = .98$ D.W. = 2.77 S.E. = 4.26

(7A.9) $N = -21.93493 + 0.86068Z - 1.35761L$
[2.49] [0.12]
$\bar{R}^2 = .79$ D.W. = 1.74 S.E. = 12.48

(7A.10) $M = 25.32219 + 0.09885A + 0.02291F - 16.21973L$
[4.00] [1.26] [0.92]
$\bar{R}^2 = .81$ D.W. = 2.02 S.E. = 13.95

(7A.11) $N_c = 23.19889 + 0.43899Z - 1.44673Z' - 12.68080i_a - 6.11165U + 2.77072t$
[2.52] [4.67] [3.30] [2.45] [1.97]
$\bar{R}^2 = .93$ D.W. = 1.68 S.E. = 5.37

(7A.12) $N_5 = 20.29275 + 0.16130Z - 1.04579Z' - 6.15218i_a - 3.15900U + 1.81010t$
[1.11] [4.03] [1.91] [1.51] [1.54]
$\bar{R}^2 = .89$ D.W. = 2.57 S.E. = 4.50

(7A.13) $N_8 = 10.67499 - 0.06630Z - 0.62822Z' - 5.94546i_a - 0.44806U + 2.02117t$
[0.54] [2.87] [2.19] [0.25] [2.04]
$\bar{R}^2 = .83$ D.W. = .86 S.E. = 3.80

(7A.14) $N_{c5} = 13.32111 + 0.23876Z - 0.76271Z'$
$[1.79] \quad [3.22]$
$- 4.89265i_a - 3.44466U + 1.11573t$
$[1.66] \quad [1.80] \quad [1.04]$
$\bar{R}^2 = .85 \quad$ D.W. = 2.33 $\quad$ S.E. = 4.11

(7A.15) $N_{c8} = 3.62103 + 0.04328Z - 0.34622Z'$
$[0.46] \quad [2.08]$
$- 3.72691i_a + 0.24078U + 0.87804t$
$[1.80] \quad [0.18] \quad [1.16]$
$\bar{R}^2 = .82 \quad$ D.W. = 1.31 $\quad$ S.E. = 2.89

(7A.16) $N_h = 28.91041 + 0.25343Z - 1.36588Z'$
$[2.11] \quad [6.38]$
$- 12.58761i_a - 6.58022U + 3.13515t$
$[4.74] \quad [3.81] \quad [3.23]$
$\bar{R}^2 = .94 \quad$ D.W. = 2.14 $\quad$ S.E. = 3.71

(7A.17) $N_{nh} = 13.03563 + 0.08098Z - 0.79296Z'$
$[0.60] \quad [3.32]$
$- 6.85512i_a - 1.43435U + 1.94472t$
$[2.32] \quad [0.75] \quad [1.80]$
$\bar{R}^2 = .88 \quad$ D.W. = 2.36 $\quad$ S.E. = 4.14

(7A.18) $M_5 = 10.50299 + 0.94844Z - 22.01354L$
$[4.79] \quad [3.28]$
$\bar{R}^2 = .71 \quad$ D.W. = 1.84 $\quad$ S.E. = 7.14

(7A.19) $M_8 = 7.07223 + 0.59651Z - 6.78872L$
$[3.46] \quad [1.16]$
$\bar{R}^2 = .79 \quad$ D.W. = 1.73 $\quad$ S.E. = 6.23

(7A.20) $M_h = 5.08769 + 0.95596Z - 12.42177L$
$[4.08] \quad [1.56]$
$\bar{R}^2 = .82 \quad$ D.W. = 1.71 $\quad$ S.E. = 8.46

(7A.21) $M_{nh} = -2.64591 + 0.93800Z - 20.09929L$
$[6.01] \quad [3.79]$
$\bar{R}^2 = .82 \quad$ D.W. = 2.35 $\quad$ S.E. = 5.64

(7A.22) $N_c = 0.99379 + 0.05796A + 0.02293F - 15.26894L$
[6.72] [3.61] [2.47]
$\bar{R}^2 = .94$ D.W. = 1.98 S.E. = 4.87

(7A.23) $N_5 = 0.86167 + 0.03516A + 0.01308F - 7.07089L$
[4.53] [2.29] [1.27]
$\bar{R}^2 = .90$ D.W. = 1.95 S.E. = 4.38

(7A.24) $N_8 = 5.78284 + 0.02077A + 0.02009F - 15.96062L$
[3.17] [4.16] [3.40]
$\bar{R}^2 = .84$ D.W. = 1.61 S.E. = 3.70

(7A.25) $N_{c5} = 1.26601 + 0.03039A + 0.01118F - 7.44835L$
[5.19] [2.59] [1.78]
$\bar{R}^2 = .91$ D.W. = 2.14 S.E. = 3.31

(7A.26) $N_{c8} = 2.38625 + 0.01743A + 0.01055F - 8.20902L$
[3.16] [2.60] [2.08]
$\bar{R}^2 = .79$ D.W. = 1.63 S.E. = 3.11

(7A.27) $N_h = -1.69528 + 0.04131A + 0.01201F - 5.94667L$
[4.20] [1.66] [0.84]
$\bar{R}^2 = .87$ D.W = 2.37 S.E. = 5.56

(7A.28) $N_{nh} = 5.01880 + 0.02639A + 0.02090F - 14.51552L$
[3.91] [4.21] [3.00]
$\bar{R}^2 = .90$ D.W. = 2.43 S.E. = 3.81

3. Supplementary Notes

(a) The regression coefficient for the exchange rate variable, x, consistently was insignificant in all tests run.

(b) The parameter for i, the short-term interest rate in Canada, consistently had a negative sign in all the tests run, and in many instances the parameter was statistically significant. To the extent that i reflects credit conditions in Canada and variations in i reflect changes in the cost of capital, one would expect i to be positively related to N. One possible explanation for the negative sign for the coefficient of i is that i serves as a proxy for U.S. monetary conditions. As a test of this possibility, both i and i_a were included in equation (7.3), on the ground that if i is acting as a proxy for i_a, the coefficient of i_a would remain significant and the coefficient of i would be insignificant. This result was borne out.

(c) In experiments in which V, the income velocity of circulation, was included as a proxy for credit conditions in Canada, the estimated regression coefficient was statistically insignificant.

(d) In one series of tests, the number of U.S. mergers, A, and the number of business failures, F, were included in equations 7A.18, 7A.19, 7A.20, and 7A.21 of this Appendix. Both variables consistently were insignificant.

STATISTICAL APPENDIX

Data on

Foreign and Domestic Mergers in Canada,

1945-61

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Statistical Appendix

There were 639 foreign acquisitions and 1,187 domestic acquisitions during the period 1945-61. A data sheet to which the information from the questionnaire replies was transferred in coded form was prepared for each acquisition. The following tables summarize the information item by item for the entire period. The order of the items on the data sheet has not been followed and it was often possible to combine a number of items in one table. An attempt has been made to put the foreign and domestic data for each variable or category in the same table. Where it was necessary to separate the foreign and domestic frequency distributions, the same table number was used for both distributions and "foreign" or "domestic" was indicated in the table.

Several points of a general nature apply to the tables. The first concerns the coding of information in the questionnaire replies. All the non-numerical information was translated into numerical codes and transferred to the data sheets in that form. Except in a few cases, the descriptions of the data in the tables were translated back from the numerical codes, exactly following the verbal descriptions of the data sheet. In those cases (Tables A-34, A-35) in which, for purposes of convenience, the description of the data in coded form was retained, a key to the codes precedes the table.

Two codes are repeated virtually in every table. The letter X was used by the editors in those instances in which no information, or insufficient information, was supplied in the questionnaire return. The letter Y was used when the question did not apply to the responding firm. For example, if a manufacturing firm was asked to give the location of its plants and it failed to do so, X was used to describe its response. However, the response of a firm without any manufacturing activities was coded Y.

A second point that affects the interpretation of the tables concerns the basic unit from which the tables were constructed. Firms returned a separate questionnaire reply for each of their acquisitions made after January 1, 1945. (The acquisition of a company with a number of subsidiaries was counted as one acquisition, however.) It is the questionnaire replies and, hence, the data sheets that form the basic unit of information. The total number of responses in the tables is equal to 639 and 1,187 -- the number of foreign and domestic acquisitions, respectively. The tabulation of information, with the acquisition as the basic unit, results in repetition for the items relating to the characteristics of the acquiring firm. Only 147 of the foreign acquisitions and 121 of the domestic acquisitions were made by firms engaged in a single acquisition over the period. Furthermore, 235 of the foreign acquisitions and 596 of the domestic acquisitions were made by firms that made more than one acquisition in a calendar year.

These points should be kept in mind in reading the tables: except in a couple of tables which are identified in footnotes, the number of acquiring firms in each class cannot be read from the tables. In Table A-7, for instance, the number 461 appears in the manufacturing row and under the column foreign acquiring company. This number should be interpreted to read that the acquiring company was located in manufacturing in 461 of the foreign acquisitions. However, the number of separate acquiring firms that this number represents may not be obtained from the table. 1/

1/ On average, in the foreign acquisitions, each firm made 1.6 acquisitions. Thus the best guess of the separate number of acquiring firms in the example under discussion is 461 ÷ 1.6 = 279. (The average number of acquisitions made by acquiring firms in domestic acquisitions was 3.6.)

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Firms that made acquisitions and were subsequently acquired were treated as follows: they were interpreted to be the acquiring firm for all acquisitions they made before they were acquired; any acquisitions they made after that were considered to be undertaken by the firm that had acquired them.

Table A-1

NATIONALITY OF ACQUIRING (ULTIMATE CONTROL) AND ACQUIRED COMPANIES

Nationality	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
Canadian	0	473	1,187	1,033
American	416	78	0	39
British	174	29	0	27
Other Foreign	49	0	0	4
X	0	59	0	84
Y	0	0	0	0

Table A-2

PROVINCIAL LOCATION OF HEAD OFFICE OF CANADIAN-OWNED ACQUIRING COMPANIES

Province	Number of Head Offices
Newfoundland	0
Prince Edward Island	1
Nova Scotia	30
New Brunswick	20
Quebec	205
Ontario	554
Manitoba	112
Saskatchewan	15
Alberta	132
British Columbia	116
X	1
Y	1

Table A-3

CATEGORY OF ACQUISITIONS
INVOLVING ACQUIRING COMPANIES

Category	Foreign	Domestic
A single company (which survives) buys a single company	490	1,013
A single company (which survives) buys a group of companies with interrelated ownership	33	48
A single company (which survives) buys a company as one of a series of contingent acquisitions	0	6
Merger or amalgamation of two or more previously unrelated companies into a new corporate entity	2	34
Sale of a division or a group of assets capable of sustaining an independent company in business of a company (which survives) to an unrelated company	23	27
Sale of a division or a group of assets capable of sustaining an independent company in business of a company (which is no longer operating) to an unrelated company	74	44
Other	3	2
X	14	13
Y	0	0

Table A-4

METHOD OF ACQUISITION WHERE ULTIMATE ACQUIRING COMPANY WAS INCORPORATED ABROAD

Method	
Directly without any operations in Canada	71
Directly with operations in Canada	72
Indirectly through a Canadian-based subsidiary	418
Indirectly with operations in Canada through the acquisition of another foreign-based firm with operations in Canada	10
Other	2
X	66
Y	0

Table A-5

LAWS UNDER WHICH ULTIMATE ACQUIRING COMPANY WAS INCORPORATED

Laws of Incorporation	Foreign	Domestic
Dominion	26*	590
Provincial	41*	594
United States	374	0
Britain	152	0
Other foreign	42	0
X	1	2
Y	3	1

*Instances where the ownership or control is held by foreign resident individuals rather than a foreign resident corporation.

Table A-6

NUMBER AND VALUE OF ACQUISITIONS BY YEAR*

($ Thousand)

Year	Number	Cash Payment	Value of Stock Payment	Value of Debts Assumed	Value of Other Considerations	Total Price Paid	Imputed Total Price, if Less than 100 Per Cent Ownership
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Foreign			
1945	23	8,484	892		3,716	17,371	17,708
1946	15	6,325	1,545			7,913	7,880
1947	13	4,379				4,401	4,379
1948	14	4,283		60		4,433	5,126
1949	11	5,230				5,638	5,477
1950	9	4,937	342			9,544	11,813
1951	19	35,263	304	327	1,641	37,568	42,925
1952	17	12,074	3,592		25	16,074	17,418
1953	25	29,456	37			30,243	32,980
1954	43	74,603	788		3,836	83,794	90,523
1955	56	102,609	42,653		1,609	147,346	153,678
1956	54	124,483	38,656	2,249		162,224	206,365
1957	35	14,907	8,278	6,690	3,545	94,406	114,463
1958	60	26,559	68,834	17	1,628	99,011	99,662
1959	66	69,392	520	1,009	1,123	72,144	90,977
1960	93	141,725	107,003	10,043	1,200	279,000	405,296
1961	86	74,350	74,397	1,759	331	170,401	176,219
				Domestic			
1945	51	14,150	1,592		310	17,752	18,282
1946	64	37,638	157	1,992		46,006	52,755
1947	32	5,352	1,863	128	893	8,844	9,006
1948	39	30,242	4,310	500		41,312	41,896
1949	27	23,916	4,273			28,556	29,268
1950	36	34,957	1,400			36,437	38,858
1951	61	36,968	31,353			72,719	72,606
1952	59	19,746	11,277		3,498	35,603	45,672
1953	68	36,588	1,107	1,219	2,830	50,610	60,667
1954	61	36,461	8,669		100	51,946	65,277
1955	78	65,093	13,832		8,069	99,089	102,660
1956	81	33,243	9,619	480	58	46,415	48,649
1957	68	17,737	71,860	907	1,935	165,807	159,752
1958	80	72,435	33,950	44	2,191	121,752	130,889
1959	120	103,255	26,865	24,464	25	195,826	215,975
1960	110	44,949	151,690	3,252	4,366	198,300	199,164
1961	148	86,532	39,381	2,469		142,216	162,661
X	4	--	--	--	--	--	--

*It is important to note that the sum of columns 3 through 6 does not coincide with the values in column 7 because of incomplete detail in the questionnaire replies in reporting

the component parts of the total price paid. Since cash was the major method of payment, it is likely that the differences between column 7 and the sum of columns 3 to 6 consist substantially of unreported cash payments and, therefore, a maximum estimate of the amount of cash payments may be obtained by adding the difference between column 7 and the sum of columns 3 to 6 to column 3.

Except for 1956 in foreign acquisitions and 1960 in domestic acquisitions (reporting errors clearly took place), the total price paid is higher than the sum of its reported parts. In about half the years the differences are fairly small, but in the remaining years there are a number of large differences. The differences for all the years are listed below.

Column 7 less the sum of columns 3 - 6
($ Thousand)

Year	Foreign	Domestic
1945	4,279	1,700
1946	43	6,219
1947	22	608
1948	90	6,270
1949	408	367
1950	4,265	80
1951	33	4,398
1952	383	1,082
1953	750	8,866
1954	4,567	6,716
1955	475	12,095
1956	- 3,164	3,015
1957	60,986	73,368
1958	1,973	13,132
1959	100	41,217
1960	19,029	- 5,957
1961	19,564	13,834

Table A-7

DOMINION BUREAU OF STATISTICS INDUSTRIAL CLASSIFICATION OF ACQUIRING AND ACQUIRED COMPANIES*

Industrial Classification	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
1. Agriculture	0	1	0	4
2. Forestry	2	8	1	21
3. Fishing and trapping	0	0	0	0
4. Mining, quarrying, oil wells	33	38	95	88
5. Manufacturing	461	352	593	541
6. Construction	3	7	12	16
7. Transportation, communication, other utilities	27	27	102	110
8. Trade	68	160	343	367
9. Finance, insurance, real estate, holding company	2	3	29	14
10. Community, business or personal services	36	38	9	23
X	7	5	3	3
Y	0	0	0	0

*The companies were placed in industrial classifications by the editors, who based their decisions on information contained in the questionnaire replies. In those cases in which companies were operating in more than one classification, the editors classified the companies on the basis of their most important activity.

The same method was followed in allocating firms to two-digit manufacturing industries; the summaries of which follow in Table 8.

The editors were given the following guidelines for acquisitions involving a foreign-owned or -controlled acquiring company:

(a) If the acquiring company is foreign-based with Canadian operations, classify these operations.

(b) If it has no Canadian operations but makes export sales to Canada, classify its main export activity.

(c) If it has no Canadian operations and makes no export sales to Canada, classify its main operation outside Canada, or, if there is no information, the closest related activity to that of the acquired company. In the latter case, it is possible that the code classification will be X.

Table A-8

DOMINION BUREAU OF STATISTICS TWO-DIGIT INDUSTRIAL CLASSIFICATION OF ACQUIRING AND ACQUIRED MANUFACTURING COMPANIES*

Manufacturing Industrial Classification	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
1. Food and beverage	42	41	197	185
2. Tobacco products	4	4	0	0
3. Rubber	14	6	11	4
4. Leather	10	13	11	15
5. Textile	6	8	19	23
6. Knitting mills	1	3	11	9
7. Clothing	10	8	10	9
8. Wood	14	17	39	28
9. Furniture and fixtures	1	3	1	5
10. Paper and allied industries	34	31	64	43
11. Printing, publishing and allied industries	11	6	50	52
12. Primary metal	8	10	49	13
13. Metal fabricating -- excluding machinery and transport equipment	40	31	15	39
14. Machinery -- excluding electrical machinery	24	24	16	11
15. Transportation equipment	25	19	20	11
16. Electrical products	44	34	10	16
17. Nonmetallic mineral products	28	22	33	31
18. Petroleum and coal products	61	9	16	6
19. Chemical and chemical products	69	47	11	27
20. Miscellaneous manufacturing	17	18	11	16
X	5	5	3	3
Y	171	280	590	641

*See footnote to Table A-7.

Table A-9

TYPE OF MERGER OR ACQUISITION
BETWEEN MAIN ACTIVITY OF ACQUIRING AND ACQUIRED

	Simple*		Complex		Total	
	(F)	(D)	(F)	(D)	(F)	(D)
Horizontal						
Horizontal	44	334	113	185	157	519
In different geographic markets	26	52	59	75	85	127
Complementary	13	29	48	66	61	95
Competing, but different materials	1	6	2	2	3	8
Same three-digit industry	4	7	9	4	13	11
Same two-digit industry	3	6	13	33	16	39
Vertical Forward						
Sales outlets	3	5	97	81	100	86
Service or service and sales	0	13	11	2	11	15
Assembly or fabrication	0	2	3	3	3	5
Processing plants	1	2	7	4	8	6
Other	1	3	0	13	1	16
Vertical Backward						
Parts	1	3	9	0	10	3
Materials	6	7	23	23	29	30
Services	0	2	3	5	3	7
Final commodities	5	6	3	20	8	26
Other	0	1	11	8	11	9
Jointness in selling	1	1	6	1	7	2
Same raw material	0	2	2	6	2	8
Same or similar processes	1	1	1	0	2	1
Conglomerate	7	18	65	142	72	160
X					37	6
Y					0	8

*Where the acquiring company operates in only one four-digit industry.

Note: (F) Acquisitions involving a foreign-owned or -controlled acquiring company;
(D) Acquisitions involving a Canadian-owned acquiring company.

Table A-10

TYPE OF MERGER OR ACQUISITION
BETWEEN MAIN ACTIVITY OF ACQUIRED COMPANY AND
SUBSIDIARY OPERATION OF ACQUIRING WHICH WAS
MOST CLOSELY CONNECTED WITH MAIN
ACTIVITY OF ACQUIRED

	Simple*		Complex		Total	
	(F)	(D)	(F)	(D)	(F)	(D)
Horizontal						
Horizontal	1	15	56	79	57	94
In different geographic markets	0	5	24	35	24	40
Complementary	0	2	17	20	17	22
Competing, but different materials	0	0	0	1	0	1
Same three-digit industry	0	0	2	6	2	6
Same two-digit industry	0	0	3	12	3	12
Vertical Forward						
Sales outlets	1	7	2	14	3	21
Service or service and sales	0	0	0	0	0	0
Assembly or fabrication	0	1	0	2	0	3
Processing plants	0	1	1	8	1	9
Other	0	1	1	2	1	3
Vertical Backward						
Parts	0	0	1	0	1	0
Materials	0	1	10	2	10	3
Services	0	0	0	1	0	1
Final commodities	1	0	3	9	4	9
Other	0	0	0	6	0	6
Jointness in selling	0	0	1	1	1	1
Same raw material	0	0	0	0	0	0
Same or similar processes	0	0	1	0	1	0
Conglomerate	0	0	0	0	0	0
X					38	8
Y					476	948

* Where the acquiring company operates in only one four-digit industry.

Note: (F) Acquisitions involving a foreign-owned or -controlled acquiring company.
(D) Acquisitions involving a Canadian-owned acquiring company.

Table A-11

TYPE OF MERGER OR ACQUISITION
BETWEEN MAIN ACTIVITY OF ACQUIRED COMPANY
AND SUBSIDIARY OPERATION OF ACQUIRING
WHICH WAS SECOND MOST CLOSELY CONNECTED WITH
MAIN ACTIVITY OF ACQUIRED

	Simple*		Complex		Total	
	(F)	(D)	(F)	(D)	(F)	(D)
Horizontal						
Horizontal	0	0	3	5	3	5
In different geographic markets	0	0	3	0	3	0
Complementary	0	0	0	4	0	4
Competing, but different materials	0	0	0	1	0	1
Same three-digit industry	0	0	0	2	0	2
Same two-digit industry	0	0	0	0	0	0
Vertical Forward						
Sales outlets	0	0	0	6	0	6
Service or service and sales	0	0	0	0	0	0
Assembly or fabrication	0	0	0	0	0	0
Processing plants	0	0	1	3	1	3
Other	0	0	0	1	0	1
Vertical Backward						
Parts	0	6	0	2	0	8
Materials	0	0	1	0	1	0
Services	0	0	0	2	0	2
Final Commodities	0	0	0	2	0	2
Other	0	0	0	2	0	2
Jointness in selling	0	0	0	7	0	7
Same raw material	0	0	0	2	0	2
Same or similar processes	0	0	0	0	0	0
Conglomerate	0	0	0	0	0	0
X					38	51
Y					593	1,095

*Where the acquiring company operates in only one four-digit industry.

Note: (F) Acquisitions involving a foreign-owned or -controlled acquiring company;
(D) Acquisitions involving a Canadian-owned acquiring company.

Table A-12

TYPE OF MERGER OR ACQUISITION
BETWEEN SUBSIDIARY ACTIVITY OF ACQUIRED
COMPANY AND MAIN ACTIVITY OF ACQUIRING COMPANY

	Simple*		Complex		Total	
	(F)	(D)	(F)	(D)	(F)	(D)
Horizontal						
Horizontal	1	9	4	5	5	14
In different geographic markets	1	0	0	0	1	0
Complementary	1	0	2	6	3	6
Competing, but different materials	0	0	1	0	1	0
Same three-digit industry	1	0	1	5	2	5
Same two-digit industry	0	0	3	3	3	3
Vertical Forward						
Sales outlets	0	1	2	11	2	12
Service or service and sales	0	0	0	0	0	0
Assembly or fabrication	0	0	0	0	0	0
Processing plants	0	0	0	3	0	3
Other	0	1	0	0	0	1
Vertical Backward						
Parts	1	0	0	0	1	0
Materials	0	1	3	1	3	2
Services	0	0	0	1	0	1
Final commodities	0	0	0	0	0	0
Other	0	0	0	0	0	0
Jointness in selling	0	0	0	0	0	0
Same raw material	0	0	0	1	0	1
Same or similar processes	0	0	0	0	0	0
Conglomerate	0	0	0	0	0	0
X					38	61
Y					580	1,078

*Where the acquiring company operates in only one four-digit industry.

Note: (F) Acquisitions involving a foreign-owned or -controlled acquiring company;
(D) Acquisitions involving a Canadian-owned acquiring company.

Table A-13

TYPE OF MERGER OR ACQUISITION
BETWEEN SUBSIDIARY ACTIVITY OF ACQUIRED COMPANY
AND SUBSIDIARY ACTIVITY OF ACQUIRING WHICH
WAS MOST CLOSELY CONNECTED WITH SUBSIDIARY
ACTIVITY OF ACQUIRED

	Simple*		Complex		Total	
	(F)	(D)	(F)	(D)	(F)	(D)
Horizontal						
Horizontal	1	6	8	19	9	25
In different geographic markets	1	0	1	1	2	1
Complementary	0	0	0	5	0	5
Competing, but different materials	0	0	0	0	0	0
Same three-digit industry	0	0	0	0	0	0
Same two-digit industry	0	0	0	2	0	2
Vertical Forward						
Sales outlets	0	1	0	1	0	2
Service or service and sales	0	0	0	0	0	0
Assembly or fabrication	0	0	0	0	0	0
Processing plants	0	0	0	0	0	0
Other	0	0	1	0	1	0
Vertical Backward						
Parts	0	0	0	0	0	0
Materials	0	0	0	1	0	1
Services	0	0	0	0	0	0
Final commodities	0	0	0	1	0	1
Other	0	0	0	0	0	0
Jointness in selling	0	0	0	1	0	1
Same raw material	0	0	0	0	0	0
Same or similar processes	0	0	0	0	0	0
Conglomerate	0	0	0	0	0	0
X					38	61
Y					589	1,088

*Where the acquiring company operates in only one four-digit industry.

Note: (F) Acquisitions involving a foreign-owned or -controlled acquiring company;
(D) Acquisitions involving a Canadian-owned acquiring company.

Table A-14

GEOGRAPHIC MARKETS SERVED BY
ACQUIRING AND ACQUIRED COMPANIES

Market(s)	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
Domestic only	41	528	918	1,035
Export only, to United States mostly	1	5	2	2
Export only, to several countries	0	4	0	1
Mixed domestic and export to United States mostly	13	14	164	68
Mixed domestic and export to several countries	2	26	78	26
Acquiring company foreign-based but did not sell in Canada	25	0	0	0
Acquiring company foreign-based and did sell in Canada	32	0	0	0
Acquiring company foreign-based but whether or not it sold in Canada is unknown	24	0	0	0
Foreign company with Canadian operations made export sales to Canada	58	0	0	2
Foreign company with Canadian operations, but whether or not it made export sales to Canada is unknown	415	13	2	3
Other	3	0	5	2
X	25	49	18	48
Y	0	0	0	0

97753—14

Table A-15

TYPE OF CANADIAN MARKET SERVED BY ACQUIRING AND ACQUIRED COMPANIES

Market Served	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
National	376	256	681	285
Regional: West mostly	59	40	164	86
Regional: Ontario and Quebec mostly	46	32	82	58
Regional: Maritimes mostly	5	7	19	18
Provincial	23	68	131	210
Local (smaller than provinces)	19	146	90	465
X	67	90	20	65
Y	44	0	0	0

Table A-16

PROVINCE SERVED BY ACQUIRING AND ACQUIRED COMPANIES WHERE MARKET SERVED WAS PROVINCIAL OR SMALLER

Province	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
Newfoundland	0	2	1	2
Prince Edward Island	0	0	1	4
Nova Scotia	1	2	1	11
New Brunswick	0	0	0	9
Quebec	10	32	12	54
Ontario	22	107	93	299
Manitoba	0	2	16	49
Saskatchewan	0	7	9	34
Alberta	5	13	27	70
British Columbia	7	50	68	138
X	53	52	11	65
Y	541	372	948	452

Table A-17

MARKET SHARES*

Share %	Held by Acquiring Company(1) A	Held by Acquiring Company(1) B	Held by Acquired Company(1) A	Held by Acquired Company(1) B	Held by Acquiring Company(2) A	Held by Acquiring Company(2) B	Held by Acquired Company(2) A	Held by Acquired Company(2) B
				Foreign				
1- 5	11	13	16	23	1	0	16	7
6- 10	26	19	15	12	9	0	5	2
11- 15	15	34	18	10	1	1	7	0
16- 20	8	4	8	8	0	0	3	1
21- 25	26	2	8	3	1	0	4	2
26- 30	5	3	4	5	0	0	3	1
31- 35	1	11	3	1	0	0	1	1
36- 40	0	11	6	1	0	0	3	1
41- 45	4	3	2	3	0	0	3	0
46- 50	0	1	2	0	2	0	2	0
51- 55	2	1	1	0	0	0	2	1
56- 60	4	4	3	1	0	0	0	0
61- 65	0	1	1	3	0	0	2	0
66- 70	0	0	1	0	0	0	0	1
71- 75	5	1	0	0	0	0	0	0
76- 80	2	1	2	0	0	0	2	0
81- 85	2	0	0	0	1	0	0	0
86- 90	0	0	0	0	0	0	0	0
91- 95	0	0	1	0	0	0	1	0
96-100	1	0	0	0	0	0	1	0
X	278	440	191	335	72	88	188	248
Y	249	90	357	234	552	550	396	374

continued . . .

97753—14½

Table A-17 (cont'd.)

MARKET SHARES*

Share %	Held by Acquiring Company(1) A	Held by Acquiring Company(1) B	Held by Acquired Company(1) A	Held by Acquired Company(1) B	Held by Acquiring Company(2) A	Held by Acquiring Company(2) B	Held by Acquired Company(2) A	Held by Acquired Company(2) B
				Domestic				
1- 5	21	14	37	30	9	4	46	40
6- 10	11	23	16	5	4	1	19	15
11- 15	11	25	14	4	6	2	14	8
16- 20	21	29	12	0	3	3	7	1
21- 25	19	14	10	0	3	1	5	0
26- 30	20	6	7	1	0	1	3	4
31- 35	34	16	10	1	3	1	10	5
36- 40	7	3	2	1	0	1	5	2
41- 45	10	4	5	0	6	5	4	2
46- 50	0	4	1	0	0	3	1	0
51- 55	5	4	2	1	1	1	0	1
56- 60	4	1	0	0	0	3	1	0
61- 65	6	1	2	0	0	0	3	2
66- 70	5	0	1	0	0	0	0	0
71- 75	4	1	0	1	0	0	1	0
76- 80	3	0	0	0	0	0	2	0
81- 85	3	0	0	0	1	0	1	1
86- 90	6	0	0	0	0	0	1	0
91- 95	0	0	0	0	0	0	0	1
96-100	0	0	0	0	0	0	2	1
X	621	811	369	480	183	215	524	628
Y	376	231	699	663	968	946	538	476

*Relates to the respective market shares of the acquiring and acquired companies in their main or over-all activity (prior to the merger or acquisition). In many instances the market share was reported for only a few products in the narrowest DBS industrial classification (three or four digits). These instances are reported in A. The reported market shares for full three- or four-digit industries are reported in B.

(1) If serving regional or national market in its main or over-all activity.

(2) If serving provincial market or smaller in its main or over-all activity.

Table A-18

MARKET SHARES
WHERE MERGING COMPANIES OPERATE
IN SAME MARKET*

Share %	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
1- 5	18	50	27	92
6- 10	19	22	18	42
11- 15	25	19	37	26
16- 20	7	11	41	11
21- 25	21	6	28	9
26- 30	3	6	16	11
31- 35	4	4	20	17
36- 40	3	4	5	6
41- 45	0	5	15	5
46- 50	0	3	7	2
51- 55	1	1	9	4
56- 60	1	1	7	0
61- 65	1	2	5	3
66- 70	0	0	0	0
71- 75	1	0	2	1
76- 80	2	3	0	1
81- 85	1	0	1	0
86- 90	0	0	0	1
91- 95	0	1	0	1
96-100	0	1	0	0
X	312	292	698	711
Y	220	208	251	244

*The market shares are for the industry in which both the acquiring and the acquired companies were producing prior to the merger, and relate only to horizontal relationships. The industry could represent either a main activity or a subsidiary activity.

Table A-19

EXPORT SALES TO CANADA BY FOREIGN-OWNED OR -CONTROLLED ACQUIRING COMPANIES

Sales ($ Thousand)	Number of Companies
0-100	86
100-500	4
500-1,000	1
1,000-5,000	5
5,000-10,000	1
10,000-50,000	0
50,000	0
X	434
Y	108

Table A-20

SHARE OF RELEVANT MARKET ACCOUNTED FOR
BY FOREIGN-OWNED OR -CONTROLLED ACQUIRING COMPANY'S
EXPORT SALES TO CANADA

Share %	Number of Companies
1- 5	84
6- 10	0
11- 15	0
16- 20	0
21- 25	0
26- 30	1
31- 35	0
36- 40	0
41- 45	0
46- 50	0
51- 55	0
56- 60	0
61- 65	0
66- 70	0
71- 75	0
76- 80	0
81- 85	0
86- 90	0
91- 95	0
96-100	0
X	447
Y	107

Table A.-21

RANK OF ACQUIRING AND ACQUIRED COMPANIES
PRIOR TO MERGER WITHIN TOP FIVE INDUSTRIES

DBS Four-Digit Industrial Classification	Rank																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	*	X	Y
Acquiring																							
Foreign																							
First	98	43	16	17	9	3	2	0	2	3	0	0	0	0	1	0	0	0	0	2	9	386	48
Second	15	14	14	1	6	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	298	287
Third	11	8	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	208	406
Fourth	10	1	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143	480
Fifth	2	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	567
Domestic																							
First	153	62	70	14	20	3	4	2	0	1	0	2	0	0	0	1	0	0	0	3	2	835	15
Second	108	38	17	20	5	10	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	508	476
Third	56	19	17	12	2	2	0	1	0	3	0	0	0	0	0	0	0	0	0	1	0	333	741
Fourth	13	20	11	9	0	3	0	4	0	3	0	0	0	0	0	0	0	0	0	0	0	194	930
Fifth	21	7	11	4	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	1,053
Acquired																							
Foreign																							
First	14	8	7	1	5	2	1	2	0	1	0	0	2	2	1	0	0	0	0	2	9	303	279
Second	7	3	7	5	2	2	1	3	1	0	0	0	0	1	0	0	0	0	0	0	2	197	408
Third	5	4	1	2	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	113	510
Fourth	3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	37	596
Fifth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	51	587
Domestic																							
First	6	6	8	4	6	4	1	2	1	6	1	5	0	0	2	1	1	3	0	8	4	671	447
Second	10	10	6	5	4	1	1	1	1	2	0	0	1	0	2	0	0	0	0	2	0	306	835
Third	5	5	2	4	1	0	1	1	0	2	0	0	1	0	0	0	0	0	0	1	1	98	1,065
Fourth	4	3	1	1	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	2	0	60	1,112
Fifth	6	1	4	2	3	1	0	2	0	0	0	3	0	0	1	0	0	0	0	1	0	87	1,076

*Insignificant.

Table A-22

RANK OF MERGED COMPANIES
WITHIN TOP FIVE INDUSTRIES

DBS Four-Digit Industrial Classification	Rank																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	*	X	Y
Immediately after Merger																							
Foreign																							
First	113	46	18	21	7	2	3	0	3	1	0	0	0	0	0	0	0	0	0	2	8	410	5
Second	21	19	20	5	6	4	0	0	1	12	0	0	0	0	0	0	0	0	0	0	1	367	183
Third	14	10	5	3	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	250	350
Fourth	13	2	3	0	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	150	458
Fifth	2	4	0	2	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	543
Domestic																							
First	171	62	71	11	13	3	4	2	0	0	1	2	0	0	0	0	0	0	0	3	2	832	10
Second	119	44	19	19	7	10	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	602	363
Third	61	28	23	13	2	2	1	2	0	4	0	0	0	0	0	0	0	0	0	0	0	359	692
Fourth	16	30	9	11	1	2	0	6	0	2	0	1	0	0	0	0	0	0	0	0	0	218	891
Fifth	26	9	14	2	4	2	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	125	1,002
At Time of Reporting																							
Foreign																							
First	113	51	22	27	2	2	4	2	2	1	0	0	0	0	0	0	0	0	0	3	8	394	8
Second	24	23	17	5	5	15	0	1	3	1	0	0	0	0	0	0	0	0	0	1	1	356	187
Third	13	11	4	3	3	1	1	3	0	1	0	0	0	0	0	0	0	0	0	0	1	248	350
Fourth	13	2	3	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	149	459
Fifth	2	4	0	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	547
Domestic																							
First	174	104	64	9	15	6	2	3	0	0	1	2	0	0	0	1	0	0	0	2	2	787	15
Second	123	42	33	17	11	6	0	0	4	0	0	2	0	0	0	0	0	0	0	2	0	566	381
Third	64	31	15	17	15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	342	701
Fourth	19	29	18	11	3	0	0	8	0	0	0	1	0	0	0	0	0	0	0	0	0	200	898
Fifth	31	9	17	2	3	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	116	1,007

*Insignificant.

Table A-23

LEADING PRODUCT OF ACQUIRING AND/OR ACQUIRED COMPANIES
WHICH APPEARED ON SELECTED PRODUCT LIST
OF DOMINION BUREAU OF STATISTICS, RELATING TO PRODUCTS
ABOUT WHICH STATISTICS ARE NOT PUBLISHED
BECAUSE LESS THAN THREE COMPANIES
ARE ENGAGED IN THEIR PRODUCTION

	Foreign		Domestic	
Product List(s)	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
1960 list only	17	17	42	32
1960 and 1945 lists	0	2	31	19
1945 list only	3	2	15	5
Neither list	476	393	509	492
X	3	6	4	3
Y	140	219	586	636

Table A-24

AGE OF ACQUIRED COMPANY

Age	Companies Acquired by Foreign-Owned or -Controlled Company	Companies Acquired by Canadian-Owned Company
1- 5	95	240
6-10	113	196
11-15	97	98
16-20	42	87
21-25	41	69
26-30	52	83
31-35	33	82
36-40	31	51
41-45	23	32
46-50	17	27
50+	36	48
X	59	174
Y	0	0

Table A-25

CONSOLIDATED NET PROFIT
EXPRESSED AS PERCENTAGE OF CONSOLIDATED NET WORTH
FOR BOTH ACQUIRING AND ACQUIRED COMPANIES
IMMEDIATELY BEFORE MERGER AND AT TIME OF REPORTING*

	Foreign				Domestic			
	Immediately Before		At Time of Reporting		Immediately Before		At Time of Reporting	
%	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
0- 5	111	43	81	60	91	75	188	65
6-10	64	53	122	31	129	50	133	47
11-15	103	48	87	36	207	72	279	38
16-20	81	40	82	16	126	55	214	28
21-25	43	28	56	17	98	50	112	27
26-30	27	24	28	10	87	38	46	12
31-35	17	20	2	7	67	27	15	3
36-40	14	19	5	3	17	22	4	9
41-45	8	8	4	5	19	10	1	3
46-50	7	9	0	1	10	13	0	0
51-55	2	5	0	1	3	13	11	4
56-60	0	4	1	2	4	6	0	0
61-65	3	1	4	0	2	7	1	1
66-70	5	2	0	0	2	10	0	2
71-75	0	4	0	1	0	6	0	0
76-80	1	2	4	2	5	4	0	3
81-85	0	0	0	1	2	3	0	0
86-90	0	0	0	0	0	1	0	0
91-95	1	1	0	0	1	0	0	2
95+	10	8	52	6	6	113	3	6
X	72	245	56	364	231	572	67	798
Y	11	0	3	17	0	0	1	49
Loss	59	75	102	59	80	140	112	90

*The consolidation of accounts applied where the acquiring or acquired firm consisted of more than one corporation.

Note: (A) -- Acquiring Company; (B) -- Acquired Company.

Table A-26

TOTAL NUMBER OF EMPLOYEES
OF BOTH ACQUIRING AND ACQUIRED COMPANIES AND THEIR SUBSIDIARIES
IMMEDIATELY BEFORE MERGER
AND OF REPORTING COMPANY AT TIME OF REPORTING

Number of Employees	Foreign			Domestic		
	Immediately Before		At Time of Reporting	Immediately Before		At Time of Reporting
	(A)	(B)	(C)	(A)	(B)	(C)
0-25	111	170	14	92	285	31
26-50	22	68	38	50	105	28
51-75	14	45	16	26	53	42
76-100	16	24	11	19	43	27
101-150	24	44	27	52	72	43
151-200	20	23	23	52	32	25
201-300	40	33	48	72	42	72
301-500	54	33	63	77	35	114
501-1,000	74	28	89	133	29	198
1,001-2,000	45	11	102	145	19	157
2,001-5,000	82	9	106	69	5	191
5,001-10,000	41	2	27	47	3	36
10,001-20,000	28	0	48	30	0	61
20,001-50,000	2	0	10	9	0	26
50,001-100,000	0	0	1	12	0	21
100,001-200,000	0	0	0	0	0	0
Over 200,000	0	0	0	1	0	0
X	64	149	16	299	455	112
Y	2	0	0	2	9	3

Note: (A) -- Acquiring company and subsidiaries where applicable;
(B) -- Acquired company and subsidiaries where applicable;
(C) -- Consolidated.

Table A-27

TOTAL SALES AND ASSETS
OF ACQUIRING AND ACQUIRED COMPANIES
AND THEIR SUBSIDIARIES

	A		B		C	
($ Thousand)	Sales	Assets	Sales	Assets	Sales	Assets
			Foreign			
0-100	65	87	54	71	1	1
100-200	5	4	33	53	2	6
200-400	14	18	57	72	10	5
400-800	20	22	87	86	11	14
800-1,600	28	33	91	72	27	48
1,600-3,200	56	58	83	62	50	43
3,200-6,400	71	66	51	47	63	80
6,400-12,800	72	65	34	19	106	88
12,800-25,600	78	60	20	11	133	90
25,600-51,200	32	57	14	10	54	88
51,200-102,400	38	41	1	4	71	39
102,400-204,800	46	53	1	2	33	76
204,800-409,600	32	17	1	2	53	46
409,600-819,200	7	2	0	0	17	1
819,200-1,638,400	3	4	0	0	7	7
1,638,400-3,276,800	0	0	0	0	0	0
3,276,800-	0	0	0	0	0	0
X	70	50	110	128	1	7
Y	2	2	2	0	0	0
			Domestic			
0-100	31	8	114	217	5	1
100-200	10	26	71	99	3	3
200-400	34	29	99	150	10	17
400-800	31	39	126	128	16	22
800-1,600	84	92	119	99	34	39
1,600-3,200	91	141	105	87	94	59
3,200-6,400	124	198	59	47	94	179
6,400-12,800	151	137	41	27	166	153
12,800-25,600	138	127	18	22	191	196
25,600-51,200	133	80	11	9	233	164
51,200-102,400	68	83	3	2	79	106
102,400-204,800	59	54	6	3	55	66
204,800-409,600	38	37	1	0	90	134
409,600-819,200	33	5	0	0	47	19
819,200-1,638,400	3	13	0	0	66	24
1,638,400-3,276,800	0	0	0	0	0	0
3,276,800-	0	0	0	0	0	0
X	158	117	401	290	3	4
Y	1	1	13	7	1	1

Note: (A) -- Acquiring Company and subsidiaries for fiscal year ended immediately prior to date of merger;
(B) -- Acquired Company and subsidiaries for the fiscal year ended immediately prior to date of merger;
(C) -- Acquiring Company and subsidiaries for the latest fiscal year at time of reporting.

Table A-28

MEANS OF ACQUISITION -- BY PURCHASE OF ASSETS OR SHARES

	Foreign	Domestic
Shares	371	669
Assets	251	517
X	17	1
Y	0	0

Table A-29

METHOD OF PAYMENT FOR ACQUIRED SHARES OR ASSETS

	Foreign	Domestic
Cash only	484	917
Stocks or other securities only	45	109
Debts or other considerations only	6	14
Cash plus stock	26	44
Cash plus debt or other considerations	19	49
Stocks plus debt assumed or other considerations	3	18
Cash, stock plus debts or other considerations	8	9
X	48	27
Y	0	0

Table A-30

PURCHASE PRICE AND METHOD OF PAYMENT
FOR ACQUIRED SHARES OR ASSETS

($ Thousand)	Cash Payment	Value of Stock Payments	Value of Debts Assumed as Part of Payment	Value of Other Consider-ations	Total Actual Price Paid	Imputed Total Price if 100% Ownership had been Achieved
			Foreign			
0-100	122	8	5	2	142	127
100-200	82	7	0	0	85	83
200-300	47	5	1	2	50	48
300-400	36	2	1	3	46	45
400-500	28	5	1	1	31	27
500-1,000	81	6	1	3	93	93
1,000-2,000	53	7	3	3	57	62
2,000-3,000	26	2	0	0	30	29
3,000-4,000	19	3	0	3	25	24
4,000-5,000	5	3	0	0	15	16
5,000-10,000	12	6	2	0	16	19
10,000-20,000	7	4	0	0	13	13
20,000-30,000	2	2	0	0	3	4
30,000-40,000	1	1	0	0	2	3
40,000-50,000	2	0	0	0	2	3
50,000-60,000	1	1	0	0	4	3
60,000-70,000	0	1	0	0	1	0
70,000-80,000	0	0	0	0	0	1
80,000-90,000	0	0	0	0	0	0
90,000-100,000	0	0	0	0	0	0
100,000-200,000	0	0	0	0	0	1
Over 200,000	0	0	0	0	0	0
X	65	56	41	44	23	38
Y	50	520	584	578	1	0
			Domestic			
0-100	394	37	14	10	427	409
100-200	161	17	3	7	177	181
200-300	94	14	0	3	109	105
300-400	64	10	3	4	76	76
400-500	38	6	3	2	50	48
500-1,000	92	22	4	2	133	136
1,000-2,000	65	22	3	4	83	84
2,000-3,000	21	5	0	0	31	29
3,000-4,000	12	4	0	1	18	21
4,000-5,000	12	2	0	0	15	16
5,000-10,000	17	6	1	1	27	24
10,000-20,000	11	2	1	0	13	12
20,000-30,000	1	4	0	0	7	12
30,000-40,000	0	0	0	0	0	0
40,000-50,000	0	0	0	0	1	1
50,000-60,000	0	0	0	0	0	0
60,000-70,000	0	0	0	0	1	1
70,000-80,000	0	0	0	0	0	0
80,000-90,000	0	0	0	0	0	0
90,000-100,000	0	0	0	0	0	0
100,000-200,000	0	1	0	0	1	1
Over 200,000	0	0	0	0	0	0
X	64	58	45	40	15	26
Y	141	977	1,110	1,113	3	5

Table A-31

REASONS FOR ACQUISITION IN DESCENDING ORDER OF IMPORTANCE

Reasons*	Rank					Rank				
	1	2	3	4	5	1	2	3	4	5
	Foreign					Domestic				
0	2	1	0	0	0	2	19	0	0	0
1	1	11	2	0	0	6	14	20	0	0
2	0	1	0	0	0	6	0	1	0	0
3	1	1	1	0	0	2	2	1	0	0
4	1	0	9	0	0	0	2	3	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	2	19	5	2	1	12	7	3	0	0
8	9	5	6	0	0	7	11	5	0	0
9	19	1	0	0	0	26	10	1	0	0
10	4	3	1	0	0	2	23	5	2	0
11	2	7	9	1	0	5	6	3	1	0
12	1	1	2	0	0	0	1	0	0	0
13	6	11	2	1	0	23	25	2	0	0
14	42	19	4	2	0	122	12	10	2	0
15	20	2	1	0	0	61	10	1	1	0
16	4	1	0	0	0	2	1	0	0	0
17	14	2	0	0	0	41	54	1	1	0
18	3	0	0	0	0	14	7	3	0	0
19	4	1	0	0	0	2	2	0	0	0
20	0	0	0	0	0	1	0	0	0	0
21	16	1	0	0	0	15	3	1	0	0
22	2	0	0	0	0	2	9	4	1	0
23	2	2	2	2	0	6	16	3	0	0
24	15	23	6	10	2	30	21	6	0	0
25	13	9	20	0	1	22	18	4	2	3
26	0	1	1	0	0	2	7	1	0	0
27	2	3	1	0	1	0	1	1	0	0
28	1	0	1	1	0	8	8	1	0	0
29	3	19	5	1	0	48	47	3	24	0
30	0	0	0	0	0	2	1	0	0	0
31	0	0	0	0	0	3	16	0	0	0
32	41	1	0	0	0	1	0	0	0	0
33	1	0	0	0	0	3	0	1	0	0
34	1	0	0	0	0	3	2	0	0	0
35	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0
37	4	1	0	0	0	1	1	0	0	0
38	1	0	0	0	0	2	1	0	0	0
39	0	0	0	0	0	0	0	0	0	0

continued ...

Table A-31 (cont'd.)

REASONS FOR ACQUISITION IN DESCENDING ORDER OF IMPORTANCE

Reasons*	Rank					Rank				
	1	2	3	4	5	1	2	3	4	5
	Foreign					Domestic				
60	3	3	0	1	0	19	13	3	0	0
61	0	2	0	0	9	2	2	3	2	1
62	0	0	0	1	0	12	3	3	0	0
63	0	0	0	0	0	1	9	1	0	0
64	4	1	0	1	0	12	14	3	1	0
65	0	0	0	0	0	0	3	2	0	0
66	0	0	0	0	0	1	3	0	0	0
67	0	0	0	0	0	0	0	0	0	0
68	11	5	0	1	0	32	2	0	1	0
69	3	1	0	0	0	6	0	1	0	0
70	38	25	2	0	0	98	24	2	0	1
71	29	9	2	0	0	3	0	0	0	0
72	4	0	0	0	0	21	3	0	0	0
73	25	8	1	0	0	42	2	1	0	0
74	47	15	4	1	0	56	14	8	0	0
75	8	0	0	0	0	13	2	0	0	0
76	24	28	1	5	1	38	26	5	2	0
77	6	2	0	1	0	5	1	0	3	0
78	30	6	2	0	0	30	31	9	1	0
79	23	10	0	0	0	15	12	0	3	0
80	19	5	3	1	0	9	6	0	0	0
81	9	1	0	0	0	13	9	1	0	0
82	7	4	4	2	0	17	15	18	2	0
X	112	112	112	112	112	260	260	260	260	260
Y	0	256	430	493	512	0	376	783	878	922

*Refer to Schedule A on the following page.

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Schedule A

REASONS FOR ACQUISITION

Code Numbers

0 - To expand without disturbing competitive situation
1 - Market too small to support another firm (where stated)
2 - To eliminate a competitor
3 - To forestall acquisition by a competitor
4 - To forestall acquisition of an outlet by a competitor
5 - To forestall acquisition of a source of supply by a competitor
6 - To reduce short-run costs which had been increased due to a declining market

To acquire something unique to acquired (or to firms like acquired)
7 - An outstanding man or group of men
8 - Know-how or processes
9 - Necessary licences or permits from regulatory authorities
10 - Well-known brands or trade marks
11 - Trade connections
12 - Three or more of seven to eleven and thirteen
13 - Other

Owner or owners wanted to sell
14 - Only stated that acquired firm was up for sale
15 - Owner wanted to retire
16 - Liquid capital was needed (or anticipated to be needed) to pay inheritance tax
17 - Acquired firm was in financial difficulties
18 - Acquired firm was in competitive difficulties
19 - Acquired firm was unable to grow because of difficulties in raising capital or because owner unwilling to delegate authority
20 - Three or more of fifteen to nineteen and twenty-one
21 - Other
22 - Belief better management would increase profits
23 - To acquire a business available at a bargain price

Cheaper and less risky to buy rather than build
24 - It was faster
25 - It provided an immediate assured market
26 - It would otherwise have taken too long to acquire knowledge of production processes
27 - The acquiring firm was unfamiliar with the market
28 - Three or more of twenty-four to twenty-seven and twenty-nine
29 - Other

To increase size in order
30 - To be able to float stock
31 - To be able to obtain funds more easily
32 - Acquisition made because of the merger of parent companies
33 - To expand without additional capital (by exchange of shares)

To take advantage of tax laws when acquired firm making
34 - Losses
35 - Profits
36 - Not stated whether firm making profits or losses in answer
37 - Other tax reasons
38 - To get control of liquid assets of the acquired company
39 - To obtain preferential treatment where less than 100 per cent ownership acquired

Schedule A (cont'd.)

OTHER REASONS FOR ACQUISITION

To achieve economies of scale or to reduce costs in

60 - Production
61 - Distribution
62 - Research or exploration
63 - Finance
64 - Management -- office activities, etc.
65 - Advertising
66 - To increase size in order to improve bargaining power as a buyer
67 - To increase size for prestige
68 - To make an investment, but no additional information given
69 - To make an investment because liquid assets available
70 - To expand productive capacity or operations
71 - To establish a manufacturing plant in Canada
72 - To organize new integrated enterprise or amalgamation
73 - To diversify into new field
74 - To diversify by adding related or complementary products
75 - To diversify by adding related or complementary services
76 - To disperse into wider geographic markets in same lines
77 - To disperse into wider geographic markets in related lines
78 - To establish a sales outlet
79 - To ensure continuation of a sales outlet
80 - To establish a supply source
81 - To ensure a continuation of a supply source
82 - To ensure or provide needed service (transportation, drilling, warehouse, etc.)

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Table A-32

REPORTED ECONOMIES RESULTING FROM ACQUISITION
IN DESCENDING ORDER OF IMPORTANCE

Economies* Realized	Rank			Rank		
	1	2	3	1	2	3
	Foreign			Domestic		
00	1	3	0	19	0	2
01	12	9	0	31	18	0
02	2	0	0	3	1	0
03	2	1	0	0	0	0
04	0	0	0	0	0	0
05	1	0	0	10	18	0
06	0	0	0	3	4	0
07	3	2	0	15	11	0
08	1	1	0	2	6	0
09	0	1	1	5	21	2
10	13	7	2	33	20	3
11	1	2	0	8	3	1
12	3	0	0	2	1	1
13	7	1	0	13	5	0
14	89	15	1	145	31	32
15	10	4	1	45	18	2
16	27	10	0	23	2	6
17	1	3	0	11	14	2
18	1	1	0	4	1	0
19	0	0	0	0	0	0
20	1	0	0	4	0	0
21	0	0	0	3	1	1
22	8	5	2	43	13	2
23	0	0	0	6	6	0
24	0	0	0	8	3	1
25	0	2	2	7	25	2
26	205	1	0	232	2	0
27	20	1	1	33	0	0
28	1	0	0	0	2	0
29	0	0	0	3	0	0
30	0	0	0	0	0	0
31	0	0	0	0	0	0
32	0	0	0	0	0	0
33	0	0	0	0	0	0
34	0	0	0	2	0	0
35	0	0	0	3	1	0
36	0	0	0	1	0	0
37	0	0	0	1	1	0
38	0	0	1	2	0	0
39	0	0	0	1	0	0
40	0	0	0	1	0	0
41	4	0	0	0	0	0
42	1	0	1	16	0	2
43	0	0	0	1	1	0
44	1	0	0	1	0	0
45	0	0	0	2	0	0
46	0	0	0	1	0	0
47	0	0	0	0	0	0
48	0	0	0	1	0	0
49	0	1	0	0	0	0
50	1	1	0	2	5	0
51	0	0	0	0	0	11
52	0	0	0	0	11	0
53	2	0	0	5	6	0
X	221	221	221	436	436	436
Y	0	347	406	0	500	681

*Refer to Schedule B on the following page.

Schedule B

REPORTED ECONOMIES RESULTING FROM ACQUISITION

Realized Code Numbers	Anticipated but Not Realized Code Numbers	
00	28	Volume buying, but reason why an advantage not specified
01	29	Greater bargaining power because of volume buying
		Products formerly purchased on market now produced internally
02	30	Formerly were purchased in Canada
03	31	Formerly were imported
04	32	Formerly were purchased in Canada and imported
05	33	Financing available at lower cost
06	34	Better bargaining position in selling
07	35	Market possibilities, but no elaboration
		Economies in promotion, selling or distribution
08	36	Advertising
09	37	Combining salesmen's routes or delivery routes
10	38	Other or not specified
		Economies in transportation
11	39	More rational location of plants
12	40	Can combine or co-ordinate shipments
13	41	Other or not specified
14	42	Economies in administration (same office staff handles acquiring and acquired, etc.)
15	43	Economies through better or more elaborate management (more specialists, etc.) in acquiring company
16	44	Less cost than establishing new facilities
17	45	Economies in use of raw materials
		Economies through integration of plants
18	46	One of the plants was closed, but no details added
19	47	One of the plants was closed, and remaining plant(s) considerably improved or enlarged
20	48	One of the plants was closed and production concentrated in larger or more modern plant
21	49	Number of products produced in each plant reduced (greater specialization)
22	50	Other
		Economies through integration of non-manufacturing establishments
23	51	Warehouses
24	52	Terminals and transport routes when trucks involved
25	53	Other
26		Negligible or no economies
27		Not applicable was response of firm

Table A-33

TOTAL NUMBER OF ACQUISITIONS MADE BY ACQUIRING COMPANY
(DIRECTLY OR INDIRECTLY) BEFORE JANUARY 1, 1945,
AND DURING THE PERIOD FROM JANUARY 1, 1945,
TO DECEMBER 31, 1961, INCLUSIVE

Number of Acquisitions	Foreign		Domestic	
	Prior to 1945	1945 to 1961	Prior to 1945	1945 to 1961
0	341	0	469	0
1	38	137	109	112
2	28	102	59	130
3	20	69	39	105
4	14	68	60	84
5	7	25	31	75
6	0	36	11	36
7	10	14	22	63
8	0	16	32	24
9	25	45	43	90
10	1	30	45	30
11	12	11	12	33
12	0	36	18	36
13	0	0	3	26
14	0	0	0	0
15	3	0	45	45
16	0	0	9	48
17	0	0	0	34
18	0	0	0	18
19	0	0	0	0
20+	72	50	47	198
X	0	0	1	0
Y	68	0	132	0

Table A-34

TOTAL NUMBER OF ACQUISITIONS MADE BY ACQUIRING COMPANY (DIRECTLY OR INDIRECTLY)IN CANADIAN INDUSTRY DURING YEAR IN WHICH PARTICULAR ACQUISITION WAS REPORTED AS HAVING BEEN MADE

Number of Acquisitions	Foreign	Domestic
0	0	0
1	404	591
2	135	250
3	37	134
4	32	61
5	10	42
6	6	32
7	7	6
8	8	30
9	0	0
10+	0	41
X	0	0
Y	0	0

Table A-35

PERCENTAGE OWNERSHIP BY ACQUIRING COMPANY IN VOTING SHARES OF ACQUIRED COMPANY IMMEDIATELY BEFORE MERGER AND AT TIME OF REPORTING

Percentage Ownership	Foreign		Domestic	
	Immediately before Merger	At Time of Reporting	Immediately before Merger	At Time of Reporting
0- 5	608	3	1,127	8
6- 10	3	0	2	0
11- 15	0	0	3	1
16- 20	1	0	4	0
21- 25	1	0	0	1
26- 30	0	2	3	2
31- 35	2	0	1	2
36- 40	0	0	1	0
41- 45	1	2	2	2
46- 50	2	2	9	3
51- 55	0	13	0	25
56- 60	0	4	0	6
61- 65	0	6	0	16
66- 70	0	9	0	16
71- 75	0	5	0	3
76- 80	0	9	0	8
81- 85	0	2	0	4
86- 90	0	2	0	4
91- 95	0	4	0	12
96-100	0	314	0	566
X	21	22	35	8
Y	0	240	0	500

Table A-36

PERCENTAGE OWNERSHIP HELD BY ACQUIRED COMPANY IN VOTING SHARES OF ACQUIRING COMPANY IMMEDIATELY BEFORE MERGER

Percentage Ownership	Foreign	Domestic
0- 5	611	1,117
6-10	0	0
11-15	0	0
16-20	0	0
21-25	0	0
Over 25	0	2
X	28	68
Y	0	0

Table A-37

RATE AT WHICH CONTROL OF ACQUIRED COMPANY WAS ACHIEVED BY ACQUIRING COMPANY

	Foreign	Domestic
By complete ownership initially	474	627
By less than complete ownership initially -- complete ownership ultimately	28	34
By less than complete ownership initially -- less than complete ownership ultimately	72	111
X	21	11
Y	44	404

Table A-38

NUMBER OF INDUSTRIES IN WHICH ACQUIRING COMPANY WAS OPERATING IN 1964*

Industries	Foreign	Domestic
1	177	195
2	92	243
3	89	182
4	64	91
5	81	48
6	15	36
7	13	72
8	24	16
9	14	38
10	0	7
11	11	51
12	23	15
13	0	8
14	13	46
15	5	0
16	10	26
17	0	16
18	0	0
19	0	0
20 or more	6	84
X	2	13
Y	0	0

*The breakdown of industries is at the three-digit and four-digit level. The repetition of the same answer for firms which made more than one acquisition must be taken into account, e. g., there was only one firm which was operating in 11 industries.

Table A-39

ALL OR PART OF THE ACQUISITION SUBSEQUENTLY SOLD

Acquisition Disposed of	Foreign	Domestic
No	568	1,096
Yes -- entire acquisition	28	51
Yes -- corporation or division	9	12
Yes -- important plant but less than a corporation or division thereof	1	6
Yes -- but a small part thereof	4	8
Other	5	7
X	24	7
Y	0	0

Table A-40

YEAR OF DISPOSITION OF ALL OR PART OF A PREVIOUS ACQUISITION

Year	Foreign	Domestic
1946	0	0
1947	0	0
1948	1	1
1949	0	0
1950	0	0
1951	0	1
1952	1	0
1953	1	5
1954	1	2
1955	1	3
1956	3	1
1957	4	2
1958	3	2
1959	3	5
1960	7	8
1961	2	9
1962	1	2
1963	1	0
X	38	46
Y	572	1,100

Table A-41

REASON FOR DISPOSITION OF ALL OR PART OF A PREVIOUS ACQUISITION

Reason	Foreign	Domestic
To dispose of assets or operations not part of principal business	0	10
To withdraw from extremely competitive market	0	4
To dispose of uneconomic or unprofitable operations	13	33
Disposal made when acquisition did not produce expected return	0	0
Purchase offer too attractive to refuse	1	2
Assets or company no longer necessary for principal operations	3	5
Shares or assets transferred to affiliate	0	2
To withdraw from competition with publicly owned enterprise or as a result of expropriation	0	0
To provide new type of operation (e.g., sale and lease-back)	0	0
To enlarge number of participants in joint enterprise	1	1
Assets obsolete or would involve too much cost to modernize	3	2
To acquire funds for principal activity	1	4
To acquire a valuable affiliation	1	2
X	44	22
Y	572	1,100

Table A-42

TOTAL NUMBER OF MANUFACTURING ESTABLISHMENTS
OPERATED BY BOTH ACQUIRING AND ACQUIRED COMPANIES
AT TIME OF ACQUISITION

Total Number	Foreign		Domestic	
	Acquiring Company	Acquired Company	Acquiring Company	Acquired Company
0	94	118	35	100
1	142	281	246	458
2	57	40	101	52
3	41	10	57	16
4	24	5	68	8
5	16	5	27	5
6	28	2	25	4
7	10	2	26	3
8	14	1	25	3
9	10	0	11	2
10	2	1	11	2
11	2	0	11	0
12	2	1	12	1
13	2	0	10	0
14	0	0	12	1
15	0	0	5	0
16	2	0	2	0
17	1	0	2	0
18	1	0	2	1
19	0	0	1	0
20 or more	1	1	103	1
X	56	22	80	61
Y	134	150	315	469

Table A-43

TOTAL NUMBER OF MANUFACTURING ESTABLISHMENTS
OPERATED BY REPORTING COMPANY AND ITS SUBSIDIARIES
IN 1964

Total Number	Foreign	Domestic
1	80	67
2	67	80
3	55	81
4	58	91
5	22	53
6	16	40
7	7	50
8	34	24
9	18	83
10	33	39
11	11	28
12	8	28
13	6	24
14	4	27
15	5	13
16	16	40
17	1	7
18	8	11
19	0	29
20	2	15
21	17	3
22	0	9
23	14	16
24	0	9
25 or more	155	307
X	2	13
Y	0	0

Table A-44

NUMBER AND PROVINCIAL LOCATION OF MANUFACTURING ESTABLISHMENTS OF BOTH ACQUIRING AND ACQUIRED COMPANIES AT TIME OF ACQUISITION

	Number of Establishments Reported													
	0	1	2	3	4	5	5+	6	7	8	9	10+	X	Y
Acquiring Companies														
Foreign														
Newfoundland	391	7	0	0	0	0	0						41	200
Prince Edward Island	397	0	0	0	0	0	0						42	200
Nova Scotia	379	9	2	0	0	0	0						49	200
New Brunswick	370	26	1	0	0	0	0						42	200
Quebec	223	124	19	3	12	2	0	4	0	2	1	0	49	200
Ontario	128	142	65	26	15	8	0	6	0	0	0	0	49	200
Manitoba	346	41	2	1	0	0	0						49	200
Saskatchewan	374	13	3	0	0	0	0						49	200
Alberta	310	62	18	0	0	0	0						49	200
British Columbia	291	60	25	3	3	0	8						49	200
Domestic														
Newfoundland	789	15	0	0	0		1						54	328
Prince Edward Island	774	23	9	0	0		1						52	328
Nova Scotia	735	31	25	7	5		4						52	328
New Brunswick	733	57	5	3	8		0						53	328
Quebec	458	166	83	30	22	14		12	8	2	4	8	52	328
Ontario	266	200	83	48	23	20		14	7	14	3	118	63	328
Manitoba	554	139	39	25	28		23						51	328
Saskatchewan	624	67	65	39	1	14							49	328
Alberta	575	68	44	26	41	50							55	328
British Columbia	553	102	32	30	18	70							54	328
Acquired Companies														
Foreign														
Newfoundland	385	0	1	0	0	0	0						20	233
Prince Edward Island	384	2	0	0	0	0	0						20	233
Nova Scotia	373	12	0	1	0	0	0						20	233
New Brunswick	383	2	0	1	0	0	0						20	233
Quebec	299	78	8	2	0	0	0	0	0	0	0	0	19	233
Ontario	169	189	19	4	0	1	0	1	0	1	0	1	21	233
Manitoba	356	29	1	0	0	0	0						20	233
Saskatchewan	368	18	0	0	0	0	0						20	233
Alberta	356	28	2	0	0	0	0						20	233
British Columbia	343	32	8	0	0	0	2						21	233
Domestic														
Newfoundland	636	2	0	0	0		0						47	502
Prince Edward Island	633	5	0	0	0		0						47	502
Nova Scotia	621	15	1	0	1		0						47	502
New Brunswick	623	14	0	1	0		0						47	502
Quebec	521	101	8	4	1	0		0	1	0	0	0	49	502
Ontario	332	276	15	6	3	3		0	1	0	0	2	47	502
Manitoba	588	42	6	2	0		0						47	502
Saskatchewan	609	24	5	0	0		0						47	502
Alberta	584	39	6	2	0		3						51	502
British Columbia	552	65	11	1	1		3						52	502

Table A-45

NUMBER AND PROVINCIAL LOCATION OF MANUFACTURING ESTABLISHMENTS IN PRINCIPAL ACTIVITY OF ACQUIRING COMPANY IN 1964

	Number of Establishments Reported											
	0	1	2	3	4	5	6	7	8	9+	X	Y
Foreign												
British Columbia	412	112	27	19	1	4	6	24	1	31	0	2
Prairies	369	77	46	68	4	8	27	0	2	36	0	2
Ontario	158	284	82	33	34	12	1	0	0	33	0	2
Quebec	323	209	41	5	11	9	28	1	9	1	0	2
Maritimes	528	71	2	4	2	0	2	0	0	28	0	2
Domestic												
British Columbia	703	253	162	19	11	22	1	0	0	3	0	13
Prairies	557	156	101	140	57	68	18	72	0	5	0	13
Ontario	355	342	163	117	45	14	26	9	0	103	0	13
Quebec	629	316	168	34	12	2	5	0	4	4	0	13
Maritimes	966	47	100	27	3	0	0	1	4	26	0	13

Table A-46

NATURE OF PRE-1945 MERGERS*

	Foreign	Domestic
Companies acquired had assets or sales volume 1/4 as great as acquiring company, or larger	64	181
Companies acquired had assets or sales volume under 1/4 as great as acquiring company	73	195
Information not available	99	208
X	0	2
Y	403	601

*This Table is based on information taken from a study done by Professor J. C. Weldon for the Combines Branch.

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STATISTICAL APPENDIX TABLES

The Take-Over of Canadian Firms, 1945-61

An Empirical Analysis,

by Grant L. Reuber and Frank Roseman

Economic Council of Canada