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REPORT OF THE ROYAL COMMISSION ON CORPORATE CONCENTRATION

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REPORT OF THE ROYAL COMMISSION ON CORPORATE CONCENTRATION

MARCH 1978

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To His Excellency the
Governor General in Council

MAY IT PLEASE YOUR EXCELLENCY

We the Commissioners appointed under Part I of the Inquiries Act by Order in Council of 1 May 1975, P.C. 1975-999, to inquire into, report upon, and make recommendations concerning the concentration of corporate power in Canada more specifically set forth in Order in Council of 22 April 1975, P.C. 1975-879,

BEG LEAVE TO SUBMIT TO YOUR EXCELLENCY THIS REPORT

Robert W. V. Dickerson

Pierre A. Nadeau

17 March 1978

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Preface

Preliminary Observations

This Commission was appointed under Part I of the Inquiries Act, by two Orders in Council approved respectively on April 22 and May 1, 1975 (see Appendix A), which set out the following terms of reference:

> . . . to inquire into, report upon, and make recommendations concerning:
>
> (a) the nature and role of major concentrations of corporate power in Canada;
>
> (b) the economic and social implications for the public interest of such concentrations; and
>
> (c) whether safeguards exist or may be required to protect the public interest in the presence of such concentrations.

While this mandate contemplated a broad and wide-ranging inquiry, the origin of the Commission was more precise and identifiable. The event that led directly to its creation was the bid for control of Argus Corporation Limited made in March/April 1975 by Power Corporation of Canada, Limited, a matter upon which we comment in some detail in Chapter 7. Although the bid was ultimately unsuccessful it provoked considerable comment, since it could have resulted in a very large enterprise with significant interests in many major industries. While this result would have been achieved by acquisition rather than internal development, it was not clear whether, in this situation, existing merger laws would have protected the public interest adequately. The government concluded that it was not able to assess the full implications of such an acquisition, as there had not been, in Canada, any general review and analysis of the consequences of mergers of large, diversified firms or of the implications of concentrations of corporate ownership and power.

Thus we were not to limit our investigation to the question of conglomerate mergers. Indeed, the terms of reference do not mention either conglomerates or the Power bid for Argus. We were asked rather to venture into areas that had not been extensively explored in Canada. Although we were given

broad terms of reference, we were at the same time operating under some constraints, since we had been asked to report with all reasonable dispatch. We were trying to complete our work within two years.

In constructing a framework for analyzing the problem given to us, we found that we shared a conviction regarding Canadian society. We believed that our political system, with its major role for governments as well as private business, and respect and safeguards for the freedom of individuals, was sound in its basic elements and structure and more appropriate for Canada than any other. Only a very few witnesses urged radical change. Almost all argued, or appeared to believe, that our society and our economy should function both efficiently and equitably, without a basic rearrangement of roles and relationships. This we believe also to be the view of most Canadians and we have therefore looked for improvements and made recommendations concerning the working of our institutions within the existing structure of society.

Our terms of reference, however broad, did not extend to an investigation and appraisal of the role of governments or trade unions, or of the implications of their respective activities, although there is much there that could be considered. That apart, there was little in the corporate sector that could be considered to lie outside our mandate, if such matters involved concentrations of corporate power.

We tried to approach our task without fixed views. Some of the relevant issues had not been widely discussed in Canada, while others had received some examination and analysis, mainly in academic circles. Most, we found, did not generate public enthusiasm or even great interest.

We determined early that it would be necessary to narrow the focus of our inquiry, so that we could best marshall and use the available resources. We announced that we thought it undesirable for the Commission to commence a review of competition policy generally, since qualified advisers to the government had been working on that matter for a considerable time. As expected, however, we did come upon issues touching directly on existing or proposed competition policy, and hence we make a number of observations on that subject in various chapters. We also stated that we would not duplicate the work of those responsible for reviewing and revising the Bank Act and that we did not plan to give detailed attention to the provisions of the existing Bank Act, or to the regulation of banks and bank credit. Nevertheless, there were a number of matters related to the banks as concentrations of corporate power with which we were concerned, and these are dealt with in Chapter 10. We announced that we did not intend to make a special study of foreign control of Canadian corporations or multinational corporations, since much had been written on that subject, and the Foreign Investment Review Act had been put into effect in 1974. We have considered some aspects of foreign control related to corporate concentration, and we comment on those in Chapter 8.

Many new laws were introduced during the 1960s and 1970s specifically relating to the formation and management of corporations, the securities they issue to the public, the information they must disclose, their competitive

behavior, the taxation of their income and that of their shareholders, permissible investment in Canada in the case of those that are foreign-controlled, and many other related matters. In addition, new laws of general application have been introduced, which are also of considerable importance to business. They include legislation to protect the environment, to protect the consumer, to prevent discrimination in employment, and to disclose political contributions.

This extensive recent reform of the laws affecting business has confronted this Commission with a difficult task in identifying those places where the public interest may have been left inadequately guarded against the economic and social implications of major concentrations of corporate power. We have selected several areas for discussion. One subject that seemed not to have been adequately studied in the past comprised the potential implications for the public interest in the formation and conduct of large diversified corporate enterprises ("conglomerates"). These are discussed in general in Chapter 5 and a specific case is treated in Chapter 7. In addition we have reviewed in Chapter 6 the practices and laws relating to mergers, which have led to the formation of many major corporations.

We also discuss a number of other issues, to which our attention has been drawn by witnesses or briefs, or which our own studies have suggested. However we should make clear at the outset that an inquiry with the very broad terms of reference we had inevitably raises many more questions than it can hope to resolve. Therefore in many cases we simply identify possible problems that we think warrant further study.

One further preliminary point should be made. We were asked to deal with matters of public policy, not to conduct an investigation into the affairs of any specific corporation. We were not established to play the role of ombudsman; there were no "parties" before us contesting "issues" in the legal sense. It was, however, inevitable that, as an integral part of our work, we should look closely at many corporations and a number of specific events. This was almost always done as part of the process of formulating our views on the broad kinds of issues we address in the *Report*.

Documentation

Unless otherwise noted data have been brought up-to-date to 1977. Since we expect this *Report* to be of interest to laymen as well as technicians, we have avoided extensive footnotes and references. However, where appropriate, readers are directed to the thoroughly documented research studies on which part of the *Report*, especially its more technical aspects, is based.

The Work of the Commission

We went about our duties principally in four ways. These were generally distinct, although of necessity they overlapped to some extent.

Existing Material

We began by studying existing material on the subject of our inquiry. This first stage has been a continuing and intensive one, engaged in by the Commissioners, our staff, and the consultants whom we have engaged. While there is not nearly as much Canadian material on the various topics as we should have liked, there is nevertheless some, and there is a good deal more material originating in other parts of the world, particularly in the United States. We have read and discussed as many as possible of the articles, studies and other material pertinent to our work.

Submissions from the Public

The second phase of our work commenced with an invitation to the public to submit views on the matters we had been asked to consider. Within two months of the creation of the Commission, we issued a public statement announcing our plans, and concurrently advertised widely to invite all interested persons to send us their views. We repeated the invitation on several occasions, by advertising in newspapers and other journals and soliciting briefs or comments from the public.

We received more than 200 written briefs, ranging in size and scope from a few paragraphs on a single topic to complex and sophisticated submissions in several volumes touching on a large number of the subjects in which we were interested. Of the briefs, 54 came from corporations, 75 from individuals, 7 from experts whom we had asked to submit briefs or studies, 62 from associations and 3 from other organizations or persons. Included in the total for associations are the submissions we received from 5 political parties and 6 trade unions. The briefs came from every province and from the territories, from the largest cities to small villages. Roughly half came from Ontario, one-fifth from Quebec, and the remainder more or less evenly from across the country. A list of written submissions is set out in Appendix B.

These submissions will form part of our permanent papers and will be available for review and analysis by others in the future. The people who submitted briefs rendered a significant service to the Commission, and we are grateful to them.

Public Hearings

In addition to written submissions, we obtained the views of the public at public hearings. While the kinds of hearings conducted by Royal Commissions are not intended to yield scientifically accurate measurements of public opinion, they do provide a forum for the expression of views, often deeply held, and we found that the hearings (which resulted in about 8,000 pages of transcript) exposed us to a broad cross-section of opinion. The dates and places of the hearings, together with the names of the people who appeared at them, are set out in Appendix C.

We conducted the public hearings in three rounds. The first took place in November and December of 1975, and January of 1976. We visited Montreal,

Toronto, Ottawa, Winnipeg, Calgary and Vancouver and heard there testimony from people or organizations that had submitted briefs and had expressed an interest in giving oral evidence. Generally we laid down no rules as to the content of any oral presentation, and witnesses were free to discuss any topic relevant to our terms of reference. This round of hearings had two main purposes. First, it was intended that the public have a full opportunity to express its views. Secondly, it was hoped that the Commissioners could form an impression about what were likely to be the important matters to be considered. These hearings (like the others that followed) were as informal as we could make them. Witnesses were not sworn and, with only one or two exceptions, did not appear with their lawyers. Witnesses spoke on the matters of interest to them and were then questioned by the Commissioners and Commission counsel in an effort to obtain elaboration and clarification of views.

By the conclusion of the first round of hearings, and as a result of the other work we had been doing, we were able to select those issues on which we wanted to hear more oral testimony, and which could be appropriately dealt with at the next round of hearings. We had also concluded that some of the issues were best dealt with by means other than public discussion, most often through specialized research inquiries. The second round of hearings took place in April, May and June 1976. These were held in the cities of Toronto, Montreal and Ottawa because the people from whom we wished to hear were resident in one of those cities or agreed to come to testify there. In the second round of hearings we were more selective than in the first. Although the format was similar, we invited particular witnesses to discuss specific subjects. The focus of the second set of hearings was thus much more narrowly defined.

A third round of hearings was held because we thought it desirable to obtain an even wider cross-section of views of Canadians. We also thought we should do everything reasonable to encourage people without the resources for the preparation of submissions, and those who did not live in large urban centres, to come forward and give their views. Accordingly we scheduled a number of quite informal hearings at various times from May through September 1976. These were all held in the evening. They were conducted by one Commissioner, with one or two staff members (the earlier hearings had been conducted by all three Commissioners and more staff), and the Commissioners allocated and shared this responsibility among themselves. We held hearings at Halifax, Charlottetown, Fredericton, St. John's, Windsor, London, Sudbury, Thunder Bay, Sherbrooke, Chicoutimi, Trois-Rivières, Quebec City, Regina, Edmonton, Victoria, Prince George, and Yellowknife. We frequently sat well into the night, and heard both prepared and spontaneous expressions of opinion from any member of the audience who wished to come forward. In total, we had at these hearings 127 witnesses. The views expressed at the hearings were valuable to us, since they helped to define in our minds the attitudes of Canadians on a number of national, regional, and local issues. For example, one of the most difficult parts of our work has been to assess the social implications of corporate power. The evening hearings helped us to formulate our own views on this question.

Research

A significant part of our work has been conducted through a research program. Some of this was done by our staff but much of it was contracted out. The program began in the summer of 1975, and all the reports were received by 1977. It was designed to fill some of the gaps in knowledge that we found to exist, to assist us in arriving at conclusions and, perhaps most importantly, to contribute to the understanding of Canadians in several important areas. A descriptive list of the published research studies is given in Appendix D.

It did not take long before we realized that there was a lack in Canada of objective, analytical histories of the development of individual Canadian businesses. Part of our task was to report on the nature and role of concentrations of corporate power. To assess the implications of corporate activity, one must have a reasonable understanding of the facts of that activity. Thus we commissioned a number of studies focusing on the financial, operational, and corporate histories of selected enterprises. About a dozen of these are reports by investment analysts describing some of Canada's largest and most important diversified enterprises and conglomerate corporations. These are based on information that, while publicly available, has now, largely for the first time, been drawn together, analyzed and reported upon in one place. We also commissioned, from professional economists, analyses of large, but essentially non-diversified, corporations. Among these firms are a major Canadian refining and manufacturing company with extensive operations overseas, a large resource-based company selling mainly in the export market, and a large multinational company in a high-technology sector. The individual studies are of course the work of the respective authors, and do not necessarily reflect the views of the Commissioners or of the companies themselves.

A second group of research projects was more technical in nature. In this group were studies dealing with (a) the relationship, quantitatively measured, between size or other dimensions of corporate structure and corporate economic performance; (b) the causes and effects of diversification among Canadian enterprises and of the market power of large firms; (c) size and concentration in Canadian industry; (d) reciprocal buying arrangements; (e) the influence of the tax system on mergers and acquisitions; and (f) alternative assessments of networks of corporate control, as signaled by interlocking directors and officers among enterprises.

A third category of research involves studies of a less purely economic or technical kind. These have a somewhat broader, socially oriented perspective. Among these are studies dealing with (a) the impact of organization size on individual alienation; (b) the social characteristics of one-industry towns in Canada; (c) the relationship between large and smaller firms (corporate dualism) in a major Canadian industry and its implications; (d) the concept of corporate social responsibility in Canada; (e) the personnel policies and practices of very large businesses compared with those of middle-sized businesses; (f) political party financing in Canada and the law relating thereto; and (g) the relationship between corporate size and labor relations.

The research projects mentioned, and the others listed in Appendix D, are being published concurrently with the publication of this *Report*. All the research projects, some unpublished studies and internal background papers, plus all the submissions and transcripts of evidence will also be deposited in every provincial legislative library.

Robert B. Bryce

We should like to record here our deep appreciation of the significant contribution of Robert B. Bryce to the work and *Report* of this Commission. From the date of his appointment as Chairman (April 22, 1975) until his resignation because of ill health two years later, he provided the Commission with inspired and dedicated leadership.

Mr. Bryce brought to our work a unique wealth of experience gained in an illustrious career as a public servant. This career included service as Executive Director of the World Bank, Secretary of the Treasury Board, Clerk of the Privy Council and Secretary to the Cabinet, Deputy Minister of Finance and Executive Director of the International Monetary Fund.

At the time of Mr. Bryce's resignation we had completed our research work and public hearings and had made considerable progress on crystallizing our views and drafting this *Report*. However, Mr. Bryce has not participated in the work of the Commission since his resignation, and the remaining Commissioners bear responsibility for the completed *Report*.

Acknowledgements

This *Report* would not have been possible if we had not had the help of a highly competent, industrious and dedicated staff. Their names are listed in Appendix E and our thanks extends to all of them.

Conclusion

In our opinion, some of the matters upon which we have expressed a view require legislative action, but most do not. As we have discovered, much of the present legislation in some of the areas with which we are concerned has emerged gradually out of, and embodies what was previously, general practice. We hope that our observations will contribute to a similar process. We also hope that the evidence and views that have been brought to light as a result of our activities, the publication of our *Report*, and the attention thereby focused on a generally unfamiliar subject will stimulate reaction and response and will influence opinion and action in a constructive way.

Chapter 1

Introduction and Background to the Report

Large firms and concentrated industries are not new phenomena in Canada or other industrial countries. They have existed for at least 100 years. Before 1800 most manufacturing industries were composed of small firms, often one-man or family operations. With the industrial revolution, the size of the firms in most industries increased dramatically as entrepreneurs invested ever larger amounts of capital equipment to exploit new technologies and the economies of scale available in them. However, this large capital investment made these large firms more vulnerable to periodic shifts in the demand for their products over the business cycle and exacerbated these swings. To insulate themselves from these often catastrophic cyclical changes in sales and profits, firms often further increased their size by buying out competitors to control the market and to reduce what they considered to be "ruinous competition". In this way, the great increase in investment and output brought about by the industrial revolution, which has so dramatically raised our standard of living, also brought with it large firms and concentrated, oligopolistic industries. By the late 1800s this trend toward size and concentration had reached a point where the governments in Canada, the United States, England and other industrial countries had enacted legislation to curb the power of large firms. In 1889, the Canadian government enacted the predecessor to the present Combines Investigation Act, predating the Sherman Act in the United States by a year. This legislation reflected concern over both the growing size of corporations and potential abuses of corporate power, such as restrictive trade practices, by some large firms.

The level of overall concentration in the Canadian economy has almost certainly fallen in every successive decade since the turn of the century. For instance, in 1923 the Canadian Pacific Railway Company accounted for 21% of the aggregate assets of the 100 largest corporations in Canada; by 1975 the share of Canadian Pacific Limited had fallen to 6%. Concentration in most sectors and industries appears to have declined over the same period and in general, as we shall show in Chapter 2, has changed very little over the period

1967-76 despite the large number of mergers during that period. Many people have become increasingly uneasy over the economic, political and social impact of large firms in Canada. The sheer size of many of the firms in concentrated industries, their impact on their employees and communities and their potential economic power to administer prices and the quantity and quality of their output have caused apprehension among the public and governments, since this impact is seen to run counter to the economic and political philosophy of the free market system. This free market so eloquently espoused by Adam Smith in the eighteenth century had promised a competitive stimulus to efficiency, low and flexible prices and competition that would direct productive activity in such a way as to maximize the national income. Free markets composed of many small firms, which cannot influence the price at which their output is sold, have probably never existed in a modern, industrial economy. The Canadian economy, though widely thought to be a free enterprise one, has always been composed of large firms and oligopolistic markets in many industries and has been characterized by extensive government involvement.

Since Confederation and the "National Policy" of Sir John A. Macdonald, the federal and provincial governments have intervened in the economy through legislation, Crown corporations, erection of tariff barriers, subsidies and other direct and indirect means in support of national and provincial economic objectives and to tie Canada together as an industrial country. For instance, the railroads were built to run east and west in an attempt to change natural trade patterns and population flows, with the federal government providing cash, land grants, bond guarantees and monopoly privileges to their builders. High tariff walls were erected to protect domestic manufacturing industries from international competition and to redirect market forces from north-south to east-west trade to promote unity and national development.

From 1930 on, direct involvement by government continued or increased with the aims of promoting economic growth, establishing industries that could be internationally competitive, and regulating "key sector" industries in the public interest. World War II and the succeeding period of high demand for industrial goods gave a tremendous impetus to the growth of manufacturing in Canada. In the 30 years since World War II, Canada has gradually lowered its tariff barriers as part of the world-wide tariff reductions negotiated under the General Agreement on Tariffs and Trade. In spite of these reductions, Canada's tariffs are generally higher than those of other industrial countries, a vestige of the "National Policy", although its non-tariff barriers to trade (such as quotas) are somewhat lower. The government has continued to subsidize unprofitable transportation routes and to offer incentives for industry to locate or expand in lagging regions of the country in order to achieve a more even distribution of economic welfare among the provinces. Throughout this period the government has become increasingly concerned and involved with the transfer of income from group to group to achieve a more even income distribution. By early 1977, the portion of the economy taken out of the private sector by government ownership or direct government regulation had reached about 25% of the gross national product (GNP). Sometimes government

involvement takes the form of joint projects, such as Syncrude. In a more general way, there has been increasing government regulation of pollution levels, product safety, working conditions and employment practices.

The need for government regulation and involvement in the economy may well increase in the future. There are a number of tasks in our society that may be best undertaken by government (often in conjunction with private enterprise). Some projects may be too large or risky for private firms to undertake by themselves without government support. Others may be in the national interest but not sufficiently profitable to attract private capital. For example, the development of new sources of energy that can be in place as the end of the oil age approaches is probably beyond the capacity of private Canadian industry under almost any set of market assumptions, yet it is in the public interest for Canada to develop these new sources.

Canada's Unique Economy

The economic analysis and policy recommendations contained in this *Report* reflect the distinctive characteristics of Canada and its economy. Many of these characteristics are mentioned throughout the *Report*; we summarize the most important ones here to give a background against which it and our recommendations should be viewed.

The Canadian economy is made up of small markets dispersed over a wide geographic area. Canada has a relatively small domestic market and is one of the few countries in the world whose industries do not have access to a large free trade area. Canada's small, dispersed markets often prevent Canadian producers from realizing economies of scale. A large central plant that attains efficient levels of production often faces high transport costs, while small regional plants, which reduce those costs, may be unable to achieve efficient production costs because of low volumes of production. In either case, Canadian domestic producers in many areas cannot achieve the productivity enjoyed by firms in more populous and geographically concentrated markets. Nonetheless Canada's exports as a proportion of GNP are among the highest of the major industrial countries. We are a high-wage country, facing increasing international competition both from low-wage countries and from developed countries whose industries can realize economies of scale in production and in research and development through access to large markets.

The dispersed, isolated nature of Canadian markets has also led to significant disparities in income among different regions. As well, different regions of the country have different economic bases such that their economic interests are often not congruent with and are sometimes directly opposed to one another.

Canada has a higher level of tariff protection, but a lower level of non-tariff barriers than most other industrial countries. These tariff policies

partly insulate domestic business from the stimulus of foreign competition, allowing Canadian firms to operate inefficiently, by international standards, because of small scale but still to remain profitable because they can set their prices to match those of imports. Foreign firms have invested in Canada to overcome these tariff barriers; but in so doing they have frequently set up either a truncated version or a complete but scale-inefficient "miniature replica" of their larger operations outside Canada.

Canadian industry features a higher proportion of foreign ownership than does any other developed country, and the presence of foreign ownership and foreign subsidiaries in Canada contributes to Canada's dependence on capital and technology from abroad. Repatriation of dividends and interest charges at the rate of $2.5 billion per year reduces the growth of domestic pools of capital. Because of their backing by their parent firms, multinational subsidiaries are often able to obtain capital in Canada on more favorable terms than domestic companies of the same size. Technology is often imported rather than developed in Canada because it is cheaper and less risky to buy or license from foreign firms than to maintain indigenous research and development.

The State of the Economy

This *Report* has been written against the background of the present serious state of the Canadian economy. We have had persistently high inflation in Canada throughout the 1970s, somewhat constrained at times by monetary and fiscal measures and recently by the Anti-Inflation Board control program, but no solution to the problem is yet in sight. Inflation has had very damaging effects on our economy and on our ability to compete internationally. Since 1970, Canadian unit labor costs have increased relative to those of our major trading partner, the United States, although they have not increased faster than those of other developed countries. Recently, inflation has been accompanied by serious unemployment, despite large government deficit financing arising in part from measures to reduce or alleviate unemployment and to cushion its impact on unemployed workers.

The industrial sector is the weakest area of the economy. Uncertainties generated by high costs, inflation, the duration of wage and price controls, the prospective behavior of wages and prices when controls are lifted, the political future of Quebec, the increasing tendency of governments to move directly into private sector activities and the federal-provincial struggle over taxes and royalties have contributed to reducing business capital spending and new investment and induced many firms to move some of their operations south of the border. In 1976 for the first time there was a net outflow of direct foreign investment, and the indications are that this outflow continued in 1977.

Canada has been running a drastically unfavorable current account deficit with the rest of the world in recent years. From a positive balance of $96 million in 1973 the current account has deteriorated to a deficit of $4.2 billion in 1976, and an estimated $4.3 billion deficit in 1977, made up of about a $2.0 billion surplus in merchandise trade, a $0.4 billion surplus in transfer payments

and a service deficit of about $6.7 billion. Our trade surplus has also deteriorated since 1971 despite the fact that the prices of exports have increased faster than the prices of imports. The book value of Canada's balance of international indebtedness (including increases in earnings accruing to non-residents) rose from $28.5 billion at the end of 1970 to $48.5 billion at the end of 1976. Canada was the world's largest borrower in international markets in 1976. From 1960 to 1975, Canada's exports have increasingly consisted of agricultural products and raw and semi-processed materials, especially non-renewable natural resources. Manufactured goods exports have also contained increasing amounts of non-renewable resources. The depreciation of the Canadian dollar that started in November 1976 should eventually increase exports, lessen imports and thus assist the merchandise trade balance but it will also add to inflation through higher prices for imports.

The corporate sector has been seriously impaired by the troubles afflicting the Canadian economy. With a few exceptions the real earnings of companies in most industries are too low to generate the internal savings or to attract the new capital required to replace, modernize and expand the plant and equipment necessary to increase output, employment and the real income of Canadians. Reported profits fail to reveal the true picture because they do not measure the impact of inflation on the real cost of replacing inventories and capital investment. Over the seven years 1977-83, Canada's total capital requirements are projected to be between $460 and $520 billion (current dollars), which will require investment as a percentage of GNP to increase from its past average of 22.5% to about 25% of the projected GNP over the 1977-83 period.

Operating and labor costs have increased rapidly in Canada. This is a natural consequence of economic growth and rising wages and is found in most advanced countries but it must be compensated for by higher labor productivity if there is to be a rising standard of living. Canada's problems of adjusting to production using higher cost labor are exacerbated because our work force tends to be specialized geographically, and a large geographic displacement is often necessary to move unemployed workers in one region to a high employment area. Employment opportunities have been increasingly centered on natural resource exploitation in areas that are unattractive to many of the urban unemployed. Canada's large natural resource base has also supported the exchange level above that necessary to make many industrial sectors competitive internationally. The fall of the Canadian dollar throughout 1977 should help alleviate this problem, however.

Canada has an abundance of natural resources, both renewable and non-renewable. Although we are not self-sufficient in all foodstuffs, we are a net food exporter and should remain so in the future. While we are no longer self-sufficient in oil, our potential for future energy production is promising, though at much higher costs than those currently incurred. We rank high in the world in alternative fossil fuels, nuclear technology, uranium fuel supplies and hydro power. Over the past decade Canada has undertaken a tremendous investment in education. Its highly educated population provides a base for

Canada to expand those technology- and knowledge-intensive industries that will enjoy the highest growth in the future.

It is in the context of these problems and opportunities that we examine the economic and social implications of major concentrations of corporate power, with a recognition that, both in 1975 when the Commission was created and in late 1977 as we complete our work, corporate concentration, while important, would rank far down on any list of problems for most Canadians.

Corporate Power

The concept of "corporate power" recurs throughout this *Report* and should be defined here. Power has been defined as the possession of control, authority or influence. Judged from the briefs and testimony to the Commission, and the economic, social and political literature, the public perception of *corporate* power seems to contain two major elements, economic power and political power, and a third element, social power, which derives its existence in part from the first two. The corporation is thought to have economic power if it can control the prices at which its products are offered, control the quantity of products produced and, through its ability, due to its size, to withstand losses, influence the prices at which it purchases labor, capital and raw materials. Large corporations are thought to have political power due to the resources at their disposal and their ability to inform and persuade the politicians and civil servants who make decisions in government. They are thought to have social power because of the influence they have directly over their employees and indirectly over consumers who are affected by their decisions and, in some instances, by their ownership, or influence over the mass media.

In briefs to the Commission, many major Canadian corporations disavowed possession of power in any form. Other briefs and testimony indicated concern that corporate power of all types does exist, and that the power held by large corporations is something governments should control. Corporate economic power and its alleged or potential abuse are not seen merely as a function of absolute size or of industry concentration. Wealth and power vested in the hands of a few is argued to be inconsistent with equality and the principles of democracy. Many of the same words and analogies used to express concern about the economic power of corporations were also used in our hearings to describe their perceived political and social power.

Some indication of public sentiment toward corporations vis-à-vis other major institutions can be found in recent survey results from the Canadian Institute of Public Opinion. Its surveys consistently reveal greater concern with big unions and big government than with big business. In May 1971 and March 1976 a question was asked that reflected directly on the Commission's mandate:

> Prime Minister Trudeau has said that he believes big unions and big corporations have too much economic power, and that this power will have to be curbed if Canadians want an economy with low unemployment and stable prices. Do you think this is true or not, of either unions or corporations, or of both?

	Big Unions Only	Big Corporations Only	Both	Neither	Undecided
1971	13%	4%	55%	12%	16%
1976	16%	8%	53%	9%	14%

One question asked in 1972 and 1975 concerned the relative threat perceived from big business, big labor and big government:

> In your opinion which of the following do you think will be the biggest threat for the country in the future–big business, big labour or big government?

	Big Business	Big Labour	Big Government	Don't Know
1972	27%	36%	22%	18%
1975	20%	36%	29%	16%

(N.B. Rows add to more than 100% because of some multiple responses.)

These findings may simply reflect an overall and growing feeling of individual helplessness in a society increasingly dominated by large power blocs. While individuals may sometimes be able to deal with these power blocs, to do so is expensive, time-consuming and often ineffective. The parallels between big business, big government and big labor are not reflected in this *Report* since the mandate of the Commission is restricted to business, to "corporate concentration", but many of the problems we discuss are related to the organization of society and to all the institutions within it.

Some constraints exist to protect society against harmful exercise of corporate economic power. The most fundamental constraint, pointed out to us by many witnesses, is the operation of the market system and the readiness of competitors both foreign and domestic to increase sales, market share or profits by lowering prices or improving the quality and variety of their products. This constraint is somewhat qualified by a protectionist tariff policy and by the concentrated nature of many Canadian industries, but, on the whole, competitors are some constraint against the flagrant exercise of market power.

The second constraint on corporate economic power is the countervailing power of trade unions. This power stems from their legal right to require firms to engage in collective bargaining and their exemption from the laws against conspiracy to reduce competition and to increase prices. Unions have firmly established bargaining rights for the employees of most large non-financial corporations and government units and are increasing their membership in the financial sector. Agreements between large corporations and their unions play an important role in setting the wage and benefit patterns in the economy, and in recent years settlements involving public sector employees at times have also served as pacesetters. Although unions act as a counterbalancing force against large firms or government organizations in protecting their members, they can also reinforce the power that these organizations have over the consumers of their goods and services, since all the firms in an industry will face the same

increase in labor costs and will be able to act in concert to pass these costs on to the consumer.

A third constraint on corporate power is that imposed by government and law. This constraint is probably the most complex and difficult to evaluate, and there was much discussion of its effectiveness during the course of our hearings. Witnesses from the corporate sector contended that the weight of government was already oppressively heavy for business of all sizes, while others argued that corporate power should be made subject to even greater restraints by government.

Another aspect of government as a constraint on corporate power is the demands it makes on the Canadian economy in competition with the private sector. At a time when both unemployment and inflation are severe, it is not easy to sort out the issues in this rivalry, but we have heard widespread concern about the scale of government expenditures and taxation, as well as the importance of government actions and policies in creating "excess" demand, reducing the incentives to work, entering into "excessive" wage settlements with employees and preempting a large share of the available savings to finance its deficits. Government policy currently is to limit the share of the GNP accounted for by government to its present level.

These constraints reinforce the idea that our society is one of offsetting power—business, government, labor and other. Within each of these groups there are, of course, many subgroups with varying interests and power bases. An individual often feels helpless in his dealings with these groups. If one group could exercise unchecked power, if the balance of power broke down, then our social organization would be endangered. It is probably also true that one form of power induces another, that big business will induce larger-scale labor organizations or larger-scale government. This *Report* therefore assesses the changing role and strength of corporations and makes recommendations where appropriate to improve the performance of the Canadian economy and society.

The Public Interest

Another term used in our mandate and throughout this *Report* is the "public interest". A corporation, or indeed any institution, has no single "public interest", but rather has many publics, with many competing interests. The "publics" of a corporation include shareholders, creditors, employees, customers, suppliers, governments and local, national and even international communities. There are diversities of interest within each interest group and subgroup and an individual may find himself at any one time belonging to several groups, which may have conflicting interests.

For example, shareholders have a primary concern with stock values and earnings, creditors with a high return and minimum risk and employees with the quality of their work lives, their wages and other benefits and perhaps the social value of their employment. Consumers have an interest in low prices, high-quality goods, a high level of service and product information and protection against defective or dangerous goods and services. Suppliers negoti-

ate with the corporation on quality, price, expertise, reliability and capacity. Governments collect taxes, regulate, provide direct and indirect grants and subsidies, serve as safety and environmental controllers and promote employment.

For any corporation with finite resources, providing more to any one public usually reduces the resources available to others. Higher returns to shareholders may mean lower wages for labor. A higher level of consumer service may require more stringent rules for employees or lower profits. Better environmental protection may mean higher costs and prices and fewer jobs at a given plant.

The competing publics act through the market system and also through the political bargaining arena to achieve their goals by changing the laws and how they are interpreted and administered. We do not imply in this *Report* that there is any best allocation of corporate resources among competing publics. The questions of who within or outside a corporation should make the allocation among publics and how that allocation should be made are valid ones, but we make no *a priori* assumption that any given allocation is superior from a public interest sense.

Structure of the Report

This *Report* consists of 18 chapters. Our mandate was to investigate the social and economic impact of corporate concentration. We recognize that there is considerable overlap and interaction between the social and economic impacts of corporate concentration, but for analytical and expository purposes we have dealt with them separately. Chapters 2 through 9 deal primarily with the economic aspect of our mandate and specifically with concentration in the Canadian economy, economies of scale, the extent and implications of oligopoly, conglomerates and their performance, mergers and acquisitions and the implications of foreign direct investment. The economic section concludes with Chapter 9, which presents proposals for workable competition in the context of the existing economic structure.

Chapters 10 and 11 deal with banks and financial institutions and with the managerial, financial and other problems confronting small and medium-sized business. The five chapters beginning with Chapter 12 primarily deal with the social part of our mandate, and specifically with the special cases of corporate control, disclosure, corporate influence, working conditions and other social implications of corporate concentration. Chapter 17 discusses the role of regulated industries and Crown corporations. Chapter 18 is a summary of our general conclusions.

* * *

In Canada we have considerable corporate concentration as part of a mixed economy, and we shall almost certainly continue to have both in the future. In this *Report* we treat these as phenomena that may be inevitable for an industrial country rather than as new developments that can or should necessarily be reversed by government action. Instead we shall make proposals designed to increase the benefits to Canada from its resources using whatever forms of industrial organization and government involvement are appropriate.

Chapter 2

Corporate Size and Concentration

Introduction

As part of its mandate, the Commission was asked to inquire into "the nature and role of major concentrations of corporate power in Canada". Our first major effort in this regard was the study of several large, mostly well-known corporations, to provide some insight into the process of corporate growth and behavior of large corporations. In addition, the Commission asked Christian Marfels to prepare a manuscript on industrial concentration in Canada. This chapter summarizes and extends our earlier inquiries by examining the size and number of large corporations and groups of corporations operating in the Canadian economy and provides a descriptive background for the remainder of the *Report*, which evaluates the existence and effects of corporate power in Canada.

This chapter presents a variety of data related to the structure of Canadian industry. The major findings are summarized here before proceeding with a detailed discussion of the research that produced them.

Summary of Major Findings

The major empirical findings can be summarized as follows:

1. Aggregate concentration (i.e. the percentage of economic activity accounted for by the largest firms in Canada) decreased from 1923 to 1975; however, the greatest portion of this decrease took place before 1966. Since 1966, aggregate concentration in Canada has changed very little.
2. The average size of Canada's 100 largest non-financial corporations and the average size of Canada's 25 largest financial corporations are very much smaller than the average size of their counterparts in the United States and other developed countries.
3. Aggregate concentration is higher in Canada than in the United States.
4. Industrial concentration (i.e. the fraction of total activity in a given industry attributable to a fixed number of the largest corporations in that industry) increased in Canadian manufacturing industries from

1948 to 1972. Most of the increase took place between 1948 and 1954. Industrial concentration has remained quite stable from 1965 to 1972.

5. Industrial concentration in Canada is substantially higher than in comparable industries in the United States.

Together, these findings imply that, although Canadian firms are small when compared with the largest firms in the world, they are large relative to the overall size of the Canadian economy or relative to the sizes of individual industries. These findings illustrate a basic conundrum facing policy-makers in Canada. That is, while average firm size in many Canadian industries is below "world-scale", policies to promote larger firm sizes may exacerbate the potential problems associated with already high domestic levels of industrial concentration.

The description of Canadian industry in this chapter is the first step in considering the potential market power of firms in Canada. The remainder of the *Report* takes up the task of analyzing available evidence related to the economic and social implications of corporate concentration.

Describing Structure

No single statistic can indicate all the complex interactions, among corporations and other sectors in the economy, of interest to those studying the structure of the corporate sector. Several conventional measures are available, and will be presented here.

Description of the corporate structure of an economy can proceed on two levels. The first is the aggregate level, where the corporate sector or the largest corporations are measured against the whole economy. The second is the industry level, where the corporations are measured against their individual industry. This chapter uses both approaches.

In discussing structure at the aggregate level, two measures can be used. The first is the degree of aggregate concentration, that is the extent to which the total of economic activity is conducted by the largest corporations. The conventional measure of aggregate concentration is the aggregate concentration ratio, which is the fraction of total activity (usually assets or sales) accounted for by a group (usually numbering 100) of the largest corporations. The second measure used is simply the size of the largest corporations themselves, in relation to both the economy and other large corporations in the world.

There are several quantifiable dimensions of structure at the industry level, including degree of concentration, ease of entry into and exit from the industry, size of corporations in the industry, degree of import competition, rate of growth and rate of technological innovation in the industry. Differences in any of these dimensions have been shown by empirical studies to produce differences in the behavior of firms. While this chapter presents some data on a number of structural dimensions, it focuses primarily on the concentration ratio as a measure of industrial structure.

Our emphasis on concentration ratios derives primarily from the prominent role that they play in the administration and enforcement of competition policy in Canada and abroad. Concentration ratios have been incorporated into antitrust law in the United States and are referred to extensively in U.S. jurisprudence. Recently they have appeared in the proposed amendments to the Combines Investigation Act in Canada. Furthermore, concentration ratios have been referred to in key monopoly and merger cases in Canada and form an important part of the jurisprudence in the United Kingdom, Sweden, France and West Germany.

The entire rationale for the attempt to describe the structure of the corporate sector lies in the "market concentration doctrine", which holds that industrial structure is an important determinant of industrial conduct and performance. In particular, it suggests that the greater the concentration of economic activity in a few firms, the greater will be the likelihood of anti-competitive conduct among these firms.

Corporate Size Relative to the Total Economy

Introduction

The primary concern raised by high levels of aggregate concentration and large firm size is that decisions taken by large corporations may have consequences that extend well beyond specific markets to produce political and social as well as "purely" economic effects. Economic concerns about large absolute firm size derive from the potential for competitive abuses, such as mutual forbearance, predatory pricing, and reciprocity, which are alleged to arise from large absolute firm size (these practices are described in Chapter 5). Potential advantages of large absolute firm size are related to economies of scale in such areas as financing, research and development, management functions and risk-taking.

Corporate Groups

Some large corporations operating in the Canadian economy, while by definition separate entities, can more accurately be described as members of corporate groups bound together by common control linkages. When describing the overall concentration of corporate power, such firms should be classed not as single entities but as members of a single corporate group. The problem in such a description is to determine a definition of intercorporate control that will facilitate identification of all such groups, since effective control of one corporation by another can be achieved in a number of different ways, and since the same set of devices can indicate control in one circumstance but not in another. However, rather than undertake a case-by-case analysis of all Canadian corporations, we have adopted as a convention the definition that a corporation is effectively controlled by another when the latter owns 50% or more of the voting shares of the former.

A corporation is defined as an establishment, or group of establishments, that themselves are under common control. An establishment, as defined by

Statistics Canada, is the smallest unit that is a separate operating entity capable of reporting information. In the manufacturing sector, an establishment is approximately equivalent to a plant.

The Commission has compiled a list of the largest corporate entities in Canada. The measurement of corporate size in this context raises some problems. Since we are aggregating the various products and services that these corporate groups provide, we could measure the size of a group by the total value of all sales and services they supply (or their net revenue), the value of the total assets they employ, the number of employees for which they account or the value added of their operations. Some data constraints existed on our choice of size measure, however, which restricted us to using asset or sales measures of size. Information about large corporate complexes is useful for two purposes: to facilitate analysis of the largest corporate complexes in Canada over time and to compare the size of Canadian complexes with those in other countries.

While it was possible to aggregate corporate sales measures across most industries, financial corporations posed a problem. No comparable "sales" figures exist for financial institutions. Thus two lists of enterprises had to be compiled: a list of the 100 largest non-financial corporations and a list of the 25 largest financial corporations. In the latter, the corporations were ranked by assets.

The lists printed in Tables 2.1 and 2.2 present certain problems and anomalies. For example, because of the definition of control adopted, Argus Corporation Limited does not appear among the 100 largest non-financial corporate groups. Under the assumption that Argus effectively controls the three major corporations that now appear separately on the list and in which it has large minority interests (Massey-Ferguson Limited, Domtar Limited and Dominion Stores Limited), Argus ranks first among the top 100 non-financial corporate groups. Power Corporation is listed as the 98th largest corporate group. This, however, does not include its holdings in the financial corporations in which it has controlling interest. Several of Power's financial corporations appear on our list of largest financial groups. The exclusion of these financial corporations from the Power group accords with common practice in ranking the size of non-financial corporations.

The non-financial list understates the size of some corporate groups in that the ownership links between Canadian incorporated companies are sometimes found in the foreign parent corporation operating in another country. An example of this linkage is provided by Ford Motor Company of Canada, Limited, and Ensite Limited, both of which are subsidiaries of the Ford Motor Company of Dearborn, Michigan.

Given all these qualifications, the tables probably understate the sizes of many of the corporations listed.

Table 2.1

100 Largest Non-Financial Canadian Companies
(Including Foreign Operations[1]),
1975/76, Ranked by Sales or Revenues
(Thousands of Dollars)

Rank	Company	Sales or Revenues	Assets	Net Income (Loss) after Taxes
1.	George Weston Limited	5,046,693	1,247,681	18,723
2.	Ford Motor Company of Canada, Limited	4,437,900	1,591,100	119,800
3.	General Motors of Canada Limited**	4,335,209	1,107,212	111,230
4.	Imperial Oil Limited**	4,047,000	2,950,000	250,000
5.	Canadian Pacific Limited**	3,651,273	6,235,832	174,863
6.	Bell Canada	2,988,116	6,588,298	266,784
7.	Massey-Ferguson Limited	2,513,302	1,982,206	94,677
8.	Chrysler Canada Ltd.	2,473,547	605,470	19,471
9.	Alcan Aluminium Limited**	2,301,453	3,011,781	22,570
10.	Dominion Stores Limited	1,913,986	262,946	20,437
11.	Canada Safeway Limited	1,877,021	436,312	34,110
12.	Shell Canada Limited	1,868,375	1,549,072	144,771
13.	Canadian National Railway Company	1,846,729	4,952,538	(57,175)
14.	Gulf Oil Canada Limited	1,701,200	1,726,500	176,600
15.	Inco Limited	1,694,768	3,025,675	186,889
16.	Simpsons-Sears Limited	1,548,600	1,050,597	32,118
17.	Canada Packers Limited**	1,453,749	310,045	21,531
18.	Steinberg's Limited	1,430,195	417,674	11,460
19.	The T. Eaton Company Limited*	1,300,000	1,150,000	39,000
20.	MacMillan Bloedel Limited	1,296,689	1,197,903	(18,943)
21.	The Steel Company of Canada, Limited	1,201,756	1,678,261	88,774
22.	Hudson's Bay Company	1,178,831	821,895	22,004
23.	Brascan Limited	1,157,451	2,247,333	95,113
24.	Noranda Mines Limited**	1,156,423	1,980,117	50,525
25.	Ontario Hydro	1,070,595	8,593,301	(60,866)
26.	M. Loeb Limited	1,048,338	150,568	3,419
27.	The Oshawa Group Limited	1,023,857	254,682	7,196
28.	Moore Corporation Limited	1,005,610	737,153	69,512
29.	The Seagram Company Ltd.	977,430	1,991,314	74,120
30.	Air Canada	957,180	1,297,628	(12,473)
31.	Hydro-Québec	922,089	7,068,285	229,750
32.	TransCanada Pipelines Limited	920,389	1,572,218	66,297
33.	Texaco Canada Limited	846,543	771,722	51,135
34.	F.W. Woolworth Co. Limited	841,834	329,622	15,332
35.	Canadian General Electric Company Limited	822,134	602,435	36,232
36.	Domtar Limited	815,221	721,368	35,288
37.	Abitibi Paper Company Ltd.	764,384	870,924	13,329
38.	Dominion Foundries and Steel, Limited	738,083	944,405	55,473
39.	Canadian International Paper Co.	725,000	550,000	50,000
40.	Genstar Limited	720,100	704,608	47,156
41.	IBM Canada Ltd.	719,327	460,422	69,817
42.	International Harvester Company of Canada, Limited	713,994	488,922	22,109

Rank	Company	Sales or Revenues	Assets	Net Income (Loss) after Taxes
43.	Mitsubishi Canada Limited**	667,349	82,899	1,391
44.	Consolidated-Bathurst Limited	643,719	662,369	32,599
45.	Burns Foods Limited	622,083	135,427	4,772
46.	The Molson Companies Limited	613,632	407,052	19,620
47.	Mitsui & Co. (Canada), Ltd.**	604,532	90,849	1,529
48.	Woodward Stores Limited	596,058	251,508	11,781
49.	Canadian Industries Limited	594,908	390,226	42,638
50.	John Labatt Limited	594,191	426,150	22,176
51.	Canadian Tire Corporation Limited	561,032	358,516	25,276
52.	Imasco Limited	559,618	364,696	29,422
53.	Simpsons, Limited	547,940	562,285	22,190
54.	The Agro Company of Canada Ltd.**	522,249	14,832	1,254
55.	Hiram Walker-Gooderham & Worts Limited	509,105	913,166	50,647
56.	S.S. Kresge Company Limited	491,290	190,179	15,704
57.	BP Canada Limited	488,351	552,500	30,480
58.	Norcen Energy Resources Limited	479,102	915,754	33,408
59.	Provigo Inc.	478,139	76,644	5,585
60.	Iron Ore Company of Canada**	472,844	845,558	(696)
61.	Canada Development Corporation	469,605	1,277,537	26,050
62.	Mobil Oil Canada Ltd.**	467,160	497,716	78,832
63.	Rothmans of Pall Mall Canada Limited	464,345	403,065	15,436
64.	Dominion Bridge Company, Limited	459,316	326,994	24,442
65.	Husky Oil Ltd.	454,391	431,548	36,018
66.	Swift Canadian Co., Limited	452,467	115,467	3,456
67.	Westinghouse Canada Limited	451,642	222,572	15,703
68.	Anglo-Canadian Telephone Company.	445,007	1,578,795	23,654
69.	Falconbridge Nickel Mines Limited	429,481	763,099	3,221
70.	British Columbia Hydro and Power Authority	425,270	3,556,085	3,349
71.	Westcoast Transmission Company Limited	416,677	675,189	33,019
72.	Du Pont of Canada Limited	410,219	411,048	3,714
73.	Canada Cement Lafarge Ltd.	398,919	515,669	24,337
74.	Petrofina Canada Ltd.	396,467	520,427	32,766
75.	The Consumers' Gas Company	380,077	740,679	32,634
76.	Amoco Canada Petroleum Company Ltd.**	379,831	704,175	81,622
77.	Union Carbide Canada Limited	378,172	431,852	43,136
78.	Irving Oil Limited[2]	376,905	277,716	13,815
79.	Zeller's Limited	369,891	165,260	7,078
80.	Reed Paper Ltd.	369,067	413,400	12,309
81.	Rio Algom Limited	367,382	541,115	30,032
82.	Canron Limited	365,950	182,716	13,565
83.	Hawker Siddeley Canada Ltd.	365,234	282,207	10,348
84.	Ensite Limited	363,241	204,378	14,046
85.	The Great Atlantic and Pacific Tea Company, Limited	358,536	88,032	3,146
86.	Westburne International Industries Ltd.	357,513	263,858	7,693
87.	Maple Leaf Mills Limited	354,790	148,736	10,365
88.	Ultramar Canada Limited	338,709	353,644	2,325
89.	Dow Chemical of Canada, Limited	337,000	414,000	36,000
90.	Goodyear Canada Inc.	329,229	244,938	5,187
91.	Kraft Foods Limited	320,746	111,279	11,713

Rank	Company	Sales or Revenues	Assets	Net Income (Loss) after Taxes
92.	General Foods, Limited	316,880	147,177	11,441
93.	Sun Oil Company Limited	315,018	491,118	12,396
94.	The Proctor & Gamble Company of Canada, Limited**	313,686	237,160	16,359
95.	Canadian Hydrocarbons Limited	301,200	214,101	6,860
96.	Crown Zellerbach Canada Limited	296,362	290,149	13,270
97.	Canadian Fuel Marketers Ltd.†	295,107	133,592	2,612
98.	Power Corporation of Canada, Limited[3]	293,104	579,341	32,164
99.	Pacific Petroleums, Ltd.	288,040	639,940	57,267
100.	Standard Brands Limited**	279,994	167,671	9,806

Sources: – Unless otherwise indicated (see sources listed below), the figures come from *Financial Post*, "The Financial Post 300" (Summer 1976).
* – Estimates, based on Royal Commission on Corporate Concentration (RCCC) research.
** – *Canadian Business*, "The Top 200 Plus the Next 200 of Canada's Largest Companies" (July 1976).
† – Figures come from the information given by the company to the RCCC.
– Sales and assets of Crown corporations come from the *Public Accounts of Canada*, vol. III (1976); *Public Accounts of British Columbia* (fiscal year ended March 1975); *Ontario Public Accounts, 1975-76*, vol. II; *Financial Statements of Quebec Government Enterprises, 1975-76*.

Notes: [1]Includes foreign operations of Canadian-owned companies but not non-Canadian operations of the parent companies of foreign-owned subsidiaries operating in Canada.
[2]Irving Oil Limited is controlled by the Irving family, which also controls a number of Canadian firms through holding companies. If the assets of all these firms were included, we estimate the combined Irving companies would rank among the top 30 on our list.
[3]Figures for Power Corporation of Canada, Limited, do not include financial subsidiaries.

The Largest Corporations in Canada

The lists of the largest financial and non-financial groups of corporations provide a basis for calculating aggregate concentration ratios. As already mentioned, these ratios give the percentage of total assets, sales or income in an economy that is accounted for by the largest 25, 50, 100 or 200 corporations. We then use this ratio to evaluate the size of the largest corporations relative to all domestic corporations and to similar groups of U.S. and world-wide corporations. We also examine how the relative size of these groups has changed over time in relation to domestic growth of all corporations.

For some specific comparisons between Canadian and foreign corporations, the Canadian corporations were allocated into broad fields of activity according to the Standard Industrial Classification (SIC) code. These classifications are quite broad, however, and do not allow comparisons of corporate groups in particular industrial activities or product markets.

Table 2.2

25 Largest Canadian Financial Institutions, 1975/76 Ranked by Assets

(Thousands of Dollars)

Rank	Company	Total Assets	Net Income after Taxes
1.	The Royal Bank of Canada	25,211,131	86,742
2.	Canadian Imperial Bank of Commerce	22,259,053	93,943
3.	Bank of Montreal	18,242,634	81,135
4.	Bank of Nova Scotia	16,005,998	64,702
5.	The Toronto-Dominion Bank	13,576,569	59,610
6.	Banque Canadienne Nationale	4,871,971	16,157
7.	Sun Life Assurance Company of Canada	4,699,301	N/A
8.	The Royal Trust Company	3,435,709	18,945
9.	The Manufacturers Life Insurance Co.	3,083,250	N/A
10.	La Banque Provinciale du Canada	3,059,145	8,192
11.	Canada Permanent Mortgage Corporation	2,726,390	14,358
12.	The Huron & Erie Mortgage Corporation and The Canada Trust Company (Canada Trustco Mortgage Company)	2,626,301	14,079
13.	London Life Insurance Company	2,392,256	7,422
14.	IAC Limited	2,390,847	30,450
15.	The Great-West Life Assurance Company	2,348,819	22,785
16.	The Canada Life Assurance Company	1,887,429	N/A
17.	The Mutual Life Assurance Company of Canada	1,781,723	N/A
18.	Confederation Life Insurance Company	1,485,332	6,423
19.	General Motors Acceptance Corporation of Canada Ltd.	1,308,299	9,483
20.	Victoria and Grey Trust Company	1,295,556	8,335
21.	The Mercantile Bank of Canada	1,288,163	8,902
22.	Crown Life Insurance Company	1,204,809	5,453
23.	National Trust Company, Limited	1,162,975	7,427
24.	Guaranty Trust Company of Canada	1,086,179	1,863
25.	North American Life Assurance Company	1,023,800	15,597

Source: "The Top 200 Plus the Next 200 of Canada's Largest Companies," *Canadian Business* (July 1976).
Note: N/A = Not applicable to mutual life insurance companies.

Historical Trends in Aggregate Concentration

The earliest record of aggregate concentration in Canada that we found was in the *Report* of the Royal Commission on Price Spreads (1937). The Price Spreads Commission reported that the total assets of the top 100 largest non-financial corporations (ranked by assets) were $5,096 million in 1923 and $7,324 million in 1933. The Price Spreads Commission could not calculate a figure for the assets of all corporations and therefore it could not compare the assets of the 100 largest non-financial corporations with those of all corporations. Instead, they chose to compare the assets of the group of largest corporations with (1) the assets of all corporations for which balance sheets

could be obtained, (2) total capital invested in Canadian industry and (3) national wealth. While noting the deficiency in such an approach the Price Spreads Commission reported that:

> It may be acknowledged that this invested capital figure is not at all comparable with the gross assets of corporations and it may appear, therefore, that two unlike things are being related. If the absolute percentage figures were regarded as significant, this would be a fatal criticism. But all that is desired here is to see the relative rate of growth of the large companies as compared to business generally. It is the trend that is significant, and this can be determined as the invested capital figures are comparable from year to year all through the period; the Bureau of Statistics has submitted the series as a homogeneous one for the period. Accordingly, the result has validity for the immediate purpose. (P. 22.)

While we faced no such deficiency of data for recent years (that is from 1966 onward), we still had to find a consistent basis for comparison between our data and that of the Price Spreads Commission. Definitional problems prevented our use of the Price Spreads Commission's primary statistic, "invested capital" in Canadian industries. In our analysis we compared the assets of the largest non-financial corporations to the statistic "mid-year net capital stock", which has been estimated by Statistics Canada on a consistent basis since 1926; (we estimated the figure for 1923). Since we found that non-financial assets were a reasonably constant fraction of total assets, "mid-year net capital stock" was comparable for our purpose to the statistic "total corporate assets". We, like the Price Spreads Commission, are not concerned with the absolute percentages but rather with determining whether a trend exists in aggregate concentration. We used the Price Spreads Commission's working papers to estimate the adjustment needed to make corporate assets relate only to domestic activity. Our estimates indicated that the assets of the 100 largest corporations had to be reduced by only .1% in 1923 and 2.4% in 1933 to eliminate those related to foreign activity.

The results of our analysis indicate a clear decline in aggregate concentration among non-financial corporations between 1923 and 1975 (Figure 2.1). The decline from 1933 to 1966 appears to be the most dramatic, but aggregate concentration also declined in each sample year from 1966 to 1975. When measured on as consistent a basis as possible, using the percentage of assets controlled by the top 100 firms (the most widely used measure of aggregate concentration), the clear trend seems to be toward lower overall concentration in Canadian non-financial corporations.

However, these results are not conclusive evidence that aggregate concentration has been declining continuously since 1933. Some sample year between 1933 and 1966 could have shown a lower level of aggregate concentration than did 1966, which would mean that there had been an increase between that year and 1966. On the other hand, since the war years (1939-45) probably accentuated the economic importance of large corporations in relation to medium-sized or small ones, this possibility is unlikely. One piece of supporting evidence is found in the Department of Consumer and Corporate Affairs

publication entitled *Concentration in the Manufacturing Industries of Canada* (1971). The study compared the total net assets of the 94 largest non-financial corporations in 1958 and 1965. Their findings showed that the net assets attributable to the 94 largest non-financial corporations fell from 40.6% of total net assets of all non-financial corporations in 1958 to 37.6% in 1965.

Moreover, even if we allow for the fact that transport companies were unrepresentative of large corporations in the earlier years and even if we consider 1933 atypical because of the Depression's effect on smaller businesses, Figure 2.1 indicates that the historical downward trend of aggregate concentration has been maintained. The downward trend is strong enough that statistical adjustments are unlikely to change its direction.

Another criticism can be made of an analysis of aggregate concentration based on the share of assets (or sales or value added) accounted for by the top 100 firms, since over time, the number of firms in the economy has increased and hence the top 100 firms form a decreasing percentage of the total number of firms. To analyze aggregate concentration over time, a measure that keeps

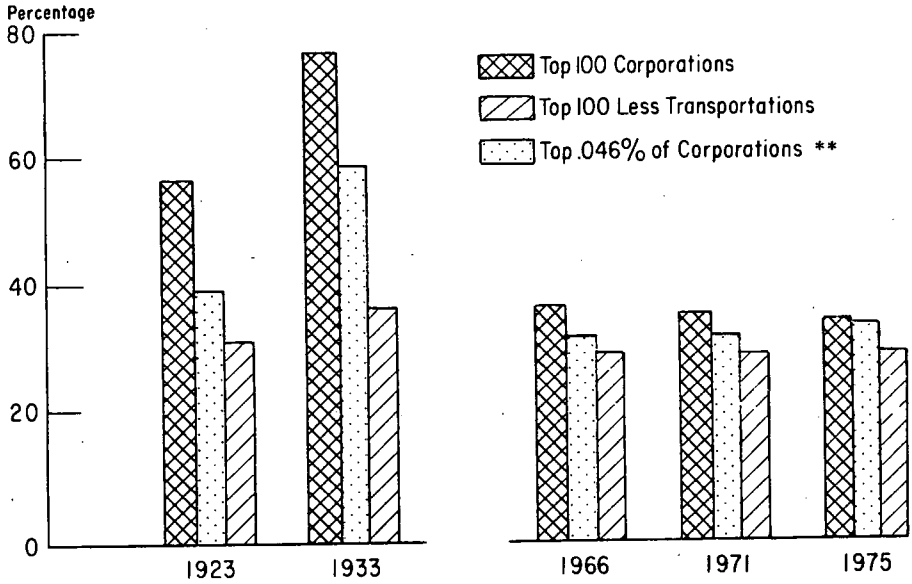

FIGURE 2.1. Assets of 100 Largest* Non-Financial Corporations as a Percentage of Total Net Capital Stock, Canada, 1923, 1933, 1966, 1971 and 1975.†
Source: RCCC research.
Notes: *Ranked by sales.
**This percentage was chosen for historical comparison where 100 corporations represented 0.46% of all Canadian corporations in 1975.
†The gap between 1933 and 1966 is due to a lack of comparable data.

constant the number of corporations might be more appropriate. One such standardized measure estimates the relative amount of economic activity accounted for by a fixed percentage of the total number of corporations in an economy over time. We calculated this alternative measure of aggregate concentration for our sample years by determining what percentage of total non-financial corporations was represented by the 100 largest in 1975. We applied this percentage (.046%) to the total number of non-financial corporations in the earlier years to determine the appropriate sample size for calculating aggregate concentration ratios in those years. We determined that the top .046% of non-financial corporations represents 7 corporations in 1923, 13 in 1933, 55 in 1966, 68 in 1971 and 100 in 1975. The assets of these largest corporations as a percentage of total net capital stock were then calculated for each year.

The trend in aggregate concentration for the top .046% of non-financial corporations is similar to that for the 100 largest non-financial corporations over the entire period 1923-75. However, aggregate concentration calculated for the top .046% of non-financial corporations increased slightly over the period 1966-75, while aggregate concentration based on the largest 100 non-financial corporations decreased. In both cases, the changes in concentra-

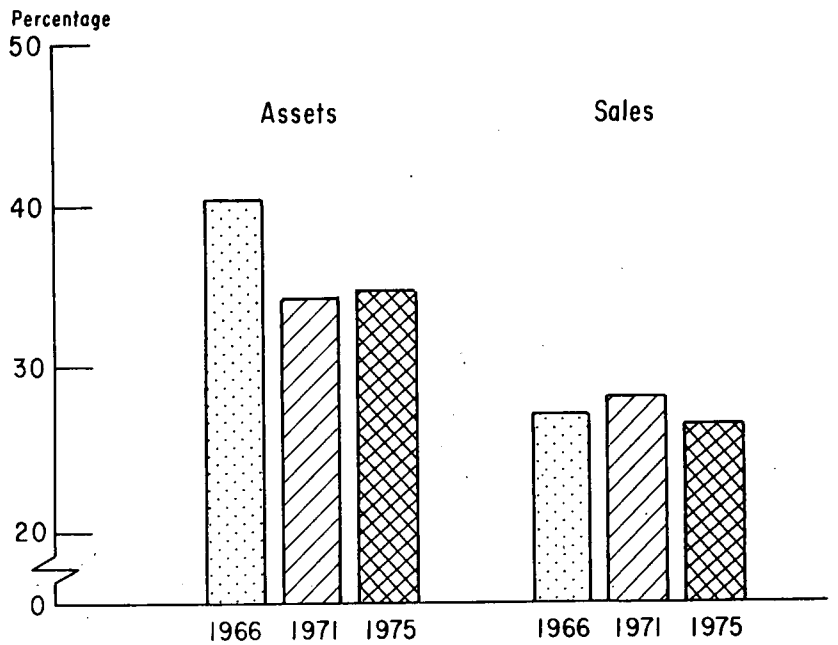

FIGURE 2.2. Percentage of Total Domestic Assets and Sales Accounted for by the 100 Largest* Non-Financial Corporations, Canada, 1966, 1971 and 1975.
Source: RCCC research.
Note: *Ranked by sales.

tion were small. The Commission therefore concludes that aggregate concentration, while decreasing over the entire period 1923-75, has since 1966 either decreased slightly or increased slightly depending on the measure used, but that whatever the measure the change has been small.

Other Measures of Recent Changes in Aggregate Concentration

For 1966, 1971 and 1975, aggregate concentration was also calculated on sales and assets bases. During this period, asset concentration declined somewhat, while sales concentration remained almost unchanged (Figure 2.2). The decline in asset concentration is consistent with the pattern seen in Figure 2.1: a consistent but mild decline from 1966 to 1975. Sales concentration, on the other hand, first increased slightly and then declined slightly to be roughly unchanged. One possible explanation of this difference is the Commission's finding that conglomerates have, in recent years, diversified into less capital-intensive industries from more capital-intensive industries.

Data for the financial sector were limited to the period 1966-75. Comparing concentration ratios based on assets for this period (Figure 2.3) revealed

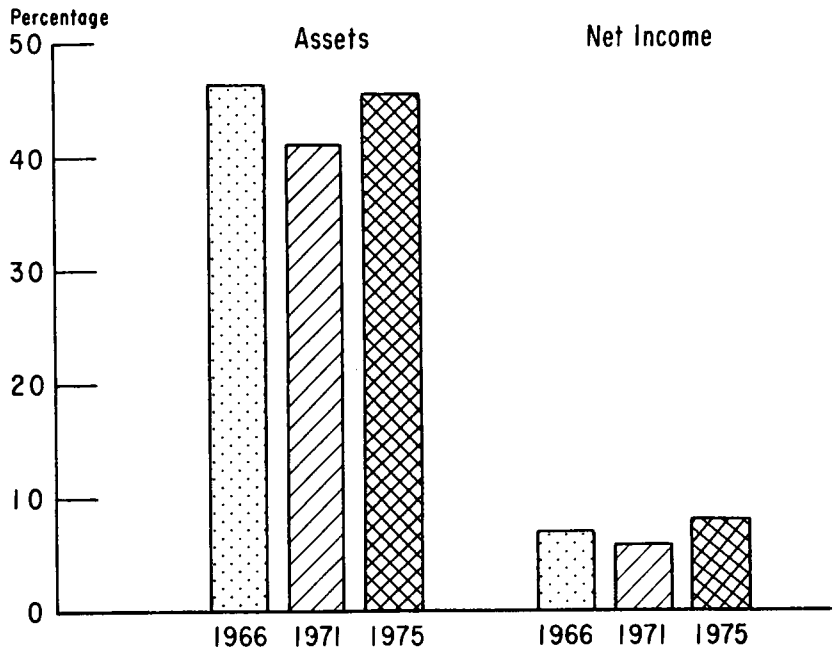

FIGURE 2.3. Percentage of Total Assets and Net Income Accounted for by the 25 Largest* Financial Corporations, Canada, 1966, 1971 and 1975.
Source: RCCC research.
Note: *Ranked by assets.

that the share of total assets accounted for by the largest 25 financial corporations decreased from 46% in 1966 to 41% in 1971 and then increased to 45% in 1975. The share of net income accruing to the largest financial corporations decreased between 1966 and 1971 from 7.2% to 5.8%. The corresponding rise between 1971 and 1975 in the share of net income by the largest financial corporations increased their share of net income of all financial corporations to 8.3%, a 15% increase over the 1966 level. Given the shorter period of time for which data are available for the financial sector and the difference in the concentration trends revealed by the asset and net income measures, no firm conclusions regarding the trend in aggregate concentration among the largest financial corporations can be drawn. However, it appears safe to conclude that any changes in aggregate concentration in the financial sector over recent years have been quite modest.

Changes in Membership among the Largest Corporations

Some of the concern regarding aggregate concentration is based on the misconception that the firms constituting the group of largest corporations in earlier years are the same firms that make up the groups in later years, i.e. that the relative importance of specific large corporations does not change over time. This, however, is not so.

A study of the changes in membership of the 100 largest non-financial corporations (Table 2.3) revealed that, during 1967-71, 13 corporations were displaced by corporations previously too small for inclusion in the group. Also one corporation became insolvent and there were seven mergers among those already on the list. Of the roughly 46% increase in assets held by these corporations over this time period, approximately 27% was due to the entrance of new corporations. For the period 1971-75 there were 16 new entrants, accounting for approximately 12% of the increase in the assets.

Table 2.3

Change in Membership and Total Assets of the 100 Largest* Canadian Non-Financial Corporations, 1967-71 and 1971-75

Change in Status	1967-71	1971-75
Exits		
Replaced by larger companies	13	16
Bankruptcies	1	0
Mergers	7	6
Total	21	22
Entries	21	22
Increase in total assets ($000)	15,798,354	40,719,930
(%)	46.15	81.36
Net increase in total due to new entrants ($000)	4,237,862	4,935,041

Source: RCCC research.

Note: *Ranked by sales.

A similar pattern is found in the changes in membership among the largest 25 financial corporations (Table 2.4). There were two new entrants during 1967-71 and two during 1971-75. The net increase in total assets accounted for by these new entrants, however, was minimal (0.37% between 1966 and 1971 and 2.48% between 1971 and 1975), largely due to the predominant role of large banks.

Table 2.4

Change in Membership, Total Assets and Total Income of the 25 Largest* Financial Institutions in Canada, 1967-71 and 1971-75

Change in Status	1967-71	1971-75
Exits		
Replaced by larger companies	2	2
Bankruptcies	0	0
Mergers	0	0
Total	2	2
Entries	2	2
Increase in total		
Assets ($000)	17,951,184	53,342,849
(%)	52.25	101.99
Income ($000)	48,604	266,490
(%)	41.97	162.08
Net increase in assets due to new entrants ($000)	126,665	1,295,168

Source: RCCC research.
Note: *Ranked by assets.

International Comparison

In testimony before the Commission, several witnesses representing large corporations contended that for a variety of reasons the size of large Canadian corporations should not be measured relative to the size of the domestic market but relative to the international economy. The most frequently mentioned reason was that Canadian corporations had to adopt world-scale production units to compete effectively in international markets. Others argued that competing in the world market required corporations large enough to exploit the economies available to firms with access to world-scale financing. While we will examine some evidence on these arguments in subsequent chapters we thought it useful to compare the size of Canadian corporations with those of other countries in anticipation of those discussions.

We compared the size (both ranked and measured by sales) of the 100 largest non-financial corporations in Canada for 1975, classified by broad

industrial divisions, with the 100 largest non-financial corporations in the United States and the 100 largest non-financial corporations in the rest of the world. Only four Canadian corporations (George Weston Limited, Ford, General Motors of Canada Limited and Imperial Oil Limited), were on a list of the 100 largest non-financial corporations in the world. Clearly, Canadian firms in all categories are much smaller than their counterparts in the United States and in other countries (Figure 2.4). While this difference in average size does not mean that individual Canadian firms cannot be larger than individual U.S. firms in the top 100, it does mean that, overall, the top Canadian firms generally must be much smaller than the top U.S. firms in the same industrial sector.

The largest 25 financial corporations in Canada are also quite small in comparison to their counterparts in the United States and the rest of the world. Although Canada's largest bank, The Royal Bank of Canada, ranks 23rd among financial corporations in the world, the average size of even the largest Canadian banks falls far behind the average size of those banks ranked in the 25 largest financial corporations in the U.S. and in the rest of the world (Figure 2.5). This is also true for Canadian insurance and trust corporations. The average size of the largest Canadian financial corporations is about one-tenth that of the average of the largest U.S. financial corporations.

In summary, while Canada has four non-financial corporations among the largest in the world, the corporations that make up the largest 100 non-financial corporations in Canada are (in terms of average size in assets) substantially smaller in comparison with the largest 100 non-financial corporations in the United States and the rest of the world, when classified into the same broad industrial groups. The average size of Canada's top 25 largest financial corporations was also found to be much smaller than the average size of their counterparts in the United States and elsewhere.

Statistics Canada Data on Aggregate Concentration

Statistics Canada aggregate concentration data are compiled from unconsolidated tax return data. Their ratios therefore understate aggregate concentration even more than do our data, which include all complexes connected by majority stock ownership. However, to check on the conclusions reached in our Figures 2.1, 2.3, and 2.4 and to obtain more complete analysis of the financial sector, we have analyzed some special tabulations provided by Statistics Canada. The earliest year for which Statistics Canada data were available was 1965 and the latest was 1973.

First we examined the total number of corporations. A statistical profile of the corporate sector, provided in a report to the Commission by Marfels, shows that the number of active corporations increased from about 168,000 in 1965 to about 259,000 in 1973. For illustrative purposes, we compared the increase in the Canadian population over the same period. In 1965 there was one corporation for every 117 persons in Canada. In 1973 this ratio was one for every 85 persons.

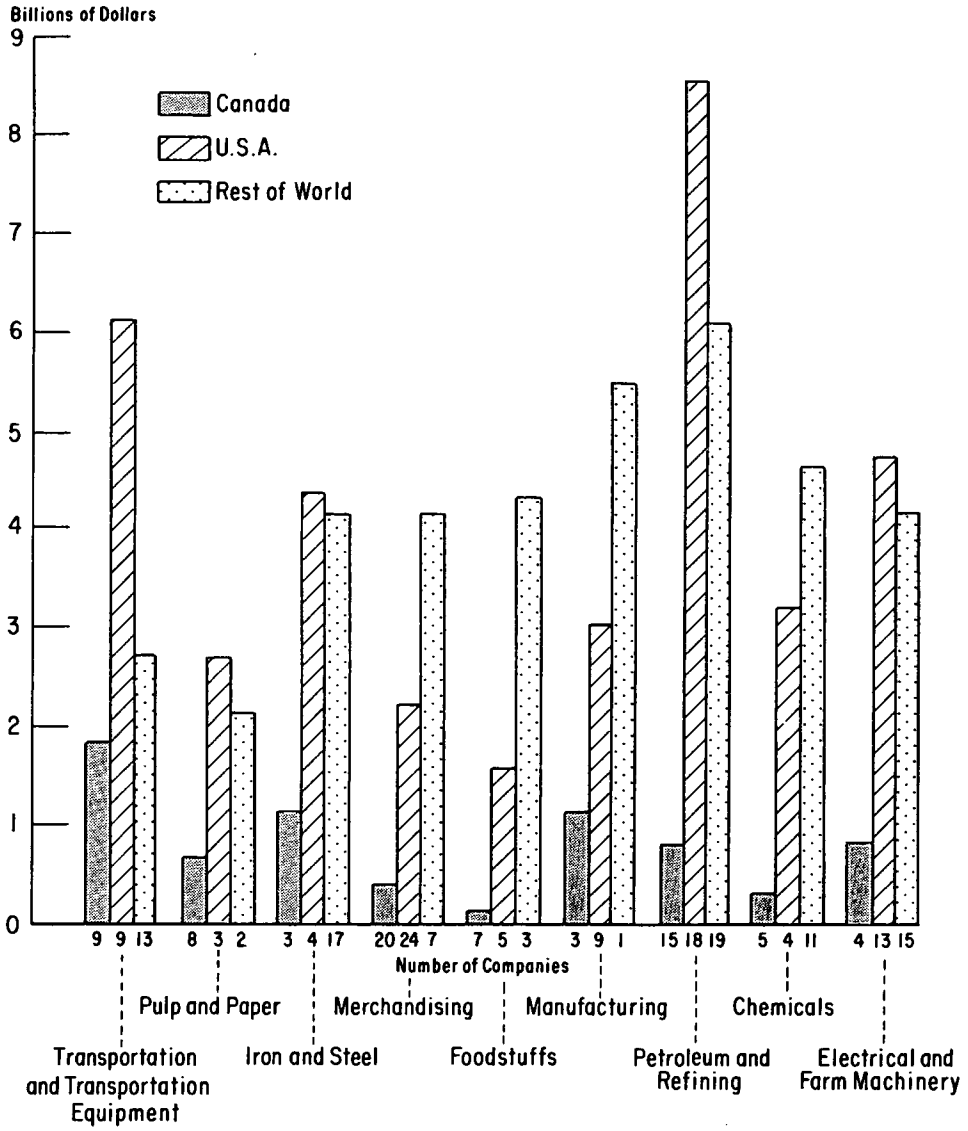

FIGURE 2.4. International Comparison of the Average Assets of Corporations among the 100 Largest* Non-Financial Corporations in Canada, the United States and the Rest of the World, Selected Industries,** 1975.
Source: RCCC research.
Notes: *Ranked by sales.
**Seven industries have been omitted. The data for utilities, beverages and miscellaneous industries are not comparable, while the samples in the mining, construction material, rubber and tobacco industries are too small to provide statistically significant results.

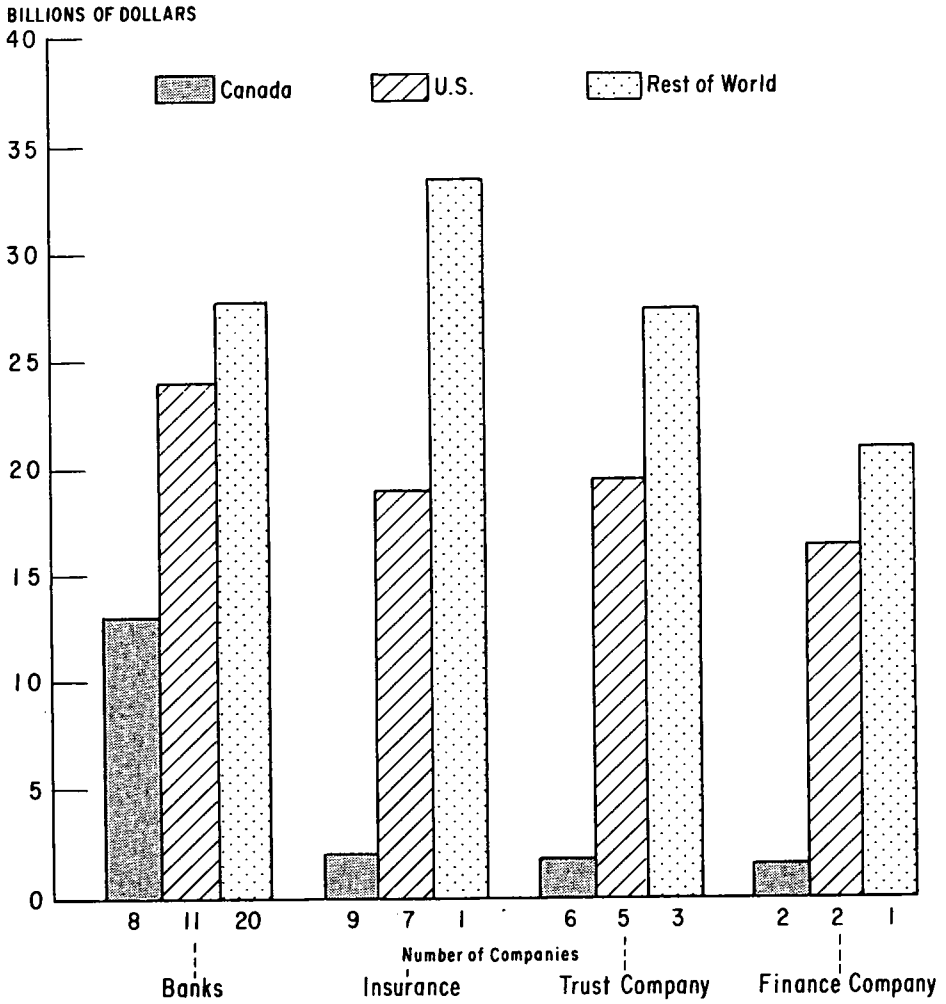

FIGURE 2.5. International Comparison of Average Assets of 25 Largest* Financial Institutions, Canada, the United States and the Rest of the World, 1975.
Source: RCCC research.
Note: *Ranked by assets.

During the same period, corporate assets grew from $145 billion to $356 billion, an average annual growth rate of 11.9%. In comparison, the average annual growth rate of the Canadian Gross National Product (GNP) was 10.2% during 1965-73. Thus, corporate assets grew slightly faster than did the GNP. Corporate sales increased from $90 billion in 1965 to $212 billion in 1973, an average annual growth rate of 11.3%.

Comparing the years 1965, 1968 and 1973, we find that about 25% of Canada's industrial resources are held by the 25 largest non-financial corporations (NFCs) and 50% by the 200 largest (Figure 2.6). The relative position of the top 25 and top 200 NFCs has changed very little between 1965 and 1973; the share of assets held by these two groups increased by 1.4 and 1.1 percentage points respectively. In absolute terms, the 25 largest NFCs had faster asset growth by 13 percentage points from 1965 to 1973 than all NFCs, while growth for the top 200 was 5 percentage points greater than the average.

In contrast to Figures 2.1 and 2.2, however, Figure 2.6 shows an increase in the level of aggregate concentration. There is a slight decline from 1965 to 1968, but a definite increase from 1968 to 1973, producing an increase over the entire period. While the period here is not exactly the same as that for the earlier figures, these results point up the tentative nature of the earlier conclusions. In short, they lead to the conclusion that the changes in aggregate concentration over the last 20 years, if any, have been very small.

For the same years the financial corporations exhibit a high degree of stability in the aggregate concentration ratios (Figure 2.7), with a slight decline from 1965 to 1968 followed by a slight increase from 1968 to 1973. These results more closely match those of Figure 2.4 and also serve to support the conclusion that changes in aggregate concentration in the financial corporations over the past 20 years have been minor.

Canadian Aggregate Concentration Trends in International Perspective

Comparisons of aggregate concentration among countries are very difficult. Since average firm size differs from industry to industry, the different distributions of economic activity across industries in different countries will produce differences in aggregate concentration ratios. We attempted a comparison of aggregate concentration ratios only between Canada and the United States, which lessens but by no means eliminates the problem of different distributions of economic activity. Also, we attempted to ensure that only domestic activity was included in the comparisons. Even with these precautions, the most reliable, albeit somewhat distorted, comparisons we can make will be between trends in aggregate concentration in the two countries.

Aggregate concentration ratios were computed from the lists of the largest 100 NFCs ranked by sales for 1966, 1971 and 1975. Looking at assets we find that aggregate concentration in Canada is roughly twice that of the United States while the trends in the two countries are virtually the same (Figure 2.8).

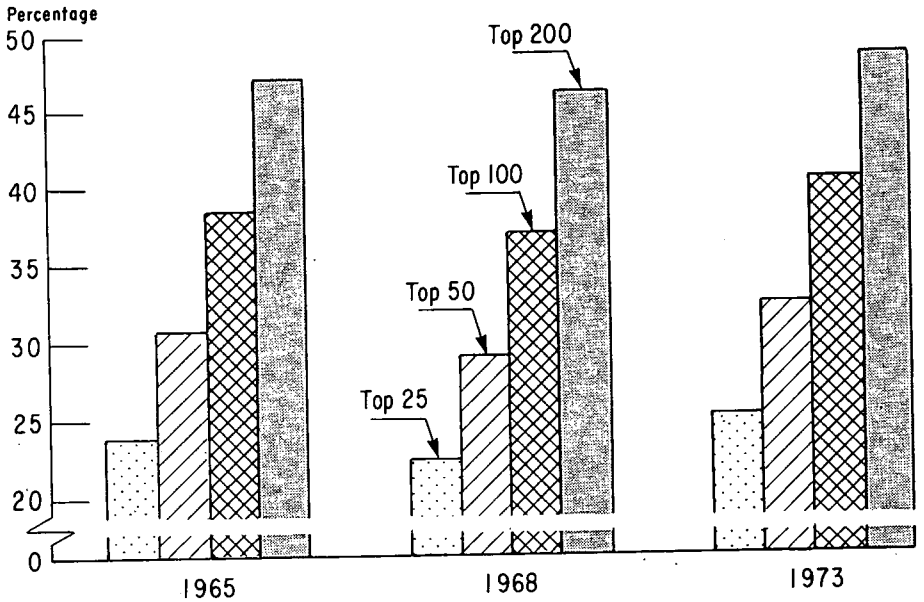

FIGURE 2.6. Percentage of Total Assets Accounted for by the 25-200 Largest* Non-Financial Corporations, Canada, 1965, 1968 and 1973.
Source: RCCC research.
Note: *Ranked by assets.

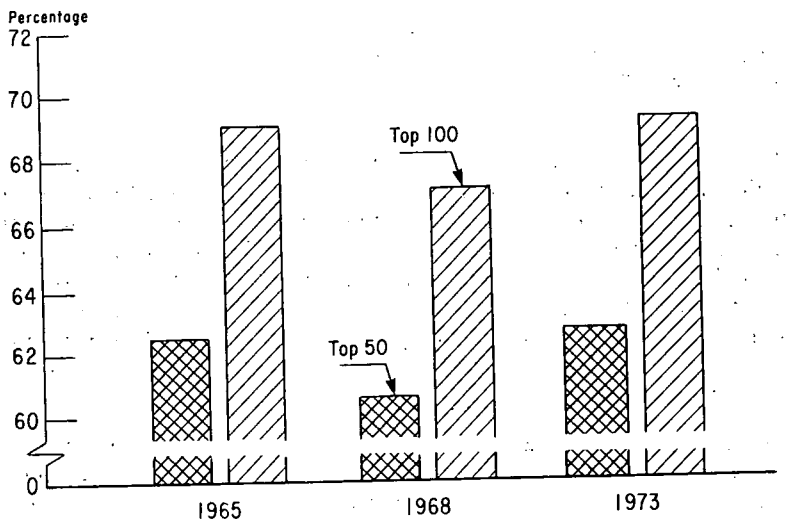

FIGURE 2.7. Percentage of Total Assets Accounted for by the 50 and 100 Largest* Financial Corporations, Canada, 1965, 1968 and 1973.
Source: RCCC research.
Note: *Ranked by assets.

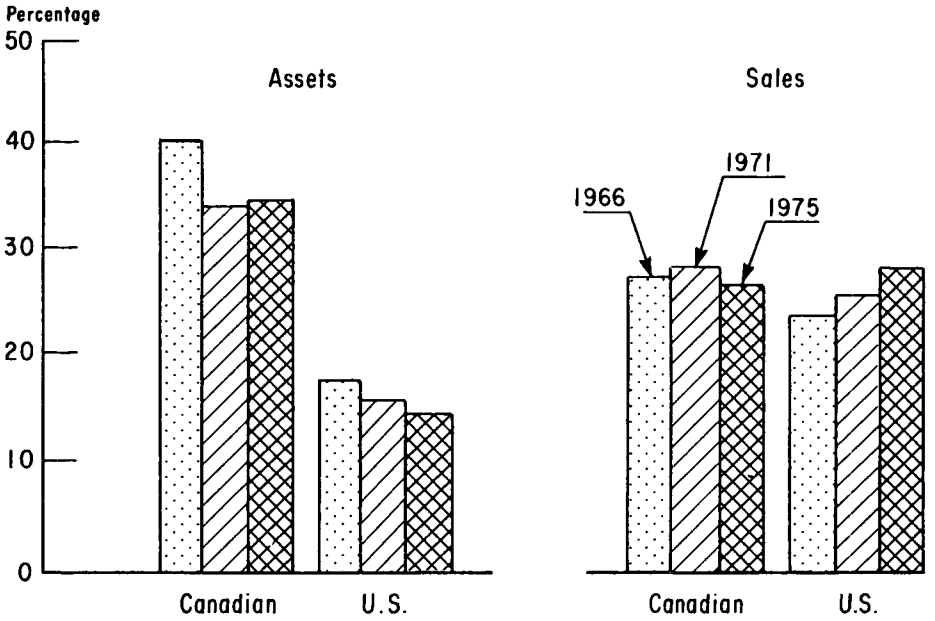

FIGURE 2.8. Percentage of Total Domestic Assets and Sales Accounted for by the 100 Largest* Non-Financial Corporations, Canada and the United States, 1966, 1971 and 1975.
Source: RCCC research.
Note: *Ranked by sales.

For the Canadian aggregate concentration ratios to be equal to those of the United States, the top Canadian corporations would have to be, on average, about one-tenth the size of their U.S. counterparts. The fact that the aggregate concentration ratios in Canada are twice those of the United States illustrates again the basic conclusion about the size of Canadian firms. The top Canadian firms are larger in relation to the Canadian economy than are the top U.S. firms in relation to the U.S. economy; at the same time, they are absolutely much smaller (these data indicate about one-fifth the average size) than the top U.S. firms.

We also computed aggregate concentration ratios standardized for the difference in the size of the corporate sector in the two countries. For each sample year, we calculated what fraction the top 100 firms are of total NFCs in the United States. We then calculated the number of Canadian NFCs which would provide a comparable fraction of total Canadian NFCs. We then derived Canadian aggregate concentration ratios for comparison with the aggregate concentration ratios for the United States. The result of this modified analysis

of aggregate concentration in the two countries is presented in Figure 2.9. It shows that by this method aggregate concentration appears to be higher in the United States than in Canada. While the calculation of the ratios for both countries is based on the same percentage of their respective corporate populations, the number of U.S. and Canadian corporations involved was significantly different. For the years 1966, 1971 and 1975, the numbers of corporations in Canada comprised by the top .0049% of the total corporate population were 6, 7 and 10 respectively. The corresponding numbers of corporations in the United States were 72, 82 and 100. If we were to average the concentration ratios of this fixed proportion of the corporate population by the resulting numbers of corporations represented by the fixed percentage, Canada would again be seen to have significantly higher aggregate concentration than the United States.

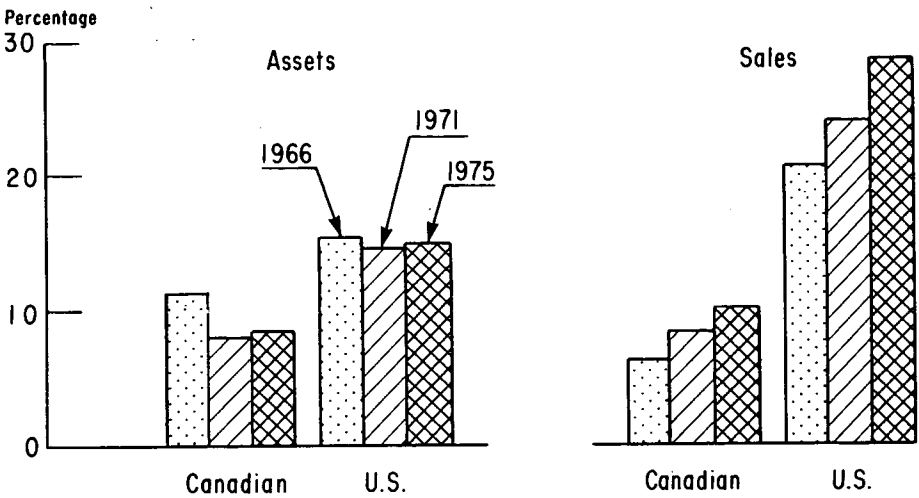

FIGURE 2.9. Percentage of Total Assets and Sales Accounted for by Top* .0049%** of Corporations, Canada and the United States, 1966, 1971 and 1975.
Source: RCCC research.
Notes: *Ranked by assets and sales respectively.
**This percentage was chosen for historical comparison with the United States where 100 corporations represented .0049% of all U.S. corporations in 1975.

Summary

To summarize this discussion of aggregate concentration ratios and the consideration of the size of large Canadian corporations, we have found several different sources of evidence that large Canadian corporations are large relative to the Canadian economy but small relative to other large corporations in the United States and elsewhere. We have also seen evidence of a decline in

aggregate concentration in Canada in non-financial corporations from 1923 to 1966. Since the period of the mid-1960s, however, several empirical points indicate that there has been very little, if any, change in aggregate concentration either in financial or in non-financial corporations.

Corporate Size within Industries

Introduction

The previous section presented data on the size of large Canadian corporations relative to the entire corporate sector. This section presents data on the size of Canadian corporations relative to the individual industries within which they operate. As before, the purpose here is to provide a background for later sections of this *Report*. Also, as before, we are interested in both absolute levels of industrial concentration and intertemporal and international comparisons.

Our major conclusion is that market concentration in Canada is generally fairly high. In particular, it is noticeably higher than concentration in similarly defined markets in the United States. Also, concentration generally increased from 1948 to 1972, with most of the increase occurring before 1954, and with concentration roughly stable from 1965 to 1972.

Measuring Industrial Concentration

We have already pointed out that several structural characteristics of an industry are important determinants of its competitive environment and performance. While this chapter mentions most of these, it will focus chiefly on seller concentration ratios as its measure of market power. The reasons for this focus have already been discussed.

Industrial concentration ratios are the fraction of activity (output, value added, employment, profits) or of the stock of productive resources (assets) accounted for by a group of the largest firms. The group sizes most often used are 4, 8, 20, and 50, with the 4-firm ratio the most common. Other measures of industrial concentration include the inverse ratio, which measures the number of firms needed to make up a fixed percentage (usually 80%) of the industry's activity or resources, and the Herfindahl index, which is the sum of the squares of the market shares of each corporation in output or resources. Each of these latter measures has certain advantages in some contexts, but we use concentration ratios here primarily for reasons of computational convenience, ease of comprehension, historical continuity and international comparability.

This choice still presents several problems. One is in the selection of the number of firms to be included in the ratio. The choice of four is dictated primarily by census disclosure rules and the need for comparability with U.S. data. However, for reasons of confidentiality Statistics Canada is forced to withhold some 4-firm concentration ratios.

Another problem is that two industries with quite different structures could have the same 4-firm concentration ratio. For example, an industry where one firm has 50% of the sales and three others have 10%, 5% and 5%

would have a 4-firm sales concentration ratio of 70%, as would an industry where three firms each had 20% while a fourth had 10%. Clearly, these two markets have quite different structures: the first has a clearly dominant firm, while the second has a group of large but roughly equal-sized firms competing in the market.

Concentration ratios can also present problems in intertemporal comparisons. If, as is perfectly possible, the 4-firm concentration ratio decreased over a period of time, while the 8-firm ratio remained constant and the 20-firm ratio increased, it would be difficult to say whether concentration had increased, decreased or stayed constant in that industry.

These problems arise in attempting to use, as a summary measure, the concentration ratio, which ignores all the other firms in the industry. The Herfindahl index solves this problem, but suffers from difficulties in computation and data availability, which preclude its use as our major measure. However, since it is a comprehensive index, it is often used to rank industries by their degree of concentration.

Concentration ratios and Herfindahl indexes both fail to reflect the regional character of certain markets. Some products, for instance, cement, beverages and glass bottles, are not shipped far beyond the regions in which they are produced because they have high transport costs per dollar of value. For some industries, regional concentration ratios are more appropriate than national ones. A study by the Department of Consumer and Corporate Affairs concluded that "In almost all cases, the regionally weighted national concentration ratios are considerably greater than the corresponding unweighted national concentration ratios." Particularly dramatic examples of this occurred in poultry processing and stone products manufacturing.

A further problem with concentration ratios in general is that they do not reflect the degree of import competition in the industries. Since Canada is more open to international trade than most industrialized countries (foreign trade was 21.3% of Canada's GNP in 1972, compared with 16.9% for West Germany, 8.7% for Japan and 4.6% for the United States), this omission represents a possibly serious distortion. An illustration of the impact of foreign trade on concentration levels is provided for the steel industry in Marfels' study. He shows that accounting for foreign trade in the steel industry in Canada, West Germany, Japan and the United States results in a substantial reduction below published concentration levels in each of the four countries.

All these problems serve to reinforce our contention that concentration ratios are but one measure of industrial concentration and are neither a complete descriptor of industrial structure nor a perfect predictor of performance. Marfels' study indicates that potential problems associated with ignoring foreign supply and the existence of geographic submarkets do not distort available concentration ratios to the point that they provide a misleading picture of the structure of Canadian industry. Nevertheless, we wish to stress once again that other supporting evidence should be examined when drawing conclusions about the competitive environment of particular industries.

Industrial Concentration in Historical Perspective

The dominance of a relatively small number of sellers in the marketplace is not a modern phenomenon. Economic historians argue that the early period of industrial capitalism was characterized by monopolies in many of the new industries. Competitive markets emerged only after the growth of production in factories.

The domination of industrial markets by a relatively small number of sellers began to recur with the industrial revolution and the simultaneous advances in transport and communication, which made it economically feasible and desirable to concentrate production wherever conditions of production were most favorable. This move toward increasing concentration was mainly accomplished in a series of massive merger movements. The historian Michael Bliss notes in his book *A Living Profit: Studies in the Social History of Canadian Business* that, during the merger movement of 1909-12, some 275 individual firms were reduced to 58, largely to achieve economies of scale in production and distribution. A second major wave of consolidations followed, from 1925 to 1930.

The first merger period was characterized by the formation of major firms in the heavy industries: for example, Canada Cement Company, Limited, Amalgamated Asbestos Corporation Limited, Canadian Car & Foundry Co. Ltd., Dominion Steel Corporation Ltd. Inc. and The Steel Company of Canada, Limited. Other important combinations were formed in textiles, tobacco, brewing, milling and paper. The second wave of mergers saw important consolidations in pulp and paper, canning, chemicals and dairies. The merger movements were quite widespread, so that by the end of the 1930s most Canadian industries had not more than ten important producers, and many had only three or four.

Trends in Industrial Concentration

Concentration data on individual industries in divisions of the Canadian economy other than manufacturing are spotty and are not available before 1965. The emphasis in this section is, therefore, on industries within the manufacturing division.

Several studies over a period of years have provided detailed concentration data for individual Canadian manufacturing industries. Gideon Rosenbluth's pioneering work discussed 1948 data; Max Stewart's background study for the Economic Council of Canada gave some data for 1964; a report by the Department of Consumer and Corporate Affairs presented 1965 data for both manufacturing and mining; and Statistics Canada has kept that report up-to-date biennially since 1968.

Even with these reports, intertemporal comparisons of concentration ratios are seriously hampered by conceptual and technical changes in statistical definitions and classifications. Major changes have occurred in the Standard Industrial Classification code, the definition of the enterprise as the tabulating unit and the data base covered.

Further problems in comparability arise because different studies have used different variables to compute concentration ratios. We will use concentration ratios based on employment data, from the Consumer and Corporate Affairs study, and ratios based on value of shipments data, from Marfels' study.

In this section, we define a corporation as all establishments under common control in a single industry. This is a change from the previous section, where we defined a corporation or corporate group to consist of all corporations and establishments under common control.

In his work for presentation to the OECD, R.S. Khemani of the Department of Consumer and Corporate Affairs selected a sample of 57 from 171 census manufacturing industries for which data were collected in 1972. The sample was chosen on criteria of historical comparability and data availability for the period 1948-72. This sample accounts for 52.8% and 48.3% of total manufacturing shipments and employment in 1972. It includes the major Canadian manufacturing industries of slaughtering and meat-packing, pulp and paper, iron and steel, automobiles, and petroleum refining. The rubber, electrical and chemical industries are among those omitted.

For his analysis Khemani used 4-firm concentration ratios based on employment data (chosen because of continuous availability). Industries were grouped into one of five concentration ratio classes: under 19%; 20-39%; 40-59%; 60-79% or over 80%. Then the average (weighted by the industry value of shipments, for those industries) industry concentration ratio for each concentration class was calculated and plotted, as was the weighted average for the entire sample.

Considering first all industries, industries with higher initial levels of concentration (greater than 60%) have generally had decreasing concentration ratios, while industries with medium and lower initial levels have been increasing in concentration (Figure 2.10). In particular, rapid increases in concentration have taken place in the top 4-firm concentration ratios for the class of 40-59% where the weighted average ratio went from 51.8% to 67.5% between 1948 and 1972 (Table 2.5).

In terms of the effect that these movements in the classes have on the sample as a whole, the weighted average concentration ratio for the group of industries increased from 44.3% in 1948 to 53.9% in 1965, after which it decreased, although not continuously, to 51.0% in 1972. However, most of this increase took place between 1948 and 1954. Since the early 1950s concentration in Khemani's grouped industries has remained relatively constant. This is one empirical study suggesting that concentration in individual industries did not change much from the mid-'50s to the early '70s.

Marfels classified manufacturing industries into decile percentage concentration classes. The results for 1972 are recorded in Table 2.6. The data show that the greatest percentage of sample industries had 4-firm concentration ratios between 30% and 39%. The 40-49% class had the second highest percentage of sample industries. After classifying all these industries by degree of concentration, Marfels found that 34% of all manufacturing industries in

Table 2.5

Four-Firm (Employment) Concentration in Canadian Manufacturing Industries, 1948-72 (Weighted Averages in Percentages)

	Percentage of Industries						
CR_4 (Employment) Level	1948	1954	1958	1965	1968	1970	1972
Class 1 80-100	89.3	83.3	81.7	86.9	83.6	86.5	82.5
Class 2 60-79	65.2	68.4	61.1	62.6	57.1	56.2	54.4
Class 3 40-59	51.8	63.8	67.9	67.2	65.8	66.0	67.5
Class 4 20-39	31.5	31.7	33.2	35.6	34.3	36.2	34.9
Class 5 0-19	10.0	12.3	11.9	13.4	14.4	16.1	17.1
	Average All Industries						
	44.3	48.7	50.2	53.9	51.1	52.9	51.0

Source: R.S. Khemani, *Concentration in the Manufacturing Industries of Canada: Analyses of Post-War Changes* (Ottawa, 1977).

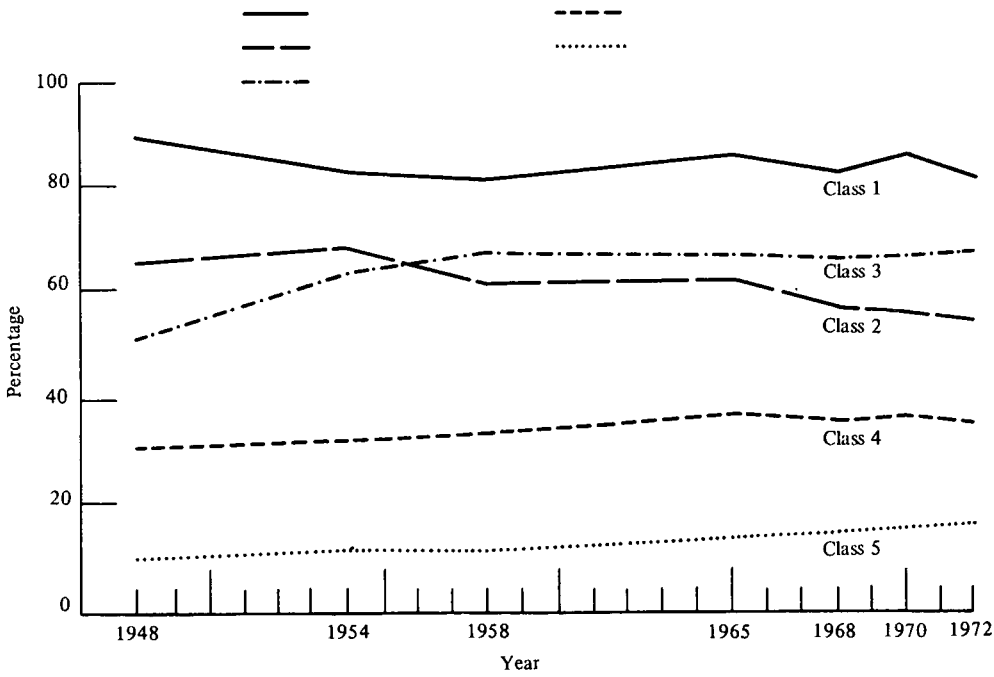

Figure 2.10. Four-Firm (Employment) Concentration in Canadian Manufacturing Industries, 1948-72.

Source: R.S. Khemani, *Concentration in the Manufacturing Industries of Canada: Analyses of Post-War Changes* (Ottawa, 1977).

Note: * – See Table 2.5.

1972 could be classified as highly concentrated, whereas 41% and 23% fell into the categories of medium and low concentration respectively.

To facilitate a quick comparison of concentration levels between 1965 and 1972 Marfels gathered the data shown in Table 2.7. He again classified industries in cumulative decile percentage concentration classes. For example, 11.6% of the industries in his sample had concentration ratios of 80% or more in 1965. The table shows that except for an increase in the number of industries registering a concentration ratio between 30% and 40% (and thus a corresponding decrease in the 20-30% class) the number of industries registering concentration ratios in the other classes has remained virtually constant.

In summary, Marfels' data confirm Khemani's findings that industrial concentration ratios remained roughly constant from the mid-'60s to the early '70s. This also tends to support the broader conclusion that aggregate concentration also was stable over a somewhat longer period from the early 1950s to the early 1970s.

Concentration in Canadian Manufacturing Industries

Having reviewed some evidence on recent trends in industrial concentration in Canada, it would be enlightening to identify those manufacturing industries which are, in fact, highly concentrated by the conventional 4-firm concentration ratio. Table 2.8 provides the industrial concentration ratios for the 20 most concentrated manufacturing industries in Canada for 1972. We reiterate our earlier proviso that concentration is only one structural measure that should be considered in evaluating the competitive environment of an industry. The limitation of the concentration ratio in this regard is illustrated by the example of the cotton yarn and cloth mills industry. Although it has the highest 4-firm concentration ratio on the list, it is an industry that is particularly open to import competition, and domestic producers could hardly be considered to enjoy a monopoly position in the domestic market.

The level of concentration in the largest manufacturing industries is more relevant to competition policy. Table 2.9 provides a summary of the concentration levels and trends for the nine largest Canadian manufacturing industries ranked by manufacturing value added in 1972. Among the largest manufacturing industries in Canada, motor vehicle manufacturers and petroleum refining are the most highly concentrated. One important point to make in this regard is that most of the sample industries in Table 2.9 experienced a decrease in industrial concentration over the period 1965-72.

Table 2.6

Four-Firm (Value-of-Shipment) Concentration Ratios in Canadian Manufacturing Industries, 1972

Industry Group	Number of Industries	Percentage of Total Manufacturing Value Added	Percentage of Industries with Ratios of 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	Not Available*
Food and beverage	18	14.3	11.1	–	16.7	16.7	5.5	16.7	27.8	5.5	–	–	–
Tobacco products	2	1.0	50.0	–	–	–	–	–	–	–	–	–	50.0
Rubber	2	3.0	–	–	–	50.0	–	–	–	–	50.0	–	–
Leather	5	0.9	–	–	20.0	20.0	–	20.0	–	40.0	–	–	–
Textiles	16	3.5	12.5	–	12.5	6.2	12.5	6.2	25.0	–	–	–	25.0
Knitting mills	3	0.9	–	–	–	–	–	–	33.3	33.3	33.3	–	–
Clothing	10	3.2	–	–	–	10.0	10.0	–	20.0	10.0	40.0	10.0	–
Wood	13	5.8	–	7.7	7.7	7.7	–	30.8	15.4	15.4	15.4	–	–
Furniture and fixtures	5	2.0	–	–	–	–	–	–	40.0	–	40.0	20.0	–
Paper and allied products	6	7.9	–	–	–	–	16.7	33.3	33.3	–	–	–	16.7
Printing and publishing	4	5.1	–	–	–	–	–	25.0	–	25.0	50.0	–	–
Primary metals	7	7.9	–	28.6	42.9	–	–	28.6	–	–	–	–	–
Metal fabricating	11	8.1	–	–	–	9.1	–	9.1	18.2	36.4	18.2	9.1	–
Machinery	4	4.1	–	25.0	–	25.0	25.0	–	–	–	25.0	–	–
Transportation equipment	10	10.8	–	10.0	–	10.0	–	20.0	10.0	10.0	–	–	40.0
Electrical products	9	6.4	–	–	22.2	11.1	33.3	11.1	–	–	–	–	22.2
Non-metallic mineral products	14	4.0	7.1	14.3	21.4	7.1	14.3	21.4	7.1	7.1	–	–	–
Petroleum and coal	3	1.9	–	33.3	33.3	–	33.3	–	–	–	–	–	–
Chemicals	11	6.3	–	–	18.2	9.1	27.3	9.1	18.2	9.1	–	–	9.1
Miscellaneous manufacturing	18	2.6	–	–	16.7	16.7	16.7	11.1	11.1	5.5	5.5	–	16.7
Total manufacturing													
Percentage	(100)	100.0	3.5	4.7	12.3	9.9	10.5	14.0	15.2	9.4	9.4	1.7	9.4
Number	171	($24 billion)	6	8	21	17	18	24	26	16	16	3	16

Source: Christian Marfels, *Concentration Levels and Trends in the Canadian Economy, 1965-73* (RCCC Study no. 31).
Example: Read as "11.1% of the 18 industries in the food and beverage groups have four-firm concentration ratios between 90 and 100%."
Note: *Not available because of Statistics Canada regulations with regard to confidentiality for industries with fewer than four firms.

Table 2.7

Cumulative Percentage of Canadian Manufacturing Industries, by Deciles of Four-Firm (Value-of-Shipment) Concentration Ratios, 1965 and 1972

CR_4 Level	Cumulative Percentage of Industries	
	1965	1972
90% or more	3.4	3.9
80% or more	11.6	9.1
70% or more	21.9	22.6
60% or more	32.9	33.6
50% or more	44.5	45.2
40% or more	60.9	60.7
30% or more	71.9	77.5
20% or more	87.0	87.8
10% or more	97.3	98.1
0% or more	100.0	100.0
Total number of industries	146	155

Source: Marfels, *op. cit.*

International Comparison of Industrial Concentration in Manufacturing Industries

Comparison of concentration levels of Canadian manufacturing industries with counterpart industries in the United States has been a matter of long-standing interest. Rosenbluth, in an article in the *Canadian Journal of Economics and Political Science* (1954), found that in 50 of 56 comparable industries Canadian concentration levels for 1948 were significantly higher than the 1947 levels in the United States. A comparison prepared by the Department of Consumer and Corporate Affairs of Canadian concentration levels in 1965 with U.S. data for 1963 and 1966 revealed similar results: of the 116 manufacturing industries in the sample, 98 were significantly more concentrated in Canada. A more recent comparison prepared by the Conference Board using 1972 concentration levels supports the previous findings that concentration is higher in Canada than in the United States. More specifically, roughly twice as many industries in Canada had 4-firm concentration levels in excess of 60%.

Concentration in Selected Manufacturing Industries

Since 1945, official concentration data for individual manufacturing industries have been published in a number of countries on a more or less regular basis. A sample of nine Canadian manufacturing industries with

Table 2.8

Twenty Canadian Manufacturing Industries with the Highest Four-Firm (Value-of-Shipment) Concentration Ratios, 1972

Rank 1972*	Industry	Number of Enterprises	CR_4
1.	Cotton yarn and cloth mills	9	97.5
2.	Tobacco products manufacturing (6)	11	97.1
3.	Glass manufacturing	9	97.0
4.	Breweries (1)	7	96.5
5.	Fibre and filament yarn manufacturing	7	93.8
6.	Cane and beet sugar processing	7	93.7
7.	Aluminum rolling, casting and extruding (8)	55	89.0
8.	Wood preservation industries (7)	19	87.1
9.	Miscellaneous vehicle manufacturing (11)	35	86.6
10.	Abrasives manufacturing (15)	17	86.2
11.	Manufacturing of lubricating oil and greases (5)	14	85.9
12.	Cement manufacturing	8	83.7
13.	Office and store machinery manufacturing	30	82.7
14.	Copper and copper alloy rolling, casting and extruding	45	81.9
15.	Distilleries (12)	14	79.7
16.	Battery manufacturing (14)	16	79.3
17.	Manufacturing of electrical wire and cable	17	79.2
18.	Clock and watch manufacturing	18	79.0
19.	Smelting and refining	14	78.6
20.	Typewriter supplies manufacturing	11	78.3

Source: RCCC research.
Note: * – 1965 rank in parentheses where applicable.

similarly defined counterpart industries in other foreign countries was selected. They are slaughtering and meat processing, breweries, tobacco products manufacturing, rubber tire and tube manufacturing, pulp and paper mills, iron and steel mills, motor vehicle manufacturing, cement manufacturing and petroleum refining. These industries are relatively easy to identify; moreover, they represent the largest Canadian manufacturing industries. We collected concentration data for these industries from several sources. The only adjustment, to obtain at least one common measurement, was to have the calculation of minimum estimates of the commonly used 4-firm ratios for countries that employ 3-firm ratios.

This international comparison of industrial concentration ratios indicated that concentration in Canada is higher than in the other countries studied (including the United States, West Germany, France, Japan and Sweden). In particular, concentration in Canada is higher than that in the United States for all nine sample industries. In Germany and Sweden, the only industry with a higher level of concentration than its counterpart in Canada is the pulp and paper industry. In France, only the steel and rubber tire industries are more concentrated than their Canadian counterparts. Finally, of seven comparable

Table 2.9

Concentration Levels and Trends for the Nine Largest Canadian Manufacturing Industries, 1965 and 1972
(Ranked by Manufacturing Value Added in 1972)

Industry	Year	Number of Enterprises	Number of Establishments	Manufacturing Value Added		Value of Manufacturing Shipments		Total Employment		Value-of-shipment Concentration Ratios			1965-72 Trend in Four-Firm Concentration Ratios
				$ Millions	Percentage of Total Manufacturing	$ Millions	Percentage of Total Manufacturing	Thousands	Percentage of Total Manufacturing	CR_4	CR_8	CR_{20}	
Pulp and paper mills	1965	56	132	1,033.5	6.9	2,104.4	6.2	69.9	4.4	36.9	57.1	86.3	Decline
	1972	65	141	1,374.1	5.6	3,127.8	5.6	79.0	4.7	34.4	52.5	80.1	
Iron and steel mills	1965	32	41	646.1	4.3	1,231.8	3.6	44.3	2.8	78.8	90.3	98.6	Decline
	1972	35	48	909.4	3.7	1,900.8	3.4	49.8	3.0	77.7	90.7	98.5	
Motor vehicle manufacturers	1965	20	20	631.4	4.2	2,120.3	6.2	42.4	2.7	93.3	98.2	100.0	Decline
	1972	17	22	906.8	3.7	4,033.6	7.2	44.0	2.6	n.a.	98.1	–	
Motor vehicle parts and accessories manufacturers	1965	149	160	326.6	2.2	755.6	2.2	32.0	2.0	54.2	64.4	80.7	Decline
	1972	171	211	866.6	3.6	1,903.1	3.4	46.2	2.7	48.8	64.8	79.6	
Sawmills and planing mills	1965	2,464	2,559	384.5	2.6	896.2	2.6	50.8	3.2	16.8	26.7	36.9	Increase
	1972	1,463	1,567	864.9	3.5	1,893.6	3.4	57.1	3.4	18.2	27.7	43.0	
Miscellaneous machinery and equipment manufacturers	1965	501	528	419.7	2.0	797.1	2.3	44.0	2.8	15.0	24.3	41.5	Decline
	1972	710	759	717.1	2.9	1,454.5	2.6	53.3	3.2	12.5	21.7	36.5	
Petroleum refining	1965	12	40	244.1	1.6	1,383.6	4.1	9.0	0.6	84.4	98.1	–	Decline
	1972	14	41	431.3	1.8	2,361.7	4.2	14.4	0.9	73.7	94.6	–	
Slaughtering and meat processors	1965	365	399	267.3	1.8	1,438.7	4.2	30.0	1.9	48.0	67.5	77.3	Decline
	1972	415	468	428.6	1.7	2,551.4	4.5	31.3	1.9	53.9	62.0	72.9	
Dairy products	1965	1,165	1,421	277.4	1.8	1,061.7	3.1	33.5	2.1	25.1	34.8	48.8	Increase
	1972	498	731	392.1	1.6	1,573.7	2.8	28.9	1.7	33.0	45.8	62.2	

Source: RCCC research.

Note: n.a. = not available.

industries in Japan, three (rubber tires, breweries, and pulp and paper) are more highly concentrated than in Canada.

These comparisons lead to several conclusions. First, it is well established, by several independent studies using data for several different years, that industrial concentration in Canada is higher than in the United States. The weight of the evidence on this point is sufficient to treat this as an established empirical fact.

Second, the trend of the evidence suggests that concentration in Canada is higher than in other industrial countries, even those with economies of roughly the same size. This conclusion is as yet tentative; it arises from a comparison of only nine industries in only one year. But that study shows a clear tendency; firmer conclusions await only further verification by more extensive studies covering more industries in more years.

Finally when taken together with the conclusions of the first section of this chapter, that large Canadian firms are much smaller than large firms in the United States or the rest of the world, this international comparison indicates that the inevitable result of expansion of the large Canadian firms to the average size of the large world firms would involve a significant increase in industrial concentration in Canada, assuming that the larger firms remained primarily oriented to the Canadian market.

Summary

This section has presented data on concentration in individual industries. It has shown that industrial concentration has generally been stable in Canada from the mid-1950s to the early 1970s. It has also presented some evidence that industrial concentration increased substantially from the late 1940s to the early 1950s. Also, although there is no direct evidence on the subject, it is probable that industrial concentration generally increased during the two early merger waves in the 1910s and 1920s.

In international comparisons, this section has established that Canadian industries are generally more highly concentrated than their counterparts in the United States, and it has presented some evidence to indicate that they are more highly concentrated than their counterparts in other industrial countries.

Chapter 3

Size and Economies of Scale

Introduction

The scale of Canadian firms and the effect of suboptimal scale on them and their component plants are central to any discussion of the structure of Canadian industry. For more than one hundred years Canada has attempted to foster a national market for Canadian manufacturers by means of a high (though lowering) tariff wall. These tariffs have encouraged both Canadian and foreign-owned firms to set up manufacturing operations within Canada, where they could compete profitably. These firms (and their component establishments) produce a much more diverse product line than firms of similar size in other countries. The small and dispersed Canadian market, combined with a policy of economic nationalism designed to aid the manufacturing and skilled labor sectors, has led to an economy whose firms and plants in many industries tend to be relatively small and unspecialized by international standards.

Small-scale operation can have a significant impact on the efficiency and international competitiveness of firms operating in Canada if their size is below what economists refer to as minimum efficient scale (MES), and if the penalties for below-MES operation are significant. MES is the point at which most economies of scale at the plant or product level are realized.

Most studies of economies of scale have focused on the product or the plant, and the recommendations stemming from them have concerned intra-industry product rationalization and concentration. This Commission in its study of large diversified firms in the Canadian economy has recognized that there might be significant firm-level economies of scale in addition to economies of scale at the product, plant and multiplant level. If such economies exist, policies that prevent this realization could affect the efficiency of the economy significantly. Consequently, we commissioned a number of studies to try to calculate the possible magnitude of firm-level, multiplant- or multiproduct-level economies. Some of this work, specifically that by Donald McFetridge and by Richard Caves *et al.*, is being published. In addition, we have consulted the work of F.M. Scherer, whose contribution to *The Economics of*

Multi-Plant Operation marks him as one of the leading researchers in this area, and who presented a brief, supplied data and testified before us.

Our research was directed at the question, "What economies might be related to scale at the product, plant, multiplant, and firm levels?" Special attention was directed toward determining what economies of scale might be realized by large, diversified firms. A competition policy that would break up existing conglomerate firms or impede the formation of new ones would not necessarily affect concentration levels *within* industries, but would affect the overall concentration of industrial ownership in the hands of the largest firms. Before we could make recommendations regarding such a policy, we needed accurate information on the efficiency costs involved.

In presenting our findings we begin with a short description of Canada's economic environment, the problem of economies of scale in the context of this environment and the most important economic policy measures that have been designed to deal with the problem. The next section is an analysis of the different types of economies of scale—product, plant, multiplant, and firm-level—and their relative magnitude for firms in Canada. We then describe the results of our own studies and those of other researchers, which bear on the issues before the Commission.

The Economic Environment

Canada's historic national economic policy, combined with a small, dispersed market, has often led to the establishment of relatively scale-inefficient firms and plants. This scale inefficiency is reflected in low output per man-hour in Canadian industry. The Economic Council of Canada has estimated 1974 Canadian output per man-hour at 79% of that in comparable U.S. industries. This inefficiency could also, of course, reflect inefficient organization ("X-inefficiency") brought about by high tariffs or could reflect the oligopolistic nature of many Canadian industries.

The domestic market for Canadian output is roughly one-tenth the size of that in the United States. In most industries, even from behind tariff barriers, if economies of scale are significant only a limited number of Canadian firms will be able to produce for the domestic market at prices competitive with imports. It should be noted that the distribution of the sizes of firms in Canada is not a one-tenth scale version of that in the United States. As indicated in our published research, small firms are, and have been, squeezed out of the market in Canada in industries with substantial economies of scale. Products with small-scale demand within an industry are generally not produced in Canada, since it is often cheaper to produce them abroad and ship them over the tariff wall to Canada. The distribution of firms within an industry in Canada is thus often truncated from below, leaving firm sizes in Canada much larger than one-tenth the scale of plants and product runs of the U.S. firms, but still small by international standards.

The Canadian government has had a competition policy that has tried to discourage concentration and the abuse of economic power within individual

industries. The extent of discouragement is hard to gauge. The Director of Research and Investigation under the Combines Investigation Act stated in his testimony to the Commission that, although there had been only a very few, and even fewer successful, prosecutions of mergers or monopolies under the Act, firms frequently consulted the Department of Consumer and Corporate Affairs about the legality of an acquisition and were often advised not to proceed. Other observers, however, have said that in Canada mergers and acquisitions are virtually unconstrained. Leonard Wrigley, in a brief to the Commission, recommends that Canada relax its competition policy legislation even further to encourage firms to form economically efficient units, so that they are not driven to uneconomic, unrelated diversification, which forms large units but brings about few economies of scale and little synergy among the parts of the firm.

Certainly the potential conflict between realization of economies of large-scale operation and high levels of concentration, with possible anticompetitive market behavior, has been recognized by those responsible for formulating competition laws. For example, agreements that allow firms to form consortia to sell in export markets have been exempted from the conspiracy provisions of the Combines Investigation Act since 1960. The Economic Council of Canada, in its 1969 *Interim Report on Competition Policy*, proposed that its civil Competitive Practices Tribunal take into account "...the likelihood that the merger would be productive of substantial 'social saving', i.e. savings in the use of resources...."

Following this lead, L. A. Skeoch and B. C. McDonald, in their 1976 report *Dynamic Change and Accountability in a Canadian Market Economy*, recommended as part of the Stage II Combines Investigation Act amendments the following recognition of possible economies of scale arising from a merger: "but [if the Board] is also satisfied that such effect [restraint of trade] will, with reasonable probability, be on balance offset by real-cost economies...no order shall be made...."

This recommendation was incorporated into Bill C-13, which states in section 31.71 (5):

> The Board shall not make an order under subsection (3) [i.e. proscribing a merger] where after hearing the parties to a merger or proposed merger to which this section applies, it finds that the merger or proposed merger has brought about or that there is a clear probability that it will bring about substantial gains in efficiency that save resources for the Canadian economy.

In addition, the proposed amendments included provisions that would allow specialization agreements between firms in the same industry.

That Canadian firms are scale-inefficient has become a cliché both in the literature of industrial organization in Canada and among businessmen. Until 1975 relatively lower wages in Canada as compared with the United States partially masked the effect of low productivity in Canada. When the wage relationship reversed in 1975, the future of the manufacturing sector in Canada looked bleak indeed: low productivity, compounded by high costs of both labor and capital, was rapidly making large segments of Canadian industry uncom-

petitive internationally. One proposed solution to this predicament was the Economic Council of Canada's recommendation, in its study *Looking Outward*, that Canada move toward multilateral free trade since then all firms would be open to international competition and would have free access to world markets. They would then be forced to move toward their most efficient scale of operation at product, plant and firm levels.

In the fall of 1976, in an article in the *Financial Times*, Harold Crookell advocated an even more radical solution to the dearth of scale-efficient firms: instead of merely being permitted to make mergers that achieve economies of scale, firms should be *encouraged* by the tax system to merge into larger units.

Each commentator seems to be advocating quite different policies, all based on a different perception of the problem of economies of scale in Canadian manufacturing industry and its effect on the ability of Canadian firms to produce efficiently and to compete world-wide. Many see the inefficient size of Canadian firms as the result of two factors: a national policy of tariff barriers, which turns firms toward the domestic market and away from their natural export markets, and a competition policy that may discourage them from combining to operate at an efficient scale. By contrast, in many European countries and in Japan, the formation of large, export-oriented firms is encouraged in order to induce world-scale efficiency. These countries argue that their small market size and the imperatives of economies of scale require large firms in some industries. The rationalization is not always a success, as witness the experience of British Leyland. Where industrial rationalization occurs, competition laws may be directed toward ensuring that the benefits accrue at least in part to the public, and not only to the owners and managers of the firms involved.

The Economic Council of Canada, in its recommendation that Canada move to free trade, indicates its belief that Canadian firms, when exposed to international competition, will adjust toward most efficient scale at the product, plant and firm levels without major dislocations. Crookell, however, disputes this. He has concluded, on the basis of his research on technology and new-product generation and transfer, that most Canadian firms currently have not the scale, the resources, the organization or the skills to survive in the international marketplace or to produce goods for the domestic market at prices comparable with those of foreign manufacturers. Crookell predicts that free trade would lead to the destruction of firms in many industries, rather than to their amalgamation into larger, more efficient units. His recommendation is that the government first encourage the formation of larger firms, then reduce the tariff barriers. This recommendation has been almost universally challenged by economists and praised by businessmen.

The Analytics of Economies of Scale

Before going further in the analysis of the effects of economies of scale on the structure and efficiency of Canadian industry, we shall discuss economies of scale in manufacturing and their effect on the efficiency of production. An

understanding of what is involved in the seemingly obvious term "economies of scale" is necessary before any policy alternatives can be proposed or discussed.

In spite of the amount of work that has been done on the subject of economies of scale, few firm conclusions have emerged, and for several reasons. First, there are several different economies of scale associated with the production of a given product (or group of products), and hence there are many definitions of what economies of scale are for any one industry. Second, the data to determine the economies of scale for firms in an industry are difficult to obtain, and the methodology for using this data is highly dependent on which definition of economy of scale is being used. Third, the different economies of scale associated with a specific industry interact with one another and with the other economic characteristics of the country in complex and changing ways. Even if all the economies of scale associated with an industry could be defined, untangled, and measured, the implications of these calculated values for economic policy are often unclear and probably limited to one country. Therefore researchers using one definition of economies of scale in one country may arrive at policy recommendations radically different from those of another group of researchers in another country.

We begin to unravel this tangle by listing the possible economies of scale that operate in the industrial sector. Remember, however, that these interact and overlap with one other, so that any classification will inevitably oversimplify the true situation.

Product-Specific Economies of Scale

F. M. Scherer, in his writings on the subject, places great importance on the distinctions among product-specific, plant-specific, and multiplant economies of scale. Increased volume of production of a product tends to decrease the average total costs per unit for several reasons. Economies of scale may be related to the volume of output of a product as a function of three related variables: the total expected volume of output, the rate of output per unit of time and the length of the expected run. As the total expected volume increases, management is willing to expend more time on developing cost-cutting measures and quality control in production. As the length of the production run increases, both workers and management become more familiar with the production techniques involved (learning by doing), so that production costs tend to fall over time and over the total volume of output. As the rate and the volume of production increase together, more and more of the production process can be automated, and there is an increasing possibility of line-balancing, so that the time during which machines are idle during the production run is decreased.

These three components all combine in such a way that goods whose demand warrants high-speed, long-term production runs will utilize more specialized machinery and there will be less down time for changes between products using the same machinery. Fewer line changes and more familiar products will also reduce waste and increase quality. In addition, as volume increases, the many risks associated with production, sales, and materials

procurement tend to decrease, so that firms may produce closer to the expected volume of demand and at lower unit cost.

There are two major caveats to this analysis. It has assumed that neither input costs (particularly labor and materials) nor the output price is a function of the rate of production. However, to produce at a high rate of output, the firm might have to increase the wages it pays its workers or the costs of its materials, lower its selling price, and/or incur increasing transport costs to reach the larger market required to absorb its increased output. A high rate of materials demand could lead to increasing returns to scale in production and lower procurement costs or to the necessity of seeking more distant sources or to an increase in local input prices. The standard analysis shows these input and transport costs rising with volume after some output level is reached. When these additional costs are added, the average total cost per unit will eventually rise with output even if the production process itself shows increasing returns to scale. Transport costs, population density and disposable incomes are country- as well as product-specific, while market share is firm-specific. No universal optimal size plant can be calculated when these variables are included. In Canada, high unit transport costs and a dispersed market motivate many firms to construct small plants to serve a local market. Production costs from such plants will be above those from an MES plant, but total costs (including transport costs) will be minimized.

Firms such as MacMillan Bloedel Limited, Abitibi Paper Company Ltd. and George Weston Limited, in their briefs and testimony before the Commission, stressed the importance of product-level economies of scale for industry in Canada and the great disadvantage under which Canadian firms operate because they do not have access to a large domestic market. The problems of these product-level economies of scale are accentuated by the large range of products produced by Canadian manufacturers in many industries. As documented by Caves, in *Diversification, Foreign Investment and Scale in North American Manufacturing Industries*, Canadian firms (and plants) have an output of products much more diverse than that of similar-sized firms (and plants) in the United States. This diversity is a response to the demand of the market that firms in many industries either supply a full range of products or face substantial price and sales penalties. Alternatively, there may be economies of scale in marketing and distribution or fixed costs of operation, which make distribution of multiple products by one firm at large volume more efficient.

Plant Economies of Scale

Most work in the area of economies of scale has been focused on the plant. Plant economies of scale arise from indivisibilities in plant management, maintenance, repair, inventories of raw materials and construction. If the volume that exhausts a specific product's production economies of scale is greater than the MES scale of a plant, one plant will produce only one product. If the economies of scale of a product are exhausted at low volumes, a plant may produce several products, thereby utilizing its managers, engineers and

machinery more efficiently. In Canada, where market conditions arising from product differentiation by firms in many oligopolistic industries demand that a firm produce a broad line of products, but where the market can absorb only small volumes of these products, firms that produce only for the domestic market can lower their total costs to some extent by producing many lines in one plant rather than in several different plants. Such larger multiproduct firms would be more efficient that many small firms, each of which produced only one product.

Multiplant Economies of Scale

In a major advance in the theory of economies of scale, Scherer *et al.* in their 1975 book, *The Economics of Multi-Plant Operation*, sought to explain what advantages accrue to firms operating a number of plants. They describe how a multiplant firm may obtain a lowest-cost allocation of production among geographically dispersed plants, by balancing transport costs against product-specific and plant-specific economies of scale. For example, a multiplant firm might obtain lowest costs by producing in short runs at small plants when transport costs are high relative to economies of scale. On the other hand, the firm may be able to specialize its plants, producing long runs in large plants, when transport costs are low. The overall lowest-cost allocation of production among plants is termed "optimal (geographically) unbalanced specialization". Scherer *et al.* contrasted these optimal costs with those that would be incurred by plants producing a full line of products in each regional plant, and concluded that "the economies attributable to optimal unbalanced specialization by multi-plant firms must be quite small in relation to total production and physical distribution costs." Multiplant operation and geographically unbalanced specialization may lead to firms producing closer to efficient scale, however, since they facilitate investment staging decisions that involve bringing on large blocks of capacity and hence lower average total costs.

In his testimony before the Commission, Scherer argued that multiplant economies of scale were probably very small for Canadian manufacturing firms. This implies that from a production point of view, little efficiency would be sacrificed in Canada if firms were broken up so that each firm had only one plant. Scherer and others were, however, primarily concerned with production and transport costs. They looked at distribution, research and development, marketing costs and profits only in relation to these production and transport costs. Consequently, many of the incentives for firms to have multiple plants, such as risk-spreading and centralized purchasing, were not recognized in their quantitative analysis.

Firm-Related Economies of Scale

For the Commission, the most interesting question is the relationship between the absolute size of the firm and the efficiency at which it can produce its products. If large firms are necessary for efficient production, product and process development, distribution, finance, advertising and export of a product, then a policy that retards or prevents the formation of such large firms would

decrease the overall efficiency of the economy. Such economies might be one motivation for the formation of conglomerate firms.

In a country like Canada with a small market, firms of minimum efficient scale may imply a very high level of industrial concentration, since economies of scale at the firm level might be achieved at greater firm sizes than required to achieve MES plant economies. The expansion to MES firm size would not occur, however, in an extreme case such as refrigerator compressors, where the output from a single MES plant may well be greater than the entire Canadian market for them.

When an industry is highly concentrated, there is a serious question as to whether firms that operate at large scale are doing so to gain production efficiencies in the hope of gaining monopoly or oligopoly profits, which may result from a concentrated industrial structure and oligopolistic pricing. In Canada, this problem of motivation for large-scale production is compounded by the presence of relatively high tariff barriers and substantial foreign ownership in some industries. Both of these may serve to reduce import competition since foreign firms may not compete with their Canadian subsidiaries. In the Canadian context, therefore, economies of scale at the firm level, industrial concentration, industrial strategy, Canada's import exposure and foreign ownership are all interrelated.

The factors of production that may lead to economies of scale at the firm level (which have not already been included in product, plant and multiplant economies of scale) are generally considered to include management, finance and control, research and development (R&D), advertising and distribution, export activities and risk-taking for large projects, as well as overhead expenses such as insurance and legal services. The extent of the economies of scale associated with these factors is still a subject of some controversy. Some writers portray the top management of large firms as being inundated with a never ending deluge of paperwork and statistics, which are necessary to maintain control of their empires. Joe Bain notes in his 1968 book, *Industrial Organization*, that slow response to changing situations is almost inevitable in large organizations. He points out that decision-making in large organizations is likely to be rigid and lacking in coordination among departments. Other writers, however, extol the great efficiency of the modern manager who is able to use the latest management and computer techniques for processing and assimilating information. This latter view is supported in briefs to the Commission, by Leonard Wrigley and David Leighton, and in the testimony of the managers of many large firms, including Paul Desmarais and John McDougald.

The problem is that it is very difficult to measure the performance of firms along the dimensions of managerial effectiveness, finance, control, R&D, advertising and distribution, and export penetration, and then to plot this performance against the scale of their operations. Consider the problems of measuring the effectiveness of R&D. What variable should be used to measure it—patents, journal articles, number of significant inventions or new products and processes? There may well be different economies of scale for invention

and innovation, as in the Polaroid and Xerox processes, for example. Both were invented by individuals, yet after the initial invention large organizations were required to generate the continuous innovation necessary to keep these products ahead of the market. The Polaroid SX70 camera is reported to have cost several hundred million dollars to develop, a sum not available to an individual inventor.

These then are the main areas—product, plant, multiplant and firm—through which the efficiency of the invention, production and marketing of goods could increase with scale. The next section describes the problems of measuring these economies of scale and, more importantly, reviews the Commission's main conclusions on the magnitude of these various economies of scale.

Measuring Product, Plant and Multiplant Economies of Scale

Plant and Multiplant Economies of Scale

There have been several studies of the relative size of Canadian plants compared with those in the United States and other countries and the relative scale efficiencies of these plants, but a survey of the evidence does not provide an unambiguous conclusion. In Scherer's study of multiplant economies of scale in six nations, Canada was found to have the lowest mean size of plant, measured by employment (see Table 3.1).

Table 3.1

Indices of Relative Plant Sizes, Based on Average Employment in the Largest Plants Accounting for 50% of Industry Output

(Most comparable U.S. industry bench mark = 100)

	Indices of Plant size					
Industry	Canada	U.S.	U.K.	Sweden	France	Germany
Brewing	50	100	77	13	23	29
Tobacco products	25	100	81	10	15	24
Cotton and synthetic fabrics	75	100	28	47	27	91
Paints and varnishes	103	100	340	121	94	162
Petroleum refining	31	100	150	28	87	n.a.
Shoes	51	100	97	27	85	103
Glass bottles	94	100	86	57	131	114
Cement	68	100	157	129	95	171
Steel	117	100	65	46	68	n.a.
Antifriction bearings	29	100	118	209	65	123
Storage batteries	34	100	n.a.	n.a.	112	426
Mean relative size	61	100	120	69	68	138

Source: Excerpted from F. M. Scherer *et al.*, *The Economics of Multi-Plant Operation* (Cambridge Mass., 1975), Tables 3.3 through 3.7.
Note: n.a. = not available.

These findings were not supported by an earlier study undertaken by the Economic Council of Canada. Using employment as a measure of size, the Council reported, in its *Fourth Annual Review* in 1967, that for 1963 (the latest year then available) the average size of firms in the United States was larger than in Canada, but the average size of plants in most industries was larger in Canada. These observations led them to conclude that "the mere *size* of the establishment is probably not a dominant factor in the differences in productivity...[but rather] the size of production runs and the degree of specialization or diversification of production." The Canadian Pulp and Paper Association pointed out in their brief to the Commission that they could not fully realize potential plant economies of scale in fine papers because of the short runs of the diverse products produced.

Another viewpoint has been advanced by Caves *et al.*, who in their study for the Commission wrote that "the average-size manufacturing establishment in Canada (measured by value added) does not appear to differ greatly from that in its U.S. counterpart industry."

Paul Gorecki, in a monograph published in 1976 by the Federal Department of Consumer and Corporate Affairs and titled *Economies of Scale and Efficient Plant Size in Canadian Manufacturing Industries,* disagreed with the measure used by the Council in making its comparison. Redoing the analysis using a different measure, he found that in 69 of the 123 industries covered (or 56% of the sample), the U.S. plant sizes were larger than Canadian plant sizes by an average of 61%. For 50 industries (or 41% of the sample), however, Canadian plant sizes were larger, although the difference was only 32%.

A more appropriate comparison may be made between the size of the Canadian plant and the size of the MES plant in that industry. A comparison with this independent standard will give a better indication of how much efficiency can be improved by adopting best-practice technology (existing technology that would produce the lowest unit cost output) of an MES plant (see Table 3.2).

A number of studies have attempted to compare estimates of the MES of best-practice plants for certain industries with the actual size of plants in operation in Canada. In their study *The Tariff* (1967), H. C. Eastman and Stefan Stykolt found that in approximately one-third of the sample of 16 industries they studied no plants were of MES. In another third, less than 60% of industry capacity was optimally efficient. In only one industry was all industry capacity of the minimum efficient size. They concluded that a significant percentage of Canadian production comes from plants of technically inefficient size. This estimate should be compared with the United States, where on the average 80% of the firms in all manufacturing are above minimum efficient scale.

Gorecki calculated MES plants by the survivor method for plants in Canada and compared these estimates to MES plant sizes calculated by others using engineering and survey techniques. (An MES plant in the "survivor" sense is the plant size that most successfully competes in the market place and increases its share of industry output. Under engineering and survey tech-

Table 3.2

Number of MES Plants Compatible with Domestic Consumption, Canada, circa 1968 *

Industry	Number of MES Plants Compatible with Domestic Consumption, circa 1968	Actual Number of Plants, 1967	Percentage Increase in Unit Costs for Plants Operating at One-Third MES
Refrigerators and freezers	0.7	33	6.5
Cigarettes	1.3	21	2.2
Solid detergent	1.7	n.a.	3.8
Integrated steel	2.6	44	11.0
Sulphuric acid	2.7	n.a.	1.5
Breweries	2.9	48	5.0
Automobile storage batteries	4.6	24	4.6
Anti-friction bearings	5.9	n.a.	8.0
Petroleum refining	6.0	41	4.8
Paint and varnish	6.3	159	4.4
Portland cement	6.6	24	26.0
Glass bottles	7.2	n.a.	11.0
Cotton and synthetic broad-woven fabric	17.4	n.a.	7.6
Bricks	32.0	78	37.5
Bakeries	40.8	2,275	11.3
Non-rubber shoes	59.2	206	1.5

Sources: P.K. Gorecki, *Economies of Scale and Efficient Plant Size in Canadian Manufacturing Industries* (Ottawa, n.d.), Table 6.4; Dominion Bureau of Statistics, *Manufacturing Industries of Canada, 1967*, Catalogue No. 31-203 (Ottawa).

Notes: *N.B. that these data are 10 years old.
n.a. = not available.

niques, the definition of an MES plant in a given industry is based on the calculations of the engineers who design plants and machinery for that industry.) The results are set out in Table 3.3. In only one of the industries in Gorecki's sample did the estimates come close to matching (the closest was in non-rubber shoes, where the survivor technique indicated a size of 1 and the engineering technique a size of 1.7).

Gorecki's data, although not strictly comparable, give some support to Eastman and Stykolt's hypothesis that firms in Canada's oligopolistic, protected markets construct less-than-MES plants: "surviving" plants were much smaller than minimum efficient scale. The highly competitive market necessary to force firms to employ plants of at least MES is not present in Canada. In many industries in Canada, even four MES plants would supply more than the entire domestic market. The firms in Canada's tight oligopolistic industries could not construct MES plants without infringing on the market share of their competitors and precipitating a price war.

One major caveat to this whole line of analysis is the use at the plant level of engineering or survey MES estimates that do not include transport costs.

Table 3.3

Size of MES Plant Expressed as a Percentage of Industry Size, Canada, 1967

Industry	Size of MES Plant: Survivor Estimate, 1961-66	Size of MES Plant: Engineering Estimate
Petroleum refining	1.1	16.7
Non-rubber shoes	1.0	1.7
Integrated steel	0.2	38.5
Refrigerators and freezers	3.7	142.9
Automobile storage batteries	4.3	21.7
Bakeries	0.3	2.5
Bricks	1.4	3.1

Source: Adapted from Gorecki, *op. cit.*

For example, Scherer calculated that Canada's domestic market could be served by 2.9 MES breweries and 6.6 MES cement plants, yet the four largest firms in each industry operate respectively 36 breweries and 16 cement plants. If transport costs are added to the cost of production and delivered costs became the criterion, then the MES of these plants would surely decrease, especially for Canada's widely dispersed market.

The calculation of MES using engineering techniques overstates the scale disadvantage of Canadian firms and understates their relative efficiency. The studies using these estimates support the conclusion that firms in Canada have constructed plants at below MES to reduce delivered costs by serving a small market located near the plant. Many of the market areas for industries in Canada are protected from foreign competition by transport costs, and thus firms can operate small, widely dispersed plants to serve these isolated markets without fear of competition from large-scale foreign firms. On the other hand, given the geographic concentration of most Canadian manufacturing industry in Ontario and Quebec and its orientation toward purely Canadian markets, firms located in the northern United States face more or less the same transport costs to Canadian markets, but can operate at large scale, since they produce for both the Canadian and U.S. markets. The tariff structure in both the United States and Canada therefore plays a major role in creating and preserving an economic environment in which scale-inefficient firms can survive. In addition, the high degree of foreign ownership may further restrict both import competition and export possibilities and thereby encourage below-MES operation.

Scherer and researchers for the Commission were in agreement on the effects of several variables they measured in statistical studies. They found that within a given industry the percentage of firms operating at efficient scale increased with the size of the market, industry concentration, the size of cost

penalties for operating below MES, and growth in demand, and decreased with transport costs. One piece of research suggested that this percentage increased with export intensity and import competition and decreased with the rate of effective tariff protection, foreign control and product differentiation.

The direction of these effects "makes sense". The larger the market size relative to MES, the more MES plants can be constructed. The higher the concentration, the greater the probability that the new capacity constructed to meet increased demand will be MES. The greater the growth rate of market size, and the greater the increment in capacity required, the greater the probability that new plants will be MES, or that existing plant capacity will be expanded to MES. The higher the transport costs, the greater the incentive to construct small, geographically dispersed plants. The greater the cost penalty for below-MES operation, the greater the incentive to construct MES plants. The greater the protection from foreign competition, the less the incentive to produce at MES. The greater the export intensity, and the larger the market, the more MES plants can be constructed in an industry.

Product Economies of Scale

In their preoccupation with plant (and multiplant) economies of scale, many observers have given only casual attention to the economies of scale of specific products. Yet these product-specific economies of scale are perhaps the most important source of production inefficiency in Canada. For example, many of Dominion Textile's plants are as large as those of textile firms in the United States and much larger than MES, but Dominion Textile Limited produces significantly more lines of textiles per plant than do U.S. textile firms. Similarly, to provide a full range of nuts and bolts, The Steel Company of Canada, Limited (Stelco), has some product runs that are much shorter than those of its competitors in the United States and Japan. The Canadian plants have much greater down time, wastage and learning costs than do U.S. plants.

These diseconomies of small-scale production at the product level have been largely neglected; yet they are often highly significant. Gorecki has made rough calculations for several industries to show the cost disadvantage of operating plants of the scale found in Canada. As indicated in Table 3.2, these cost disadvantages would be somewhat less than 10% for plants operating at only one-third MES in most industries. It should also be noted, however, that in many industries, particularly those producing a homogeneous product, a cost disadvantage of even 5% would lead to an overwhelming competitive disadvantage.

Gorecki's calculations do not include the penalties of multiproduct production within one plant. In work for the Economic Council, E. C. West analyzed both price and productivity performance in Canada vis-à-vis the United States (*Canada-United States Price and Productivity Differences in Manufacturing Industries, 1963*). His results indicated that about one-third of the variation in productivity performance between industries was associated with a scale effect: industries with a large gross output relative to the United States also displayed

higher productivity relative to the United States. On the other hand, his analysis detected no relationship between relative productivity performance and relative gross output per establishment. This suggested that the economies of scale realized with large volume output most likely emanated not from differences in size of establishment, but from greater specialization within particular establishments.

A detailed industry study of Canadian productivity by the Department of Industry, Trade and Commerce, *Establishment Size and Productivity in Manufacturing Industries in Canada, 1973* (1976), suggests that plant size had no significant influence on productivity, except in a very few industries. The study does not support the view that productivity can be increased through increases in plant size alone. It does suggest that a large part of the problem may be the way production is organized *within* Canadian plants. This would be consistent with the view of the Economic Council that the cause of inefficiency at the plant level lies in the larger number of products manufactured within Canadian plants.

This certainly is not a new idea. The Royal Commission on Canada's Economic Prospects observed this phenomenon in 1957. They pointed out that if very long, standardized runs can be achieved, it may be possible to employ different production techniques using specialized machinery and to realize substantial savings in reduced idle time between runs. Scherer has illustrated how in small and medium-sized antifriction bearings operations a job-lot method was used, while those operations producing larger volumes adopted a straight-line operation. He indicated that manufacturing cost savings as high as 50% could be gained by shifting from the job-lot to the straight-line method. This illustrates an extreme case in which product-specific economies can be more important than plant-specific economies.

Scherer *et al.* go on to conclude that product-specific economies of scale in 4 and possibly as many as 7 of the sample of 12 industries examined were more important than plant-specific economies. Eastman and Stykolt found that diversity of output increased costs in such industries as rubber tires and detergents. In interviews conducted for their study on *Scale and Specialization in Canadian Manufacturing*, D. J. Daly *et al.*, found that businessmen claimed that short runs were a major factor in explaining the higher costs in Canada in a wide range of industries. Their discussions with a number of companies about what would happen to levels of output (using the same labor and machinery) if production runs could be more specialized and longer suggested that efficiency gains would be "appreciable—in some cases even dramatic".

It is the wide range of products per plant that is the main focus of the Economic Council of Canada in *Looking Outward*. On the basis of several detailed studies carried out on firms in the European Common Market, the ECC predicted that substantial intra-industry rationalization at the plant level would come about with free trade.

Before leaving the subject of plant and product-level economies of scale, one final example will be given in order to highlight the complicated nature of the whole subject of MES plants and the extreme caution that must be

attached to any conclusions drawn from these calculations. In the November 1, 1976, issue of *Business Week*, Emerson Electric Company was reported to be following a strategy of being the low-cost producer in the industry. To achieve this, it had located *small* plants in rural areas where wages were low. If these plants had been observed by the researchers on plant efficiencies of scale, they would have appeared to be below MES, and hence inefficient, high-cost operations. This example is not meant to detract from the work of these researchers, but as a cautionary tale.

Firm-Level Economies of Scale

To this point the advantages of large firms and their component plants have been analyzed in terms of their production capacities. In addition to these, however, firms engage in activities that should be studied in the same light, since economies of scale might also be encountered there. Among the more important of these activities are research and development, management, finance, marketing (advertising and distribution) and risk-taking. The question to be addressed in this section is whether the economies of scale of these activities (if they exist) require a firm size larger than that required by production considerations alone.

Research and Development

Canada has one of the lowest rates of research and development expenditure, on a per capita basis, of Western industrialized nations, and Canadian research and development expenditures are concentrated in the hands of a very few large firms. Some controversy exists about the relationship between a firm's size, the amount of R&D it undertakes, and the output of that R&D. It has proven difficult to construct useful measures of R&D inputs (engineers, R&D expenditures, etc.), outputs (patents, inventions, innovations, etc.), or the relevant size to be measured (plant, division, or firm). Consequently, definitive answers to the question of the relationship between R&D and size are difficult to find.

A related question for Canada is the licensing of foreign product and process technology, rather than its indigenous generation. At present over 90% of the patents in force in Canada are held abroad.

A number of writers have concluded that big business is more conducive to innovative activity than is small business. For example, John Kenneth Galbraith asserts (without empirical evidence) that the costs of technological innovation in modern times are so great that they can be borne only by large firms. He argues further that R&D projects are risky, as well as expensive, and that only large firms can afford to maintain a balanced portfolio of R&D projects, letting the profits from those that succeed pay for those that do not. Others have observed that there are obviously some economies of scale in conducting R&D. A large laboratory can justify the purchase of specialized equipment to make experimentation easier and it can also employ specialists in many disciplines who may interact. R&D projects may also benefit from

economies of scale realized in other parts of a large firm's operations. If a large firm has promotional advantages over a small firm it would be able to penetrate markets more rapidly with new products, and thus increase the profitability of developing a product. Also, because they have high volumes of sales, large firms might have an advantage in introducing process innovations, since a new process that reduces costs by a given percentage yields greater total savings to companies producing a larger volume.

The ability to license profitably may also be a function of the size of the firm and its ability to carry out its own R&D. A common form of licensing occurs through cross-licensing; i.e. two firms trade licences for different products or processes. Cross-licensing reduces the costs of technology transfer by reducing the information gap and the perceived risk of both using and selling technology. To engage in this type of activity, a firm must be able to generate its own R&D. Licensing technology instead of developing it indigenously may also place limits on the Canadian firm's export markets, in that the licensing firm will often limit the sale of the licensed products to the Canadian market.

On the other hand, it is also argued that large size can be a disadvantage in facilitating research, development and innovation. In a large corporation with a large administrative structure, the decision to proceed with R&D has to filter through a long chain of command, and this is said to increase the chance that an idea will be rejected. This may result in a bias in large firms away from more imaginative innovations. The inability to get ideas approved by top management could drive the most creative individuals out of large corporate laboratories to go it alone in their own ventures. A related problem might be a propensity for research to become over-organized in large laboratories.

To license effectively, a firm may need to be only large enough to maintain an effective listening post in the world market for technology. A small firm without a major R&D establishment may be better able to incorporate new outside technology since it has few inside researchers with a stake in their own products and processes.

Nevertheless, many briefs received by the Commission, including those from the Canadian Manufacturers' Association, Imperial Oil Limited and the Canadian Pulp and Paper Association, stressed the prevailing view among businessmen that large size is essential for creating successful R&D programs.

Canadian studies of the relationship between size and innovative activity of corporations have been particularly meager. The data source for these studies has been the Statistics Canada series, "Industrial Research and Development Expenditures". Reporting companies include all large companies and those that the Department knows or believes are engaged in research and development. These studies generally support the conclusion that companies in some size categories are more vigorous than others in advancing technology, even though the pattern is not consistent.

The bulk of the evidence indicates that, among firms engaged in research and development, R&D increases more than proportionally with scale up to a certain size and then decreases as a proportion of sales. As Scherer summa-

rized, "relative effort tends to increase with size up to a point and then decline, with middle size firms devoting the most effort relative to their size". He drew a similar conclusion on the basis of his own research: "A little bit of bigness—up to sales levels of roughly $75 million to $200 million—is good for invention and innovation. But beyond the threshold further bigness adds little or nothing, and it carries the danger of diminishing the effectiveness of inventive and innovative performance" (*Industrial Market Structure and Economic Performance*).

Scherer's sample of firms was taken from *Fortune*'s directory of the 500 largest American firms. To put his remark about "a little bit of bigness" into better perspective from the Canadian point of view, in 1964 (the closest year to that in Scherer's study for which data were available in Canada), out of Canada's largest 100 non-financial corporations, only 40 had annual sales exceeding $200 million, 49 exceeded $135 million and 68 exceeded $75 million.

Canadian studies on the relationship between innovation and size have been confined mainly to the determinants of research and development expenditures. Until very recently, these studies dealt with specific cases and with tentative statistical analyses. Research in the area was done for the Commission by McFetridge, Caves and several others. One study attempted to determine the relationship between size and R&D intensity and concluded that a company's own commitment of funds to R&D increased with size as measured by sales and employment. In two very important industries, electrical products and some chemical products, we found that R&D increased more than proportionately with size after a sales threshold was reached. This threshold was very high, in excess of $200 million. The analysis indicated that beyond a sales size of approximately $230 million, a firm's self-financing R&D would decline relative to sales. (Note that this is close to Scherer's estimates above.) Such findings do not take account of inter-industry differences in the relationship between size and innovation, or of such factors as variation in the potential for innovation in specific industries.

In 1976 in the *Canadian Journal of Economics,* J. D. Howe and D. G. McFetridge analyzed "The Determinants of R&D Expenditures" by industry and were able to account for inter-industry variations. They found that the principal determinants of R&D expenditures were current sales, cash flow and government incentive grants.

In their work for the Commission, McFetridge and his associates found that larger firms in some industries seemed able to make better use of a given R&D budget than did smaller firms. More specifically, they found that patent activity in some industries increased more than proportionately in relation to the increase in past R&D expenditures. In examining the effect of firm size on the average product of R&D in three industries, they found that an increase in firm size resulted in an increase in the number of patents resulting from a given R&D outlay as follows:

1. in the electrical industry, among the larger firms;
2. in the chemical industry, among firms with relatively large R&D budgets;

3. in the machinery industry, among firms with relatively small R&D budgets.

McFetridge concluded that it was difficult to generalize from these findings and there is no compelling evidence of a general tendency for innovative activity to rise more than proportionally with firm size.

In a brief to the Commission, Wrigley estimated the expense of a major, continuous R&D operation and the volume of sales necessary to support it: $20 million per product division.

Harold Crookell, Leonard Wrigley and Peter Killing (in a forthcoming book) have examined the ability of Canadian firms to generate R&D continuously either internally or by licensing. Instead of relying on aggregate data from a large number of firms, they conducted extensive interviews with firms in Canada, the United States and United Kingdom. Their conclusion is that Canadian firms lack the scale and the local market size to generate continuous R&D profitably. This is not to say that small firms cannot generate new products, but simply that small firms usually cannot do so on the continuous basis necessary to remain competitive internationally in the long run. This conclusion has led to Crookell's proposal that Canadian firms be given tax incentives to grow large enough to carry out continuous, profitable R&D.

These studies can lead only to very tentative conclusions. There seems to be sufficient evidence to suggest that large corporate size does confer advantages in carrying out research and development, as measured by expenditures. However, large corporate size does not seem to be a prerequisite for participation in the innovative process, and the benefits accruing to large firms seem to be confined to the later stages of the process, i.e. investment and development.

There have been no studies relating the size of the firm to its ability to license technology or use licensed technology effectively. This is an area of major importance to Canada which should be addressed in future research.

Administration

As yet, no way has been found to measure the effectiveness of management as a function of scale. Desmarais depicts the modern manager at the control center of a diversified empire: Power has a headquarters staff of 22 to control and manage a $575 million empire. With decentralized management techniques, Desmarais sees no natural limit to the size of the modern, diversified firm. McDougald of Argus, on the other hand, sees serious dangers for operating firms that diversify beyond their areas of product expertise.

Economies of management at the firm level (for both single and multiplant firms) may result from certain administrative and service activities requiring a staff of roughly fixed and indivisible size over a broad range of production levels. If this is true, the unit costs of these functions will decline as corporate output increases. The multiplant, multiproduct firm can average out fluctuations in demand for staff services, thus securing better staff utilization and carrying proportionally smaller reserves against its relatively flat demand peaks. Large companies can use a greater division of labour, employing special-

ists in such fields as linear programming and arbitration law, where small firms must do without or make do with less intensively trained personnel. The external market for these management services often does not permit their efficient use on an irregular basis.

Size may also have its disadvantages. As with research and development, the large administrative staff necessary to run big corporations may frustrate young, imaginative managers, and the added layers of bureaucracy needed to maintain control may lead to delay, mistakes and unnecessary costs.

If there are economies of management at the firm level, what impact might they have on cost and profit performance? A very rough indication of the magnitude of management costs in relation to operating costs can be made by finding what percentage the wages of administrative, office and other non-production employees formed of the total costs of production. In Canadian manufacturing as a whole, this figure was 9.8% in 1975. Studies on the relationship between size and administrative staff levels come to no firm conclusions, but Scherer *et al.* conclude that in only a few cases did management costs rise less than proportionally with size. For most firms, Scherer concludes that larger size brought higher unit administrative costs.

Concerning the quality of management and administrative staff personnel, Scherer *et al.* "perceived no obvious association between firm size and such attributes of managerial quality as dynamism, intelligence, awareness, and skill in interpersonal relations." Larger companies did display the expected tendency to maintain a wider array of staff specialists, but on the other hand, staff personnel in smaller companies had learned to wear several hats well.

The Commission received both briefs and testimony on the subject of management as it related to conglomerate organizations. Wrigley and Leighton in their briefs expressed the view that in both theory and practice there exist significant economies of scale in the use of top management which increase the efficiency of large, diversified firms. Testimony by executive officers representing such large Canadian firms as Canadian Pacific Limited, The Royal Bank of Canada and The Investors Group extolled the benefits that their subsidiaries derived from the head office staff who provided aid in such management activities as coordination, financing and long-range strategic planning. Rothman's of Pall Mall Canada Limited and Redpath Industries Limited pointed out increases in the size, employment and profitability of their subsidiaries after acquisition. However the actual performance of conglomerates in both the United States and Canada does not seem to support the contention that management economies in a conglomerate organization put the smaller non-diversified firm at a disadvantage.

A. Michael Spence, in work with Richard Caves for the Commission, showed that Canadian industries have a greater proportion of non-production workers than do comparable U.S. industries. The difference is probably a function of both the greater diversity in the output of Canadian plants and the smaller size of Canadian firms. These findings suggest that significant management savings might be forthcoming if Canadian activities were less diversified.

Richard Caves and Masu Uekusa, in *Industrial Organization in Japan,* found that administrative costs as a percentage of total costs declined for large firms.

Marketing

ADVERTISING AND DISTRIBUTION ECONOMIES OF SCALE

Does a large firm have a cost advantage over a small firm due to advantages in sales promotion? The answer is almost certainly "yes", but in answering the question one should differentiate between real and pecuniary economies of scale. The cost of advertising for the firm may decrease with size either because of the market power of larger firms in purchasing advertising or because real cost savings are achieved. Large firms may enjoy several kinds of advertising economies of scale, both pecuniary and real, over small firms. Advertising campaigns often need to attain a high threshold level to achieve their maximum effectiveness, so that there may be high absolute returns to advertising expenditures up to some high level, after which diminishing returns set in. Advertising messages are purchased from various information media, and advertiser economies are available where the price per message declines as the number of purchases increases. What percentage of these discounts reflects real cost savings to the media instead of buying power by the advertiser is not known

Large firms often create brand images for their products which introduce artificial economies of scale in marketing and thus serve as barriers to entry for small firms. For example, in many consumer goods industries, a new product must be introduced with large advertising expenditures, a substantial barrier for most small firms. Joe Bain concluded in his study (*Barriers to New Competition*) of 20 American industries that product differentiation was "of at least the same general order of importance [notably in consumer goods] . . . as are economies of large-scale production and distribution" in giving established market leaders a price or cost advantage over rivals. In Scherer *et al.*'s recent work, brand image was found to confer a price advantage at the wholesale level of from 1% to 50% across their sample of eight consumer industries. Image differentiation was found to be substantially important in only two of these industries, brewing and cigarettes. A strong brand image in these two industries was found to be associated with a wholesale price advantage of from 8% to 40% in brewing and from 10% to 50% in cigarettes. Only in brewing was multiplant size essential to the exploitation of this brand image advantage. John Labatt Limited testified before us that advertising economies enabled breweries to produce a wider range of higher-quality products at a given price.

Are there systematic relationships between firm size and the profitability of advertising? Again the only measurable statistic is advertising expenditures. The results of a 1974 U.S. study by W. S. Comanor and T. A. Wilson suggest that, in most industries, larger firms spend proportionally more on advertising than do their smaller rivals. However, there were a number of industries where the data showed that large firms smaller than the industry leaders spend proportionately as much as or more than the leading firms. The latter group included most of those industries with high advertising-to-sales ratios. In both

groups, however, the very small firms (those ranked below the top 20) spend little on advertising, both absolutely and in relation to sales.

Caves in his work for the Commission found that high ratios of advertising to sales are accompanied by high profits in industries that do not have substantial import competition but are accompanied by low profits in industries exposed to imports. This evidence suggests that the ability of Canadian firms to establish brand images and reap above-average profits has been decreased by foreign competition.

Another strand of evidence points to large marketing and distribution economies of scale. Canadian firms produce far more products within their industries than do firms of comparable size in the United States. This phenomenon is due to a large extent to the costs of selling and distributing products; once the brand name has been established, other products may be sold under that label at little extra cost. A salesman can sell a full line of products as easily as one product. Retail stores have large search, learning and start-up costs associated with their purchases, and so they are more likely to buy products that are part of a full line.

There are ways by which narrow-line firms can escape such preferences: for example, by seeking out that subset of dealers without broad-line preferences, by offering price discounts sufficient to induce middlemen to do their own coordination or repairs and by filling out their lines through purchases from other producers or selling their narrow line for labeling by large buyers. With any of these strategies firms may achieve viability, but at some cost disadvantage.

To what extent were smaller firms able to take advantage of different strategies to offset any disadvantage of marketing practices that were available only to the large firms, and to what extent do these advantages necessitate firm sizes larger than operations of one MES plant? Scherer *et al.* concluded that, for several industries in their study, multiplant firms enjoyed significant cost advantages in advertising over their single-plant rivals. In many industries these pecuniary and real advertising and marketing economies of scale far outweighed production economies of scale.

We think that there is quite compelling evidence of marketing and distribution economies of full-line production which impel a firm in Canada to offer a full line of products, even if it faces substantial production diseconomies of scale for some of the lines it must carry for marketing reasons.

INTERNATIONAL MARKETING

It is often argued that large firms have an advantage in exporting. In their submission to the Commission, officers of MacMillan Bloedel argued that there are great economies of scale in export marketing. Since their brief contains most of the arguments associated with this hypothesis, we quote it at some length:

> International trade...has important implications for MB's scale of operations. If MB did not have substantial size, it would not be a major exporter of Canadian

> products. To be successful in international trade in commodities, a company must have large volume of its products available for sale. It must also have access to an adequate supply of raw materials, low cost manufacturing facilities, and a large marketing and transportation organization to sell to and service a variety of foreign markets.
>
> The large volume of forest products MB sells has enabled the Company to develop a worldwide marketing system at minimum unit sales costs.
>
> MB's network of sales agents and subsidiary companies keeps its head office in continuous contact with markets throughout the world and assists it in making long-term marketing plans in an attempt to maximize mill returns and ensure stability for both mill and customer. New markets can be opened when opportunities develop and existing markets can be expanded and services to them improved. With its existing large marketing network, MB has also been able to provide marketing services to smaller Canadian companies whose product volumes do not permit development of such a network.

The theoretical basis of this argument appears to be that there are marketing functions associated with international trade that are indivisible. That is, a certain minimum expenditure on marketing services is required to sell abroad. The small firm spreads these fixed costs over a smaller output and thus operates at a cost disadvantage. This argument assumes that the services required by a firm engaged in international trade cannot be purchased from independent suppliers in small quantities. To the extent that the small firm can obtain market research, selling effort or customs brokerage services from independent specialists in suitably small quantities, it will not necessarily face a cost disadvantage. Recognizing the disadvantages of small size in international markets, several firms (such as Interimco Company Limited) and the federal government have brought many small producers together to form export consortia to bid on large-scale international contracts. Section 32 of the Combines Investigation Act specifically exempts from prosecution agreements or combinations relating only to exports.

In research done for the Commission, McFetridge concluded that export performance was not related to size: "...holding industry and ownership effects constant, firm size exerts no effect on the proportion of sales exported. Large firms are not more 'export intensive' or 'export oriented' than are small firms."

As he pointed out, however, the data samples he used in this study, while better than those in previous studies, were not representative of the total Canadian manufacturing sector. In order to accept his conclusions, we must accept not only the premise that there are no production-cost economies of scale that make large firms more cost competitive, but also that there are no export economies of scale. Such a finding would fly in the face of the evidence in every other country and of analyses conducted by the Department of Industry, Trade and Commerce, where industrial rationalization and export consortia are seen as aids to exports.

Again the question of the relevant measure of size arises. Desmarais in his testimony used the example of Power being small and a hypothetical Power-Argus being larger and hence better able to compete internationally. McDougald, on the other hand, portrayed export performance as a function of the

strength of a firm's individual components. That is Massey-Ferguson Limited can compete internationally because of its own size, not because it is part of the Argus group. The Commission concludes that probably both views contain parts of the truth. As demonstrated by the Japanese trading companies, total firm size increases ability to operate in international markets, even when diverse products and services are sold under one group. It is difficult, however, to see how a combination of Massey-Ferguson Limited, Consolidated-Bathurst Limited, Canada Steamship Lines, Limited, plus the other companies in a Power-Argus group, would increase the success of any of the component parts or the company as a whole in export markets.

In developed countries with high labor costs, manufactured exports come from innovative products and manufactured imports from standardized products. Innovation (at least continuous innovation) at the product and process level increases with scale, where scale is defined as the scale of the related product unit, not the firm as a whole. It would seem that in many industries, large scale is a prerequisite to continuous exports. In addition, for many products there is an initial size barrier that must be crossed before continuous exports can be expected. The firm must be able both to generate new products and to sustain the high initial fixed costs necessary to begin overseas operations. There are often substantial start-up costs in penetrating an export market in manufactures, which can usually be sustained only by large firms. Small firms may be able to penetrate the export market via government promotion programs, trade fairs, and participation in export consortia. In general, however, these are expensive ways to compensate for small size.

Financial Advantages of Large Firms

Large firms are said to enjoy cost or access advantages in raising capital in that they may pay lower interest rates on short- and long-term debt than do smaller establishments, they can float debt and equity issues at lower costs per dollar of funds received and they have access to sources of funds not available to smaller firms. The real economies of large size have two bases. Certain more or less fixed transaction costs are incurred in effecting a stock or bond issue. The larger the issue, the lower the cost per dollar of fixed expense incurred. In addition, investors are willing to buy the securities of large firms at interest or profit yields lower than those on securities of small firms. There are a number of reasons given for this willingness. Large firms are better known and have longer earnings records, investments in them are thought to be less risky, in the sense that earnings tend to be more stable, default rarer and the return to the equity holder more predictable. The principal reason, however, appears to be that securities of large firms have established markets and are far more liquid investments.

John Scott, in part of the Caves study for the Commission, showed that the cost of equity capital for firms in Canada decreased with size and diversity. Surprisingly, he also found that the variation in the return to stockholders was greater for more diversified firms. Scott hypothesized that stockholders may have perceived a lower risk in diversified firms and hence were willing to have

both lower and more variable returns. He also found some slight evidence that the cost of debt to large, diversified firms was lower.

Commission staff studies and other empirical work indicate that large firms do in fact obtain lower interest rates on bank borrowing and that the difference is in the order of one or two percentage points. Empirical evidence also substantiates the prediction that there are economies of scale in floating stock issues. Caves testified before the Commission that there was evidence of real economies of scale in finance for firms in the United States, Japan and Europe.

On the question of whether larger diversified firms allocate their capital more efficiently than do smaller firms, the Commission was unable to detect this in the financial performance of large conglomerates. In fact, as we explain more fully in Chapter 5, our research showed that highly diversified firms had a lower return on their investment and lower returns to their stockholders than did other firms.

On the basis of the above studies the Commission concludes that large companies do have a cost and access financing advantage vis-à-vis smaller companies, but that this advantage does not seem to be reflected in better performance. In fact, larger diversified firms have both a lower return and a greater variation in this return than do non-diversified firms.

Economies of Scale in Risk-Taking

For several reasons, as its size increases, a firm's ability and willingness to take on increasingly risky projects also increase. Larger firms will have a greater number and often a greater variety of projects in which they are engaged at any one time. They can more easily "bet the averages" without as great a fear of being wiped out if any one project fails. The sum of the risky projects that two small firms are willing to undertake by themselves is therefore less than the number of risky projects that one larger firm would be willing to undertake. Put another way, for the same risky project, a small firm will usually demand a higher rate of return than will a larger one because the former requires compensation for its higher perceived risk.

Two types of projects are especially risky and usually require large firms to undertake them: research and development, and projects related to energy. R&D is risky for four reasons: (1) there is a wide variation in its possible outcome; (2) the cash outflow before a cash inflow is often very large, sometimes into the hundreds of millions of dollars; (3) the length of time between outflow and inflow is often very long; (4) the payback time is highly variable. Large firms can balance several R&D projects against one another and thereby reduce the impact of many of these risks.

By tax and other incentives, the government, of course, can decrease some of the risk perceived by firms when they undertake R&D projects. In the past, however, the government's efforts in this area have not been notably successful.

Energy and projects related to it are risky for many of the same reasons as R&D projects: they are very large, and the size of the payback is uncertain and

may be delayed. Even the huge integrated oil firms feel uncomfortable about undertaking some large, risky projects and form joint ventures to do so. In several instances, the government has stepped in when it felt that insufficient investment was taking place in high-risk areas, but in neither Canada nor other countries has this course proved a complete solution to the problems posed by high-cost, high-risk projects.

The risks associated with R&D and energy projects are already large and will increase in the future. For private firms to undertake these projects, they must increase in size to realize the substantial economies of scale in risk-bearing.

Summary

A great deal has been written about the effect of scale on the efficiency of Canadian industry. Undoubtedly Canadian plants in many industries are smaller than those in other countries. But, as Scherer *et al.* demonstrate, when the low end of the plant size distribution is excluded, Canadian plants are not, in general, very much smaller. The fact that the Canadian market is only one-tenth the size of the U.S. market does not imply that industrial plants in Canada are one-tenth the size of U.S. plants as well. Plant-specific economies of scale, which have been the main focus of most of the studies, are significant in a few Canadian industries but have not, in general, imposed a major cost disadvantage on Canadian firms in serving the Canadian market.

There are two more important sources of scale inefficiency in Canada. First, to compete with imports and to satisfy consumer demand, Canadian firms in tariff-protected oligopolies produce a full line of products. Since each plant produces a much more diverse line of products than do similar-sized plants in the United States, Canadian plants employ less specialized equipment, have a higher proportion of set-up and downtime, and experience fewer of the economies of scale that arise from "learning by doing". Secondly, because of the degree of foreign ownership, the small size of firms, and high product diversity within firms, firms in Canada are unwilling or unable to undertake continuous research and development on products and processes, which is necessary to compete both at home and abroad. The cost disadvantage that this low level of R&D imposes on Canadian-owned firms is often significant but hard to quantify. Many Canadian-owned firms do not manufacture products that compete directly with foreign products or products of foreign-owned subsidiaries. With low R&D, Canadian-owned firms must compete at the price-sensitive end of the product line or purchase new products and processes on the imperfect and often costly market for licences. For firms operating in a country with high labor and capital costs, this is not an attractive position. Many of these problems can be attributed to the presence of high Canadian tariff barriers, which have encouraged both scale-inefficient production and foreign ownership in many industries.

In addition, large firms seem to be able to realize both real and pecuniary economies of scale in finance, marketing, management, and perhaps elsewhere.

These economies of scale constantly motivate Canadian firms to form larger units.

Our overall conclusion is that plant-level economies of scale, which are usually cited in discussions of size, are often of little relevance in evaluating firm size, vis-à-vis product economies, multiplant economies and economies of firm size. It is our conclusion that in many industries firm-level economies in Canada justify larger-sized businesses that do plant-level economies. How large a firm is justified depends on the industry, but it may be sizable. The major firm-level economy is probably found in risk-taking ability, in undertaking new investment, and in long-term R&D, with the largest firm sizes probably justified in high-risk sectors such as energy exploration, aerospace and similar fields. We emphasize, however, that in these areas plant-level or product-level economies are less important than past discussions of the topic in Canada have suggested.

The Commission recognizes that achieving economies of scale is only one of many motivations that may lead firms to expand. Other motivations, such as managerial empire-building and the desire to obtain market power in concentrated markets for the purpose of restraining competition, will be discussed in subsequent chapters. This chapter has dealt solely with cost considerations that encourage firms to increase their size, and serves as background to the remaining chapters on the economics of corporate concentration.

Chapter 4

Competition and Oligopoly

Our hearings and research have shown that most industries in Canada are quite concentrated: they contain a relatively few large firms, which exercise economic power in the markets they serve. This high level of concentration was discussed at length in Chapter 2. In this chapter we look at some of the implications and consequences of this concentrated structure. We look first at the objectives of the market and price systems, then at theories of competition as they apply to industries with different structures. Finally, we propose an approach to the regulation of the behavior of firms in concentrated industries.

The Role of the Market System

Each of the world's economies has to accomplish certain basic economic tasks: to determine what is to be produced, where, how and in what quantities; to allocate the goods and services produced; to replace and expand the stock of capital goods; to distribute material benefits among members of the society; and to interact with other economies through international trade and investment.

These activities may be carried out within a variety of institutional arrangements ranging along a spectrum from central planning and control (as in many Communist countries) to a system of decentralized, but interconnected markets. In Canada, economic activities take place under a mixture of arrangements, with emphasis largely on self-regulating markets, but with much and increasing resort to government intervention through regulatory boards, Crown corporations and other forms of government ownership, legislative restrictions, taxation and subsidy programs and, more recently, wage and price controls.

On the whole, although numerous constraints are placed on its operation, in Canada we continue to rely primarily on the market mechanism (also called the price system or price mechanism) to allocate resources, adjust production and consumption, distribute income and bring about economic growth. The allocation of resources through the market mechanism does not imply that firms are privately or publicly owned, nor does it say anything about the degree of competition among those enterprises. It implies only that economic units are

largely autonomous with regard to the decisions they make and that they deal with one another chiefly through voluntary exchanges of goods and services.

The performance of an economic system can be measured according to the following criteria: (1) the efficiency of resource allocation: are capital, labor and raw materials used in such a way that the value of output is maximized? (2) growth: is the economy accumulating the necessary capital and technological skill to expand output and increase real per capita income? (3) stability: does the economic system provide adequate and stable employment and reasonable price stability? (4) distribution of income and output: how equitably is the output distributed among the people in the country?

In addition, in recent years public attention has focused on a set of more subjective measures of performance called social indicators. These provide measures of the quality of life rather than measures of quantity of production or efficiency of resource utilization. Examples include measures of housing, employment and environmental quality. This chapter will focus on some of the economic consequences of various market arrangements.

There are almost always significant trade-offs involved in choosing among economic policy alternatives. For example, using traditional policies, reductions in unemployment may be attained only at the cost of increased inflation; increased job satisfaction or maintenance of more "human-scale" enterprise may lead to some loss of efficiency. The fact that such trade-offs exist and that judgments tend to be highly subjective are two reasons the Commission has heard much conflicting evidence from witnesses and in briefs on what the market system and the role of large enterprises "should be". Consequently, we have had difficulty in formulating highly specific arguments and conclusions concerning the role and impact of large firms in our economy and the policies to be adopted in the presence of concentrations of economic power. In this chapter, we address the implications of concentration within individual industries for the efficient allocation of resources, for growth, and for stability.

In Chapter 2 we discussed changing industry and aggregate concentration ratios in Canada. As shown in that chapter, most industries in Canada are highly concentrated: a few firms produce a high proportion of the output of the industry. We concluded that concentration both within industries and overall has remained fairly stable in recent years. To understand how the Canadian economy functions and to make recommendations to improve its performance, we must understand the behavior and performance of firms in concentrated or oligopolistic industries.

Economists who study industry organization have developed a methodology for analyzing industries which consists of three components: the *structure* of the industry (concentration, product differentiation, barriers to entry, potential competition, cost structures, vertical integration, growth in demand, foreign competition); the *conduct* of firms within the industry (the nature of price and non-price competition and anticompetitive practices); and the *performance* of firms (efficiency in the use of capital, labor, and raw materials, profit levels and technological progressiveness).

Barriers to Entry

Before describing the four main types of market structures, a short description of the concept of "barriers to entry" is necessary. Barriers to entry are those factors that impede or prevent the entry of new firms into an industry. They can be classified into four groups.

1. Economies of scale and transport costs. If the minimum efficient scale of a firm (MES) is large relative to the demand in the industry, and if the cost penalties for below-MES operation are substantial, a new firm would have to enter the market at such a large scale that the combined output could be sold only at substantially reduced prices, perhaps below cost. High transport costs are also a barrier to entry, since they decrease the effective size of a market area and inhibit or prevent competition from firms outside the area.
2. Government-imposed or legislated restrictions such as patent protection, legal monopolies and cartels, restrictions on foreign investment and tariffs.
3. Product differentiation by existing firms through high-level and continuous advertising of brand names, company reputations or distribution outlets.
4. Absolute cost advantages arising from control of resources, technology, inability of some firms to acquire capital or raw materials, and vertical integration of firms in the industry.

The higher these barriers to entry, the more difficult it is for firms to enter the industry, the more concentrated the industry will be and the less competition there may be among firms in it. Barriers to entry have important implications for the concentration of industry, the evolution of that concentration and the conduct of the firms within various industries.

Types of Markets

On the basis of an analysis of the structure of an industry, the behavior of firms within that industry and the performance of the industry, economists classify industries into four main categories: atomistically competitive; monopolistic; monopolistically competitive; and oligopolistic. We describe, briefly, each of these market categories or models and then examine closely the oligopolistic model, which is by far the most complex of the four, but also the most relevant to an understanding of the Canadian economic system.

An atomistically competitive industry is one in which price and total industry output are determined by the market and firms have no individual discretion in setting the price of their products: firms are price-takers. Atomistically competitive industries are usually characterized as having many firms whose output is small in relation to total industry output, low barriers to entry for new firms or to expansion of output by established ones, perfect information and a homogeneous product (salt, for example). These conditions are even approximately met in only a very few industries: some sectors of agriculture and small retail establishments in service industries are the standard examples.

In atomistically competitive industries, all efficient firms are expected to earn a "normal" or competitive return on invested capital over time. If profits rise above this normal level (because of an increase in demand or a decrease in costs), existing firms will expand their output and new firms will enter the industry (since the barriers to entry are low or nonexistent), thereby lowering prices and profits.

If the markets in all industries in an economy are competitive, returns to capital will be comparable in all industries after adjustment for risk, since there are no impediments to moving these resources to another use if such a move would increase their returns. In addition, in atomistically competitive markets the marginal cost of production for any given product (including a normal return on capital) will equal the marginal value of the product to consumers, as measured by the price consumers are willing to pay for it. Thus, if all industries are competitive, resources will tend to be allocated efficiently from both production and consumption points of view. Although atomistically competitive markets are efficient in allocating resources at any one time, their effect on growth and technological progress, income distribution, and stability is not certain.

The importance of the atomistic-competition model is not that it represents reality; it does not. Rather the model and the assumption that it produces a desirable result for society are the origin of the belief by a generation of freshman economics students that many buyers and sellers are "better" than few; that "artificial" product differentiation may not be in the public interest and that more information and disclosure are always better than less. It is sometimes forgotten that all the conditions underlying the model must exist simultaneously before we can predict an outcome of efficient resource allocation. If only some of the conditions exist it cannot be assumed that firms will behave more closely to the ideal. In particular, striving for competition only in the general sense of a large number of rival producers in an industry does not guarantee that resources will be allocated efficiently.

At the other end of the spectrum, a monopoly industry is one in which there is only one firm, protected by high barriers to entry (such as large economies of scale, patents, a captive source of supply, or government regulation) and insignificant import competition. A monopolist has the power to restrict his output below that which would exist in an atomistically competitive industry in order to raise prices and profits. The price consumers pay for the product is normally greater than the cost of its production (including a normal profit). Not only does the monopolist usually make above-average profits, but productive resources are not allocated efficiently within the economy. The monopolist may also take some of his monopoly profits in an "easy life" and not produce at the optimal level of efficiency, with costs higher than they would be if he were faced with the pressures of competition. This phenomenon, which economists call "X-inefficiency", may be the most important cost arising from a monopoly.

The extreme case of monopoly is similarly of limited value in describing reality in Canada. Monopoly in the pure sense can arise only when there is no

ready substitute for the monopolist's product or service. When this occurs on a large scale, government tries either to regulate the market or to place the monopolist under public ownership. Examples are found in telephone service, water supply, sewer services and railroad freight transport. Monopoly power is also constrained where there are close substitutes for the good in question. Railroads may be monopolists in transporting high-bulk commodities over long distances but, except in rare circumstances, they have no monopoly power in low-bulk or other intercity freight transport. Products such as concrete, steel, aluminium and even wood may be technically unique, but nevertheless they may be interchangeable for some purposes.

The real importance of the monopoly concept is not that pure unregulated monopoly exists in the Canadian economy; it does not. However, there are many cases of partial monopoly, characterized by an ability to set somewhat above-competitive prices, to restrict output and not to minimize costs. The exercise of such market power by firms leads, as would pure monopoly, to an inefficient allocation of resources and usually to above-average profits over time. Hence there is a feeling that society must intervene to regulate monopoly and market power, and should probably regulate businesses that seem even moderately monopolistic.

Very few Canadian industries fall into either the atomistically competitive or monopoly categories. From a structural standpoint, most industries have two or more firms and from a behavioral standpoint firms in most industries have some discretion in setting price, that is they have some market power. Economists refer to these intermediate industries as imperfectly competitive. Imperfectly competitive industries can then be further subdivided into those that are monopolistically competitive and those that are oligopolistic.

Monopolistically competitive industries are characterized by a large number of competitors, relatively low barriers to entry, price and non-price competition, and very limited monopoly power in the hands of the sellers. Representative monopolistically competitive industries are most service, most retailing and many manufacturing industries, including furniture- and garment-manufacturing and printing. Firms in these monopolistically competitive industries attempt to differentiate their products or services and are likely to follow independent pricing strategies. Some firms, as a result of locational advantages, marketing acumen or superior management and employees, may be able to earn above-competitive profits over an extended time. However, the threat of new entry into these industries is so real that it severely limits the ability of established firms to exercise monopoly power. Most important in regard to resource allocation and range of choice for consumers, the firms in these industries, as a group, will typically offer a wide variety of price, quality, design and service combinations from which to choose. If they seek it out, consumers are likely to be offered by one or more producers a price approximating that which would prevail under atomistic competition. Prices in these industries will closely approximate atomistically competitive ones and adverse effects on resource allocation and efficiency will tend to be minimal.

An oligopolistic industry is one that has only a few leading firms. These firms recognize that their pricing and output decisions are interdependent and seek to act on that realization. Firms in oligopolistic industries choose their strategy knowing that the other firms in the industry will react if their position (market share, prices, profits and growth) is threatened. Oligopolistic industries have considerable barriers to entry (economies of scale, branding, technological know-how, etc.) and often only minor import competition.

Most manufacturing and financial industries in Canada are oligopolies. The barriers to entry both natural (e.g., production economies of scale) and artificial (government regulation, advertising, control of distribution channels and vertical integration) are typically high in these industries, and firms often strive to make them higher to deter entry. Many of our recommendations for competition policy in this and succeeding chapters will be directed toward decreasing such barriers to entry in an attempt to allow industries to achieve their "natural" level of concentration, and the firms in them to behave as competitively as possible.

Structure, Conduct and Performance

For both competitive and monopoly markets the relationships among structure, conduct and performance are quite clearly defined. In competitive markets, concentration and barriers to entry are low, firms compete on the basis of price, profits are normal and resources are allocated efficiently. In a monopoly, barriers to entry are high, prices are high relative to costs, profits are usually above normal, and resources are allocated inefficiently. In oligopolistic industries, however, the link between conduct or behavior and structure is no longer determinate. There are many patterns of behavior possible (and observed) for firms within an oligopolistic industry. At one extreme, firms in an oligopolistic industry may desire and be able to collude (either explicitly, as in a cartel, or tacitly) to set near-monopoly prices and reap near-monopoly profits. At the other extreme, they may engage in cutthroat competition that drives prices and profits in the short run below even those that would prevail in a perfectly competitive industry. Thus, an oligopolistic industry may have output and prices such that profits are near normal and resources are allocated as efficiently as in a competitive industry, or have near-monopoly prices, output and profits and hence inefficient resource allocation. The essential difference among firms in monopolistic, oligopolistic and competitive industries is the discretion they have to behave anticompetitively. This varies with the degree of their market power.

The end of the spectrum nearest which an oligopolistic industry operates depends on the behavior of the firms in the industry. This behavior is strongly influenced by such structural factors as the height of barriers to entry, the threat of entry into the industry through direct investment by foreign and domestic firms, the nature of the product (the size and growth of demand, the number of close substitute products and the stage in the product life cycle) and the amount of import competition. Nevertheless it is a significant element, which, although constrained by these structural factors, has an independent dynamism of its own.

The Structuralist and Behavioralist Views

It is within oligopolistic industries with their wide range of behavior and performance that a large part of the Canadian economy operates and competition policy must address the problems these industries create. Yet economists (and regulators) have great difficulty in reaching unambiguous conclusions about the relationships among market structure, behavior and performance in oligopolistic industries, on which to base economic policy recommendations.

On the one hand are the "structuralists", who believe that market structure strongly influences performance. This structuralist view is reflected in the industrial policy of governments in many industrial countries, and is especially strong in the United States. In a 1971 study, *Concentration in Manufacturing Industries in Canada*, the Canadian Department of Consumer and Corporate Affairs set out the theory on which their analysis of industry conditions is based:

> Economic theory and actual experience suggest that the level of concentration is an important determinant of market behaviour. Other things being equal, the smaller the number of leading firms which account for a large proportion of an industry's output, the more likely it is for monopolistic practices to prevail. In highly concentrated industries, firms have considerable latitude and discretionary power in making decisions regarding price, output, and related matters. . . . when industry concentration is low, the existence of many rival firms forces each to behave independently and . . . market forces rather than individual firms determine the levels of prices and output.

If the structuralists are correct in their observations, officials in charge of enforcing competition policy have a *prima facie* justification for looking at concentrated industries. By acting to initiate change in the concentration of an industry, they may be able to remove deleterious effects on resource allocation and remedy a lack of competition. In Canada, however, government competition policy explicitly recognizes that even if high concentration brings higher prices, higher price-cost margins and profits in some industries (and hence a misallocation of resources), high concentration may also be justified in many of them by significant economies of large-scale operation at both plant and firm levels. This is most obvious in the merger, monopoly and specialization agreement provisions of Bill C-13, the proposed amendment to the Combines Investigation Act introduced in late 1977.

At the opposite end of the spectrum, there are economists and many others, several of whom also appeared before us, who disagree with the structuralist school. Their argument is that the structure of an industry provides no systematic basis to predict the nature of the performance of that industry. At the center of the anti-structuralist, or "behavioralist" approach, is a belief that there are many ever changing, dynamic factors that influence the behavior of firms in an oligopolistic industry. They conclude that the structure-conduct-performance link is not strong in oligopolies for several reasons, notably:

1. The relationship between a firm's behavior and the many elements that constitute the structure of the industry in which it operates is so

complex and industry-specific that no useful generalizations can be made. Firms in industries with the same structure can (and do) behave very differently.

2. Many of the structural aspects of an industry are constantly changing so that the system is continually being disturbed. As changes occur in these structural variables (for example, a change in technology or import competition), the behavior patterns of the industry will become less stable: the complex behavioral relationships among firms may change as they interact with one other through the marketplace even if the overall structure of the industry is unchanged. Firms that at one time had jointly attained near-monopoly prices through collusion or conscious parallel pricing may later engage in cutthroat competition. Several authors have shown that, although on average profits in oligopolistic industries are higher than in competitive ones, the variability of these profits is also higher, apparently because of frequent swings between strong competition and cooperative behavior, and the high capital intensity and unevenness of investment often found in concentrated industries.

3. The behavior of firms is personalized by their owners and managers in dissimilar, unsystematic ways so that firms will interact with one other in unpredictable ways.

Behavioralists argue that structuralists overemphasize the static elements of an industry's structure (such as concentration ratios) and underemphasize the dynamic, competitive, idiosyncratic characteristics. Some proponents of the behavioral case claim that the only really effective barriers to competition in an industry in the long run are those created by government intervention in the form of tariffs, trade programs, quotas and government regulatory bodies. The most articulate advocate of the behavioralist approach to appear before us was Donald Armstrong. On the basis of the analysis in his brief he concluded that when all the dimensions of competition are taken into account and considered in the context of interindustry competition and international trade, high levels of industry concentration as measured by production in Canada (even where such measures are relevant) are in themselves no cause to believe that competition is inadequate. In fact, he asserted that competition may be aided by the presence of large firms.

The Commission thinks that the differences between the stucturalist and behavioralist arguments may often be more apparent than real. Few advocates of the structuralist position deny the importance of those dynamic factors emphasized in the behavioralist approach, particularly in the long run. Few advocates of the structure-conduct-performance paradigm believe that the concentration ratio is the only important characteristic of any industry's structure. Rather they see industrial structure as composed of numerous components: technology, barriers to entry, demand growth, potential competitors, import penetration, degree of vertical integration, heterogeneity of the firms within the industry, and so on. Bill C-13 recognizes that these other

components of industry also influence the behavior and performance of firms and does not condemn concentration industries *per se*.

We conclude that a firm's behavior is strongly influenced by the many elements that make up the structure of its industry. Everything else being equal, as industries become more concentrated the behavior of firms changes as they become more aware of the competitive reaction of other firms in their industry to their output and price decisions, and it becomes easier for firms to coordinate these decisions among themselves. Price-cost margins and industry profits are more likely to be raised above the competitive level as the industry becomes more concentrated. "Everything else" is not often equal, however, and a competition policy in Canada that focuses solely on concentration (even if properly measured) will be misguided.

We think that frequently the market power of firms in oligopolistic industries will be undermined over time by competition or rivalry and by technological and organizational change, so long as the government does not create artificial impediments. We are not so confident that the speed of this natural development will be fast enough to be acceptable to the public. Some industries have high barriers to entry, which they can maintain for a long time. The competition policies we explore in later sections of this chapter can be used to assist or reinforce those forces at work in the economy that are likely to erode these entry barriers and to prevent existing firms from creating new barriers, thereby permitting new firms to enter oligopolistic industries and increase competition. We think government should pursue a competition policy that minimizes the undesirable economic effects of anticompetitive market structures and behavior in the short run and supports the dynamic, long-run market forces leading to more efficient market structures. Such a policy must focus on deterring the creation and maintenance of artificial barriers to entry and on facilitating innovation and adaptation in the form of new products and methods of production and distribution.

Conduct and Performance in Oligopolistic Industries

As concentration within an industry increases, the firms within it are ever more aware of their competitive interdependence in setting price and output levels and in their other strategic decisions. This section will examine some of the patterns of behavior found in oligopolistic industries in Canada and their effects on industry performance.

Pricing under Oligopoly

A wide variety of price-output combinations may exist in oligopolistic industries, ranging from those one might find under perfect competition to the same prices and quantity as in a pure monopoly. Most descriptions of pricing behavior in oligopolistic industries start with the facts that the pricing, output and other strategic decisions of one firm are made with a view to their impact on all other firms in the market and that the firms involved quickly recognize their interdependence. Managers of firms in competitive and oligopolistic

industries recognize that profits will be higher when cooperative policies are pursued than when each firm aggressively seeks a larger market share through price competition. But only those in oligopolistic industries are able to coordinate their pricing and output decisions. Cooperative policies do not necessarily imply overt collusion; they may merely reflect a recognition that a price cut by one firm will be quickly matched by competitors and will not lead to significantly greater sales volume in the long run. In a price war total sales revenue for the industry may actually fall. Understandably, firms in oligopolistic industries have every incentive not to engage in price wars. As a result, economists suggest that firms in an oligopolistic industry will exhibit a tendency to maximize collective profits, will approximate the pricing behavior associated with pure monopoly and will compete primarily on a non-price basis once a "stable" price level has been reached.

To ensure any kind of industry stability and joint profit maximization, however, firms must make parallel decisions not only on price but on all major aspects of a transaction, and this is often complex and difficult. Competitors have to offer essentially the same terms of sale, delivery, transport charges, policy on free goods, sample goods and replacement goods, and have to agree on the many aspects of the quality of the goods to be offered (length of life, guarantee, after-sale service, etc.). Each of these components is an integral part of the sale, and thus may determine which firm will win market share. As an example of the difficulty of reaching agreement on even a simple aspect of competition, the International Air Transport Association (a legal cartel which fixes passenger fares on many international airline routes) had to meet in plenary sessions for two days in 1958 to define what was allowable for member airlines to serve as a luncheon sandwich on trans-Atlantic flights.

Several things strongly influence the behavior of firms in their pricing decisions and their ability to coordinate their strategies: the nature of the production and marketing of the product, technology and the rate at which it is changing, the growth in demand, the presence of a low-cost, leading firm, similar cost structures among firms, barriers to entry into the industry, the existence of potential entrants, and the degree of vertical integration in the industry. For example, general cooperation is more likely among firms that produce homogeneous products than among firms whose output is complex or can be differentiated. Thus, cooperation is likely to occur when the offerings of rival sellers are sufficiently alike in significant physical and subjective aspects that they are virtual substitutes in the minds of consumers. Salt, sugar and light bulbs are examples of such products. With perfect homogeneity, price becomes the most important and visible area in which rivalry can take place, and oligopolists can coordinate their behavior more easily and find it highly desirable to do so to avoid price wars. With such differentiated products as soft drinks, television sets and automobiles, rivalry becomes multidimensional, and the coordination problem becomes considerably more complex. Even with such heterogeneous products, however, there still is considerable parallel behavior in pricing and product decisions in which price, style, service and other components of the output package are matched by the major producers.

Within the structural constraints of an oligopolistic industry, there is still a considerable range of possible behavior patterns for firms, such as the willingness of leading firms to act as price leaders (with perhaps an erosion of their market share over time), the conflicting price and market share expectations of firms within the industry and the speed at which price cuts (and other strategic changes) will be countered by rival firms.

The degree of cooperation in strategy and particularly in pricing in an oligopolistic industry is determined by both structural and behavioral variables. Evidence of recognized interdependence among oligopolists includes fast, open response to price cuts (to indicate the inevitability of competitive retaliation), joint industry pricing based on the price level of laid-down imports rather than on costs, frequent interfirm communication (not necessarily written), and a lack of covert price-cutting (for example, the same prices offered on closed and open tenders).

The Commission has examined three types of pricing behavior often present in oligopolistic industries: price leadership, the dominant firm and conscious parallelism. These are all problem areas that have troubled economic theorists and that have been imperfectly addressed by public policy-makers in the past.

PRICE LEADERSHIP

In an oligopoly, particularly one with homogeneous products, price leadership is a common phenomenon. It occurs when one firm in the industry takes the initiative in raising and lowering prices and the other firms in the industry follow its lead. The price leader may change from time to time. Price leadership may or may not be the result of open or even tacit collusion. Rather, the firms in an industry recognize and act upon their mutual interdependence and the advantages they expect will arise from an acceptance of the prices set by the price leader as those to be charged by all the major firms in the industry.

In many industries, particularly those comprising one large producer and a number of smaller ones, the role of price leader falls to the dominant firm, the largest firm in the industry. Each small firm behaves as though it operated under conditions of perfect competition. The dominant firm chooses a price that in some sense maximizes its profits, given its assessment of the willingness of smaller competitors to follow the price move and maintain their market shares, the threat posed by imports and the likelihood of competitors entering the industry.

Occasionally the price leadership role is assumed by a firm that is not the largest or most dominant in an industry. These smaller firms seem to command respect of rivals by "expertise" in price setting and marketing or by their speed in reacting to market conditions. The leader is often the firm most disposed to cut and least disposed to raise prices. In some industries leadership changes hands from time to time. Shell Canada Limited, in their brief to the Commission, stated that their industry does have price leadership but no one overall

price leader; the leader varies by geographic region and by product. In other industries the price leader remains the same over a long period. Imasco Limited stated in its testimony before the Commission that it regularly is the leader in changing cigarette prices to reflect increased costs of supplies in the industry. Thus, the reasons why a particular firm serves as the price leader for an industry may also be found in the institutional and other features which form the background to that industry's development.

The effect of price leadership in oligopoly may be the establishment of higher and more stable prices than those that would prevail under more competitive conditions. Price movements may be coordinated by the leader by sending cues (postdated price lists perhaps) to the other firms in the industry indicating an interest in higher prices in good times and a price rallying point in depressed times. Often price changes are announced in advance to the press, so that the price leader runs very little risk of its price differing from that of other firms. If they do not follow his lead, he can withdraw the change before it becomes effective.

We note two exceptions to this behavior. When the price leader in a concentrated industry has lower costs, it may hold its price below levels desired by other firms to increase its market share, deter competitive expansion, or deter entry. Second, strong price leaders may resist raising prices as a reaction to increased demand for several reasons: (1) because long-run profits (on a present-value basis) may be reduced by such behavior, (2) at the government's request, (3) to deter government competition policy actions, (4) to discourage other firms from entering the industry, and (5) to maintain the parallel pricing behavior within the industry.

In industries with price leadership, the discipline necessary to maintain similar prices among firms sometimes breaks down and there is a price war. At the retail level, the petroleum industry is particularly prone to price wars, which break out when one firm or another needs to increase its market share to absorb the production of a refinery.

In the initial stages of development, nearly every industry in Canada and the United States has been dominated by a single firm that served as a price leader: in Canada, The Steel Company of Canada, Limited (Stelco), in some steel products and Canadian General Electric Company Limited in most small appliances; in the United States, the Slater Mills in cotton textiles, American Viscose Corporation in rayon yarn, and Birds Eye, Inc. (Del.) in frozen foods. In many industries the power of the initially dominant firm was gradually reduced by industrial growth and the entrance of new firms during the period when the industry was growing and evolving. In its brief to the Commission, Stelco stated that today it has little control over prices, which "are either government controlled, or set by market forces which could not be influenced by Stelco which, although large in terms of the Canadian economy, was only a minute factor in overall market terms."

THE DOMINANT FIRM

Several Canadian industries are characterized locally or nationally by the presence of a single, dominant enterprise, which is large both in absolute terms

and in relation to other firms in the industry. *Dynamic Change and Accountability in a Canadian Market Economy,* a report prepared by L. A. Skeoch and B. C. McDonald in 1976 for the Department of Consumer and Corporate Affairs, defined an enterprise as dominant within an industry if it "is capable within broad limits of choosing its rate of profits (or its share of the market) undeterred by the consideration that rivals may compete away these profits by offering better terms to customers." This is a functional definition of dominance within an industry as opposed to the statistical or market share definitions used in Britain, West Germany, Australia and the United States. Skeoch and McDonald conclude, and we concur, that for competition policy purposes, a market share definition of dominance is most useful when applied in a large economy where economies of scale are insignificant relative to demand. In the small Canadian economy, it would be difficult or impossible to choose a definitional percentage that would not be both too large in some cases and too small in others.

In the long run, more important than high industry concentration, or even the pricing behavior of the dominant firm, are the underlying factors that lead to this concentration level. If there are economies of large-scale operation, highly concentrated industries may be inevitable and may best be constrained in their behavior by tariff reductions. If dominant firms in an industry engage in "entry barrier building", then such behavior should be dealt with under the competition law.

A functional test of dominance has been rejected in most countries because it is difficult to find adequate evidence to meet it. If a statistical definition is used, and certain types of behavior are proscribed, prosecution by the government is easier and more certain, and there is far less uncertainty in the minds of businessmen about the legality or illegality of a particular business practice. Although a statistical definition reduces uncertainty, it is inevitably arbitrary and inflexible, and may lead to expensive, time-consuming investigations and prosecutions that do not make economic sense.

The dominant firm in a market is likely to be the price leader, or in any case other firms are likely to treat the prices it sets as almost unchallengeable, thereby producing a situation more akin to monopoly pricing and behavior than to price competition. The exception is in cases of "limit-entry pricing", where the price leader intentionally takes a low markup to discourage new entry. Smaller firms will be well aware of and constrained by the ability of the larger firm to outspend, outdare and outlose them, and in particular to engage from time to time in disciplinary price-cutting designed to discourage smaller firms from deviating from industry pricing and market share "standards".

The power of dominant firms is not based only on their ability to exercise price discipline. Such enterprises may have advantages based on the control of strategic resources, as in the aluminum industry; the ability to control channels of distribution or to demand preferred treatment as buyers, as seen with major department store or supermarket chains; or the ability, through vertical integration, to secure stability in the supply of raw materials and the marketing of products, as seen with some basic metals. Competition policy should be directed toward preventing the things that allow the creation and exercise of a

dominant position and that, at the same time, do not give rise to real economies of scale.

This is not to suggest that the power of a dominant firm to set prices is necessarily used or misused, but the potential power is often sufficient to elicit cooperative behavior. In an industry that lacks substantial barriers to entry, a dominant firm will almost always see both its market position and its ability to maintain prices eroded by market forces, as small firms expand their market share and new firms enter the industry. This decline may take a long time, however, and consumers may find little comfort in the economists' assurances of eventual competitive behavior.

We think that in general there is a need to protect the public interest by legislation only in those cases where traditional market forces will not erode a dominant firm's position over a fairly short period. Normally this situation is thought to occur only when there are high barriers to entry or great economies of scale or where the dominant firm is protected by government policies regarding tariffs, licences, purchasing programs or patents or is located in a mature, slow-growth industry. This last case is less obvious than the others and deserves some emphasis.

Every industry in its development goes through an early formative stage, an intermediate development stage and a mature stage. In the mature stage, manufacturing, management and marketing techniques in the industry all reach an advanced stage of refinement. Markets may continue to grow, but at an orderly and predictable rate. Unanticipated or chance events are fewer as experience accumulates and statistical inference techniques are improved. Employees with the relevant experience are on hand. Established connections with customers and suppliers (including the capital market) operate to buffer changes and limit large shifts in market shares. Significant innovations tend to be fewer and are mainly improvements rather than radical changes. Entry into a mature industry by a new firm is impeded by its lack of expertise, the difficulty of upsetting established customer attachments and the absence among would-be entrants of a known performance record to present to suppliers, most notably the capital market.

A potential entrant to a mature industry must invest large amounts of capital both to finance plant and equipment at an efficient scale and also to cover high start-up costs. That investment is unlikely where the alternative exists of entering at an early stage in some other industry's development where differential experience and reputations are negligible and cost differences between new and established firms are minimal. There is also a real problem in transferring management talent and creating compatible management groups, a problem accentuated in Canada with its relative dearth of mature managerial talent.

The conclusion of this line of reasoning is that, if a firm achieves dominance during its industry's intermediate stage of development, this position is difficult to change once the industry has reached a mature stage of development. Any assumption that such dominance will be easily upset by the

operation of the market is doubtful. Such firms as IBM, General Motors and Imperial Oil are unlikely to be toppled from their dominant positions, even over long periods of time. Long-term dominance has a serious effect on the economy where firms are not pushed by competition toward efficient operations and it is particularly important where a dominant position in Canada mirrors a similar one by the same enterprise in world markets.

The United States has gone furthest in limiting the behavior of dominant firms and in some cases in reducing firm size, usually through the mechanism of a decree drawn up by the Antitrust Division of the Department of Justice, consented to by the enterprise involved and then authorized by a court. One U.S. example is an agreement in the 1950s by Eastman Kodak Company to reduce its market share in the film-processing market to 50% over a seven-year period. A similar case resulted in an agreement by IBM Corporation to undertake a liberal patent licensing policy. In both these cases, the dominant firm involved agreed to stop tying the sale of its products so that smaller firms could compete against specific products in individual markets without having to produce a full line of products. Other cases include a patent licensing agreement imposed on RCA Corporation, a divestiture order against American Telephone and Telegraph Company, and an agreement by United Fruit Corporation to establish a new firm capable of serving one-third of U.S. banana import requirements, and hence break United Fruit's monopoly supply position for bananas in the U.S. market. All these cases were designed to limit the behavior of dominant firms that were trying to increase barriers to entry in their industries in order to preserve their dominant positions and profit levels. Government initiatives to limit dominance do not appear to have damaged the entrepreneurial élan of these firms over the long run. Indeed there are indications that firms like AT & T have been induced by these antitrust actions to enter new industries, often by acquiring small firms, thus stimulating competition and reducing sectoral concentration.

A review of the European, Japanese, and Australian approaches to dominant firms reveals an awareness of the problem and an acceptance of a relatively low-level definition of the market share at which domination is perceived to create a problem. In the United Kingdom a firm is regarded as a dominating enterprise when its market share is above 25%; in Japan, 30%; in West Germany, 33%; in Australia, 33%; and in Sweden, 50%. In each country the market share applies to domestic production only.

The record of experience with recent legislation in these countries is insufficient to draw general conclusions about how the laws will be administered in practice. Each country relies on an administrative tribunal possessing wide discretion. Enforcement generally focuses on a rigorous review of mergers involving dominant enterprises and an acceptance of the premise that some trade practices that might be acceptable for non-dominant firms may be abusive when used by a dominant firm. The practices that have been most aggressively attacked have involved exclusionary trade practices, price discrimination and restrictive patent licensing.

A modified approach to the problem is found in Sweden, which relies on foreign competition to restrict the ability of firms in highly concentrated industries characterized by a dominant firm to exploit their market positions. In industries such as cement, where the government has permitted mergers resulting in the virtual elimination of competition, and in which foreign competition cannot be relied upon to constrain the exercise of monopoly power, the government has taken a minority shareholding in the firm. The assumption is that a public presence in the boardroom is effective in ensuring public accountability and in constraining the exercise of monopoly power.

British legislation dealing with dominant firms is found in the Monopolies and Mergers Acts 1948 and 1965 and in the Fair Trading Act (1973). Assurances (similar to but less formal than consent agreements) are sought by the Monopolies Commission when dominant firm behavior is thought to be either anticompetitive or not in the public interest. Some of these "assurances" are in highly subjective areas. In chemical fertilizers, assurances were given not to seek "unreasonable" profits on monopolized materials. In the supply of gasoline, the principal suppliers gave undertakings dealing with the period for exclusive selling and buying agreements, full-line forcing and further acquisitions. In color film, undertakings were sought and obtained relating to a reduction in the price of films and processing charges, retailers' discounts, exclusive dealing, and tying arrangements.

The Commission has found it difficult to arrive at conclusions relating to dominant firms in the context of the Canadian economy. Ideally, we should be able to rely on foreign competition, particularly the threat of imports from the United States, to reduce the ability of dominant firms to exploit their market positions. Where Canadian tariff barriers are too high to permit this, where foreign markets are dominated by the same firms as those in Canada, or in markets such as cement where there are local monopolies, some other solution must be sought. As indicated earlier, the problem is most significant in the case of dominant firms in mature industries. Even in these industries, however, lowered tariff barriers would introduce some needed competition and reduce the sometimes considerable existence and misuse of monopoly power.

In general, and for reasons discussed at length in a later section of this chapter, we do not think that divestiture is a valid or useful approach to the problem of the dominant firm in Canada. In most cases a unilateral reduction of tariffs might prove a more acceptable alternative.

The Commission recommends that most dominant firms be treated by an approach analogous to that used in European countries. A wide range of trade practices undertaken by dominant firms should come under scrutiny even where such practices would be unobjectionable if undertaken by a firm with a relatively small market share. A civil review procedure seems a better approach than a criminal one. The decisions of the civil tribunal should be made binding and subject to judicial appeal only on points of law. Otherwise the time required to resolve finally a violation of competition law would stretch over many years and effectively neutralize competition legislation.

CONSCIOUS PARALLELISM

One of the most intractable public policy problems associated with oligopoly is the coordinated behavior of firms. This is sometimes described as conscious parallelism. It occurs when the leading firms in an oligopoly not only recognize their interdependence but are able to act upon this recognition without explicitly agreeing to do so.

If firms in an oligopoly are selling a relatively undifferentiated (or homogeneous) product, such as steel, it is likely that they all will charge identical prices or set a schedule of prices that reflects only differences in the value of services provided, including intangible services such as the provision of a dependable source of supply. In such industries, little price deviation occurs. No firm will charge more than the established industry price, and under normal circumstances no customer will pay a higher price. Producers will be discouraged from charging less because they are aware that major competitors faced with the threat of market share erosion will match the lower prices immediately. Conscious parallelism will normally produce identical list prices and usually virtually identical transaction prices. Price adjustments upward may occur almost simultaneously, entirely without any overt or covert agreement.

An example of such behavior was related in the submission in 1976 by the Automotive Retailers' Association (Alberta) to the Legislative Assembly of the Province of Alberta, regarding oil company pricing policies:

> ...the wholesale price at which dealers have to buy their gasoline, the Posted Dealer Tankwagon Price, is an "administered price". It is practically uniform, varying normally no more than a fraction of a cent between each major company. When one major company does increase its wholesale price, as Imperial did last week, others usually follow immediately by nearly identical amounts. Announcements of increases corresponding to Imperial's may be expected now at any day. ...oil industry price increases are clearly in the pattern known by economists as "conscious parallelism", common to oligopoly....

Milton Moore, in *How Much Price Competition? The Prerequisites of an Effective Canadian Competition Policy* (1970), defines the conundrum for competition policy when he states: "The key assumption in the analysis of their behaviour is that most oligopolies engage in conventional pricing practices that are indistinguishable from the tacit collusion that is almost universally disapproved." He then points out: "Formal collusion is susceptible to regulation, but conscious parallel action is extremely difficult to detect and even more difficult to prove, and it is impossible to prevent independent action on the recognition of mutual dependence. But the effects of all three are similar."

While the practice of conscious parallelism may lack all the customary elements of a formal agreement as defined by the courts in conspiracy cases, the economic effects may be just as pernicious as those associated with a conspiracy. Prices may be maintained, over a long time, at levels significantly above those that would exist under competitive conditions. Innovations and technological change may be inhibited or introduced at a slower rate. Excess

capacity may continue to exist over long periods, not only constituting a burden to the consumers of the industry's output, but also acting as a barrier to the entry of new competitors. In addition, conscious parallelism may shift the major firms' cost curves upwards because of inefficiency in production and distribution in the absence of competitive pressures to be efficient. This inefficiency involves a waste of valuable resources and a loss to society as a whole.

Businessmen, and often economists, argue that parallel action by oligopolists, particularly as regards homogeneous products, is necessary and, in fact, evidence that the forces of competition are working. For example, in their joint brief to a House Committee in respect to Bill C-42 (the predecessor of Bill C-13), 12 of Canada's largest corporations stated that conscious parallelism "may be the result of acts which are completely independent and which are undertaken by persons engaged in active competition by similar means". The brief of the Canadian Pacific group of companies stated that conscious parallelism "connotes both a normal and a natural feature of competition in the market place. True competitors ordinarily seek unilaterally to meet or match as much as possible each other's prices, terms and products." The Investment Dealers' Association brief argued "competitive considerations dictate parallel policies within many oligopolies...." The brief of Imperial Oil stated: "In an oligopoly market, firms normally must recognize their mutual interdependence because of their fewness. They also are often compelled to follow 'closely parallel policies or closely matching conduct.' For example, if they are selling in the same market, any seller must match a lower price offered by a competitor or risk losing customers. If demand is buoyant and costs rising, a seller who does not follow a competitor in raising prices risks losing profits. If one seller advertises in a market, his competitors normally must do so also." Businessmen argue that parallel action or matching conduct should not be subject to competition policy legislation because it is the result of the independent decisions of the firms involved.

W. T. Stanbury and G. N. Reschenthaler conclude in a forthcoming article in the *Osgoode Hall Law Journal*, "Oligopoly and Conscious Parallelism: Theory, Policy and the Canadian Cases", that, in the context of an oligopoly, "independent" behavior by individual firms can mean only that they make their decisions without any attempt to communicate with other firms in the industry (except by their actions, which of course contain information). It does not mean that the leading firms in an oligopoly fail to recognize their interdependence. As they point out, to ask an oligopolist to behave independently in the sense of not taking into account the actions and reactions of his competitors is to ask him to behave irrationally.

In our view, to prohibit oligopolists from matching the prices of rivals is to revise significantly the established rules of the market place. It would not necessarily mean utter chaos, but it would severely disrupt the market and would not be likely to eliminate parallel behavior in any event. Prohibition orders relating to parallel behavior would be exceedingly difficult to enforce, whether standardized or differentiated products were involved. To prohibit

firms from charging identical prices in an industry in which the product and service being sold is essentially undifferentiated might simply cause firms to adopt insignificant price spreads which may be offset by marginal service differentials.

Conscious Parallelism in Combines Cases. Before discussing public policy in respect to conscious parallelism, it may be useful to look at some recent cases in which it became an issue. Price-fixing and market sharing conspiracies that lessen competition unduly have been illegal in Canada since 1889. In the recent *Armco*, *Large Lamps* and *Atlantic Sugar* cases the defendants had argued that their behavior amounted to conscious parallelism, and that even closely parallel behavior did not constitute a conspiracy contravening the Combines Investigation Act. In the *Armco* case the firms were convicted because Mr. Justice Lerner inferred that an agreement had been made to adopt a common price list although there was no documentary or oral evidence indicating an agreement. He said: "The publication of this price list by itself was innocent conduct but common sense dictates that it would be unlikely, if not impossible, that this progressive and energetic competitor would risk another failure [of other firms to follow the prices indicated] without assurances from other members of the [industry] that, if attempted again, it would be followed by the others. The simple fact that stability was almost instantaneous makes any other inference not only improbable but unrealistic....Tacit agreement had to be the means and I find it was achieved as the results... unquestionably establish." In the *Large Lamps (Regina* v. *Canadian General Electric Company Limited et al.)* price case Mr. Justice Pennell inferred the existence of an agreement, but he did so on the basis of at least eight pieces of documentary evidence of direct communications among the three firms in respect to a common sales plan and common prices. He said he was "not able to reconcile the substantial unanimity of action taken by the accused with price conscious parallelism." To some extent, *Large Lamps* is a "traditional" conspiracy case in that the judicial determination was based on documentary or oral evidence of an agreement. While it is an axiom of the law of conspiracy that an agreement may be inferred from entirely circumstantial evidence, the criminal law requires (following the rule in *Hodge's Case*) that the inferences be consistent with the establishment of an illegal agreement and inconsistent with any other rational conclusion. This is a rigorous test, one that cannot be easily met when trying the typical case of conscious parallelism of firms in an oligopoly.

In the *Atlantic Sugar* case, involving the three largest refiners in eastern Canada, which the Crown lost at trial but is appealling, Mr. Justice Mackay stated that "Price conformity and identical price lists are characteristic of an oligopolistic industry" and that they "may well be consistent with independent competitive decisions" or be the result of an agreement. Finding no documentary evidence, and unwilling to infer the existence of an agreement, Mr. Justice Mackay acquitted the accused. With respect to the other charge that there had been an agreement as to the market share to be enjoyed by each accused, the judge found that the maintenance of traditional market shares was the result of

a tacit agreement, but that competition had not been prevented or lessened unduly. It is apparent that the existing legislation is inadequate to deal with conscious parallelism.

POTENTIAL COMPETITION AND OLIGOPOLY PRICING

In many Canadian and U.S. industries with oligopolistic structures, some constraint on above-normal pricing and other uncompetitive practices exists when buyers are able to turn to alternative suppliers who are not currently producing or supplying the product in question. Existing firms in related lines of business are sometimes able to enter the new industry easily, especially if they have access to the requisite technology and financing, and are able to acquire the necessary personnel and distribution channels. Such "poised competition" is thought to come from large firms in closely related industries, or sometimes from large conglomerate firms.

The strength of poised competition and its importance in keeping down prices and profit levels in the oligopolistic sector depend upon the height of barriers to entry. Where there are patents to which a newcomer cannot obtain access at reasonable cost, brand identification, a minimum efficient scale so large as to discourage investors, large cost penalties for small-scale production or a shortage of requisite personnel, machinery, sites or raw materials, then the barriers to entry may be substantial. If the barriers to new entry are not great, however, poised competition can be a significant restraining force on the use of market power which might otherwise arise within an oligopolistic structure.

Several of those who appeared before the Commission commented on the existence of poised competition. D. G. Hartle, for example, presented the idea in a slightly broader concept:

> I do not wish to appear to suggest that the market system works so well that millions of self-seeking investors are continually searching for small potential advantages and jump upon opportunities within days. But I do believe that rates of return are held down by competition or the threat of competition. This competition can come from imports or from changes in the product lines or the pricing policies of existing firms or the entry of new firms or by the acceptance of new products and services that serve the same function but are not identical with existing products and services.

Although the Commission recognizes the competitive importance of firms poised at the edge of an industry, the limitations of potential competition must not be minimized. In Canada, the barriers to entry mentioned above are often substantial. The Commission recommends that every attempt should be made to encourage new firms to invest in concentrated industries and to discourage existing firms from raising the barriers to entry to new firms. The Commission's recommendations are intended to promote increased entry by reducing the latitude of large firms in their competitive behavior. The Foreign Investment Review Act (FIRA) has had the effect of erecting some barriers to entry by foreign firms, which are potential entrants in many Canadian industries.

Advertising as a Factor in Oligopoly

There has been a considerable controversy over whether there is a significant relationship between advertising and industry concentration, firm size and profits. Some economists argue that the theory of oligopolistic behavior predicts that advertising and concentration will interact with each other: advertising will increase the barriers to entry into an industry and thereby increase concentration; and firms in concentrated industries will compete on a non-price basis by advertising. Often firms in concentrated industries also try to prevent other firms from entering the industry by differentiating their products by marketing a broad line of similar products. Advertising is used to try to brand a product so that consumers will not switch to the products of other firms in the industry, even if these products are sold at lower prices. For example, the introduction of the yearly model change and the full-product line in the automobile industry has greatly increased the minimum efficient size of firms in that industry. Advertising is used both to differentiate the different models and to persuade consumers to buy according to yearly model changes. In addition, where there are economies of scale in advertising, larger firms may be able to exclude smaller firms from the industry. Thus dominant firms in concentrated industries often use advertising to increase barriers to entry.

Firms in concentrated industries who are aware of one another's prices and output reactions usually compete by advertising, to avoid costly price wars. Several U.S. economists have concluded that there is a direct association among advertising intensity, profits and concentration in consumer goods industries. Although there is an association among these factors, as yet there is no firm evidence as to whether there are causal links among them. U.S. economist Yale Brozen has concluded that advertising is beneficial, since it is carried out more intensively on products new to an industry and by the smaller firms in the industry, decreases brand loyalty and is associated with high- and uniform-quality goods. In his view, "advertising makes markets competitive". In a parallel study showing the benefits of advertising, Lee Benham in a 1972 article in the *Journal of Law and Economics* argued that in the eyeglass industry, "prices were found to be substantially lower in states which allowed advertising". Based on this research the Commission concludes that advertising by small firms or new entrants in a market increases competition. While advertising by dominant firms decreases it, on balance barriers to entry are lower in the presence of advertising than they would be without it.

Marketers recognize, and research supports, that brands may be classified on the basis of consumer acceptance into "major" brands and "independent" brands. Brand-switching behavior among buyers is high among brands within each group, but low between groups. Put differently, the purchaser of Kellogg's Corn Flakes may switch occasionally to the heavily advertised breakfast cereals of General Mills Incorporated, General Foods Corporation and Quaker Oats Company, but will only infrequently switch to low-priced, unadvertised or private-branded breakfast cereals. A new producer must thus either commit himself to very high advertising expenditures to overcome advertising threshold levels and compete with the giants or settle for part of the relatively small

market for unadvertised cereals. The high cost of entry to the advertised sector and the high risk involved mean that virtually all new entrants stay in the low-cost, low-risk unadvertised sector. Those firms in the advertised sector can emphasize new products and other non-price features and in general act as oligopolists even though entry has not been foreclosed.

High-level advertising resulting in a joint monopoly has been recognized in some countries, notably the United States and the United Kingdom, and in recent years regulatory agencies and the courts have suggested and implemented some attempts at a solution. A charge against manufacturers of ready-to-eat cereals was made in 1970 under section 5 of the U.S. Federal Trade Commission Act. The FTC alleged that the Kellogg Company, General Mills, General Foods and Quaker Oats had adopted practices aimed at the illegal monopolization of the ready-to-eat cereals market. The FTC claimed that their intensive advertising promoted trademarks that concealed the true nature of the products and created artificial differentiation between products, which enhanced the respondents' ability to raise prices and to exclude competition.

The FTC proposed that the firms involved divest themselves of some of their production facilities, that they undertake royalty-free licensing of trademarks for a given time, that they be prohibited from acquiring other cereal manufacturers and be prohibited from offering shelf-space services to retailers. In early 1978, the case was still under litigation.

In Canada, the only case under the Combines Investigation Act resulting in an advertising restriction involved a prohibition order by consent of the parties in respect to a charge of monopoly (the case did not go to trial) against Canada Safeway Limited; it placed a ceiling on the firm's advertising and some of its promotional expenditures in Edmonton and Calgary from 1974 through 1978. Canada Safeway was also prohibited during this period from directly or indirectly stating in its advertising that its stores within Calgary or Edmonton were engaged in localized price-cutting.

In any policy decisions to restrict advertising expenditures as an aid to competition (or to prevent "waste"), the actual advertising intensity of firms in Canada must be considered. M. E. Porter (in Caves *et al.*) concluded that, in the retail consumer goods industries in Canada, the level of advertising as a percentage of sales was significantly below that in the United States.

Given this mixed evidence, the Commission sees no feasible set of laws or government policy by which government should invoke on economic grounds a general limitation on advertising for all firms within concentrated industries other than the present ones against fraudulent or misleading advertising. Limitations on high-level advertising by dominant firms in mature, oligopolistic, consumer goods industries may be an appropriate and useful remedy in some cases, however.

Oligopoly and Technological Change

One of the measures of performance listed earlier was the rate at which firms and industries develop new products and techniques of production and

marketing. There have been many statistical studies that relate market structure to some aspect of innovation, but as yet no consensus has emerged.

The theory that attempts to link market structure to technological change consists of a collection of hypotheses. The arguments on one side are represented by a theory associated with J. A. Schumpeter and John Kenneth Galbraith that an oligopolistic industry structure is the best structure for inducing technological change. The essence of this argument is that market power is necessary to motivate firms to innovate and that innovation is necessary for competition, progress and growth. Galbraith advanced this argument in his book *American Capitalism* (1952). He concluded that firms needed the high profits that were available only to innovators in oligopolistic industries as an incentive for them to undertake the high risks of research and development and new product and process innovation and introduction.

The Schumpeter-Galbraith hypothesis implies that there may be a conflict between two measures of performance—efficiency of resource allocation and progress—thus raising an issue that has perplexed policy-makers and troubled this Commission. If Schumpeter and Galbraith are correct, policies designed to reduce market power or to break up oligopolies in order to promote allocative efficiency are likely to reduce technological change. As Scherer and Markham have pointed out, a misallocation of resources stemming from oligopoly may be quickly overcome by rapid technological change from innovation.

The alternative view to that of Schumpeter-Galbraith has been presented by a number of other economists over the years and was articulated by Carl Kaysen and Donald F. Turner in their book *Antitrust Policy: An Economic and Legal Analysis* (1959). This view is essentially that competition is an important, if not essential, condition for technological change in an industry and that market power is detrimental rather than helpful. Competition gives firms the incentive to innovate to defend their market positions through new products and more efficient production. It is a means to achieve at least a temporary respite from unremitting price competition.

Many empirical studies have tried to determine the relationships among market structure, firm size and technological change. To arrive at empirically supported conclusions, such research must examine the three components of technological change: invention, innovation and adoption. A careful study undertaken at the Marketing Science Institute at Harvard University and using firm-level data reached three tentative conclusions:

1. R&D efforts have significantly higher payout in profits for integrated rather than non-integrated firms;
2. R&D is more profitable for companies having large rather than small market shares;
3. The profitability of R&D is higher for large companies.

There is a general consensus among other studies that concentration aids innovation within the firm up to a threshold level, after which there is no further positive relationship. Scherer, for example, concluded that "technological vigor" increased to the point at which the four-firm concentration ratio

reached 50-55%, after which increasing concentration had a depressing effect on innovation. The conclusion of Chapter 3 on returns to scale in R&D should be recalled: in many industries large firms are relatively R&D-intensive, and the output from their R&D is relatively higher than that of smaller firms. However large firms that produce unrelated products have no particular advantage in the generation of internal R&D or the adoption of innovation. Large firms are often necessary in order to undertake the very high costs and high risks often associated with large R&D projects.

In those highly concentrated Canadian industries in which price competition is low, there is less incentive to introduce new products and processes. Firms in moderately concentrated, oligopolistic industries do have a great incentive to obtain new products and processes via licensing, since licensing is unlikely to disturb the pricing structure of the industry. On the other hand, the adoption of new production process technology often makes capital plant and equipment obsolete. Firms in highly concentrated industries may attempt to prolong the life of their fixed assets by slowing the rate of adoption of new technology. This strategy will be successful only in a highly coordinated oligopoly with little import competition, in which all competitors openly or tacitly refrain from introducing innovations.

Canada may therefore be caught between the necessity of having large firms in order to have large, successful R&D programs and the fact that large firms in general imply the existence of concentrated industries. At high levels of concentration, however, firms may become insulated from competitive pressures and hence both engage in less innovative activity and also acquire fewer new products and processes by licence. Licensing often does not require large firm size to be successful; it is one way in which small firms may be able to challenge the dominant firms in oligopolistic industries.

The Commission has not been able to draw any firm conclusions about the relationship between concentration and innovation, although it is apparent that large firms are better able to undertake the risks of large-scale R&D. Transfer of products and processes by licensing seems to us to be one potential avenue by which new firms can break down the barriers to entry in concentrated industries and increase competition. We recommend, as has the Science Council of Canada, that the government make every effort to increase the rate of innovation via licensing, particularly licensing to small firms.

Oligopoly and Inflation

Popular opinion holds that large firms in oligopolistic industries are able to "pass increased costs on to the consumer" through their pricing practices, thereby increasing the rate of inflation, while firms in more competitive industries are not able to do so. This belief was expressed in several briefs and in testimony before the Commission. The Commission has not done research specifically on this relationship, and our comments here are based on the research of others, as well as on what we have been told in briefs and at our hearings. Although the relationship between oligopoly and inflation is complex,

some valid generalizations can be made, although the policy implications are less clearcut.

Economic research over the past 30 years has sought both a theoretical basis and empirical data indicating the role, if any, played by market power in creating and maintaining inflationary pressures. After World War II and until the late 1950s, there was a general belief that inflation resulted from excess demand forces usually generated by government deficits financed by an expansion of the money supply. This is the so-called "demand-pull" theory in inflation. This belief was tempered by the recognition that frequently prices began to rise during an economic upswing long before full employment of labor and resources was reached.

Following the 1955-58 inflationary period, and in particular after the 1959 steel price hearing in the United States, some economists began to recognize that a combination of large corporations and unions with market power could cause a "cost-push" inflation under conditions of slack demand. According to this theory, wages, particularly those paid to unionized workers in oligopolistic industries, were pushed up faster than productivity, prices rose in response, and the monetary and fiscal authorities, who were more sensitive to unemployment than to inflation, would support the wage-price spiral by following expansionary policies.

Experience in the steel industry in Canada and the United States is often cited to illustrate how an individual industry with market power, responding to the behavior of a powerful union, can bring about price increases and further inflationary pressures in the rest of the economy simultaneously with a recession characterized by falling demand. In the past, there have been several periods during which steel prices rose sharply in the presence of falling demand, stable costs and substantial excess capacity. Some of this behavior (particularly during 1953-59) has since been recognized as "catch-up" increases to restore historical profit margins. The Steel Company of Canada emphasized in its brief that steel prices as a general rule lag behind increases in the cost of production. Steelmakers, it claimed, are continually playing catch-up in their pricing policies.

This phenomenon of catch-up pricing may be partially explained by the common use of target pricing by a majority of large Canadian manufacturers, and by enterprises such as Bell Canada and Ontario Hydro in the regulated sectors. Target pricing involves setting prices for specific products, product groups or divisions in such a way as to yield a predetermined corporate average return on capital or sales (or to achieve a stated dollar amount of profit). The essence of the target-rate-of-return pricing process is that it uses sales volume to derive price, rather than price to estimate sales volume. As demand falls and capacity utilization decreases, firms that price to achieve a target rate of return will raise their prices if they believe that demand is insensitive to price. Similarly when demand and capacity utilization increase, firms using target pricing may not raise their prices immediately. If demand is steady, prices will change over a planning period only in response to changes in standard unit

costs of labor and materials. This means that prices do not necessarily move downward when demand falls, but do rise when costs rise.

If firms in oligopolistic industries do not adjust their prices completely to reflect changing conditions of demand, they must either be willing to finance large changes in their inventories or be able to change the volume of production rapidly, perhaps by laying off workers. Thus a dampening effect on price swings may be translated into greater inventory or employment fluctuations. In fact, one of the hallmarks of an oligopolistic industry is that output will vary to a greater degree than will prices.

By the mid-1970s, with concurrent high unemployment and inflation visible in almost all Western industrialized countries, many economists and policy-makers had come to accept the premise that inflation could result either from excess demand or from "cost-push" forces reflecting market power or frequently from a hybrid of the two. As mentioned above, government fiscal and, especially, monetary activities have been forced by pressure from many segments of society to validate these "cost-push" cost and price increases by generally expansionary policies financed by an increase in the money supply. The initial change in prices in both concentrated and unconcentrated industries may be the same in reaction to increased costs, but in concentrated industries large firms and their large unions have the political and market power to make these higher prices stick in the face of falling demand.

Several studies have attempted to determine this relationship empirically. In probably the most comprehensive cross-sectional study of pricing behavior, Leonard Weiss found that, in the United States between 1953 and 1959, price levels rose more rapidly in concentrated industries. However, between 1959 and 1963 there was no detectable relationship between concentration levels and the degree of price increases. For 1967 to 1969, a period recognized as one of excess demand inflation, prices actually rose less in concentrated industries than in less concentrated ones. J. Fred Weston and Steven H. Lustgarten reran the analysis for the entire 1953-69 period (which contained periods of demand-pull inflation and periods of cost-push inflation) and found no *overall* statistical relationship between concentration and price behavior. The findings of Weiss and of Weston and Lustgarten, taken together, have been interpreted by many economists as showing that industrial concentration produces a "lagged", seller-induced inflation, which may exist alongside (or independently of) demand-pull inflation. Beals' survey of the empirical evidence for the U.S. Council on Wage and Price Stability in 1975 also concluded that prices in concentrated industries increased less during periods of excess demand and more during periods of insufficient demand than did prices in competitive industries, but that over a long period, price levels in oligopolistic industries increased no faster than did prices in competitive ones.

K. Dennis and D. G. McFetridge also reached the same conclusions in their work for the Canadian Prices and Incomes Commission in 1973. They concluded that there is no reason to believe that oligopoly either fosters or intensifies inflation. Dennis wrote: "it is reasonable to conclude that neither

large firm size nor high concentration alone is very likely to create or intensify periodic inflationary bursts while high concentration should only limit the capacity of the economy to find a new equilibrium (at a generally lower price level) during a recessionary period." McFetridge concluded: "There is no obvious relationship between market structure as defined here, and price behavior .... There is, therefore, no reason to believe that a policy of market deconcentration would make the existing macro-economic policy tools more effective in limiting inflation." On the basis of these studies, the Commission has reached the conclusion that the link between oligopoly and inflation has not been established, particularly for the period before the 1975-78 "stagflation". Indeed lagged adjustment behavior in firms in oligopolistic industries may have contributed to smoothing out the rate of inflation. As yet there is no evidence aside from that based on the most casual empiricism to conclude that there is a direct relationship between oligopoly and inflation during a period of sustained unemployment accompanied by high inflation. At present, the Commission sees no reason for the government to act against firms in oligopolistic industries because of their supposed contribution to inflation.

Four major studies have been done on the relationship in Canada between industrial concentration, price-cost margins and profits. In general the results of these studies support the hypothesis that increased industrial concentration is associated with greater price-cost and profit margins, all other variables held constant. Harry Bloch in a 1974 article in the *Canadian Journal of Economics* and Richard Caves *et al.* in their report to the Commission concluded that, in addition to high concentration, high tariffs (or low import penetration) were necessary for firms to increase their price-cost margins.

A. Michael Spence (in Caves *et al.*) concluded that in general for the firms and industries in his sample, price-cost margins were higher in the United States than in Canada, despite the higher levels of concentration existing in most Canadian industries. That study concluded that price-cost margins in Canada are caught in a squeeze between high costs on the one hand and the prices of imported goods on the other. These higher costs may also be due to inefficiencies existing because of the less competitive environment in many Canadian industries. If an industry changes from a competitive to an oligopolistic one, then firms in that industry may tend to take a once-and-for-all price increase when they recognize their interdependence and act on that knowledge. An increase in the level of concentration may increase the rate of inflation, but, as we indicated in Chapter 2, there has been no overall increase in the level of industrial concentration in Canada in recent years.

Approaches to Oligopolistic Conduct

The "Joint Monopolization" Approach

In November 1977, Bill C-13, amendments to the Combines Investigation Act, was given first reading in the House of Commons. It replaced Bill C-42, which had been introduced in March. Included was a new civil provision dealing with "joint monopolization" (section 31.73). This is defined to mean a

situation where a small number of persons (not all affiliated) achieve or entrench substantial control of a market by adopting closely parallel policies or closely matching conduct, and the policies or conduct have the effect of restricting entry, foreclosing a competitor's sources of supply or his sales outlets, eliminating a competitor by predatory pricing, coercing or disciplining a competitor or restraining competition by exclusionary or predatory means. The Bill provides that a finding of joint monopolization can be made "notwithstanding that the parallel policies or matching conduct... involved no arrangement or agreement between or among them". Where joint monopolization is found, the Competition Board will be empowered to issue a prohibition or remedial order or, where these would fail to restore competition, to require divestiture of assets.

The Commission is troubled by the proposals put forward in this Bill relating to joint monopolization, (although they are an improvement over what was in Bill C-42), and thinks that they go beyond what is necessary to protect the public interest. The government may still argue that the scope of its proposals would be limited to situations where parallel policies have one or more predatory or exclusionary effects, but their potential scope may be greater. We think Bill C-13 might be both fairer and more effective if it treated the "plus factors" discussed in the next section of this chapter less as consequences of parallel policies than as things that tend to accompany that kind of conduct.

Conscious Parallelism Plus

Examination of a number of the cases involving conscious parallelism or implied conspiracy in various countries suggests to us what seems a much more more workable approach to the problem of joint monopolization. In virtually every case of parallel behavior successfully prosecuted in Canada or elsewhere, some further pattern of behavior beyond the mere adoption of parallel courses of action and serving the mutual interests of the competitors was required. Such behavior has become known as "conscious parallelism plus".

As mentioned earlier, it is a natural tendency for the leading firms in an oligopoly to try to act on the recognition of their mutual dependence. It is relatively rare for the members of an oligopoly, even one producing a homogeneous good, to be able to coordinate their behavior closely *without* the use of one or more "plus factors". These factors are additional techniques over and above simple parallel action, which facilitate the coordination of interfirm behavior in an oligopoly. In their absence coordination is likely to be poorer, price and product policies less frequently identical and the industry more prone to bouts of aggressive or even "destructive" competition.

Several of these "parallel plus" situations are illustrative. In a 1914 case in the United States, parallel pricing among retail lumber dealers was accompanied by distribution by the lumber dealers' association of a list of wholesalers who also served as retailers of lumber products. Retailers, independently and individually, boycotted these wholesalers. The plus factor was publication of

the list. In a 1939 case, two dominant regional motion picture exhibition chains sent identical letters to the eight major motion picture distributors stipulating "desirable" distribution rules for first-run films. Each of the letters included the names of all others receiving the letter. Each of the eight adopted the recommended rules, with the result that independent exhibitors were thereafter unable to obtain first-run films under the rules. The court inferred a conspiracy based on the plus factor that concerted action was invited by the knowledge that all distributors were aware that all others had received identical letters.

In the 1967 *Canadian Coat and Apron Supply* case in Montreal, the defendants (who accounted for 85-90% of the linen towel business on the island of Montreal) formed a trade association, the Montreal League of Linen Supply Owners. Among other things, the League hired a private detective agency to police the prices members were charging for linen supply and to report on whether members were soliciting business from other members' customers. The League also reimbursed members for losses incurred when they priced below cost to drive newcomers out of the business. The plus factors here were, quite clearly, the policing and related activities.

In several Canadian and U.S. cases, dissemination of detailed price lists and invoice information, accompanied by extensive details on actual below-list price quotations and transactions to all members of a trade association, has been adequate for the inference of conspiracy. The plus factor in these trade association cases is the distribution of detailed data on actual sales prices, accompanied by identification of the supplier and buyer sufficient to permit others to match the discounts, and thus remove the incentive for price competition. The plus factor would be important, however, only in a situation where there was close adherence to list prices in the industry. In one U.S. case, where off-list sales accounted for 25% of total industry sales and no effort was made by the association to induce members to adhere to list prices, the defendants were acquitted.

Other examples of "plus" factors that have been cited in legal cases include product standardization enforced on buyers by an industry association, with resultant increase of the cost of entry of new firms; use of absolutely uniform but artificial basing points in delivered pricing schemes, with refusal to allow f.o.b. or similar purchasing; parallel buying activity to support the price of a substitute product; uniform refusal to supply certain accounts; and the exhortation of members of the industry to avoid the destructiveness of active competition, particularly price competition. The Commission recommends that a civil (as opposed to a criminal) provision be framed to condemn joint monopolization in the form of conscious parallelism with respect to price and other policies, where one or more of such plus factors have been used to facilitate coordination of the firms involved. The remedy might take the form of an order prohibiting the use of the plus factor. The objective of such a provision is to reduce the ability of the leading firms in an oligopoly to act upon their interdependence in a tightly coordinated fashion.

To the extent that normal market competition does not erode oligopoly positions supported by economies of scale, government regulation, or other

factors, then competition policy has to focus on those elements of behavior that allow firms to coordinate their policies closely. A parallelism-plus policy will not reach firms in oligopolistic industries that can act together without the use of plus factors ("those who have learned to dance together to faint music") but according to existing Canadian and U.S. jurisprudence, situations without plus factors are uncommon. A parallelism-plus policy should help to move the economic performance of many oligopolies away from the monopoly end of the spectrum. However the parallelism-plus approach is primarily useful in attacking short-term pricing behavior. Of more long-term significance are steps to speed the erosion of barriers to entry in concentrated industries, and to prevent firms from erecting additional barriers.

The Commission does not recommend that conscious parallelism, or joint monopoly, be treated as a criminal offense. We disagree with a criminal treatment of actions that may be entirely innocent in origin. Furthermore we think it wrong in principle to impose criminal penalties, including possible imprisonment, for actions that are only vaguely defined and whose criminal nature cannot be forecast in advance. On this basis alone we recommend that criminal penalties be removed completely from all competition legislation, except for very well-defined offenses such as horizontal price fixing, market division, bid rigging and false advertising.

Deconcentration of Industry

As we have seen, when industrial concentration is high, firms tend to set their prices and output in recognition of the probable competitive reaction of other firms in their industry. In concentrated industries with high barriers to entry, firms may arrive at the monopoly (or near monopoly) price, output and profit configuration through conscious parallel action or price leadership. Even under a "conscious parallelism plus" approach, well-coordinated behavior in an oligopolistic industry cannot be attacked if it has been effected without agreement or the use of plus factors. Proposals to reduce barriers to entry are long-term measures. Given this situation, it is a tempting idea simply to deconcentrate the industry by splitting large firms into a number of smaller ones, which would be expected to act more competitively.

Deconcentration of industry has been considered seriously only in the United States. The Commission does not think that deconcentration of industries by the breakup of firms that operate in them is a practical alternative for Canada. Firms in most industries in Canada are still too small to compete internationally. Canada's problem is not in decreasing the size of existing firms, but in ensuring that the large firms necessary to compete efficiently actually realize economies of scale and that they pass lower costs on to the consumer in the form of lower prices. We think, however, that a brief review of the subject is necessary for three reasons: (1) often anticombines (antitrust) sentiment felt in the United States migrates into Canada through the media and academicians and is applied to Canadian industry despite the dissimilarities between the two economies; (2) there is some sentiment among the public and some government officials that "big" is usually "bad"; and (3) it might be

argued that if competition policy inhibits mergers that create more concentrated industries it should, by the same logic, deconcentrate industries that are already concentrated.

Only one group, the Communist Party of Canada, has suggested to us in a brief or in our hearings that deconcentration would be appropriate to the Canadian economy. One or two other groups, for example, the Alberta Associated Grocers, have advocated deconcentration or restrictions on growth in specific sectors. Nevertheless we have looked at deconcentration as one of the alternatives that seemed to arise from the terms of our mandate.

THE HART, NEAL AND KAYSEN-TURNER PROPOSALS

Over the past 20 years, three major proposals for industrial deconcentration have been put forward in the United States: Kaysen and Turner (1959) in their book *Antitrust Policy*, the "Neal Report" (1968) by the White House Task Force on Antitrust Policy, and the "Hart Bill" (1973) by Senator Phillip A. Hart. In the context of U.S. antitrust history, deconcentration proposals are neither academic nor utopian. Opposition to the growth of economic concentration has been found in the Congress since the passage of the Sherman Act in 1890, an act aimed at deconcentrating business structure by "breaking up the trusts". Later statutes, such as the Clayton Act (1914), Federal Trade Commission Act (1914), Celler-Kefauver Act (1950), and specialized legislation such as the Bank Holding Company Act (1956), have all agreed that economic power must be dispersed, prevented from forming or at least controlled.

The Hart Bill stems from the conclusion of its author that too much power lies in too few hands; that industry is becoming increasingly concentrated; and that market concentration results in decreased competition, price levels that are both higher and more inflexible, inefficiency, underutilization of economic capacity and a decline in exports. Senator Hart concluded that these factors combine to fuel inflation and create unemployment. He further concluded that antitrust laws were at that time inadequate and that remedies were lacking either to reduce existing concentration or to change the behavior of firms in oligopolistic industries.

The Hart Bill proposed that the Congress declare unlawful "monopoly power in any line of commerce in any section of the country or with foreign nations". The bill defined monopoly power to exist where: (1) any corporation that maintained its average rate of return on net worth after taxes in excess of 15% over a period of five consecutive years out of the most recent seven years; (2) there has been no substantial price competition among two or more corporations in any line of commerce in any section of the country for a period of three consecutive years out of the most recent five years; or (3) any four or fewer corporations account for 50% (or more) of sales in any line of commerce in any section of the country in any year out of the most recent three. The bill did not require divestiture, however, if the firms involved could demonstrate that their power was due solely to the ownership of valid patents or if divestiture would result in a loss of substantial economies of scale.

The earlier Neal and Kaysen-Turner rationales were somewhat narrower, focusing on adverse industry performance and inefficient resource allocation rather than on inflation, foreign trade or unemployment as reasons for deconcentrating oligopolistic industries. Neal and Kaysen-Turner agreed that existing antitrust laws were inadequate to restructure oligopolistic industries without a specific deconcentration statute.

We have devoted some space to these proposals because their detailed nature and the serious way in which they were received emphasize to us the attention being paid to the market concentration doctrine in the United States. Indeed, an implementation of the Hart, Neal or Kaysen-Turner proposals in Canada could require rearrangement of a significant part of the privately owned industrial sector in Canada. It is interesting to note that, although none of these proposals was ever enacted, each successive proposal is more stringent than its predecessor, possibly reflecting a growing sentiment in the United States that concentrated industries must somehow be broken up.

The issue of vertical divestiture has also been raised recently in Canada in the context of Bell Canada and Northern Telecom (formerly Northern Electric). In a 1976 report prepared for the Department of Consumer and Corporate Affairs, the Director of Investigation and Research concluded:

> The documentary evidence suggests that vertical integration in the telecommunication industry is not in the public interest. ...It is recommended that the best policy solution to the issues raised in this statement is the deconcentration of the telecommunication equipment industry. Furthermore the most effective long term method to achieve this goal is through the divestiture of Northern Electric from Bell Canada as a means of reducing existing barriers to entry into the telecommunication equipment industry.

THE COMMISSION'S VIEW

It is obvious from the U.S. discussions on vertical and horizontal divestiture that the subject is far from simple. There is, however, no persuasive evidence that structural changes would be simple in effect, pro-competitive on balance or as easily carried out as these proposals seem to assume. We therefore strongly recommend that no attempt be made to force deconcentration on the basis of a percentage of industry sales controlled by the largest firms, or on the basis of absolute firm size for diversified firms, or on the basis of the degree of vertical integration among firms. Bill C-13 emphasizes a case-by-case approach to oligopoly problems, with remedies directed at specific kinds of restrictive practices, and divestiture only as a last resort. We think this is the preferable approach.

A number of practical and significant problems would have to be worked out by any industry (or vertically integrated enterprise) facing deconcentration or dissolution. One group of problems is financial in nature. Where is the capital to come from to buy up the newly divested pieces of large firms, especially in industries where large firms dominate the world market? A second problem involves the identity of potential purchasers of spun-off

sections of an enterprise. In the oil industry, for example, the most eligible purchasers (assuming that other energy suppliers would be ineligible) would be foreign energy companies with expertise in the area. The next most likely buyers would be domestic energy companies too small to come under a purchase prohibition or stronger domestic companies that lack energy expertise. Of these, how many might have the cash or financing ability to acquire and operate these divested units successfully? If the answer is, as we suspect, "very few", some serious questions arise about vendors obtaining a fair price and about the ability of a newly reorganized industry to survive and progress. These problems could be overcome, possibly by increased government ownership, but we believe the costs of such actions could far outweigh their benefits.

Closely related to financial problems are the enormous problems of disentangling contractual obligations that would have to be reformulated on the breakup of an enterprise.

Should a government body proposing divestiture be required to make up possible losses by adding their guarantees to the obligations of the newly created enterprises? The answers are far from clear, but we think it should be incumbent on anyone recommending deconcentration or divestiture to suggest how each problem might be overcome.

We have not previously mentioned another problem with a structural approach to deconcentration. Although it is difficult to know how long it would take to change the structure of a market through a legal process, the duration of major competition policy cases in Canada and the United States provides some guide. The recent *Large Lamps* case alleging shared monopoly involved conduct by three defendant companies between 1959 and 1967. The decision of the trial court was handed down in 1976, penalties announced in 1977, and the period might have been extended into 1978 or 1979 if the defendants had appealed the case to the Supreme Court of Canada. The striking feature about similar legal decisions in the United States is the degree to which conditions in the industry involved have often changed significantly by the time a final decision is reached so as to render the decision of little importance to the situation under review. The precedents set by such prolonged cases may be applied in subsequent decisions, however, and may have some cautionary effect on other firms.

The Commission is doubtful that the slow process under either the present or the proposed law will have any greater effect on concentration and competition than will dynamic processes of invention, innovation and changes in competition. This conclusion does not imply that we think that competition policy should be de-emphasized, but rather that the process should be speeded up.

Need for a Review

We would like to offer one final thought on dominant firms, and indeed on competition policy in general. The content and emphasis of competition policy and the arguments presented to us for and against aspects of such a policy are

very much dependent on Canada's current economic goals, and our industrial strategy. Once adopted, there seems a great danger that a competition law will introduce rigidity rather than dynamism in industrial structure and performance. There seems, then, some virtue in recommending that competition laws be reviewed periodically, and that they be formulated as "sunset laws" and expire automatically every seven to ten years.

There is a danger of course that frequent changes in competition law would simply introduce more uncertainty into the investment and operating climate of firms, which must take a very long-run view in their most important decisions. Nevertheless we think that such a provision would stimulate continuous thinking and debate of the contents of competition policy and its relation to national economic objectives, which does not seem to happen now with this or other economic statutes. If the Bank Act review is a good analogy, and it seems so to us, a periodic re-evaluation would be worth the uncertainty it might cause.

Chapter 5

Conglomerates: Diversified Enterprise in Canada

Introduction

Diversified enterprises have existed in Canada since the late 1800s, when the Canadian Pacific Railway Company (CP) started to expand from its base in railroads to ventures in related industries: transport, mining and natural resources, communications, hotels, and real estate. Over the past 80 years, the size of CP and other enterprises in Canada that are large, relative to the size of the industries in which they operate, has been the subject of several investigations and considerable literature, which has focused primarily on the ability of these firms to set prices and constrain competition in individual markets.

Following the announcement that Power Corporation of Canada, Limited, intended to take over Argus Corporation Limited, public attention focused on the conglomerate nature of many firms operating in the Canadian economy and shifted in emphasis from the relative size, concentration and behavior of firms within one industry, to the economic and social impact of enterprises with diversified holdings in several different industries. Spokesmen from business and the business press were quick to extol the ability of diversified enterprises to mobilize and allocate capital efficiently, to rationalize industry, to prevent foreign takeovers of Canadian industry, and to compete internationally. Others were as vociferous in their condemnation of conglomerates as large aggregations of power, which seemed to them to allow a few men undue control of large segments of the Canadian economy.

In this debate, there was agreement on three points: that, potentially, conglomerates and conglomerate mergers could have a significant impact on the economic, social, and political functioning of the country; that not enough was known about their nature, scope, or importance, nor could this be readily determined from the information at hand; and that the government was unable under existing corporation and competition law to regulate either conglomerate mergers or much of the behavior of conglomerate firms. The Combines Investigation Act was enacted to deal with mergers or acquisitions that tended to create monopolies or with specific anticompetitive practices within one industry, but not with combinations of firms in several industries. Existing

legislation did, however, restrict the actions of conglomerate firms in using their financial subsidiaries to finance or invest in their other subsidiaries.

This Commission has investigated the characteristics of conglomerate enterprises and the mergers they undertake. We have also tried to identify the implications of the size and diversity of conglomerate firms for resource allocation and competition, to measure whether conglomerates produce an increase in overall corporate concentration, and to consider whether and how any detrimental features of conglomerate enterprises need be regulated in the public interest.

These questions were studied intensively in the United States during the middle and late 1960s, when conglomerate merger activity there was at a peak. However, with a few notable exceptions, such as International Telephone and Telegraph Corp. (IT&T) and Gulf & Western Industries Incorporated, interest in "acquisitive" conglomerates waned in the United States with the decrease in conglomerate merger activity after 1970 and with the end of the buoyant stock market, which had both nurtured and been fueled by acquisitive conglomerates. In fact by 1975, the more freeform conglomerates had almost ceased to exist entirely.

During the 1960s Canadian reactions to conglomerates were more muted, perhaps because the acquisitive conglomerate, which had so captured the public imagination in the United States, was largely absent from the Canadian economy. The lack of interest may also have been because Canadian attention was directed toward different phenomena: the takeover of Canadian firms by large foreign-owned companies and the high level of concentration within its individual industries. Whatever the reason, the Canadian public and media largely ignored the diversification process that was undertaken by firms within Canada. During this period Canada had neither the legislation with which to regulate conglomerate mergers nor the inclination to formulate any. In the United States, after ten years of study by academics, government agencies, and other groups (such as the Conference Board), a large body of data and analysis has been amassed about conglomerates, including data on their number, size, diversity, profitability, growth and stability, acquisition patterns, management techniques, financial structure and competitive behavior. The conclusions drawn from this data and analysis have been mixed and often contradictory. Perhaps reflecting the diversity of conclusions, the U.S. government has not as yet articulated a coherent policy toward conglomerates, but has resorted to a makeshift application of existing antitrust law and negotiated settlements imposed by the Justice Department to regulate conglomerate mergers.

Conclusions reached about the behavior and impact of conglomerates in the United States must be used with great care when analyzing conglomerates in Canada. There should be no presumption that U.S. government policies toward conglomerates can usefully be applied to firms in Canada. The Canadian economic, social, and governmental structure and the goals of the various interest groups differ along so many dimensions from those of the United States that the basis for analysis of conglomerate behavior and performance must differ between the two countries.

Origin and Development of Conglomerates in Canada

In the late 1800s, CP developed into not only the largest enterprise in Canada but also Canada's first large, diversified company. After completing the first transcontinental railway in 1885, CP expanded its transport operations into shipping on the Atlantic and the Pacific to offer complete service to its customers in Canada, Europe and Asia. During World War II, CP expanded first into air service and later into trucking. At present, it is investigating the possibility of entering the pipeline industry, the only major transport sector in which it does not operate (it already owns shares in TransCanada Pipelines Limited through its majority-owned subsidiary Canadian Pacific Investments Limited).

CP's major railway business led it to build a chain of hotels to house its passengers and a communications network to coordinate its rail traffic. Since much of CP's freight was raw materials and because its land holdings contained mineral deposits, it was drawn into the mining business. Its purchase of a railway property that included a lead smelter at Trail, British Columbia, led to the development of the Sullivan lead-zinc mine. The by-products of the smelting process placed CP in the fertilizer, iron and steel businesses. The land that CP acquired during initial railway construction eventually led it into the forest products, real estate, and oil and gas industries.

CP stated in its brief to us that once it had established these diverse operations, they developed in their own right without regard for their origins. Each business developed a commercial logic of its own, based not on its origins but rather on the dictates of its own marketplace and technology.

By the 1920s, as other sources of capital, management, and technological expertise developed in Canada, CP's share of total corporate assets and of the gross national product (GNP) began a long, steady decline. In 1962, recognizing that its interests had diversified to the point where their operations had no unifying logic, CP formed Canadian Pacific Investments Limited (CPI) to manage its non-transport interests.

Although the history of some of today's conglomerates goes back to the early part of the century, most Canadian companies other than CP did not begin to diversify until after World War II. Most of these firms can be classified into three groups, according to the initial base from which they began to diversify: (1) investment holding companies that increased ownership and participation in their portfolio of firms; (2) firms in declining industries or in industries regulated or expropriated by the government which were more or less forced either to diversify or to return their capital to their shareholders; and (3) firms and industries whose commercial or technological logic led to expansion into related industries. The categories are not mutually exclusive, and a firm may have passed through two or three of them. For example, Power Corporation of Canada, Limited, started as an investment holding company, which then acquired operating control of several large electric power firms. When Power's assets in this area were taken over by provincial governments, it again became a holding company. A new management then came to control the company and increased Power's participation in its investments to a point where it obtained majority control of most of them.

Diversification strategy and control policy may differ greatly among diversified firms. For example, Power Corporation, Argus Corporation Limited and Genstar Limited all have interests in diverse groups of firms and all began as holding companies. Yet each represents a distinct management and ownership philosophy. The origins and history of Canadian conglomerates do seem to have influenced their diversification strategies and the organizational structures they have used to pursue them.

Argus has followed a strategy of holding a large minority interest in each of the companies in its portfolio. By having its officers on the boards of directors of the portfolio companies, Argus provides general policy guidance and advice to each firm. Except for this managerial guidance, there is no claim of any synergy among the firms in the Argus portfolio. Each firm is helped to maximize its own efficiency, growth and profitability. In the past, when an Argus holding has had financial difficulties, Argus has come to its rescue with financial and managerial assistance.

Power Corporation seeks majority ownership to ensure control of each firm in its group. Like Argus, Power Corporation does not seem to involve itself in the day-to-day management decisions of most of its subsidiaries unless the subsidiary gets into serious difficulty.

Genstar, on the other hand, seeks 100% ownership of its subsidiaries. Through a company-wide capital budgeting process, it allocates the cash flow of all its subsidiaries to those units that it thinks have the greatest potential for growth, efficiency and long-run profitability. Genstar has tried to form its subsidiaries into groups that are coherent from a marketing and production standpoint.

For analytical purposes the distinction among Argus as a holding company, Power Corporation as an operating company, and Genstar as an "operating conglomerate" is not precise. They, and other firms such as Canadian Corporate Management Company Limited, Warnock Hersey International Limited, Federal Industries Ltd., CPI, Brascan Limited and Neonex International Limited, lie along a continuum with Canadian Pacific Securities Limited (the investment holding subsidiary of CP, which exercises virtually no management control over the firms in its portfolio) at one extreme and Genstar (which carefully monitors and controls the activities of its diverse subsidiaries) at the other. The true conglomerates in Canada are firms whose subsidiaries are of major importance to them and are not linked by any underlying marketing or technological logic.

The Strategy and Structure of Firms in Canada

A conglomerate has been defined as "a diversified firm, meaning a firm with two or more non-competing, non-vertically related products." Although this definition of a conglomerate is useful in some ways, it is too simplistic to capture the wide variety of strategies pursued by firms in Canada. For example, Power Corporation and Redpath Industries Limited would be classified under this definition as conglomerates, whereas Imperial Oil Limited and

Ford Motor Company of Canada, Limited, would not. Yet the organizational structure and operational strategies of the firms within these two groups are radically different.

The differences among firms whether in the same or different groups are in the amount of diversification of their product lines. Throughout this chapter the terms "conglomerate firm" and "conglomerate merger or acquisition" are used when there is no underlying production or marketing logic among the product lines of the firm. The terms "diversified firm" and "diversifying merger or acquisition" are used when there is an underlying production or marketing logic among the products of the firm. By these definitions Power Corporation is both a diversified firm, in that its subsidiaries within any one industry (e.g., financial, pulp and paper, communications) are related, and a conglomerate firm, in that there is no underlying logic connecting its financial subsidiaries to its pulp and paper subsidiaries to its shipping line, newspapers, etc. Similarly a merger of Power and Argus would contain elements of horizontal, vertical, diversified and conglomerate mergers. The problem then is how to measure the degree of relatedness between the product lines of a firm or firms.

As mentioned above, there are different kinds of diversified and conglomerate firms, but without a system for measuring the degree of diversification, it is not possible to distinguish precisely between one kind of firm and another, and so to draw the public policy implications of the growth, performance and behavior of one kind of firm as compared with another. In the studies of conglomerate activities in the United States in the 1950s and 1960s, the measure used by U.S. regulatory bodies and academics was based on the SIC (Standard Industrial Classification) code; on this basis, the greater the number of product lines (identified through the SIC code) of a firm, the more diversified the firm was held to be. However, two difficult problems arose in the use of this code. The first problem was that the code did not distinguish between firms such as Chrysler, which had a very large number of product lines of which one (automobiles) accounted for 90% of output, and firms such as Gulf & Western, which had as many product lines, but with each broadly equal in sales. This problem has been solved by Richard Caves (in his study of the diversification of plant output in Canada and in his work for the Commission) by using more sophisticated measures of product diversification such as the Herfindahl index and the concentric measure. Essentially these give a weighted measure of the diversity of a firm's products, not simply a count of the number of different products it produces. The second and more formidable problem was that the SIC code did not distinguish between firms that diversified their output from a single production technology or marketing method, and which might have grown largely from internal diversification (such as General Electric Company and E.I. DuPont de Nemours & Company), and firms that had diversified from no common technology or marketing logic and that had grown largely through acquisitions (such as Textron Incorporated). These defects in the system of measuring diversification in the U.S. studies led to much debate and contradictory conclusions.

Another system of measuring diversification avoids these two problems altogether. It defines diversification as a departure from an original core of technology or marketing skill. The system was developed by Leonard Wrigley in 1970, at the Harvard Business School, and led to the identification of four categories of firms—single business, dominant business, related business, and unrelated business—which could be spread along a continuum of amount of diversification in product lines, with each category representing a distinct corporate strategy. Wrigley used the system to study differences among U.S. industrial corporations in their historical patterns of growth and in their organizational structures, their "way of life". Later, researchers at Harvard used the system to study the similarities and differences among the strategies and structures of large-scale enterprises in the United Kingdom, Italy, France and Germany.

The Commission has used R. P. Rumelt's elaboration of this classification system as the basis for some of its studies. According to this elaboration, the strategies of all firms can be classified into four main categories: single business, dominant business, related business, and unrelated business. Firms following a dominant business strategy can be further classified into four subcategories: dominant-vertical, dominant-constrained, dominant-linked and dominant-unrelated. The related business category is divided into two subcategories: related-linked and related-constrained. These strategic categories essentially describe the diversity of the products that the firm has chosen to produce and their underlying sales and production relation. Definitions of each of these strategic categories appear in Table 5.1.

Using this framework, our opening definition of a conglomerate firm would include firms whose strategies can be classified as unrelated, related-linked, dominant-unrelated, dominant-linked and, perhaps, dominant-constrained and related-constrained.

These different strategies tend to be motivated by very different conditions and have very different implications for a firm's growth, return on assets and return to the investor. The Commission was able to trace the diversification patterns of firms in Canada over the period 1960-75 (Table 5.2). When these patterns are compared to those of firms in the United States (Table 5.3), we see that Canadian firms have followed a diversification pattern similar to that in the United States but at a somewhat later date.

In Canada, the United States, France, Germany, England and Italy, the percentage of the largest firms following a strategy of producing in one industry (single business) declined dramatically over the period 1950-70. In general, this decline was matched by an increase in the percentage of firms engaged in related businesses. Data assembled for the Commission using standard SIC code classifications also show an increase in diversification of firms in Canada from 1960 to 1975. These changes were accompanied by a trend toward a more divisionalized organizational structure.

Table 5.1

Definitions of Firms' Strategies

1. *Single Business*: firms that are basically committed to a single business in a single industry.
2. *Dominant Business*: firms that have diversified to some extent, but still obtain the preponderance of their revenues from a single business in a single industry.
   a) Dominant-Vertical: vertically integrated *Dominant* firms.
   b) Dominant-Constrained: non-vertical *Dominant* firms that have diversified by building on some particular strength; their activities are strongly related.
   c) Dominant-Linked: non-vertical *Dominant* firms that have diversified by building on several different strengths; activities are not closely related, but are still linked to their dominant business.
   d) Dominant-Unrelated: non-vertical *Dominant* firms whose diversified activities are not linked to their dominant business.
3. *Related Business*: non-vertically integrated diversified firms operating in several industries but whose activities are linked.
   a) Related-Constrained: *Related* firms, all of whose activities are related to a central strength.
   b) Related-Linked: *Related* firms that have diversified using several different strengths and hence are active in widely disparate businesses.
4. *Unrelated Business*: non-vertical firms that have diversified without regard to the relationships between new businesses and current activities.

Source: R.P. Rumelt, *Strategy, Structure and Economic Performance* (Boston, 1974).

In addition to a descriptive analysis of the diversification strategies of firms in Canada, this framework can be used to answer several important questions about the behavior of large firms in Canada: (1) why did firms follow a particular strategy? (2) how did they effect this change? (3) which strategies have been successful (i.e yielded high returns on assets and in the market)? (4) what has been the effect of these diversification strategies on industrial structure (and hence competition) in Canada? The following sections seek to answer these questions.

Motivations for Diversification

There has been considerable effort in Canadian and U.S. economic and business literature to try to explain why firms have shifted from a single-business strategy to diversification into other industries, either by internal growth or by merger. The motives advanced for diversification vary widely and are sometimes contradictory. Clearly firms diversify for many reasons, which may vary from firm to firm and industry to industry. Since the group of highly diversified firms in Canada is quite small, the Commission has examined these firms individually to try to reach conclusions as to their motivations for diversifying. Some firms found themselves in slow-growth, stagnant, or declining industries (e.g., beer and tobacco) because of government regulation or reduced primary demand for their product. A firm in such an industry could increase sales only by increasing its market share, a move that was difficult or

Table 5.2

Strategy of Top 200 (1975) Publicly Held Firms in Canada, 1960-75
(Estimated Percentages)

Strategy	1960		1965		1970		1975	
Single business	31		18		14		13	
Dominant business	51		52		47		41	
Dominant-vertical		24		23		20		13
Dominant-constrained		17		17		12		8
Dominant-linked		10		11		8		10
Dominant-unrelated		0		1		7		10
Related business	13		22		25		28	
Related-constrained		8		12		9		8
Related-linked		5		10		12		20
Unrelated business	5		8		14		17	

Source: Royal Commission on Corporate Concentration (RCCC) research.

Table 5.3

Strategy of U.S. Firms, 1949, 1959 and 1969
(Estimated Percentages)

Strategy	1949		1959		1969	
Single business	34.5		16.2		6.2	
Dominant business	35.4		37.3		29.2	
Dominant-vertical		15.7		14.8		15.6
Dominant-constrained		18.0		16.0		7.1
Dominant-linked		0.9		3.8		5.6
Dominant-unrelated		0.9		2.6		0.9
Related business	26.7		40.0		45.2	
Related-constrained		18.8		29.1		21.6
Related-linked		7.9		10.9		23.6
Unrelated business	3.4		6.5		19.4	
Unrelated-passive		3.4		5.3		8.5
Acquisitive conglomerate		0.0		1.2		10.9
Total number of firms used to derive the estimates		189		207		183

Source: R.P. Rumelt, *Strategy, Structure, and Economic Performance* (Boston, Mass., 1974), p. 51.

Table 5.4

Financial Characteristics of U.S. Firms in Different Strategic Categories, 1970

(Percentages)

Strategic Category	Financial Characteristics			
	Growth in Sales per Share	Growth in Earnings per Share	Return on Investment	Return on Equity
Single Business	5.84	3.92	10.81	13.20
Dominant-vertical	5.26	5.14	8.24	10.18
Dominant-constrained	7.93	7.60	12.71	14.91
Dominant-linked and dominant-unrelated	5.23	6.11	8.69	10.28
Related-constrained	7.93	8.56	11.97	14.11
Related-linked	6.29	5.57	10.43	12.28
Unrelated-passive	4.67	5.96	9.40	10.38
Acquisitive conglomerate	10.48	9.46	9.56	13.13

Source: Rumelt, *Strategy, Structure, and Financial Performance of the Fortune 500* (DBA dissertation, Graduate School of Business Administration, Harvard University, Boston, 1972).

impossible because of the reaction of firms in its own oligopolistic industry and because of possible government response. The profits of firms in this group were often satisfactory, but their growth rate in sales and profits was not.

Richard Caves, in his work for the Commission, found strong support for the hypothesis that firms in Canada such as Redpath Industries Limited, Jannock Corporation Limited, The Molson Companies Limited, Rothmans of Pall Mall Canada Limited, John Labatt Limited and Imasco Limited have diversified out of concentrated slow-growth industries so that they could continue to grow. These firms have followed the dominant-unrelated strategy, which, as already noted, has not usually been successful in either Canada or the United States.

Action by the U.S. government to block horizontal mergers and improve competition in concentrated industries has been widely cited as an incentive for some firms to diversify out of such industries. In Canada, however, enforcement of the Combines Investigation Act has been ineffective in discouraging mergers that increase concentration within an industry, and it seems to us that this incentive to diversify has not been important in Canada.

Firms in slow-growth, concentrated industries could gradually decrease in size, but managements have usually refused to accept this alternative. Tax laws in Canada give firms an incentive to reinvest their cash flow rather than to pay large dividends, which will be heavily taxed. Reinvestment offers shareholders the prospect of profits in the form of capital gains rather than as regular income.

Diversification through mergers and acquisitions is one means by which a firm may continue to increase the value of its shareholders' investment, while

at the same time shifting the investment to other uses, which it hopes will prove more profitable. A contrary, but not inconsistent, argument is that managers are willing to sacrifice the returns to their shareholders to pursue asset and sales growth through diversification. This is the argument most strongly advocated by John Kenneth Galbraith and is supported by evidence that executive salaries increased with the size of the firm. The difficulties encountered by Redpath, Imasco, Molson, and Rothmans in their initial diversifying investments in Canada also lend some credence to this argument.

In research for the Commission, Caves has concluded that firms in concentrated industries in Canada have tended to diversify into less-concentrated industries, industries where there was greater scope for growth in market share and where there tended to be fewer foreign-owned firms, smaller firms, and a lower dependence on export sales. Firms also react to inbound diversification into their base industries by diversifying into other industries. These firms were seeking to reduce their risks of operation as well as increase their growth and profitability by merging or taking over firms in "safer", less oligopolistic industries whose products did not have to compete on the world market. Risk reduction was thus a powerful motivation for firms to enter new markets through mergers and aquisitions.

In briefs to the Commission, Leonard Wrigley and David Leighton emphasized the important role played by the developments in managerial techniques, which may enable management to coordinate effectively the activities of diversified and geographically separated subsidiaries. In their view modern managers can use these techniques to increase the efficiency of diversified firms regardless of the industries in which they operate. Such techniques can be applied to financial planning and capital budgeting, accounting and control systems, production scheduling and inventory control, marketing research and analysis, long-range forecasting and business-government relations. The evolution in data handling and analysis through the extensive use of computers may have augmented management's power and effectiveness even further. These economies of scale in management and control were discussed in Chapter 3, "Size and Economies of Scale". The overall effect of economies of scale in management will be examined in a later section of this chapter, "Performance of Diversified Firms".

Research and development appear to have shaped the strategies of those U.S. companies, such as General Electric, Du Pont and American Telephone and Telegraph Company, which have diversified into related products. These companies have moved beyond dependence on a single market to multimarket strategies. They are characterized by an institutionalized research and development effort, that is the systematic search for new products, to gain the high profits of products in the early stages of the product life cycle. The success of this strategy is reflected in the high profit and return figures for related American firms shown in Table 5.4. As noted above, the nature of the base industries from which many Canadian firms have had to diversify has discouraged this type of diversification in Canada, or at least made it unprofitable. This point will be discussed later in this chapter.

Methods of Diversification

Firms can diversify either through internal expansion or by acquiring another firm in a merger or acquisition. This latter activity has been erratic, but increasing over the period 1945-75 (see Chapter 6, "Mergers and Acquisitions").

As already described, the definition of a "conglomerate merger" presents several problems. For the purposes of its work, the Commission has defined a "conglomerate merger" as one in which the products of the acquired firm were not the same or closely related in production or marketing to those of the acquiring firm. If the acquired firm was itself diversified, and if some of its major subsidiaries operated in industries in which the acquiring firm did not operate, the merger was considered to be conglomerate. By this definition, not all mergers by a conglomerate can necessarily be classified as conglomerate mergers.

Since 1900, the absolute and relative number of conglomerate mergers has increased, as has the total number of mergers. However, the percentage of domestic companies engaging in mergers decreased over the period 1969-76. Comparable figures for conglomerate mergers in the United States indicate that the conglomerate merger trend peaked in that country in 1967, but in late 1977 there was a resurgence in the number of conglomerate mergers in the United States.

A random sample of 91 mergers in Canada by 10 conglomerate firms during the period 1960-75 was examined in terms of the market share and industry structure of the acquired firm (see Tables 5.5, 5.6). The firms in the sample tended to acquire firms by making "toehold" acquisitions in unconcentrated industries (sometimes because all major firms in the industry were already subsidiaries of foreign-controlled multinational enterprises and not for sale). If the acquired firm's industry was concentrated, the acquired firm tended to be intermediate in size. (See Table 5.6.)

An alternative way to diversify is through internal expansion using the firm's existing management and workers, research and development facilities, and sales force. From 1960 to 1975, growth in assets of Canadian firms appears to be related to the strategy of the firms: the greater the degree of diversification the greater was the proportion of growth due to mergers (Table 5.7).

How did firms whose strategy was to diversify by merger finance their acquisitions? For the period 1960-75, diversified firms were more likely to use stock to pay for their acquisitions than were single businesses, which tended to use cash already on hand (Table 5.8). It should be noted that, unlike the practice in the United States, there has been little use of unusual securities given in exchange for acquired companies. In particular, the possibility of using stock traded at high price/earnings (P/E) multiples to buy firms with lower multiples has been greatly reduced by Canadian regulations governing accounting for mergers, and the relatively low P/E multiples assigned by stock markets to conglomerate enterprises.

Table 5.5

Market Share of a Sample of Firms Acquired by 10 Conglomerates,* Canada, 1960-75

Market Share	Percentage of Firms	Percentage of Assets
20% or more	5	25*
10-19.9%	15	32
5-9.9%	27	23
1-4.9%	24	15
Less than 1.0%	24	5

Number of firms in sample 91

Source: RCCC research.
Notes: *Argus Corporation Limited, Brascan Limited, Canadian Pacific Investments Limited, Imasco Limited, Jannock Corporation Limited, John Labatt Limited, Neonex International Ltd., Power Corporation of Canada, Limited, Redpath Industries Limited and Warnock Hersey International Limited.
**Read as "5% of the firms had 20% or more of their relevant market and accounted for 25% of the assets of all acquired firms in our sample".

Table 5.6

Market Position and Level of Industry Concentration for a Sample of Firms Acquired by 10 Conglomerates* Canada, 1960-75

Market Position of Acquisition	Type of Industry: Concentrated (CR_4 over 60%)	Intermediate (CR_4 40-60%)	Unconcentrated (CR_4 less than 40%)	Total
Leading firm (Market share 10% or more)	5	9	4	18
Intermediate (Market share 5-9%)	9	7	9	25
Toehold (Market share less than 5%)	5	14	29	48
Total	19	30	42	91

Source: RCCC research.
Note: * See Table 5.5 note.

Table 5.7

Type of Growth in Assets of Top 200* (1975) Publicly Held Firms in Canada, 1960-75

(Percentages)

Strategic Category of Firm	Type of Growth: Internal	Merger
Single business	91	9
Dominant business	72	28
Related business	68	32
Unrelated business	57	43

Source: RCCC research; estimates based on annual reports.
Note: *Ranked by sales.

Table 5.8

Methods of Financing Acquisitions by Publicly Held Canadian Firms, 1960-75
(Percentages)

Method of Financing	Strategic Category of Acquiring Firm			
	Unrelated Business	Related Business	Dominant Business	Single Business
Working capital	2	15	55	53
Long-term debt	34	21	8	19
Convertible debentures	8	9	2	3
Preferred stock	4	18	6	14
Common stock	52	37	29	11
Total	100	100	100	100

Source: RCCC research: annual reports on mergers by publicly held Canadian firms in the top 200 (1975), ranked by sales.

On the other hand, some Canadian enterprises have been able to acquire subsidiaries by using the acquired firm's own dividends or unused debt capacity. The acquiring firm borrows the money for its acquisition and repays the loan from the cash flow of the acquired firm, or from a subsequent debt issue of the acquired firm. This financing method has on occasion allowed small aggressive firms to take over large, unleveraged, high pay-out firms.

Performance of Diversified Firms in Canada

Capital Allocation

One of the major claims of diversified firms such as Genstar and Canadian Corporate Management in their submissions to the Commission was that diversified firms are a more efficient means of transferring capital from one industry to another than is the imperfect capital market in Canada. In research done for the Commission, D. G. McFetridge tested this claim. For the period 1961-70 he found no difference in a sample of 205 Canadian firms between returns on internally reinvested funds and those on externally raised capital.

The lack of ready capital for small and medium-sized business in Canada has often been cited as a primary cause of the takeover of Canadian firms by foreign bidders. Canadian firms taken over in the 1968-73 period tended to be more highly leveraged than those which were not, and thus more in need of infusions of new equity capital. More significantly, R. F. Hinchcliff and D. M. Shapiro in work done for Statistics Canada in 1975 found that firms acquired by foreign firms were less liquid, more highly leveraged, and more profitable than were firms taken over by Canadian firms. On the other hand, parallel research in the United States has concluded that acquired firms there had lower leverage ratios than firms in the same industry that had not merged. This finding supports the general belief that capital for expansion is more easily available to small businesses in the United States than it is in Canada.

Profitability, Risk and Efficiency

The controversy over the relative profitability and risk of large diversified firms is widely reflected in the economic literature. If, as several witnesses testified before the Commission, a strategy of conglomerate diversification allows firms to achieve economies of scale in finance and management, they should be more profitable and give a higher return to their investors at lower risk than do firms with otherwise identical opportunities which have followed other strategies.

A growing body of evidence, however, throws into doubt the theory that a strategy of conglomerate diversification is either a profitable one for investors or a good use of the firm's assets. Rumelt concluded in *Strategy, Structure and Economic Performance* that unrelated-passive firms (firms that were conglomerate holding companies) had the lowest rate of sales growth, very high variability in earnings per share, and next to the lowest return on capital. The U.S. Federal Trade Commission in 1972 stated that from their research they could find no significant change in the post-merger profitability of those firms acquired by diversified firms. As indicated in Table 5.9, there seems to have been no clear direction to the changes between pre-merger and post-merger profitability for a sample of the firms acquired by highly diversified firms in Canada in the 1960-73 period. In his Ph.D. thesis, "An Analysis of Financial Performance and the Level of External Growth through Merger", S. N. Laiken found no correlation between the diversification of firms in Canada and their growth in either earnings (or sales) per share or their profit performance. Caves and his associates support these conclusions. They found that return to the investor in Canada may indeed have decreased, and risk increased, with diversification. McFetridge also concluded that, contrary to his expectation, as the diversity of a firm increased, its profitability decreased.

Table 5.9

Change in Profitability after Acquisition of Manufacturing Firms Acquired by Sample Conglomerates, United States and Canada, 1960-73

	Total Number of Firms Acquired	Change in Profitability	
		Increase	Decrease
United States	43	23	20
Canada	24	13	11

Source: U.S. data: Federal Trade Commission; Canadian data: RCCC research.

This failure of conglomerates to increase the profitability of their new acquisitions may be due to a necessary gestation period during which acquiring firms learn how to manage their newly acquired subsidiaries, and to realize the many synergies that may be inherent in the merged firm. Given time, it has been argued, even highly diversified firms with no marketing or technological

Table 5.10

Comparison of 10 Conglomerates*
with Simulated Portfolios, Canada, 1960-75
(Percentages)

	Conglomerates	Simulated Portfolios	
		(1)	(2)***
Return to stockholders	9.4	12.7	10.0
Return** on total assets	6.7	10.3	8.1
Growth rate of earnings per share	4.3	6.8	5.3

Source: RCCC research.
Notes: *See Table 5.5 note.
**Based on earnings before interest and taxes.
***Column (2) includes an average acquisition premium of 27.5% above market price.

link between their subsidiaries will be able to increase profits because of the synergy of the various components. This synergy is most often thought to come from the ability of modern managers to transcend the skills required in any one business and to achieve economies of scale in management time and effectiveness through modern management techniques.

An impressive rebuttal of the synergy argument for highly diversified firms was given by R. H. Mason and M. B. Goudzwaard in the *Journal of Finance* (1976). They constructed 22 portfolios of stocks that duplicated the initial assets and acquisitions of 22 U.S. conglomerates over the period

Table 5.11

Performance of Publicly Held Firms in
the Top 200* (1975), Canada, 1960-75
(Percentages)

Strategic Category of Firm	Growth in Earnings per Share	Growth in Sales per Share	Return on Equity	Return to the Investor
Single Business	2.1↓	6.8	10.5	8.9
Dominant-vertical	3.7↓	6.5	7.1↓	8.3↓
Dominant-constrained	5.2↑	8.3↑	11.2↑	19.1↑
Dominant-linked	4.3	6.1	8.9	16.3
Dominant-unrelated	2.0↓	4.2↓	7.5↓	10.2↓
Related-constrained	7.5↑	8.7↑	11.2↑	20.3↑
Related-linked	3.7	6.0↓	6.9↓	12.2
Unrelated business	3.1↓	5.2↓	7.1↓	8.1↓

Source: RCCC research.
Notes: * Ranked by sales.
(↓) = significantly below average at the 10% level of significance.
(↑) = significantly above average at the 10% level of significance.

1962-67. Of the 22 "mirror portfolios", 19 had a higher return on investment and return to the stockholder than did the actual conglomerate firm. This result was totally unexpected by the authors and is even more surprising since the period was one when the conglomerate firm in the United States was very popular.

Our research replicated this study for ten highly diversified firms in Canada over the period 1960-75 and showed similar results. Firms that followed a strategy of unrelated diversification were less profitable in sales, grew less quickly and returned less to their stockholders in dividends and stock appreciation than did a portfolio of stocks that duplicated the acquiring firm's diversification pattern (Table 5.10). As well, of the 100 largest publicly held firms in Canada, those that followed a strategy of unrelated diversification (dominant-related, related-linked and unrelated business) had a significantly lower return on equity and return to their investors over the same period (Table 5.11).

The Commission considered this conclusion sufficiently important to warrant replicating the research, to check whether the outcome was consistent given different assumptions, portfolio selections and benchmarks. In this research, Jerome Baesel and Dwight Grant looked for a measure of performance that did not rely on accounting statements, in order to eliminate the problem of conceptual or measurement error in the preparation of those statements.

The first part of the research was designed to investigate whether long-term market performance of the common stock of acquisitive companies was significantly different from long-term market performance of a diversified portfolio of common stocks. They measured the annual rate of return on the common stock for five groups of firms: the Toronto Stock Exchange (TSE), a random sample of firms on the TSE, a group of 35 firms that made five or more acquisitions over the period 1960-75, the ten conglomerate firms in the Commission's earlier study, and a group of mutual funds. Performance was measured on both an unadjusted basis (return above the risk-free rate) and a risk-adjusted return (as measured by the Treynor index). The study again covered the period 1960-75, which we think adequately reflects both good and bad periods of market performance.

The results of this study were mixed. In the period 1960-69, during which the TSE performed well, both the acquisition-oriented firms and the ten firms that pursued a strategy of conglomerate diversification significantly outperformed the firms in the other groups. During the period 1970-75, a period of poor market performance, the market performance of the acquisition-oriented and conglomerate firms was worse, although not significantly so, than those in the other samples. Over the entire period, there were no significant differences in the performance of any of the samples. The results of these two studies are not necessarily contradictory. The population of firms in each strategic category (as displayed in Table 5.11) changed over the period 1960-75. Thus many of the firms that followed a strategy of unrelated diversification fell into that category only in the late 1960s or early 1970s, a time when Baesel and Grant found that such firms were not performing well on the stock market.

Why have Canadian firms been largely *unsuccessful* in their diversification strategies? As stated earlier, Canadian firms appear to have followed U.S. firms in a strategy of increased diversification. While U.S. firms have tended to diversify into related industries, however, Canadian firms have diversified largely into unrelated industries. There are still a greater proportion of single businesses and dominant businesses in Canada than in the United States, but within the dominant-business category a greater proportion of firms have diversified into unrelated industries in Canada than in the United States. Similarly, Canadian firms that have followed a strategy of related diversification are more diverse than U.S. firms within that category, i.e. they have followed a related-linked strategy.

For firms that followed a strategy of unrelated diversification in Canada the problems of low profits and low returns to their investors have been particularly acute (Table 5.11). J. T. Scott in research for the Commission also found that these lower returns were accompanied by higher risks. It should be noted that the firms in each group have changed over the period. For example, Redpath, Jannock, and Labatt have changed their strategies from single business to dominant-unrelated; Imasco has changed from a single business to related-linked. The returns in each strategic category are only for firms in that category during that year. Table 5.11 indicates that the performance of firms differed significantly according to strategy.

In an effort to test Wrigley's conclusions concerning the relative unprofitability of the diversification strategies followed by Canadian firms, Caves and his associates placed 58 of the firms in their sample into Wrigley's four strategic categories: single, dominant, related and unrelated. They found that the base industries of firms in each category had distinguishing characteristics and that once the structural characteristics of the firms' base industry were taken into account the strategic categories had no significant influence on profits. Caves' conclusion implies that Canadian firms have not followed a strategy of unrelated diversification in error, with resulting low return, but that given the industries in which they were operating originally, they had no alternative but to follow a strategy of unrelated diversification. For example, Redpath could not diversify into a high-growth, high-profit industry related to sugar refining because, in all likelihood, no such industry existed. Caves concluded on the basis of the firms in his sample that there are a large number of firms in Canada whose base industries allow them little scope for related diversification (e.g., brewing, tobacco, mining and textiles). For these firms, diversification may have been a better strategy despite its low returns than remaining solely in the base industry. It has also been suggested to the Commission that unrelated diversification may also be caused by a miniature replica effect for the subsidiaries of foreign firms: i.e. Canadian-owned firms may imitate the diversification they observe at home and abroad as a competitive response.

The Commission decided to expand this study and took a sample of the 100 largest, publicly held Canadian firms and classified them into the eight

strategic subcategories described earlier. The growth in earnings per share, sales per share, return on equity, and return to the investor were then calculated for the firms in each group.

Our results partly support Caves' conclusions. Many Canadian firms did diversify out of concentrated, capital-intensive, low-growth industries. Only for those firms that followed a diversification strategy into related products was there an improvement in the efficiency of the firm (measured by return on equity) or in return to the investor. Firms that diversified into unrelated businesses performed significantly worse than their base industries. Firms that diversified into related industries improved their performance over other firms in the economy and over their base industry performance. These firms seem to have been able to realize both economies of scale and some synergy in their related diversification. One explanation for this finding is that only firms that diversified into related industries could realize economies of scale from their larger operations.

Another explanation for the lack of increased profitability of highly diversified firms has been proposed by a number of writers who have argued that owner-managed firms are more profitable than firms managed by delegates of the owner, because of lower motivation among such delegates and greater difficulties in control. Similarly, it has been argued that managers of firms controlled by an absentee dominant shareholder may be less likely to take risks to increase profits. If a diversifying firm acquires owner-managed firms, it may be decreasing both the profitability and the incentive to innovate in its new subsidiaries despite achieving real economies of scale in management and finance.

Another plausible explanation for our finding is offered in research by Michael Gort and T. F. Hogarty in the 1970 *Journal of Law and Economics*. They suggested that firms that diversify by merger pay such a large premium over the market value of the firm's equity for their acquisitions that they are unable to recoup their money from future operations. In a study of tender offers for publicly held firms in Canada from 1960 to 1975, the Commission found that acquiring firms paid an average premium of 27.3% over market price at the time of the offer for the firm they acquired.

The existence of this premium means that if actual return on assets of the acquiring firm is used as a measure of efficiency, we cannot easily draw conclusions as to whether there is synergy in mergers as a whole, even though diversified companies as a group have not performed as well as their "mirror portfolios". It is possible that there is considerable synergy involved in mergers, but that the acquisition premiums paid were so high that an acquiring firm could not thereafter achieve the industry's average return on investment, and thus give shareholders a normal return, even though it had increased the efficiency and profitability of its acquisition.

In an attempt to correct for this bias, the asset bases of the acquiring firms in our sample were deflated by the amount of the merger premiums. Although the returns on assets and to investors improved for highly diversified firms, they were still significantly below those for firms that diversified into related industries.

From our research, the general conclusion can be drawn that firms that have diversified into unrelated industries have not increased their return on investment, their return to their shareholders, or their growth in sales per share. For some time such firms have exhibited very low price/earnings ratios, a reflection of the market's current opinion of their growth prospects and the trend of their earnings.

In a brief to the Commission, Wrigley has suggested what seems to be a crucial factor in Canadian firms' lack of success in diversification strategy: their lack of sufficient size within related product groups. In Canada, both the diversifying enterprise and the firms it acquired were usually far smaller than such firms in the United States. Even with diversification and increased enterprise size, many Canadian firms were still at a considerable disadvantage in their ability to undertake research and development, and in particular to innovate. As was described in Chapter 3, R&D was found to increase with scale up to a very large size, particularly the scale of output of the related products produced by the firm.

These problems of low expenditures on research and development and low productivity have become almost cliché in Canada. In addition to the high degree of foreign ownership (*Foreign Direct Investment in Canada* [Gray *Report*], 1972) and poor business-government relations (Science Council of Canada, 1971), major impediments to sustained innovation in Canada are simply the relatively small size, the great diversity of products and the organizational structure of Canadian enterprises.

Until Canadian firms have a larger market either through specialization agreements between firms, industry reorganization, or trade into foreign markets, they will be largely blocked from attaining sufficient size to undertake continuous innovation. Unrelated diversification has not helped to solve this problem. As a consequence of unrelated diversification, the size of the enterprise has increased, but the size of its basic economic marketing, technological and production units has not. It is the size of the related product units that is crucial to achieving economies of scale and the minimum size for continuous process and product innovation. We say this while recognizing that any attempt to resolve the problem must include safeguards against the potential anticompetitive results of monopoly or oligopoly.

Even though firms in Canada that have diversified into unrelated industries have not increased either their efficiency or their return to their shareholders, they could still be seen as a potentially efficient means of allocating resources in the economy and as an attractive investment if they had been able to reduce their risks even though they lowered their profits. Established financial and economic theory holds that diversified firms should be less risky, that is they should have a lower variation on sales and earnings than do undiversified firms. However a major finding of Scott in the Caves study for the Commission is that the variation in sales and earnings in Canada increased with the diversity of the firm.

Recognizing some of these problems, some enterprises in Canada that have followed a strategy of unrelated diversification in the past have recently

begun to try to focus their products and new acquisitions into more closely related product groups (notable examples being Genstar and Imasco). Such enterprises seem to have concluded that purely financial control of unrelated subsidiaries does not lead to higher profits and more efficient operations, as the acquisition logic of the 1960s argued that it would.

Unsound Capital Structures

Concern has been expressed in the United States that the financing of mergers with debt has led to less-conservative (debt-heavy) capital structures in acquiring firms. While there is little good evidence on this point even in the United States, the Commission did undertake a limited investigation of the financial ratios of net income to total liabilities, working capital to total debt, net cash flow to total debt, total debt to long-term debt, and the current ratio in several Canadian enterprises that had undertaken debt-financed diversification since 1965. The analysis was complicated by the fact that virtually all Canadian business showed some deterioration in these ratios during the period 1970-75. While not claiming that our research was either extensive or definitive, we were unable to find evidence of deteriorating capital structures due to debt-financed expansion that would warrant either more extensive research on our part or any expression of concern. In some instances, such as Power's takeover of Consolidated-Bathurst Limited or the takeover of The Price Company Limited by Abitibi Paper Company Ltd., diversified firms have tapped their unused borrowing power to acquire new subsidiaries or aid existing ones. In these cases, however, although total debt increased, the size, diversity and earning power of the enterprise could carry the new debt without increasing the risk of default.

Competition with Foreign Firms

Two important international aspects of the Canadian economy affect Canadian firms. One is the significant percentage of Canadian industry controlled by foreign-based multinational enterprises; the second is the size and scope of Canada's international trade.

The question of the relationships among economies of scale, size and exports has already been covered in Chapter 3. In that chapter we concluded that there probably was a very weak relationship between the size of the firm and its ability to export. A stronger relationship probably exists between the size of the output of related products within the firm and its exports. No relationship was found between the size of highly diversified firms and the exports of their products.

It was suggested to the Commission that a diversified firm such as Power Corporation could function much as some of the huge, diversified Japanese trading companies do in encouraging exports from components of the group. It is difficult to see, however, how financial and media interests could help the export of pulp and paper products or computers.

Many briefs have argued that when Canadian enterprises diversify by taking over smaller firms, these firms are saved from foreign takeover. If

correct, this is an important factor in considering corporate diversification. If takeovers by foreign firms are restricted or generally discouraged by the Foreign Investment Review Agency (FIRA), and if venture capital firms, banks and the stock market are unable or unwilling to provide sufficient equity or loan capital, a misallocation of resources might arise in the Canadian economy unless Canadian-controlled firms were willing to acquire small, growing firms. Without such nourishment the incentive to invent and invest in new products might well decrease even further from its current low level.

Competition

Many of the fears regarding diversified firms stem from a belief that somehow, as a result of the diversification process, they will reduce competition, increase industrial concentration, raise prices, reduce quality, decrease output and slow innovation. We might then ask what, if any, relationship exists between diversification and market concentration. That is does diversification increase concentration within the sector of which the acquired or acquiring firm is a member? In the United States, recent research has concluded that when conglomerate firms diversified into an industry (inbound diversification) the market position of leading firms was weakened, especially where the market was concentrated and the entering firm was large. C. W. Berry reached similar conclusions for the United States in *Corporate Growth and Diversification*, based on studies of changes in concentration in industries with a high rate of inbound diversification. Caves, in his research for the Commission, concluded that firms in Canada diversify out of concentrated industries and into less-concentrated ones instead of trying to increase concentration in their base industry either internally or by merger. He also found both that inbound diversification tended to occur in industries with moderate barriers to entry and that lower profits were found in industries with high inbound diversification. These diversification patterns might thus be beneficial in the long run to the Canadian economy.

In the United States, conglomerate acquisitions of leading firms have been blocked by regulatory agencies on the presumption that a large, acquisitive, diversifying firm could enter the industry through internal expansion or by acquiring a smaller firm, and thus its entry by a large acquisition decreases potential competition in the industry. In addition, if a firm's acquisition is blocked by the courts, it may be forced to expand via internal growth. The focus for expansion in virtually every enterprise studied by the Commission has been on either internal growth or acquisition, but not both. Single businesses grew mostly by internal expansion, whereas unrelated businesses grew mostly by merger. When a firm diversified into a new business, it almost always did so by merger or acquisition, not by internal expansion. Once a firm has diversified into a new industry by acquisition it sometimes greatly increases the size of its new subsidiary by allocating funds to it from its other operations. We conclude that a potential-entry argument that conglomerate acquisitions reduce competition would not be a valid reason for forestalling conglomerate mergers in

Canada, except perhaps in very unusual circumstances, and that the reducing-potential-competition argument should probably not be extended to apply to conglomerates.

In testimony before the Commission, John Narver concluded, on the basis of U.S. experience, that if a diversifying firm enters an industry by acquiring a leading or dominant firm, overall competition will probably decrease. If the diversifying firm makes a toehold acquisition, however, competition within the industry will probably increase. As described earlier, over the period 1960-75 conglomerates in Canada tended to diversify by toehold acquisitions into unconcentrated industries. In general, firms that made toehold acquisitions tended to expand the market share of their new subsidiaries, whereas firms that acquired leading firms did not (Table 5.12). These results are similar to those of L. G. Goldberg in a 1973 article in the *Journal of Law and Economics*. He concluded that concentration ratios did not increase for industries that experienced considerable inbound conglomerate diversification. In Canada, when diversifying firms actively increased their subsidiaries' market shares, not only did their profits increase but the efficiency of the firms as measured by return on equity frequently increased as well. On the basis of this evidence, the Commission concludes that conglomerate mergers have not in general decreased competition within industries by increasing their concentration or by ceasing to be potential competitors by means of internal expansion.

Potential Restraints to Competition

Discussions of anticompetitive practices associated with conglomerate enterprises have usually cited the potentials for such practices inherent in large corporate size, or have illustrated abuses by reference to scattered examples. The ones cited most commonly are the following: reciprocity, tying agreements, exclusive dealing, predatory pricing, cross-subsidization, mutual forbearance and increasing barriers to entry.

RECIPROCITY

Reciprocity occurs when two or more firms agree to buy one another's products at preferential prices. Certainly as the number of products a firm produces increases, the potential for reciprocal dealings with other firms increases. B. T. Allen in a 1975 article in the *Journal of Law and Economics* concluded that the greater the number of closely related products a U.S. company made the more opportunities for reciprocity it had *and used*. He also found that reciprocity was inversely related to market share, leading him to conclude that reciprocity was practised by companies as a device for cutting prices and hiding the evidence from larger rivals. On the other hand, J. W. Markham, in *Conglomerate Enterprise and Public Policy*, found that reciprocal dealing decreased diversification. Allen concluded: "Genuinely *diversifying* mergers are unlikely to produce any reciprocity potential." Allen went on to state: "The practice [reciprocity] evidently does enhance competition within concentrated industries by adding an element of sub rosa price cutting." In any event, so long as markets for the products of both firms are competitive, there

Table 5.12

Post-Acquisition Changes in Market Positions of Firms Acquired by 10 Conglomerates,* Canada 1965-75

	Changes in Market Position								
	Type of Industry								
	Concentrated (CR_4 over 60%)		Intermediate (CR_4 40-60%)		Unconcentrated (CR_4 less than 40%)		Subtotals		
Market Position of Acquisition	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Total
Leading firm (Market share 10% or more)	3	2	4	5	2	2	9	9	18
Intermediate (Market share 5-9%)	3	6	3	4	3	6	9	16	25
Toehold (Market share less than 5%)	3	2	6	8	8	21	17	31	48
Total	9	10	13	17	13	29	35	56	91

Source: RCCC research.

Note: *See Table 5.5 note.

is no misallocation of resources or loss of efficiency even if reciprocal dealing does occur. This observation is not much consolation for the small, single-product firm, which is foreclosed from selling its products to major markets or buyers because of the existence of reciprocal buying arrangements. Such an excluded firm does not even have recourse to Canadian courts under the Combines Investigation Act, since reciprocity is not presently considered to be an offense under the Act or under proposed amendments to it. Companies or individuals may, however, bring civil suits for damages suffered from other restrictive practices such as refusal to deal or exclusive dealing.

Caves, in *International Trade and Finance: Essays in Honour of Jan Tinbergen*, cites historical and contemporary evidence of the extent of reciprocity in the United States. He shows that reciprocity is most likely to exist when large firms have market power and when a large part of their business consists of inter-company transactions of semi-processed goods or components. When reciprocal dealing occurs in such imperfectly competitive markets it may reduce economic efficiency if the effect is to raise supplier prices and enhance the profitability of an existing monopoly position. William Stanbury examined reciprocity in a report for the Commission and pointed out that existing estimates of the extent of reciprocal dealing the United States are very rough, and that there is virtually no evidence on the economic significance of this practice either there or in Canada. The Commission recognizes that persistent reciprocity at other than market prices is socially objectionable. However, it has not been able to uncover evidence that reciprocity is practised to any significant degree in Canada by diversified firms.

Often what is seen as reciprocal dealing is simply the result of long-term, historical buying and selling relationships between two firms. In a world of uncertainty and high search costs, firms may be minimizing their total costs even when they do not purchase from the supplier with the lowest price. The expected costs associated with searching for a lower-cost good or service, testing it, adapting to its requirements and forming a new buyer-supplier relationship may be greater than any expected gains. Uncertainty about future supply or the financial stability of the supplier further reduces incentives to seek and switch to a lower-cost supplier.

The Commission concludes that whatever dangers may be inherent in reciprocal dealing among diversified enterprises do not deserve additional legislative treatment at this time.

TYING AGREEMENTS AND EXCLUSIVE DEALING

Concern has been expressed that diversified enterprise will be more likely to engage in tying agreements and exclusive dealing than will firms in a single line of business. A tying arrangement occurs when a supplier makes the sale of one good conditional upon the buyer's agreement to take as well a second, unrelated good. For example, in the United States, Procter & Gamble Company was forced to divest itself of Clorox Company in part because the court held that Procter & Gamble's wide range of related products enabled it to coerce stores to stock Clorox to the exclusion of other bleach products.

However, it is also agreed that if Procter & Gamble had been maximizing its profits by using all its monopoly power before its acquisition of Clorox, one must conclude that the company would have no further leverage to force stores to expand their purchases of Clorox. Thus, to conclude that conglomerate diversification will increase the propensity of firms to engage in tied selling, we must believe either that these firms have unexercised monopoly power, or that the diversification process somehow confers additional monopoly power on them in the individual markets for their products. It seems to us that neither of these two situations are likely to exist.

Exclusive dealing occurs where a supplier insists that his dealers agree to stock or sell no other directly competitive lines of goods. This may occur because an exclusive territory is offered the dealer as a quid pro quo or because the seller has some unexercised market power permitting him to make such a demand. In either case, the supplier must both have unexercised monopoly power and face constraints on its exercise.

The Commission concludes that existing law is probably sufficient to treat those cases of tying arrangements and exclusive dealing that may arise. The Commission similarly concludes that no case exists for a general presumption against diversified enterprises on the basis of their increased ability to use tying arrangements or exclusive dealing in unfair competition.

PREDATORY PRICING

One persistent fear about conglomerate enterprises, which is not felt about large, single-product, single-market firms, is their latent power to employ predatory pricing to penetrate new markets. The argument is that, temporarily, a conglomerate may use the profits from one product to subsidize the price of another product below the level of long-term total cost, and thereby capture market share from single-product sellers who are unable to subsidize their sales. A single-product firm cannot follow this strategy unless it is willing and able to sustain short-term losses, or unless it can practise price discrimination.

Unless an increased market share for the new product can be maintained, however, and above-normal profits derived from its sales, the diversified firm trying to maximize profits has no incentive to engage in predatory pricing. If the market is competitive or there are relatively low barriers to entry, the firm that gains market share by predatory pricing will not be able to recoup its lost profits by eventually raising prices, since if it raises prices its competitors will recapture their lost markets.

However, in some consumer-goods markets where heavy advertising expenditures create strong brand preferences and high barriers to entry, predatory pricing could be used by a diversified firm to increase its long-term profits. For example, after IT&T acquired Continental Baking Company in 1968, it rapidly expanded the market share of Continental's Wonder Bread by pricing the bread below its long-term average cost. The company presumably hoped to gain a large share of the bread market, and eventually to be able to raise its prices, but, because of brand loyalty, without losing customers. In 1975, IT&T

was found guilty in the United States of predatory pricing, fined and enjoined from continuing to employ that pricing policy.

In Canada, the Combines Investigation Act gives the government power to attack predatory pricing, although there is virtually no jurisprudence on the issue. The basic problem with enforcing predatory pricing legislation comes from the difficulty of distinguishing between predatory pricing and normal rigorous competition. A firm with a modern, efficient plant and equipment may very well be able to price below older firms in an industry.

On balance, we believe that a strong and well-enforced competition law is probably the best deterrent to a feeling that predatory-pricing practices are either possible or likely.

CROSS-SUBSIDIZATION

Cross-subsidization to allow pricing below full cost is similar in effect to predatory pricing. A firm may use profits from one of its product lines (or subsidiaries) to subsidize another product temporarily to enhance its market share. Again, if the firm is motivated solely to maximize its profits, it will not engage in cross-subsidization unless it thinks that in the long run the subsidized product can be profitable on its own. It will not engage in cross-subsidization in the sense of allocating corporate resources to uses where they will earn below normal returns.

In briefs to the Commission, diversified firms had very different responses to the issue of cross-subsidization. The Chief Executive Officer of Argus Corporation denied that Argus has ever cross-subsidized any of the firms in its group. Molson has subsidized losses of Beaver Lumber Company Limited for several years. Similarly, Power Corporation has shifted resources to several of its subsidiaries when they have run into difficulties; it put fresh money into Dominion Glass Company Limited when that firm ran into temporary financial and operating difficulties, and it provided financial assistance to Laurentide Financial Corporation Limited when that subsidiary was in trouble. Thus, in emergencies, Power Corporation and other diversified firms have provided funds for their subsidiaries by using their general corporate financial strength.

Genstar, on the other hand, actively pursues a second, quite different, kind of cross-subsidization, using the cash flow of subsidiaries in slow-growing but still profitable industries to subsidize the cash flow of subsidiaries in fast-growing, cash deficit, but potentially more profitable, industries. Genstar has created an internal allocation system designed to allocate its resources to their most efficient use. Genstar stated in its brief that one of the virtues of a diversified enterprise is precisely this ability to transfer resources from one industry to another more efficiently than does the financial sector.

From an economic point of view, this short-run, cash-flow cross-subsidization, which may lead ultimately to more efficient use of capital and employees, may be beneficial to both the firm and the economy. Of course, cash-flow cross-subsidization can lead to an inefficient allocation of resources if a firm continues to subsidize the long-run production of a product that cannot be made efficiently or sold at a profit. In this connection, it is interesting to note

that Michael Porter in a 1976 article in the *California Management Review* concluded that highly diversified firms were more likely to retain losing subsidiaries than were other firms.

In his recent books Galbraith has concluded that managers of firms in the "planning sector", the large firms in the economy, seek growth and stability by sacrificing profits, which are simply maintained above some minimum acceptable level. According to this view firms seeking to maximize growth would have every incentive to use cross-product subsidization, predatory pricing and tied sales (up to a point) even if these practices reduced the firm's long-run profits. The Commission has observed several instances where non-profit-maximizing objectives have been pursued by some diversified firms. These practices do not lead to efficient resource allocation, nor do they encourage innovation and competition within industries. As with some of the other problems of diversified firms already described, the solution to this problem is elusive. Eventually the investors should reflect dissatisfaction with such growth strategies by giving these firms very low price/earnings multiples and threatening the management with takeover raids (however, conglomerate firms can hide these indicators of poor performance for significant periods and thereby cause serious resource misallocation). Government-owned enterprises have been guilty of the same distortion of resource allocation by subsidizing inefficient ventures, often without even the minimum profit constraint that acts as a partial check on large firms in the private sector.

Diversified enterprises offer managers alternative uses for the funds generated by uneconomic subsidiaries besides that of reinvestment in the declining industry or returning the funds to the shareholders. Redpath, Molson, Imasco and others have all diversified to transfer resources out of their base industries by initially subsidizing diversification into other industries through merger or acquisition or by setting up a new plant.

The question then is not whether subsidization occurs within diversified enterprises in Canada, but whether it has beneficial, neutral, or harmful effects on the efficiency with which resources are allocated within the economy. The conclusion of the Commission is that the effects of cash-flow subsidization do not in general appear harmful, nor is the incidence of inefficient cross-subsidization common enough, to suggest a need for legislative constraints on diversified firms beyond those existing in the present Combines Investigation Act. The most overt example of inefficient cross-subsidization of long-term losses which the Commission has encountered occurs among chain newspapers, where groups systematically subsidize losing papers, as a matter of policy, over long periods of time. This cross-subsidization is usually applauded inside and outside the newspaper industry as creating a more competitive press, and has been described as one of the benefits of chain operations for newspapers.

MUTUAL FORBEARANCE

As the operations of conglomerates spread throughout the economy, their subsidiaries will come to operate in the same industries more and more often.

The potential thus exists for a few conglomerates to agree, tacitly or overtly, to restrict competition in an industry, even an unconcentrated one. Thus mutual forbearance could take two forms: subsidiaries of conglomerates in the same industry could collude to set and maintain prices above a competitive level while at the same time accepting static market shares, or a conglomerate could refrain from entering an industry dominated by the subsidiary of another conglomerate. Both these forms of mutual forbearance would reduce competition in the specific industry and in the economy as a whole.

So long as entry into an industry is unrestricted, however, mutual forbearance is not a preferable long-run practice. If the subsidiaries of conglomerate firms do not compete in their overlapping industries or if they collude to maintain high prices, other firms will simply price below the conglomerates and take away market share. If subsidiaries of conglomerates are the only potential entrants, however, mutual forbearance between conglomerates may be a practicable strategy. Its use would lead to substantial misallocation of resources.

In Canada, where conglomerates tend to make toehold investments in unconcentrated industries, there seems little scope for mutual forbearance. The Commission concludes that while the problem of mutual forbearance is potentially important, it is in reality a special multimarket example of the oligopoly problem discussed in Chapter 4. The solution to mutual forbearance lies, we think, in more disclosure, lowered barriers to entry, availability of equity and debt capital and constraints on predatory practices, rather than in any special legislation. These measures would better ensure that opportunities for high profits would be recognized and that independent firms would tend to move into those industries where those opportunities existed, thereby increasing competition and lowering prices and profits.

INCREASING BARRIERS TO ENTRY

The entry of a large, diversified enterprise into an industry may serve to increase barriers to entry into it, even without any overt anticompetitive action by the enterprise. If other firms in the industry and other potential entrants believe that the diversified firm is able and willing to engage in anticompetitive behavior, they may curtail the scope of normal competitive activities so as not to antagonize what they perceive to be a stronger adversary. In this way, a subsidiary of a conglomerate may become the "barometer" firm in a shared oligopoly, since other firms in the industry perceive it to be most able to engage in a price war for market share.

If conglomerate firms were able through any of the practices described above to erect barriers to entry, we should expect to find that industries with a high proportion of diversified firms would have high price-cost margins. Yet research by S. A. Rhoades in a 1974 article in the *Review of Economics and Statistics* on U.S. firms has come to the opposite conclusion. Also, as mentioned above, McFetridge found that corporate profits declined with diversification. Firms in Canada do not seem to have been daunted by conglomerate diversification.

While again recognizing that increased barriers to entry are a continuing potential danger, the Commission is not able to propose a solution to what is basically a problem of smaller firms believing that larger firms have an unfair advantage that ensures their victory in a competitive situation.

Loss of Information

As formerly independent, single-product firms whose sales and profits were made public are acquired by diversified enterprises that consolidate the operating statements of their subsidiaries into their own financial statements, information is lost to direct investors, firms within the industry, the stock market and society. Firms within the industry and, more importantly, potential entrants no longer have information about sales, profits, costs and growth rates by line of business to use in evaluating the desirability of shifting resources into or out of the industry. Similarly, investors are less efficient in their allocation of resources to various industrial sectors and firms, since their evaluation of the investment potential of firms and industries is more subject to error.

This problem exists both in the evaluation of single-product firms in an industry in which subsidiaries of conglomerates operate and in the evaluation of conglomerates themselves. One researcher for the U.S. Federal Trade Commission spent two months trying to construct profitability figures by product line for one conglomerate firm using all available public documents. He failed completely. In research done in the United States, D.W. Collins in a 1975 *Journal of Financial Economics* article argued that his evidence supported the conclusion that information loss has caused investors in the stock market to make incorrect, inefficient selections for their portfolios.

The problem of loss of information is not so acute in the case of a firm whose subsidiaries have public shareholders and must issue annual reports; however, often these subsidiaries produce a wide range of products about which information is not available. On the other hand, companies that seek 100% ownership of subsidiaries can consolidate their statements and so not reveal their profitability.

This loss of information is not confined to conglomerate firms. Provincially chartered or private firms are not subject to the same disclosure requirements as are federally chartered firms. We address this problem in a more general context in Chapter 13, "Disclosure of Corporate Information".

Conclusion

In its recommendations concerning the economic impact of conglomerate enterprises, the Commission has two objectives in mind: (1) to increase the efficiency of resource allocation in the Canadian economy, and hence the ability of Canadian firms to provide goods at low prices to Canadians and to compete on a world basis; and (2) to inhibit anti-competitive practices that might permit large firms to achieve an unfair advantage over their competitors and to gain monopoly returns. Our recommendations are also made in the context of the realities of the Canadian economy.

The level of sectoral concentration has not changed appreciably over the past decade, nor has the growth of large firms increased the share of the economy controlled by the top 50 or 100 firms. If large firms in Canada had not pursued a strategy of diversified growth, aggregate industrial concentration might well have declined, but sectoral concentration might also have grown. In general, the diversification process does not seem to have led to increased concentration or reduced competition in specific industries. Indeed the large size of conglomerate enterprises does not imply that their subsidiaries are large in their individual industries. By definition, a conglomerate firm has subsidiaries in several sectors, so that a large conglomerate may be composed of diverse units, none of which necessarily has any appreciable degree of control in its own market. The argument was made earlier that, in general, conglomerates in Canada have diversified into such unrelated industries that they have not been able to take significant advantage of economies of scale within their components, or to find any significant synergies among their components. In particular, they have not been able to form a common basis for continuous technological innovation. Conglomerates may even be blocking the formation of firms that could diversify into related products, since firms in a given industry are much less likely to merge into one efficient firm if they are controlled by different conglomerate firms than if they are independent firms. Even if one conglomerate firm were willing to sell its subsidiary in an industry to a rival, the combines authorities might not be anxious for such a merger to take place. In the Power-Argus controversy, critics pointed to the potential increase in concentration in forest products and communications media as a reason for blocking the merger. Yet it may be that such large concentrations within industries are necessary if increased efficiency is to be achieved.

A similar problem would arise if George Weston Limited and Argus attempted to merge, this time with possibly increased concentration in the retail food industry. This line of reasoning, if valid, in effect reverses the usual argument against conglomerates. Conglomerate firms may thus be detrimental to the economy if their overall size tends to inhibit formation of economically efficient units in their subsidiaries through horizontal mergers at the industry level.

On the other hand, diversification into unrelated sectors has helped allocate resources from old, static industries to newer, more dynamic ones. Acquisition activities by diversified companies have almost certainly improved the efficiency of the market for firms in Canada, thereby increasing the incentive to form and develop new products and processes, while decreasing the number of such firms that are taken over by foreign firms. On balance, however, conglomerate diversification has probably decreased the efficiency of resource allocation in the Canadian economy, although not seriously. Firms that have followed a strategy of conglomerate diversification have, in general, given their shareholders and given their investors below-average returns in the market. Over a long period, therefore, the practice of unrelated diversification is likely to cease through the force of competition. Indeed, many conglomerate firms are already rationalizing their subsidiaries in an effort to increase their efficiency and returns on assets and to their stockholders.

The Commission concludes, therefore, that there is no need for any general prohibition against conglomerate mergers or a general review for conglomerate mergers. In *general*, conglomerate mergers and acquisitions do not decrease competition or seriously misallocate Canada's resources.