Royal Commission on Corporate Concentration

Study No. 4

Canada Development Corporation

A Corporate Background Report

by

Michael R. Graham

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FOREWORD

In April 1975 the Royal Commission on Corporate Concentration was appointed 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".

To gather informed opinion, the Commission invited briefs from interested persons and organizations and held hearings across Canada beginning in November 1975. In addition, the Commission organized a number of research projects relevant to its inquiry. One such project resulted in a series of studies, of which this is one, dealing with the growth of large and diversified corporations in Canada. The series was coordinated by Charles B. Loewen of Loewen, Ondaatje, McCutcheon & Co. Ltd., an investment firm in Toronto.

The report on the Canada Development Corporation that follows is one of 12 studies in this series. It was prepared by Dr. Michael R. Graham, who was associated with Wood Gundy Limited for over 13 years as Director of Research and latterly was Chairman of that firm's investment policy committee. He is now an associate of A.E. Ames & Co., for whom he is manager and coordinator of institutional sales.

The Commission is publishing this and other background studies in the public interest. However, the analyses presented and conclusions reached in each study are those of the author, and do not necessarily reflect the views of the Commission or its staff.

AUTHOR'S NOTE

I feel privileged to have been invited to undertake this study by the Royal Commission on Corporate Concentration -- even though the Canada Development Corporation proved a much more taxing and challenging proposition than I had realized. I shall follow CDC's progress with greatly enhanced understanding and interest as a result of the opportunity I have been accorded.

I have prepared this study with the utmost care. However, it has not been checked for accuracy and I cannot therefore guarantee its facts, statistics and calculations.

The opinions, estimates and conclusions are entirely my own. I am grateful to Messrs. Hampson and Morrison and the CDC staff for their willing assistance, but in no way did they put words in my mouth or attempt to influence my thinking.

Among the many who helped me I would especially like to single out my new employer, A.E. Ames & Co. Limited, for allowing me the time to undertake this study, William Wiltshire & Associates for his comments and input on the all-important aspect of Investor Relations, Richard Falconer and Charles Loewen for their invaluable comments and criticisms, and Bayze Panagopka for as willing and beautiful a job of typing as ever.

Michael R. Graham

Toronto, Canada
August, 1976

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INTRODUCTION

The Canada Development Corporation (CDC) was established by a special Act of Parliament in 1971 to give Canadians a wider opportunity to invest in their own country and to develop strong corporations that would be managed and controlled entirely by Canadians. To achieve these objectives, the CDC operates much like a profit-motivated holding company in the private sector. The government provided the initial capitalization, but already 32% of the voting stock is in the hands of the Canadian public and eventually 90% of all shares may be publicly owned.

By most normal criteria CDC is a concentration of corporate power. At latest year-end, it headed a group of some 60 operating companies, including major ventures in petrochemicals, mining and petroleum and, through holding companies, over 30 venture capital enterprises. Authorized share capital is in the $3 billion range, assuming the 200 million no par value common shares are worth the average $10.48 each paid by the Government of Canada for the shares issued so far. Consolidated capitalization, including long-term debt of subsidiary companies and minority interests in subsidiaries,has reached the $1 billion level. Consolidated assets total some $1.3 billion and consolidated revenues $484 million. If Texasgulf, over which CDC could be construed to have effective control, were added in full, total group assets and revenues approximate $2 billion and $900 million respectively. Therefore, it seems appropriate for reasons of magnitude alone to include CDC in the series of studies on large corporate groups and "conglomerates" being conducted by the Royal Commission on Corporate Concentration.

As a large industrial-type holding company, CDC is similar to Power Corporation, Noranda Mines, George Weston and others. At the same time, it is intended to be different from most other holding companies. For instance, it is uniquely, distinctly Canadian: its shares may be owned only by Canadian citizens and residents and the national interest is supposed to be very much part of its objectives and operating policies. To accomplish its objectives CDC had to be large from inception and, therefore the government of Canada knowingly created a "corporate concentration" after a difficult formative period in which the original concept was significantly refined. At present the federal government owns substantially all the outstanding CDC common shares; but a convertible preferred issue sold publicly last year gives Canadian investors a 32% vote in the affairs of the corporation, as well as a 36% potential ownership of the common stock.

CDC is run by an independent board of Canadian-only directors and management as if it were a corporation in the private sector. Profit is a overriding concern. Other attributes that are unusual in enterprises created and controlled by governments are: state ownership of equity is ultimately to be reduced to 10%; the board may decide the speed of share dispersal; and the federal government can, if it wishes, refrain from voting its shares in the election of directors in return for the right to nominate 4 directors to a 21-man board. As long as the government's holding exceeds 50% of the outstanding voting stock, two of its representatives are attached to the board ex officio; i.e., in a non-voting capacity. Until recently the government had repeatedly pledged noninterference in the affairs and operations of the corporation and had been content to cast its vote in favour of management at shareholder meetings. However, at the May 1976 annual general meeting the government indicated it would vote against the re-election to the board of Simon Reisman, who then withdrew and was replaced by a government nominee, Murray B. Koffler. Mr. Reisman, who had been associated with the corporation all along, first as an ex officio government representative and then as an elected board member, stated this was the first instance of government interference in the affairs of the CDC. At the same time, in a letter to the CDC directors, the Minister of Finance reaffirmed the government's stand that the directors were not to be subject to interference by the government in their investment and other decisions. The circumstances surrounding Mr. Reisman's departure were exceptional. Nevertheless, this incident serves as a reminder that the CDC is currently majority-owned by the state that created it, will always be its largest single shareholder, and is in a position to significantly influence its affairs whenever it desires.

A corporation that was forged in the heat of the great nationalism debate and "growing-up" processes of the 1960's, that was created and endowed by the state and that is, ipso facto, government-controlled is bound to be controversial. In particular, the early 1963-65 period has left a stigma not easily dispelled. In reporting the Reisman incident the *Toronto Star* in its headlines referred to the CDC as a "government agency", and as an "Ottawa agency", an example of how mistaken impressions linger on.

Any discussion of the CDC invariably stirs emotions and provokes criticism. There are those who maintain CDC has the power--or potential power--to compete unfairly with private industry, to obtain preferred positions in the capital markets, and to seek favours from its controlling shareholder when it needs to. Another concern is that the CDC has the potential of being a ready-made instrument of government control and power should a new party assume office in Ottawa (so far, CDC has existed only under a Liberal regime), or should political sentiments change.

A study of the CDC cannot and should not avoid discussion covering its controversial gestation period or potential abuses of power. By the same token, appreciation of how and why CDC came into being and the objectives it sees for itself is essential. At this stage, financial analysis of its progress must perforce be limited, the corporation having been in existence for only five years. For all these reasons this can hardly be a routine analytical study. At the same time to avoid too much digression or subjectivity, it will be prudent to adhere as closely as possible to the Royal Commission's own terms of reference:

- the nature and role of major concentrations of corporate power in Canada;
- the economic and social implications for the public interest of such concentrations;
- whether safeguards exist or may be required to protect the public interest in the presence of such concentrations.

Accordingly, throughout this study, I will try to address myself consciously and objectively to whether and how the CDC fits the Royal Commission's own overall guidelines.

1. EVOLUTION

The CDC is different from other corporations. It is large by most standards. It was state-conceived and -created, and while 32% of its voting stock is already in the hands of the Canadian public, and this proportion could rise to 36% if and when the bonus common shares attached to each convertible preferred are fully issued, effective control will remain with the federal government for many years in the future and the federal government will always be the corporation's largest single shareholder.

By 1971, when it was finally legislated into being, there was a sizable measure of public support for the CDC. By then the Walter Gordon legacy was gaining wider acceptance, economic nationalism was growing, the large and still rising degree of foreign ownership and control of the Canadian economy was causing widespread concern. Thus, the CDC, a potential hot potato for the previous eight years, came to meet a need in the public's eye. But, more than that, it was seen by its creators as a means of filling gaps that existed in Canada's equity capital structure -- in the ownership of existing key industries, in getting desirable industrial development going, and in providing risk capital for Canadian enterprises.

I, for one, feel the CDC had a legitimate right to exist. A goal of this study will be to establish how real a place CDC has carved for itself in modern-day Canada, five years later. It will be instructive, therefore, to begin by tracing the evolutionary process leading to the CDC's statutory incorporation and, in so doing, to point out that the CDC eventually legislated into being in 1971 was significantly different from the institution perceived in the 1950's and first presented to Parliament in 1963.

The origins of the CDC can be traced to the mid-1950's, in particular to the 1957 Report of the Royal Commission on Canada's Economic Prospects, chaired by Walter L. Gordon, rightly dubbed the "father figure" of the CDC. In its final report the Commission expressed concern over the extent to which the Canadian economy, especially its productive resources, had become owned and controlled by nonresidents (mostly Americans). Mr. Gordon's subsequent writings and speeches advocated a Canada Development Corporation that would be especially concerned with preempting foreign takeovers and acting as a Canadian buyer of last resort.

The Progressive Conservative regime of 1958-63 considered setting up an institution to encourage Canadians to invest their savings in Canadian-controlled ventures and took some tentative but inconclusive steps in this direction. Then the government changed and Walter Gordon was appointed Minister of Finance. His June 1963 budget, brought down in the Liberals' "90 days of decision", proposed several nationalistic measures, e.g., a 30%

takeover tax on the sale of Canadian corporations to foreigners; a reduced withholding tax for companies that were 25% or more Canadian owned; and a resolution to set up the Canada Development Corporation, the main objectives of which were to be furtherance of Canadian participation in the development of Canadian industry and the general further development of Canadian resources and industry. From the beginning, Mr. Gordon stipulated that his CDC would have the overriding objective of making a profit and would be required to satisfy the normal interests of its shareholders. But the "Canada for Canadians" overtones, with the CDC to play a role in protecting industry and corporations from foreign takeover, were unmistakeable, and the entire budget was greeted with considerable skepticism. In the resulting furor one cynic suggested that the takeover tax was the guillotine and the CDC the basket to catch the dismembered heads! There was understandable apprehension as to the precise role of the CDC. Was the corporation to be an instrument of genuine industrial development or of government policy in the rise of economic nationalism in Canada? How could profits be maximized if the CDC were to include a "last resort" role in its objectives? A stigma was attached to the CDC that probably still lingers to this day.

After being so dramatically tabled in Parliament, the CDC issue took a back seat in the years of minority Liberal government that followed, although measures were taken to deal with foreign ownership and control in selected areas of the economy -- banking, life insurance and the communications media. Nevertheless, quiet discussion and refinement of the CDC concept went on behind the scenes and by the late 1960's a consensus of opinion had begun emerging that the CDC could, after all, play a useful role as an instrument of industrial development. In particular, it was thought that such a corporation could fill gaps in the Canadian capital market for large-scale, Canadian-controlled development projects. In so doing the corporation would still be an instrument of economic nationalism, but in a creative rather than a punitive sense.

Thus, reclamation and preservation roles for the CDC were being played down in favour of a distinctive, independently operated, profit-motivated holding company playing a useful part in Canada's burgeoning economic development. Some problems remained: for example, could there be genuine assurance that the federal government would not interfere (especially when political pressures mounted), would there be conflicts between maximizing profits and "gap-filling" to build a strong Canadian presence; who should own CDC's shares and have the voting control initially and into the future, etc. But as a result of the switch in emphasis the climate of opinion concerning the CDC was changing for the better, both in the public's eye and in the government's intentions. There was emerging a milder CDC sitting more comfortably with the public, politicians, businessmen and investors alike.

In June, 1971, Edgar Benson, then Minister of Finance, unveiled a distinctive Special Act corporation. In Bill C-219, "An Act to establish the Canada Development Corporation", the CDC was described as:

> ...a corporation that will help develop and maintain strong Canadian controlled and managed corporations in the private sector of the economy and will give Canadians greater opportunities to invest and participate in the economic development of Canada.

Outlined was a vehicle for promoting industrial growth and development, filling gaps in Canada's equity capital structure, making available pools of capital for new ventures, and acting as a catalyst in the mobilization of large amounts of capital for major Canadian controlled projects. Emphasis was placed on the CDC role in building for the future rather than attempting to redress the past. The federal government was to subscribe for the first $250 million worth of equity capital in the new corporation and make provision to lend it up to $100 million. Ultimately, however, it was envisaged that the government's holding would be reduced to 10% of the voting stock. No other shareholder was to be permitted to own more than 3%, meaning that the state would always be the CDC's largest single shareholder.

Thereafter, both in the incorporating legislation and in the description of what was intended, the government appeared determined to see the CDC as an independently operated institution in the private sector as distinct from one that straddled the private and public sectors. The profit motive would be paramount, and the CDC would be free to do its own thing. If the government refrained from voting its shares in the election of directors, the legislation provided that it could appoint up to 4 directors on a 21-member board. Moreover, the deputy ministers of Finance and of Industry, Trade and Commerce would be attached to the board ex officio (i.e., without votes) as long as the government's holding exceeded 50% of the total voting shares outstanding. Although the aggregate amount the federal government would invest in CDC was to be limited, provision was made for the issue of further CDC shares to the government in exchange for its interests in four designated Crown corporations -- Polymer Corporation, Eldorado Nuclear, Panarctic Oils and Northern Transportation -- should they be sold to CDC. Furthermore, the Act empowered CDC's board to redeem government-held shares at their net asset value as long as the government's holding exceeded 10% of the total voting shares outstanding.

There was an obvious desire to create a "large" corporation. The CDC deemed necessary had to be large to achieve the objectives envisaged. Therefore, the federal government, supported by public opinion, knowingly created a peculiarly Canadian "corporate concentration" with nationalistic overtones, but in a more positive developmental sense than originally conceived. At the same time, the private sector bias, the clear direction to strive for profit, and the mechanism to hasten the reduction of proportionate state ownership (at CDC's discretion) marked CDC as an unusual, distinctive, government-controlled enterprise.

Remembering that these are still early days, I will try to establish and illustrate in subsequent sections how successfully CDC has fared in carrying out its mandate. Before doing so I feel it is important to stress how the original concept was refined into an institution that fitted more comfortably into an increasingly state-directed but still essentially free-enterprise economy whose citizens had come to want a more direct say in their own destiny. At the same time it is logical to question whether a "hands off", free-enterprise institution can provide Canadian citizens with a greater degree of <u>direct</u> control of the economy. If CDC is profit-oriented can it, in fact, be any different from other private corporations? Alternatively, if a supposedly profit-motivated organization strives to improve the national economy, is not one of the two masters, the common shareholder or the Canadian public, bound to be dissatisfied? Of course, if CDC were sufficiently widely owned this type of conflict might be reduced -- and very wide ownership by Canadians <u>is</u> one of its ultimate objectives. These are potential conflicts in logic that plague the CDC. I pose them here and will return to them in the concluding section to this study.

2. OBJECTIVES & OPERATING POLICIES

CDC was created by a special Act of Parliament. Because it is intended that 90% of its voting shares ultimately be held in the private sector, it is not a Crown corporation. Moreover, except for any changes in its objectives and capitalization, CDC does not require approval for its decisions by the Governor-in-Council; nor does it report to Parliament on its operations.

Within a carefully created statutory framework (large, directors and shareholders must be Canadian, operating squarely in the private sector, profit-motivated, federal government opting for a diminishing minority partner role, etc.), CDC's objectives and powers are set intentionally wide. According to Section 6.1. of the enabling legislation:

> "The objects of the company are:
>
> A. to assist in the creation or development of business, resources, properties and industries of Canada;
>
> B. to expand, widen and develop opportunities for Canadians to participate in the economic development of Canada through the applications of their skills and capital;
>
> C. to invest in the shares of securities of any corporation owning property or carrying on business related to the economic interests of Canada;
>
> D. to invest in ventures or enterprises, including the acquisition of property, likely to benefit Canada;
>
> and shall be carried out in anticipation of profit and in the interests of the shareholders as a whole."

In the subsection on policy considerations that follows, it is advocated that so far as it is "practical and profitable" to do so, the corporation should make substantial investments in shares with voting rights and that shareholders' equity of $1,000,000 (after involvement by CDC) should be the minimum size for companies it invests in.

The government has so far not elected to use its right to nominate four directors to the CDC board in lieu of voting its shares at shareholder meetings. However, while possessing first the total and still the dominant vote at these meetings, and with the exception of the Reisman affair, the government has gone out of its way not to interfere in the affairs of the corporation. As mentioned previously, as long as the government holds more than 50% of the outstanding voting stock of the corporation, the deputy ministers of Finance and of Industry, Trade and Commerce are attached to the Board as non-voting, ex officio members. Once the state's voting ownership falls below 50%, their attachment to the Board will cease unless the government decides to exercise its right to nominate directors to the Board instead of merely voting its shares in their election.

It was made clear to the directors upon their original appointment that the affairs of the CDC were to be managed in a timely, flexible, creative and independent manner. The only legal distinctions are that all directors must be Canadian citizens and that four-fifths of the directors can remove another director from office. The current board reflects a wide geographical and industrial diversification. Mr. A. John Ellis, Chairman of the Board, is a retired banker, but the corporation has consistently opposed the likes of lawyers, accountants, bankers and stockbrokers, feeling that their kinds of service are always available through normal market channels.

It is worth stressing that from the outset the CDC board, made up of Canadians with widely ranging geographical, industrial and commercial backgrounds, has been given a great deal of freedom to operate within broadly defined, profit-motivated, private-sector objectives.

Upon inception the CDC was temporarily headquartered in Ottawa. The Prime Minister expressed the hope it would locate in Vancouver and the head office is nominally in that city. However, the corporation's executive office and true headquarters is in Toronto. To reflect its national image, corporation policy is to hold the annual general meeting in different Canadian cities. To date these have ranged from Halifax to Vancouver.

Within broad incorporating legislation, CDC has summarized the objectives it sees for itself as follows:

- to develop and maintain strong, Canadian-controlled and-managed corporations in the private sector;
- to widen the investment opportunities open to Canadians;
- to operate profitably and in the best interest of <u>all</u> the shareholders (i.e., the federal government and public shareholders).

The last objective, in particular, might seem somewhat contradictory, but senior management, notably in the person of H. Anthony Hampson, president and chief executive officer, has been at pains to explain the corporation's underlying rationale in carrying out its mandate.

Management's paramount guideline is that CDC's actions relate to the economic interests of Canada, i.e., that projects or properties it invests in are likely to benefit Canada.

To play a gap-filling role in the Canadian economy, and to meet the objectives set out above, CDC has to be big in financial terms. However, the government has limited the extent of its investments and CDC will reach its optimum size only if it is successful in attracting the savings of Canadians to its treasury stock. This, in turn, will be facilitated if CDC can develop an investor following for its shares in the market place, the sooner the better. Therefore, CDC management has reasoned that to prove its commercial viability its limited financial resources must be concentrated, in the initial period especially.

In any case, management recognizes that it is not possible to deal effectively and profitably with investment projects varying widely as to size, industry and location. They feel it is doubly essential to avoid the pitfalls common to many governments and conglomerates, namely, of scattering resources too thinly and in too many directions so that investment effectiveness and control are lost. Thus, the CDC approach is to reinforce strength in selected areas and to identify unusual growth opportunities where unique Canadian competence can be developed or encouraged.

Within the above context, longer range development is seen as CDC's principal business. While needing to prove itself to investors as early as possible, the corporation is prepared to be patient, recognizing that the kind of opportunities it is seeking will sometimes exist because other investors are unwilling or unable to wait through years of earnings buildup. It sees its investments exclusively in equities, though not in the portfolio, proportionately small and non-controlling sense of a mutual fund. There is no reason for it to be a lending institution, with which Canada is very well provided.

In the spirit of its act of incorporation, and because it intends concentrating on enterprises which will be significant for Canada, including Canadian penetration of international markets, the average size of CDC's investments will be large. If successful, large investments will have a meaningful impact on CDC's overall results and therefore on its rating with investors. It follows that each investment must have above-average growth prospects to compensate for the size and risks involved which will normally be higher than those accepted by other financial institutions.

Industries selected for investment should have a profit growth potential of approximately twice the rate of growth in nominal gross national product, or in excess of 15% annually. Selected investments should also offer a long-run rate of return on equity in the range of 15%, which CDC defines as the rate of return earned on the average common shareholders' equity outstanding during a year.

The criteria of profit and reward for risk have been constantly stressed by CDC. While developmental projects do not provide an immediate optimum return, the overall return on a discounted cash flow basis must meet its criteria before there is any interest in participating in any given venture. The sound economic foundation that CDC itself is seeking cannot, it is pointed out, be built on losing enterprises, nor through propping up weak and declining entities.

Other CDC preferences are for projects involving an upgrading of resources, the possibility of rationalizing or restructuring to world-scale size either by CDC alone or together with other domestic and foreign investors (but only if control is held in Canada), a high technological base, and potential for building a Canadian-controlled presence in international markets if it is thereby possible to scale up operations to a larger and more efficient size.

The international aspect will, CDC management argues, encourage the emergence of superior managerial, technical and creative Canadian talents, provide job opportunities for skilled and creative Canadians and generally assist the country to achieve its full potential in an increasingly interdependent world. It is believed CDC can, without duplicating or preempting the activities of others, play a role in assembling Canadian strengths and competences, including areas where investment opportunities open to Canadians were formerly limited or nonexistent. In similar vein, management feels CDC can act as a catalyst in mobilizing the capital of investors of diverse nationalities to an extent that would not otherwise be possible.

In carrying out its objectives the CDC approach is to invest through "vehicle" companies, each with their own skilled staffs and specialized operating managements. Without the vehicle company approach CDC would require a large, unwieldy central staff to be involved in the day-to-day operations of its member companies. Instead, it prefers to assist with the basic strategies, goal-setting and longer-range business planning and development, and provides this assistance through membership on the boards and executive committees of its companies. To assist in its supportive advisory role, there are certain budget monitoring, reporting and control practices that CDC likes to see implemented. These help as well in ensuring that individual objectives are kept in tune with those of CDC for its investments. While the aim is to encourage lean, self-reliant, driving management groups at all levels, in the final instance CDC feels it must have the right to change member managements and directors felt to be weak or inadequate. Therefore, in compliance with its incorporating act, it generally requires effective control to protect and develop its investments.

Early in CDC's existence its board selected six broad industry areas for intensive study and probable investment:

- petroleum and natural gas;
- petrochemical and related industries;
- mining, smelting and refining;
- pipelines and related northern transportation;
- health care, including pharmaceuticals, medical equipment and other related manufactured products; and
- venture capital enterprises.

In arriving at this short list there had obviously to be some awareness of the publicized desires of the Minister of Finance and other government spokesmen accompanying the launching of the CDC. But the chosen areas could be arrived at logically as well. Petroleum, which features so importantly in Canada's overall economic picture, combined predominant foreign ownership with continuing strong growth and fitted well within the CDC terms of reference. It could not have escaped notice that the federal government had been obliged to take a 45% interest in Panarctic Oils, a northern petroleum exploration venture, because of a dearth of private sector interest and risk capital resources. Similarly, petrochemicals and the early investment in Polymer -- a downstream extension of the petroleum industry dominated by foreigners -- seemed a logical choice. The reason for investing in mining was less clear-cut. There were already a number of Canadian-controlled companies and a significant degree of Canadian ownership of the industry, though admittedly less than 50%. Consequently, there was less of a gap to fill in mining than in other industry areas. Pipelines and northern transporation were both distinctive and desirable selections in the Canadian context, though the latter would almost certainly have to involve political considerations as well (the freight rates that could be charged, the subsidization of services deemed necessary in the public interest, etc.). In health care, the few Canadian companies that had been set up had been taken over by foreigners. At the time there was much talk about the need for and provision of pure venture capital in Canada and real opportunities were felt to exist in a budding area. All in all, with the possible exception of mining, it seemed appropriate that CDC select areas like these, provided they met its other investment criteria. In public pronouncements, management certainly indicated an awareness of what was required in making its selections according to CDC's legislative mandate and the ground rules it had set for itself.

Each selected industry area was considered capable of meeting the 15% rate of return described earlier. The petrochemical, health care and venture capital industries were intentionally included because they were felt to offer unique

Canadian investment opportunities with their high value-added content per man, while at the same time having a beneficial indirect effect in creating incomes, employment and markets. The development of Canada's western provinces since 1950 is cited as a case in point. It was reasoned as well that burgeoning resource industries would create additional possibilities in the manufacturing sectors, where it was intended to concentrate on industries involved in upgrading resources or with a high technological base and good export potential. For mining, in particular, the smelting and refining that could be added was a definite plus. The sought-after international exposure was felt to be available in mining, pipelines, petrochemicals and health care. The CDC emphasis on large, longer-range developments fitted well with the substantial equity capital requirements of projects that were contemplated, such as a natural gas pipeline from the north or a naphtha cracker plant to give Canada a world-scale dimension in petrochemicals. CDC could hardly initiate or control projects such as these but it could be a necessary lead investor in them. As mentioned, health care was looked upon as an example of an investment opportunity not available to Canadians while foreigners in the field were flourishing.

It would seem, therefore, that CDC management selected its industry preferences shrewdly. The subsequent investments in these industries are summarized in Table 1 (opposite).

The table read in conjunction with its footnotes is relatively straightforward, with the exception of the column headed "Carrying Value". The figures in this column basically reflect the initial capital outlay adjusted by the cumulative retained earnings that belong to CDC. It is perfectly normal to adjust the equity invested in wholly- or majority-owned subsidiaries in this fashion; but where equity ownership is less than 50%, effective control determines whether the adjustment is acceptable. If the investment represents the largest single shareholding -- and therefore effective control -- the Canadian Institute of Chartered Accountants requires the use of the "equity method" of accounting whereby the proportionate share of earnings is shown in the parent's income statement. To balance, it follows that these earnings, less dividends received, must be added to the value at which the investment is held in the parent's balance sheet. In CDC's case the equity method applies to the major investment in Texasgulf and the smaller venture capital investments. At the end of 1975 the investment in Texasgulf was worth $263 million at quoted market value and at time of writing the market value is $320 million. These amounts compare with a $271.2 million book cost and a $324.2 million carrying value. An effective controlling interest in a world mining group of Texasgulf's stature would almost certainly be worth considerably more than its quoted stock exchange value if it became available for sale. I do not feel the Texasgulf investment is inflated in CDC's financial statements, even though it is recorded as accounting requirements dictate.

Table 1

SUMMARY OF CDC INVESTMENTS

Industry & Company	Year Acquired	% Equity Ownership	Outlay by CDC ($ Millions)	Carrying Value end 1975[1] ($ Millions)
Petrochemicals				
Polysar[2]	1972	100.0	72.0	96.2[3]
Petrosar	1975	20.0	9.9[4]	9.9
Mining				
Texasgulf	1973	30.2	271.2	324.2
Health Care				
Connlab Holdings[5]	1973	100.0	35.5	32.5
Pipelines				
Canadian Arctic Gas Pipeline	1972	3.9	3.8	3.8
Venture Capital				
Venturetek International	1972	32.0	4.7	6.4
Innocan Investments	1973	40.0	3.7	3.6
Ventures West Capital	1973	49.0	2.2	2.2
Oil & Gas[6]				
CDC Oil & Gas	1975	100.0	110.8	110.8
			513.8	589.6
Other (Cash and Short-term investment)			109.8	109.8
			623.6	699.4

1 - Outlay by CDC plus (or minus) the cumulative annual retained earnings belonging to CDC by virtue of its investments.

2 - Polysar owns 40% interest in Petrosar for a combined 60% ownership of Petrosar by Polysar and CDC; Petrosar is therefore consolidated in CDC's financial statements.

3 - No adjustment made for $51.0 million of negative goodwill; i.e. the excess of the book value of the net assets purchased over the price paid.

4 - Including $3.9 million added in January, 1976 as part of a $25 million commitment.

5 - Holding company formed to consolidate Connaught Laboratories and other health care purchases.

6 - Acquired December 31, 1975, renamed CDC Oil & Gas, total CDC equity interests average 60% of oil & gas producing properties formerly owned by Tenneco Inc. in Canada.

Source: CDC Annual Reports 1972-1975; New Issue Prospectus, September 2, 1975; Polysar Ltd. Offering Circular, December 17, 1975.

As the table shows, the major investments to date have been made in petrochemicals, mining and, most recently, oil and gas. These particular investments certainly seem large enough to make a meaningful overall impact on CDC. Polysar (formerly Polymer), one of the four Crown corporations mentioned in CDC's act of incorporation, was purchased for $62 million worth of shares payable immediately and $10 million on an "if-earned" basis later, which was subsequently paid. In addition, CDC is committed to invest heavily, both directly and through Polysar, in the large-scale Petrosar development near Sarnia. Of the remaining Crown corporations CDC would have liked the federal government's 45% interest in Panarctic Oils, but with ensuing energy developments the federal government preferred to earmark this holding for a new national oil corporation and eventually it was turned over to Petro-Canada. As for Northern Transportation, CDC eventually decided against it because of the noneconomic policy considerations in its type of operation. Finally, Eldorado Nuclear was considered undesirable in view of the uncertain economics of uranium at the time. (An Eldorado executive sits on the CDC board but, according to CDC management, this is a coincidence). It is my understanding and belief that the federal government played no role in any of these decisions by CDC.

The investments in health care and venture capital give the desired effective control of the companies concerned, though in the latter industry CDC has consciously taken a "wholesale" rather than a "retail" approach because its incorporating legislation directs it away from companies having equity of less than $1 million and because it believes this type of investment is best made and monitored by small specialist and flexible management teams on the spot.

Comparison of the initial outlays by CDC and the latest carrying values gives an idea of the success of the various investments to date. Retained earnings have added to the equity owned by CDC in Polysar, Texasgulf and Venturetek. On the other hand, the investments in Connlab Holdings and Innocan Investments have suffered a net equity diminution.

The CDC objectives and operating policies might sound somewhat idealistic. There is no denying they are ambitious. Time will provide the truest test of the industries and attendant companies selected for investment. Nonetheless, this report will attempt to evaluate the investment worth of CDC's major investments. Considering the background to its formation, as well as its distinctive incorporating legislation, it is obvious that considerable thought and logic has gone into the formulation of CDC's investments and operating policies thus far. Already they single CDC out as a distinctive industrial holding company, if nothing more. Moreover, in four short years CDC has "filled in" the investment objectives it set for itself to a truly noteworthy extent.

Where does CDC stand today in the specific carrying out of its mandate to "help develop and maintain strong Canadian-controlled and -managed corporations in the private sector" and to "give Canadians greater opportunities to invest and participate in the economic development of Canada"? Are its policies and objectives standing the test? Is CDC bringing to its member companies benefits they could not otherwise have achieved themselves, i.e. financial support, advantage through association, assistance with budget preparation and control, problem solving? These will be the subjects of investigation in the sections of the study to follow.

3. CURRENT PERSPECTIVE

The busy four years of acquisition by CDC since incorporation in late 1971 were summarized in Table 1, from which an idea was also obtained of the relative magnitude and importance of the investments made to date. The purpose of Table 2 below is to bring this importance into further focus by showing the returns to CDC in terms of net income and dividends. In addition the table is intended to give an idea of the return being earned on total income, as well as on the equity value at which the investments are currently carried by CDC. An estimated *pro forma* adjustment is made to latest income and dividend contribution figures for CDC Oil & Gas which was acquired on December 31, 1975.

Table 2

CDC INVESTMENTS IN RELATIVE PERSPECTIVE
($ Millions)

	Revenue in 1975	Carrying Value[1]	Net Income Contribution 1975	Net Income Contribution 1974	Dividend 1975	Contribution 1974
Texasgulf	461.7	324.2	27.6[2]	40.4[2]	9.4[3]	7.5[3]
Polysar/Petrosar	392.1	106.1	(1.3)	18.1	1.2	2.5
Connlab Holdings	83.8	32.5	(2.0)	(0.3)	-	-
Venture Capital	73.5	12.2	0.8	1.1	-	-
Canadian Arctic Gas	-	3.8	-	-	-	-
CDC[4]	7.4	109.8	0.9	(0.4)	-	-
	1,018.5	588.6	26.0	58.9	10.6	10.0
CDC Oil & Gas[5]	N/A	110.8	7.0E	N/A	2.0E	N/A
	$	699.4	33.0	58.9	12.6	10.0

1 - As per Table 1, and the explanation of "Carrying Value" on p. 14.

2 - Texasgulf cost of acquisition exceeded underlying book value of the shares purchased by $143 million, which excess is being amortized on a straight line basis. The net income contributions shown are after a $3.57 million annual amortization charge.

3 - Estimated after 15% withholding tax and conversion to Canadian currency.

4 - Short-term investments and income thereon, in total and net after expenses.

5 - Acquired December 31, 1975; net income and dividends for 1975 estimated (E) and shown *pro forma*.

Source: CDC Annual Report 1975

The figures in Table 2 reveal a number of factors about the investments made to date and CDC's overall financial position:

- the preponderant importance of Texasgulf, Polysar/Petrosar and CDC Oil & Gas, the chosen vehicle companies in mining, petrochemicals and petroleum, the three selected industries where CDC has "filled in" heavily to date;
- the cyclical, volatile nature of the investments in mining and petrochemicals, i.e., in Texasgulf and Polysar/Petrosar;
- the dependence on Texasgulf as a base for net income and, vitally, as a source of dividend income and cash flow to CDC;
- returns on the investments in Texasgulf and Polysar/Petrosar, which met CDC return on investment and profit growth criteria in 1974 but fell woefully short in 1975;
- the losses, worsening in the latest year, and total lack of return on the relatively heavy investment in Connlab Holdings, these despite a substantial revenue stream from the group of companies in health care;
- the relatively small and embryonic nature of the investments in the venture capital enterprises and the Canadian Arctic Gas consortium; and
- the significant dimension and likely measure of stability that CDC Oil & Gas will add to net income, even if this investment will take some years to produce an income return sufficient to meet CDC's 15% criterion. (In this instance the cash flow return could be a fairer criterion -- refer to the section Major Investments -- CDC Oil & Gas, p.62).

It is clear from the analysis that mining, petrochemicals and oil and gas have most impact on CDC's future picture. Accordingly, the merits of the chosen vehicles in these respective industries will be discussed and weighed at length in the next section.

CAPITAL STRUCTURE

Table 3 shows the heavy weighting of the Polysar/Petrosar petrochemicals complex in the consolidated CDC capital structure.

At year-end 1975, adjusted for the Polysar debt issue of January, 1976, CDC had some $370 million worth of consolidated short- and long-term debt poised on $700 million worth of consolidated book equity. A 1-to-2 debt-to-equity ratio indicates a significant degree of leverage. The middle column illustrates the extent to which the debt, and consequently the leverage, in the CDC capital structure is attributable to Polysar/Petrosar.

TABLE 3

CDC - CONSOLIDATED CAPITAL STRUCTURE
(as at December 31, 1975)

	Consolidated[2]	Polysar/ Petrosar	Remainder
	($ Millions)		
Short-term loans	95.2	52.9	42.3
Long-term debt	280.4[3]	265.8[3]	14.6
Minority interest in subsidiaries	73.2[4]	0.6	72.6
Shareholders' capital			
- preferred	100.0	50.0[4]	50.0
- convertible preferred	142.5	-	142.5
- common	322.0	30.0	292.0
- retained earnings	91.7	117.8	(26.1)
- excess Polysar book value over cost at date of acquisition	51.6	-	51.6
	607.8	147.8	460.0
TOTAL	1,156.6	517.1	639.5

1 - 10,000,000 5-3/4% cum. red. non-voting Class A, p.v. $10
1,425,340 8% cum. red. conv. voting Class B, p.v. $100
Redeemable:
- at shareholders' option, from October 2, 1980 to December 31, 1980, October 2, 1985 to October 1, 1986
- at corporation's option, from October 1, 1980 at $105, reducing $1 per share annually to October 2, 1985, after which at $100

Convertible
- into 10 common shares at any time

Bonus common shares
- right to 2 bonus shares
- 1 each payable to holders of record on October 1, 1980 and 1985, or upon prior conversion
- the first bonus share must be issued; the right to a second bonus share will be extinguished on shares redeemed before October 1, 1985 or the fixing of the record date for the issuance of these shares.

30,712,038 common n.p.v. (all but 48 shares currently held by the federal government)

2 - Polysar wholly owned by CDC. Petrosar 40%-owned by Polysar and 20%-owned by CDC; hence, consolidated in CDC financial statements.

3 - U.S. $30 million Polysar long-term debt issue of January, 1976 added to year-end figures; no adjustment made for conversion to Canadian currency.

4 - Polysar preferred shares owned by outsiders and therefore shown under minority interest in CDC consolidated statements.

Sources: CDC Annual Report 1975; Polysar Annual Report 1975

On an unconsolidated basis, as shown in the column headed "Remainder", CDC itself has relatively little short-term debt. In fact, CDC is understood to have no outstanding bank loans, so that the loan of approximately $110 million to finance the purchase of the 30.2% interest in Texasgulf (refer to the next section) must have been successfully repaid. Since the column shows $14.6 million in long-term debt, and wholly owned Connlab Holdings owed some $15 million in long-term debt at the end of 1975, it can be assumed that CDC itself has no long-term debt outstanding.

CDC is primarily an equity investor, and under Canadian law dividends paid to one Canadian corporation by another are tax free in the recipient's hands. Consequently, there will not ordinarily be much non-dividend income for CDC to write borrowing costs off against and thus its tax status effectively limits it from doing much borrowing -- and leveraging -- itself. Double leveraging in the CDC group is thus effectively precluded, it being necessary for subsidiaries like Polysar/Petrosar and Connlab to borrow directly themselves rather than through their parent. CDC can, of course, guarantee subsidiary debt and has been obliged to do so in the case of Polysar/Petrosar. (Refer to the section on Major Investments, page 43).

Polysar, a wholly owned and fully consolidated subsidiary of CDC, originally held a 60% interest in Petrosar, a developing worldscale petrochemical feedstocks supplier which in turn was consolidated in Polysar's financial statements. Last year, agreements between Petrosar shareholders were modified in order to permit a direct investment by CDC in Petrosar in return for a 20% interest, the Polysar portion then decreasing to 40%. The wisdom of this move, which meant that Polysar need no longer consolidate Petrosar, will become apparent when Polysar/Petrosar is assessed. Nevertheless, this intergroup switch of an investment still requires Petrosar to be consolidated in the CDC financial statements. The significant degree of leverage which Polysar/Petrosar imposes on their parent is worth emphasizing at this stage because the results for CDC's own shareholders are magnified either up (e.g., in 1974) or down (e.g., in 1975).

SHARE OWNERSHIP

At present, all but 48 of the 30.7 million of outstanding CDC common shares are owned by the federal government. However, late in 1975 CDC issued 1,425,340 Class B convertible preferred shares of $100 par value to the Canadian investing public, each share carrying ten votes, being convertible into ten common shares and eligible to receive two bonus shares by set dates or upon prior conversion. This class of share, the details of which are summarized in the lower section of Table 3, already gives the general public a considerable voice in the corporation, i.e., 14.3 million out of 45 million votes, or 32% of the total shareholder vote. It also gives the public a significant potential common share ownership of CDC, as the following summarized calculations show.

Table 4

CDC-- POTENTIAL COMMON SHARE OWNERSHIP
(Millions of shares)

Holder/Events	Federal Government No.	Federal Government %	General Public No.	General Public %	Total No.	Total %
At present	30.7	100	-	-	30.7	100
Upon issue of bonus shares						
- 1st share (must be issued)	30.7	96	1.4	4	32.1	100
- 2nd share (subject to redemptions)	30.7	92	2.8	8	33.5	100
Upon full conversion of Class B preferred	30.7	68	14.3	32	45.0	100
Upon full conversion and issue of						
- 1st bonus share	30.7	66	15.7	34	46.4	100
- 2nd bonus share	30.7	64	17.1	36	47.8	100

Source: CDC Annual Report 1975; CDC New Issue Prospectus, September 2, 1975

Assuming the full conversion of the Class B preferred and the eventual issuance of both bonus common shares, there is thus currently in place a potential 36% public ownership of CDC common.

Another issue on the same terms as last year's Class B issue and before the issuance of the first bonus share would bring the investing public's vote in CDC to 48%. Another identical issue and the issuance of the first bonus share, which has to be issued, would bring it to just below 50%. Two further issues aggregating slightly more than the $142.5 million issue of 1975, and on similar terms, would reduce the federal government's vote in CDC to below 50%, at which point the government's ex officio representation on the board would cease -- though not the right to appoint four full directors in lieu of voting its shares at shareholder meetings in the election of directors. When the government ownership falls below 50% the public shareholders can, perhaps more than theoretically, assume a majority voice at annual and special general meetings. Conceivably, too, this "cross-over" point can be reached within the next three or four years.

The extent to which CDC can hope to make further share issues, and the resulting rise in ownership by the public, will be weighed in the concluding section of the study. If the convertible preferred route is repeated in future issues, management and existing shareholders would obviously hope for a progressively dearer conversion option as CDC gains increasing recognition in the securities markets. This and the practical limitations of the market place notwithstanding, an idea is obtained from Table 4 as to the rapidity with which potential public ownership could build up -- and state ownership be reduced -- through public issues along the lines of that in 1975. This process would be speeded up by CDC making acquisitions through share exchanges, as well as by involving its option to redeem government-held shares at book value, calculated at $15.16 per share at latest year-end.

If the federal government's holding in CDC remains at 30.7 million shares and the desired 90% public ownership is achieved through treasury issues and acquisitions through share exchanges CDC will ultimately have 307 million common shares outstanding! This would require a request to parliament, CDC's present capital authorization being 200 million common shares. If up to the full 200 million shares were to be issued in the manner outlined, a 30.7-million-share government holding would reduce to 15.3%, and ownership by the investing public to 84.7%. At best, it will be many years before CDC reaches this first threshold anyway. Moreover, a 200-million-share base would also be inordinately large, even allowing for the growth of the corporate sector over a 10-to-20-year time span. By comparison the following are examples of the current outstanding share bases of leading Canadian corporations: Imperial Oil, 130.2 million shares (82% foreign owned); INCO, 70.5 million shares (now slightly more than 50% Canadian-owned); Canadian Pacific, 71.7 million shares; Bell Canada, 39.8 million shares rising to 48.5 million if all convertible and warrant features are exercised; Royal Bank of Canada, 36.1 million shares; Stelco, 24.6 million shares; Noranda Mines, 23.1 million shares.

Thus, to achieve an 85% public ownership via the new issue route, CDC's share capital base and liquidity (i.e., availability of its shares) in the market place would have to become huge by comparison with leading Canadian companies, even though its dollar market capitalization would be more in line with theirs. The desired 90% public ownership would magnify still further the distortion in terms of the number of shares issued. Therefore, the option to redeem government-held shares may have to be invoked at some point, or else the 90% public ownership goal will have to be dismissed as impractical. Of course it would be easier to justify redemption of government-held shares if there were a public market in CDC's common shares in which they were priced above their book value.

COMMON DIVIDENDS

The feasibility of additional public share issues by CDC will be considered in the concluding section of this study. However, it is obvious that to grow successfully and achieve a substantial degree of public ownership CDC will need to sell further large blocks of treasury stock to the Canadian investing public. This task will be facilitated by the emergence of a successful market in CDC's common shares which, in turn, will only become a reality when it is advantageous for the Class B shareholders to convert their preferred shares into common.

Class B shareholders receive $8 of cumulative, (second) preferred dividends annually on a share convertible into 10 shares of common. Ordinarily, the common dividend, nonexistent at present, would thus have to rise through $0.80 per share to induce Class B shareholders to convert their holdings. However, the fact that the two bonus common shares are issued immediately upon prior conversion could soften this common share dividend requirement somewhat. For example, conversion with the common dividend at $0.70 a share would bring dividends of $8.40 versus $8.00 on the Class B, and the first bonus share likely not issuable until the required date of October, 1980. Clearly, the decision to convert will be a function of the dividend rate established on the common, as well as the time factor set against the first bonus share date in particular.

Table 5

CDC -- EARNINGS AVAILABLE FOR DIVIDENDS
($ Millions)

	1975
Dividend and other investment income received	
- dividends from Texasgulf	9.4
- dividends from Polysar	1.2
- interest and other	7.8
	18.4
Adjustment for CDC Oil & Gas	2.0
	20.4
Operating expenses and taxes	(3.3)
Class A preferred dividends	(5.8)
Net available for dividends on Class B and common	11.3
Class B dividends-- full year basis	11.2
Coverage of Class B dividend	1.0x
No. of common shares upon full conversion and issue of bonus shares-- 47.8 million	
Earnings available for common dividends on fully diluted basis	0.26

Source: CDC 1975 Annual Report including Unconsolidated Review, p. 23.

Table 5 assesses CDC's ability to pay common dividends based upon its net unconsolidated income in 1975, adjusted to include CDC Oil & Gas acquired on the last day of the year. (Because CDC Oil & Gas is a growing petroleum company, its payout is estimated at one-third of estimated earnings.)

The calculation of dividend coverage calculated in this table is undoubtedly very conservative. Texasgulf and Polysar should both do materially better in 1976, when CDC Oil & Gas will be included for a full year in which its earnings should grow well. In addition, there will be a return on last year's issue proceeds and other resources available for investment after spending $110.8 million on CDC Oil & Gas. On the other hand, Texasgulf's dividend payments were raised by 22% in 1975, a year in which its earnings declined by 30% (but its payout remained at a relatively low 36%). Polysar's dividends might be inhibited as a result of its equity commitments to Petrosar and, because they are growth companies, the bulk of earnings by each CDC member company is likely to be ploughed back into further expansion. Thus, even allowing for the severity of a calculation based on adjusted 1975 results, the fact remains that the coverage of the Class B dividend is thin. Similarly, the earnings available for common dividends have a long way to grow before approaching the "ball park" where conversion to common would become a feasible proposition. The fact that holders have the right to redeem their shares in the last quarter of 1980 adds urgency to the time frame in which CDC must achieve a meaningful level of dividends on its common shares.

GENERAL

The decision by CDC to concentrate on existing holdings in 1976 before contemplating further acquisitions becomes understandable from this broad analysis of its current position. On 1975 figures the returns on its acquisitions are inadequate, its capital structure is significantly leveraged and heavily influenced by the volatile Polysar and capital-hungry Petrosar, and the coverage of the dividends to its Class B (public) shareholders is thin. The payment of dividends on its common shares will be instrumental in determining whether and when the Class B shares are converted, and also promises to be a material factor in deciding holders on whether or not to exercise their redemption options, the first of which comes up in 1980. Common dividends made possible by the success of its investments will be vital in developing a proper market in CDC's shares, thereby facilitating its large future fund-raising and ownership tasks.

Examination of the major investments, the purpose of the next section of this study, will be important in assessing CDC's chances of meeting the dividend-paying objectives on its common shares-- thereby facilitating its broader capital-raising, investment-creating and Canadian ownership goals.

4. MAJOR INVESTMENTS

As Table 6 below shows, three investments -- Texasgulf, Polysar/Petrosar and CDC Oil & Gas -- feature dominantly in the current CDC picture and, therefore, also heavily in its future.

Table 6

CDC--MAJOR INVESTMENTS
($ Millions)

	Latest Carrying Cost[1]		Contribution[1] 1975	Contribution[1] 1974
Texasgulf	324.2	46%	27.6	40.4
Polysar/Petrosar	106.1	15	(1.3)	18.1
	430.3	61	26.3	58.5
CDC Oil & Gas	110.8	16	7.0[2]	-
	541.1	77%	33.3	58.5
Total CDC	699.4	100%	33.0	58.9

1 - As per Table 2, p. 19.

2 - Estimated and similar *pro forma* addition made to total 1975 income contributions.

Source: CDC Annual Report 1975

In this section these major investments will each be examined in detail. In each examination there will be two ultimate questions in mind:

- Can the investment meet CDC's objectives, including the prospect of both a high long-term growth rate and superior profit potential?
- Can CDC contribute to each company something it could not otherwise have obtained for itself and in so doing further the CDC's own mandate?

TEXASGULF INCORPORATED

CDC Investment

Acquired	-	October, 1973
Interest	-	30.2%
Cost	-	$271.2 million cash, averaging $29.29 per share
Carrying Value	-	$324.2 million (refer to Table 1, footnote 1, p. 15 and further explanation on p. 16.)

Consolidated Capitalization
(Dec. 31, 1975)

	($ Millions)
Long-term debt	228
Deferred income taxes	179
Common equity*	628
Total capitalization	1,035

Earnings/Dividend Record
(per share)

Year	Earnings	Dividends
1972	$0.99	$0.60
1973	2.43	0.64
1974	4.83	0.98
1975	3.37	1.20
1976E	3.75	
1977E	4.50	

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* - 30,672,863 common shares outstanding, of which CDC owns 9,259,720.

TEXASGULF INCORPORATED

Acquisition of effective control of this world mining entity with its very large Canadian content represented a bold use of CDC's mandate and was a real coup. There is no doubt CDC means much more to Polysar/Petrosar than it does to Texasgulf. How much real clout CDC wields in the affairs of Texasgulf, how effective its 30% interest really is in the control sense, and what the attitude of TXG management would be if CDC attempted to acquire a further 20% for majority control are open questions. Nevertheless, Texasgulf represents an outstanding investment by CDC and there are useful and mutual benefits of association for both companies.

THE COMPANY

Texasgulf (TXG) is a U.S. international, mining-natural resource concern. It was founded under the laws of Texas as the Gulf Sulphur Company in 1909 to undertake exploratory drilling on a prospective sulphur site in that state. The name was changed to Texas Gulf Sulphur Company in 1918. By 1926, TXG had become the world's largest sulphur producer. Shortly before World War II it began investigating the removal of sulphur from sour natural gas and its efforts led eventually to the discovery of a viable extraction technique and the establishment of sour gas sulphur recovery plants in Wyoming and Alberta -- its first investment in Canada.

Attempts at diversification began in 1952, with initial emphasis on oil and gas exploration. Mining exploration activities led to the discovery of extensive phosphate deposits in North Carolina in the late 1950's. A precipitous drop in sulphur prices, and consequently in TXG's earnings and dividends, gave fresh impetus to the drive for diversification and in 1964 came the sought after breakthrough, the discovery of a massive ore body, rich in zinc, copper and silver, on the site of an abandoned mine at Kidd Township near Timmins, Ontario.

This sensational discovery, with preliminary ore reserves estimated at 55 million tons, led to a succession of lawsuits against TXG: by Leitch Gold Mines, contesting the ownership of the ore body; by the U.S. Securities Exchange Commission charging insider trading violations; and by former TXG shareholders. The ownership issue was resolved in TXG's favour in 1968, but it was not until 1971-72 that most of the other suits were finally settled. Undeterred by the legal threats TXG pressed ahead with its plans. A Metals Division was established to begin operations at Timmins. Land purchases in the area were consolidated. The development of a new open pit mine, the Kidd Creek Mine, began. Kidd Creek was to become not only one of the richest mines discovered in Canada but also one of the free world's largest producers of zinc and silver.

The desired production level was reached at Kidd Creek early in 1967, at which point the mine was transferred to TXG's wholly owned subsidiary, Ecstall Mining Ltd., now called Texasgulf Canada Ltd. This property was to make an immediate and profound contribution to its parent's income statement. By 1968, TXG sales had doubled and its net income more than doubled. By the early 1970's metal sales had risen to over half of total sales, over 40% of TXG's assets were held in Canada, and between two-thirds and three-quarters of operating income was being derived in Canada; this proportion reached a peak four-fifths in 1973. Softening product prices saw profits falling away after 1968, but this did not deter TXG from launching into an ambitious multi-year capital expansion and diversification program.

In 1969, it was decided to construct an on-site electrolytic zinc plant to handle about half the zinc concentrates produced at Kidd Creek. This $70 million plant reached the production stage in 1972 and full production in 1973. For an additional $5 million it was further modified to expand its output by 25%, completed in 1974. In addition to slab zinc metal, the plant produces sulphuric acid, cadmium, tin, copper and silver-rich residues. The plant has led to very significant cost savings from the previous custom refining, and all in all is yielding an attractive return on the investment in it.

After the initial bad experience not much was said publicly about the reserves at Kidd Creek Mine. In late 1970, it was noted they were sufficient to support a mining operation at the then rate of 3.6 million tons per annum for at least 25 years. That meant total reserves in excess of 90 million tons, a figure confirmed by a revised estimated 95 million tons in 1973. But there were many who believed that such was the extent of the ore body that the true figure ran considerably higher than that.

The year 1972, when CDC began to investigate a way into mining, marked the next big step forward in TXG's expansion program -- at the Kidd Creek mine, in oil and gas ventures off the Louisiana coast, in chemicals and fertilizers in the U.S., and in iron projects in which it had become involved in western Australia.

At Kidd Creek, drilling results had established that the ore body continued well below the 4,000-foot level, and it was decided to convert from an open pit to an underground mine, this to be gradually accomplished over a period of years. In the company's latest annual report it is stated that the ore body is now known to extend to the 5,000-foot level, but its ultimate depth and dimension are still unknown. Conversion has progressed to the point where in 1976 the roles of the open pit and the underground mines will be reversed, with the underground mine supplying the majority of the ore and mining in the open pit scheduled for completion at the end of the year. A second shaft is being sunk at the deep-level mine.

Also at Kidd Creek, feasibility studies were undertaken in 1972 on the building of an on-site refinery to handle the mine's copper and lead concentrates. Just as conversion to an underground mine would lengthen the mine's life, improve operational flexibility and lead to the likelihood of higher ore grades, so a refinery would substantially reduce smelting costs and lead to better overall metal recoveries. (At that time copper concentrates were toll refined by Noranda, i.e. for a fee, and lead-silver concentrates were shipped to the U.S. for processing.) There seemed worthwhile potential advantages in becoming fully integrated in this manner.

In 1973, when CDC made its tender offer, product prices were improving and the new electrolytic zinc plant at Kidd Creek had begun contributing to net income, which recovered to the 1968 level. In 1974, the positive trend in prices -- especially for zinc and copper on which TXG's earnings were heavily levered -- continued to have an accentuating effect. This year also saw the benefits of the further expansion of the Kidd Creek zinc plant, as well as expansion of phosphate and potash operations in the U.S. and the increasing fruition of the Australian projects. Sales grew strongly, while net income doubled over the previous peaks.

The downward effects of world recession on sales and net income became evident in 1975. Nevertheless, it still ranked as the second best year ever, and it saw the further strengthening of the company's overall base and the broadening of its horizons, as illustrated by the disclosed breakdown of operating income in the past three years:

	1975	1974	1973
United States	40%	34%	19%
Canada	57	65	81
Other	3	1	-
	100%	100%	100%

In the same year, a four-year, $100 million program to expand mine production at Kidd Creek from 3.6 to 5.0 million tons annually was commenced, this program to include the sinking of a second underground shaft and the addition of a fourth circuit to the concentrator. In addition, engineering and design work was begun on a $360 million copper smelter and refinery, scheduled for completion in 1978. However, in the summer of 1976, it was announced that the new refinery would be built in two units, construction of the first unit proceeding immediately for completion in 1979. In the Chemicals Division a large-scale new investment was undertaken in a soda ash mine in Wyoming, and there were other completions, expansion and purchases in phosphates, limestone, Frasch sulphur and acid. Worldwide exploration activities were stepped up, with an emphasis on oil and gas in the U.S. and Canada.

In late 1973, the company's name was changed from Texas Gulf Sulphur to Texasgulf Incorporated, the latest name change being considered better descriptive of an international group whose principal interests had expanded to include:

- base metal mining, smelting and refining in Canada;
- the production of sulphur, agricultural and industrial chemicals in the United States, Canada and Mexico;
- expanding stakes in natural gas in offshore Louisiana and iron ore in Australia; and
- the maintenance of a worldwide exploration program for oil and gas and minerals.

In the course of its long history Texasgulf has grown into one of the largest, most aggressive and diversified mining-natural resource entities in the world. The transition from a sulphur producer to a multiproduct, multinational firm within a decade is impressive. The Kidd Creek Mine remains the gem among TXG's diversified holdings, and this mine has still to achieve its full potential. It was TXG, with its lucrative operations in Canada, that CDC chose as its springboard into mining!

TENDER OFFER

In retrospect, TXG with so heavy a Canadian content, but curiously with only one Canadian on its board of directors, was a logical takeover candidate for CDC once mining had been identified as one of its prime industry areas. In fact, TXG fitted most CDC criteria admirably in terms of its growth potential, high profit growth and return on equity, ownership of a large-scale mine in Canada including smelting and refining facilities, and its international operations. However, CDC only decided upon TXG after lengthy examination.

CDC began looking for a way to enter mining in the spring of 1972. At that point it chose to enter the field by investing in an existing company, because of the expense of undertaking a mining operation from scratch. A list of 20 to 30 mining companies was drawn up, of which TXG was one. This list was eventually boiled down to four companies in the $50 to $60 million range, meaning the exclusion of TXG. However, by the fall of 1972 three of the four had been discarded and were being replaced on CDC's shopping list by companies requiring considerably more investment than originally contemplated. TXG was one of these companies.

By March 1973 there were two companies left, TXG and one other. In the case of TXG it was felt that an approximate 35% interest would be manageable financially and large enough to ensure effective control. CDC began buying TXG in "street name", rationalizing its purchases as a worthwhile investment whether or not it gained effective control. In addition, Noranda Mines agreed to purchase the stock for CDC pending a final decision by CDC and also by Noranda as to whether it would participate in the venture. The decision to seek Noranda's assistance is interesting in itself and probably reflects CDC's apprehension about the magnitude of its task, considering its lack of expertise in mining and the likely negative reaction of the TXG management which might result in resignations that would leave gaps in operating management. CDC also thought a joint company to own the Texasgulf holding might make sense. The Canadian share ownership of TXG at the time was estimated at 20%, including a block of 2% to 2.5% held by Noranda.

Noranda took several months to reach a decision, buying 748,800 shares or 2.5% of TXG's outstanding stock for CDC in the process through a numbered account at the Bank of Nova Scotia. By late June, Noranda had decided against participating in the venture, because of commitments to other projects of its own and a belief that it could put its funds to better use elsewhere. At that point the CDC board decided to go it alone.

CDC was primarily attracted by the Kidd Creek Mine. There was a growing world demand and rising prices for almost all TXG's major products. Even the outlook for heavily depressed sulphur (for use in the manufacture of phosphate fertilizers) was starting to improve, securities analysts were revising upwards their 1973-74 earnings estimates, and the stock was being recommended by a number of Canadian brokerage firms. First-half earnings, announced on July 20, were excellent and were said to reflect the contribution of the new Kidd Creek zinc plant and the growing worldwide demand for metals and fertilizer materials. TXG stock was moving up in the market place from a low of $17-1/4 earlier in that year to $24-1/4.

On July 24, 1973, after markets had closed, CDC announced a tender offer to purchase 10 million of the outstanding U.S.-held shares of TXG at a price of U.S.$29 per share, for a $290 million cash outlay. Together with the shares already bought via Noranda, the purchase would represent 35% of the total TXG shares outstanding and, with the estimated 20% already held in Canada, the offer would, if successful, bring Canadian ownership to 55%.

The purchase was to be financed through CDC's own resources, the federal government taking up the balance of its $250 million share subscription (in two instalments) and the Toronto Dominion Bank agreeing to make available a line of credit up to $160 million on a short-term basis. Years later, in 1976, in testifying before the Royal Commission on Corporate Concentration, Toronto Dominion executives acknowledged they committed to this loan without knowing the identity of the firm whose shares were being sought, and that CDC had asked Toronto Dominion not to press for the name. Such a transaction was admitted to be without precedent in the bank's history, but had been agreed to because of "the credibility of CDC", the federal government's commitment to make additional advances to the corporation, and the knowledge that the offer had the "unanimous" support of the CDC board, in other words that the offer had the CDC's backing and the government's implicit backing. As it transpired, Toronto Dominion happened to be one of TXG's Canadian bankers and a potentially embarrassing situation was averted by its not knowing the name of the takeover candidate.

The tender offer for controlling interest was received with shock and dismay by the TXG management, who immediately requested and received a court injunction to halt the takeover. A protracted and acrimonious legal battle commenced in the U.S. courts, requiring the offer to be extended several times. The initial reaction by investors was very favourable. More than the required 10 million shares were lodged with depositories pending the legal outcome, and the main criticism was that the offer did not extend to Canadian shareholders as well. (The inability to obtain a TXG shareholders' list and the varying requirements of Canadian securities commissions, making the confidentiality aspect impossible, were given as the reasons for making the offer to U.S. shareholders only.)

In late September 1973, while the takeover was still being contested in the courts, TXG announced spectacular drilling results at Kidd Creek Mine, and confirmed ore reserves in excess of 90 million tons. The expansion of mine and concentrator production from 3.6 to 5 million tons annually was also announced, as was the decision to proceed with a copper smelter. Early in October, TXG reported a 35% rise in third-quarter revenues (over the comparable 1972 quarter) and a 178% rise in net income. Later that month the Fifth Circuit Court of Appeal, New Orleans, upheld an earlier judgment in CDC's favour by the U.S. District Court in Houston, and the way was finally cleared for CDC to exercise its offer. However, by then 1.8 million shares had been withdrawn from tender and less than 9 million shares were left with the depositories. CDC was eventually able to announce the ownership of 9,259,720 shares of TXG, equivalent to about 30%. Though falling somewhat short of the original goal, this gave CDC effective control and meant that approximately half of TXG's ownership had swung to Canada.

In testifying before the U.S. courts, CDC acknowledged that it had initially contemplated a number of courses of action if its offer was successful, including selling off some assets, although it was stated in the tender offer that there was no preconceived plan to do so. However, the corporation maintained that upon reappraising its prospective purchase it had come to see the chemical and agricultural operations, the petroleum ventures and international diversification as added pluses. The TXG management was given full credit in these respects. CDC added that it had come to realize that TXG's indifferent performance in the securities markets, where its shares had languished around the $25 level for some time, was the result of the cyclical nature of the industries in which it was involved and was not a result of poor management.

Early in December, the companies made a joint announcement that their differences had been resolved, and that three CDC directors were being appointed to the TXG board, with a fourth Canadian to be nominated at its next annual general meeting.

So ended one of the most celebrated takeovers in Canadian history.

FINANCIAL REVIEW

Table 7 records an eventful ten years. It illustrates the volatility and cyclical nature of the natural resource industries, as well as the attendant leverage of changes in metal and commodity prices on TXG's earnings. Within the fluctuations it also tells a tale of much progress and diversification by a dynamic corporation formerly geared predominantly to sulphur but successfully transforming itself into one of the world's leading natural resource groups.

The base year in the table, 1966, marked the year before the Metals Division with its newly developed Kidd Creek Mine began contributing to sales and net income. In 1968, two years later, sales doubled and earnings more than doubled as a result of the Kidd Creek contribution. Only by 1973 did sales and earnings surpass the 1968 level, but in this period the greatest portion of TXG's operating revenues and profits were attributable to Kidd Creek. Clearly, too, the doubling of TXG's sales and earnings reflected the Kidd Creek Mine, and therefore the Canadian representation, to a considerable extent.

The electrolytic zinc plant, begun in 1969 and finally completed and expanded in 1974 is reflected in the rising investment in net property, plant and equipment in the early 1970's, as are expansions in the Chemicals Division. The next big leap in investment in property, plant and equipment came in 1975, when heavy new programs, all in the U.S., were continued or undertaken in the Chemicals Division, and a major four-year program to expand Kidd Creek production, including a second underground shaft, was begun.

Table 7

TEXASGULF--FINANCIAL SUMMARY
($ Millions)

	1975	1974	1973	1972	1971	1968	1966
Income							
- Metals Div.	196	291	216	147	n.a.	n.a.	n.a.
- Chemicals Div.	236	260	143	119	95		
- Oil & Gas	12	9	5	4	-	-	-
- Other	1	9	-	-	-	-	-
	445	569	364	270	218	266	130
Pre-tax income	171	269	121	52	39	101	35
Average tax rate	40%	45%	39%	45%	36%	29%	20%
Net income	103	147	74	30	20*	72	28
Financial Position							
Total assets	1,156	977	776	771	670	529	365
Working capital	187	192	114	94	87	151	31
Inventories (incl. working capital)	140	74	64	71	68	38	19
Working capital ratio	2.8	2.3	2.7	2.[illegible]	2.5	4.3	2.4
Property, plant & equipment (net)	805	583	530	492	462	300	278
Long-term debt	228	135	157	173	169	126	135
Shareholders' equity	628	559	440	385	372	298	176
Other Data							
Earnings/share	$3.37	$4.83	$2.43	$0.99	$0.67*	$2.36	$0.92
Dividends/share	$1.20	$0.98	$0.64	$0.60	$0.60	$0.33-1/3	$0.13-1/
Book value share	$20.50	$18.30	$14.50	$12.70	$12.30	$9.80	$5.80
Return on equity	16.4%	26.4%	16.8%	7.8%	5.4%	24.1%	15.9%
Mean market price per share	$30-1/8	$28-3/8	$25-1/8	$17-3/4	$17-3/4	$39-3/8	$33-1/

* - After $4.7 million extraordinary charge, equivalent to $0.15 per share.

Source: Texasgulf Inc., Annual Reports

Table 8

TEXASGULF--CAPITAL EXPENDITURES
($ Millions)

	1976	1975	1974
Chemicals Division	93	155	54
Metals Division	110	48	22
Exploration	40	31	18
Other	37	5	9
Total	280	239	103

Source: Texasgulf Inc., Annual Reports, 1974 and 1975.

TXG's strong financial and capital positions, readily apparent in Table 8, have permitted short-term accommodation and private borrowing in years when cash flow has been in any way inadequate or strained. However, in order to meet the 1975 capital expenditures (of $239 million versus net cash flow after dividends of $145 million) two major new financings were completed in 1974. First, $125 million worth of debentures, rated AA by one rating service and A by the other, were successfully sold in the U.S. and international capital markets. Second, the company entered into a credit and term loan agreement with a consortium of 16 banks to borrow up to $250 million. This loan agreement limits TXG's funded indebtedness to approximately $477 million on its latest figures, and if fully utilized would raise total debt to approximately the same level as shareholders' equity.

Sales and earnings declined significantly in 1975, which still ranged as the second best year in TXG's history. In 1976, the slow recovery of world economies will likely reflect in only a marginal improvement in TXG's net income. Thereafter, however, management rates the chances of earnings challenging the previous peak as good.

TXG's longer term earnings outlook could well be exceptional. Metal prices will firm when the world economy grows again, and the outlook for fertilizers -- phosphates, potash, etc. -- is much improved when set against the world food background. As noted, TXG is heavily and diversely leveraged to natural resource and commodity prices. In addition, there are the benefits to come from the major capital programs, recently completed and currently underway in the chemicals and metals divisions, to expand output and reduce processing costs.

In 1976, earnings are generally estimated to recover in the order of 10% from the $3.37 per share in 1975; next year should be much better, with growth estimated in the range of 20% and earnings per share at the $4.50 level.

The consensus of investment analysts is that there is potential for a very significant quantum leap in TXG's earnings within the next few years. Some experts contend that a doubling in per share earnings from the peak of $4.83 in 1974 is on the cards by the end of the 1970's.

ASSESSMENT OF CDC INVESTMENT

The acquisition of effective control of TXG in October 1973 must rank as the boldest and most controversial undertaking to date by CDC. It could also rank as one of the most shrewd and significant of CDC's investments.

Initial investor reaction to the acquisition is perhaps best described as "apprehensive", but before long it had switched to distinctly favourable. I subscribe to the favourable sentiments. It is increasingly apparent that TXG is more than a cyclical play. In fact, it ranks among the strongest, best diversified and most attractive of the world's natural resource companies. Not only is the 30.2% interest in TXG a valuable asset for CDC; it represents a well timed investment of exceptional quality and growth potential at an appealing price.

In addition, the investment in TXG provides a ready-made base of earnings and, as importantly, cash flow and dividends for CDC. For example, since 1973, TXG's earnings have risen 39% and its dividend payout by 88%--both very useful for CDC's own income statement and dividend purposes. Moreover it is large enough to have a meaningful impact on CDC's own performance. At latest year-end the carrying value of this investment, essentially the initial $271.2 million purchase price plus CDC's share of retained earnings less a $3.6 million annual amortization charge, had risen to $324.2 million, up from $307.9 million in 1974. This value compared reasonably with the value put on TXG's shares by investors in the stock markets. In 1975, a $27.6 million net income contribution on $316 million of average equity outstanding during the year failed to meet CDC's 15% return on equity test. However, in 1974, a $40.4 million contribution did essentially meet the test, as should a contribution with the potential to double over the next five years. In addition to its earnings and equity return prospects TXG has the cash flow to take advantage of promising prospects, thereby adding to CDC's stake in mining and natural resources.

But are these enough in themselves? How does TXG fit within CDC's major policies and objectives?

From a nationalistic viewpoint TXG represents the re-acquisition of control of a valuable Canadian resource, although at latest count total Canadian ownership had slipped slightly below 50%. It also represents a solid base for further expansion by CDC in the mining sector, a designated prime activity area. Furthermore, TXG is multinational, an attribute favoured by CDC. Its management is skilled in locating and developing resource properties, as well as in all aspects of mining technology. TXG's successful transition to a multiproduct, multinational concern demonstrates exceptional entrepreneurial ability on the part of its management. Richard D. Mollison, president of Texasgulf Canada, is an American, and TXG cannot be construed as being Canadian-managed. While falling short on this CDC criterion, TXG does have the capability of providing the financial, technical and entrepreneurial strengths to help accomplish these particular objectives of CDC.

From the time of the 1964 discovery, which rejuvenated Timmins, TXG has been a conscientious corporate citizen. The further large-scale capital expansions that are underway at Kidd Creek, including the building of a copper smelter, will add to the development of an attractive Canadian controlled resource and bring with it more jobs and benefits for Canadians.

In all of these respects TXG fits well within the CDC objectives of developing and maintaining strong Canadian controlled companies in the private sector, including the benefits from international operations and exposure. For its part, what benefits can CDC bring to TXG?

Obviously on the technological, mining side there is little or nothing CDC can add. However, the corporation can interpret Canada at the boardroom table. TXG is, after all, a North American company that should have a Canadian presence on its board -- which it did not have before. Examples of CDC's usefulness on Canadian matters are its explaining such matters as the recent federal-provincial disputes over natural resource taxation, the change in Ontario's mining tax laws, and the nationalization of the potash industry in Saskatchewan to the TXG board and management. In similar vein, CDC is useful in arranging introductions and contacts for TXG in Ottawa and elsewhere. Recently, the Government of Panama selected TXG to manage and participate in the development of the Cerro Colorado copper deposit in Western Panama. Its Canadian "connection" could well have been a factor in TXG winning this participation.

There is additional evidence to suggest that CDC could contribute to TXG in all-round policy and strategy awareness, i.e., in more than just Canadian matters. TXG's previous record of shareholder and investor relationships is not as good as it might have been -- witness the protracted litigation of the 1960's and the succession of announcements once CDC had made its tender offer. Among investment analysts management has had a reputation of being aloof and not being willing to disclose as much as other companies do. I would say that CDC has proved a factor in amending these shortcomings. The informational quality of TXG annual reports has improved considerably in recent years, even if the company still does not show earnings by division, as do many other companies.

TXG's record is one of growth through direct investment rather than acquisitions. Here, too, the CDC association could help in making TXG more acquisition-conscious and in bringing such opportunities to its attention, particularly Canadian opportunities.

TXG is an established, successful company, with its own accounting practices, systems and procedures and the CDC association has not led to any changes in its accounting. CDC in turn uses the accepted "equity method" of accounting to show TXG in its income statement and balance sheet. TXG does not have an executive committee, which CDC normally likes its member companies to have, but it does have internal committees on which CDC is represented -- including an audit committee. TXG makes its own banking arrangements and the Toronto Dominion Bank and its New York agency rank among its principal bankers. Hence the nomination of Mr. Richard Thomson, now president of Toronto Dominion Bank and a prominent Canadian businessman, as the fourth Canadian of the TXG board was doubly useful. I do not see any significant interlocking or potential directorship abuses between CDC and TXG, though it is useful to remind oneself that without the government connection it would probably not have received the Toronto Dominion Bank backing that made possible the acquisition of effective control of TXG. In this respect, therefore, it had a favoured position not available to other holding-type companies in the private sector.

The 30.2% interest in TXG is held by a wholly owned subsidiary, CDC Nederland B.V., which has been formed to furnish an offshore vehicle to assist in the financing of foreign activities of other subsidiaries of CDC, while giving the advantage of a lesser U.S. withholding tax on TXG dividends paid to CDC. Purists might question a government-controlled entity taking advantage of idiosyncrasies in the international tax laws, but I see nothing untoward in positioning the holding in this manner. CDC Nederland B.V. could also be useful as a conduit should CDC ever finance offshore.

<u>CONCLUSION</u>

I do not feel TXG needs CDC in anything like the same manner as, say, Polysar and Connlab do. TXG could probably manage quite adequately without CDC and I suspect CDC exerts little direct influence in its affairs. This said, I believe

CDC has brought, and can continue to bring, something useful and distinctly Canadian to this large and important "American-Canadian" natural resource entity.

TXG's shares have appreciated in the market place since CDC's purchase, and investors generally rate it as an excellent growth stock. While I might question how effective the degree of control suggested by a 30% interest actually is, my research suggests that CDC's investment in TXG is proving to be mutually advantageous -- as well as bringing ancillary benefits to Canada. In addition, TXG is proving a worthwhile base investment in terms of the cash flow and earnings it is bringing to CDC in the early stages of the latter's development. There are risks associated with the massive capital expansion and diversification program on which it has embarked, but I feel confident TXG will prove to be an exceptional "core" investment.

POLYSAR LIMITED
and its associate
Petrosar Limited

CDC Investment		Polysar	Petrosar
Acquired	-	July, 1972	late 1975
Interest	-	100%	60% combined -20% directly -40% via Polysar
Price paid	-	$72.0 million in shares	$30.0 million in cash -$9.9 million by CDC -$20.1 million by Polysar
Carrying value	-	$96.2 million	$9.9 million

Consolidated Capitalization
(December 31, 1975)

	Polysar	Petrosar
	($ Millions)	
Long-term debt	123.7[1]	142.1[4]
Capital stock		
Preferred, 8% cum. red.		
First preferred, A	50.0[2]	
Common	30.0	43.5
Surplus	117.8	2.0
	197.8	45.5
Total capitalization[3]	321.5	187.6

1 - Pro forma adjustment for U.S. $30 million debenture issue, proceeds received January 15, 1976.

2 - CDC committed to subscribe for $15.1 million of subordinated preferred during 1976.

3 - CDC guarantee of up to $75 million that Polysar will meet its Petrosar commitment.

4 - Polysar estimates it will be required to subscribe for $39 million of Petrosar debentures.

Polysar--Earnings/Dividend Record *
($ Millions)

Year	Earnings	Dividends
1972	7.4	0.8
1973	11.1	1.2
1974	18.1	2.5
1975	(1.4)	1.2
Latest	0.4	2.0
1976E	20.0	?

* - Net earnings available for and paid on 2.0 million common shares.

E - Estimated

POLYSAR LIMITED

Polysar and its developing feedstock supplier, Petrosar, know their businesses intimately. Protective features are built into the majority of Petrosar's supply contracts, and Polysar's profitability shows signs of improving to more viable levels. But the risk-reward ratios remain high and the success of this combined investment is by no means assured. Here are two companies requiring all the financial assistance, skills and acumen that CDC can bring to bear. Together they constitute a major gap-filling investment that tests CDC's mandate, objectives and policies to the full.

The success or failure of Polysar/Petrosar will have great influence on CDC's future. Among the major investments I am not as confident of Polysar/Petrosar working out as well for CDC as I am about Texasgulf and CDC Oil & Gas. The jury is out. These are the critical make-or-break years that will determine the success of this investment to a very significant extent. A much clearer picture will be obtained as Petrosar builds up to the full production stage, expected to be reached in 1980-81.

POLYSAR

Born out of wartime necessity, Polymer Limited, subsequently renamed Polysar Limited is a unique Canadian entity that has become the world's largest independent producer of synthetic rubber, as well as a potential world-scale force in petrochemicals.

When the Allies' supplies of natural rubber from southeast Asia were disrupted during World War II, the Canadian government agreed to participate in a crash North American program to produce synthetic rubber. As a result, the Polymer Corporation was formed as a Crown corporation in 1942 to help in the coordination, financing and management of a diversified plant to be constructed at Sarnia, Ontario. It was assisted in the construction and operation of the plant by Dow Chemical of Canada, Imperial Oil and a consortium of Canadian subsidiaries of the leading U.S. tire manufacturers. In addition, the technology was transferred from U.S. industry through agreements between the U.S. and Canadian governments.

Construction forged ahead and by the end of 1943 the Sarnia complex was producing general purpose rubber for tires and butyl rubber for inner tubes, made from its own hydrocarbon feedstocks. The operation reached its designed capacity in 1944, by which time the federal government had invested $48 million in it.

The wartime experience with synthetic rubber generally proved unsatisfactory. Synthetic rubber was regarded by most as an inferior substitute material to be discarded as soon as natural rubber became freely available again. Thus, after the war the federal government indicated Polymer would be permitted to continue operations only if it could operate according to sound business principles and at a profit. Thirty years later, with operations in 16 countries and representation in over 70, Polymer, now called Polysar, has become a leading Canadian-based international force in synthetic rubber, as well as diversifying into rubber-related latex, plastics and petrochemicals. This transition was accomplished in six distinct phases:

<u>1942-45</u>

The initial wartime period with its need for production on schedule, regardless of cost.

<u>1945-50</u>

The initiation of a concerted research and development program aimed at radically improving the quality of general-purpose synthetic rubbers to compete with natural rubber.

The seeking out of export markets to fill a plant whose capacity at the end of the war was more than three times the maximum possible demand in Canada.

<u>1950-60</u>

The expansion of production at Sarnia sparked by the Korean War.

The termination of the wartime operating agreements and the assumption of direct responsibility by Polymer for all operations.

A financial reorganization and the transfer of assets by the federal government to Polymer in exchange for $30 million worth of common stock and $8 million of debentures (which were soon retired).

Technological diversification to broaden the areas of application of synthetic rubber products.

<u>1960-67</u>

The setting up of international facilities and organizations to counter competition from plants being built in many of the countries to which rubber was previously exported. Construction of synthetic rubber plants in Strasbourg, France, and Antwerp, Belgium; equity positions taken elsewhere abroad; establishment of an international marketing subsidiary in Switzerland and a holding company in the Netherlands.

1967 to Early 1970's

Diversification: with international synthethic rubber markets becoming intensely competitive, high growth potential seen in plastics production and fabricating, computer time sharing and modular housing; also in rubber. New latex plant was opened in Tennessee to service U.S. carpet industry; additional latex facilities added in Sarnia and Europe.

1972 to Present

Acquisition by CDC as the latter's chosen "vehicle" company in the petrochemical field.

Name changed to Polysar, to indicate the much wider range of activities.

Rethinking of diversification program. Decisions, in conjunction with CDC, to discontinue modular housing and to tackle the problem of securing competitively priced feedstocks and facilitating diversification into petrochemicals by proceeding as a majority partner with Petrosar project.

Today, Polysar, with a long record of experience in rubber production, a reputation for a technically sound product, and an effective international marketing organization, has about 7% of the total world market (outside Eastern Europe and China) in synthetic rubber which it produces in three broad categories: SBR (general-purpose) rubbers, used principally in the manufacture of automobile tires; butyl rubbers for inner tubes and tire linings; specialty rubbers such as oil resistant rubbers, for use in a wide variety of products.

In 1975, SBR and butyl rubber each accounted for approximately 40% of Polysar's total rubber sales, and specialty rubbers for the balance. Integrated tire and oil companies accounted for approximately half the total of general-purpose rubber sales. With approximately 30% of the market, Polysar is one of the most significant producers of butyl rubber in the world. The same is true in oil resistant rubbers. In Canada, Polysar is the only producer of synthetic rubber and enjoys a major share of the market. In Europe, it is a significant manufacturer of synthetic rubber, and over three-quarters of the production of its Strasbourg and Antwerp plants is exported to more than 70 countries.

Latex, a product of the drive for diversification, is sold primarily to the carpet and fine paper industries. Polysar is a major factor in the North American and European markets for foam rubber latex, used principally as a cushion backing for carpets, and for carboxylated latex, used as a tuft binder for carpets, for backing upholstery fabrics and as a clay binder for coating fine papers. Latex sales have grown strongly since 1971, and the Tennessee plant is currently being expanded.

Polysar also manufactures polystyrene resins, the basic raw materials used in the plastics industry, at two locations in the U.S. and one in Canada. In addition, it has acquired wholly owned or controlling interests in half a dozen plastic fabricating companies that are principally engaged in food packaging. The most significant of these acquisitions was made in late 1973, i.e., a substantial interest in Bellaplast Gmbh, one of the largest manufacturers of plastic cups and containers in Western Europe (1974 sales, $28 million). In addition, Bellaplast has developed and patented advanced plastic thermoforming machinery which is manufactured and sold by other companies in its group. Plastics sales have grown strongly since 1970, a combination of acquisitions and internally generated growth.

While Polysar has grown into a major, international, integrated and diversified corporation, its profit record and return on investment have, with few exceptions been "spotty" and indifferent (refer to Financial Analysis later). Viable feedstock performance and the Petrosar project, to be discussed next, emerge as the critical links in Polysar's future.

PETROSAR

A major problem common to the entire Canadian petrochemical industry is the high cost of feedstocks for the petrochemical derivative manufacturing plants. For example, the principal materials used by Polysar are ethylene, benzene, butadiene and isobutylene, all derived from the refining of crude oil, and their availability and cost have had a vital bearing on operations, profitability and all-round viability. Yet, plants such as Polysar's synthetic rubber facilities were already of world-scale size, justifying world-scale primary petrochemical facilities.

As mentioned, the dependence upon the intensely competitive synthetic rubber markets began to reflect in declining profitability, and this vulnerability led Polysar to embark upon a diversification program in the early 1970's. Aggravating the problem was the fact that Sarnia-produced butadiene, the petrochemical used to manufacture SBR rubber, was becoming too high-priced vis-à-vis butadiene available to U.S. competitors. If the declining profitability of the Sarnia plant was to be reversed, the company had to secure cheaper feedstocks. There were two alternatives -- purchase by-product butadiene from European or Japanese sources; or, along with other producers, to participate in the construction of a world-scale primary petrochemical facility based on naphtha cracking and to sell its petrochemical output at North American competitive prices. The purchase of off-shore butadiene would provide some temporary relief from cost pressures, but it could hardly offer a permanent longer term solution. This left the second alternative to be pursued further.

In the early 1970's a proposal called the Sarnia Olefins Aromatics Project (SOAP) began being developed and studied jointly by Polysar, Dow Chemical of Canada and DuPont of Canada. SOAP would provide secure, competitively priced feedstocks, but would require a large-scale capital investment, then estimated in excess of $200 million, and would also, it was felt, require government support of some type to ensure its success. At that stage the federal government had not been particularly inclined to help the petrochemical industry in Canada and was in a quandary as to what to do with Polysar. The SOAP project, in turn, presented Polysar with the dilemma of whether the large investment that would be required, in direct form or in guarantees or both, would commit it even more deeply to the rubber industry, thereby reducing its own capital-raising capacity and limiting its diversification prospects. Feedstock viability was, perhaps, the key question to be weighed by CDC in two critical decisions it had to make, i.e., whether to purchase Polymer and whether to press ahead with the SOAP project.

Naphtha, which is similar to the gasoline component of crude oil, was chosen as the proper feedstock for a Sarnia cracker, because it comes closest to producing the range of primary petrochemicals required by the partner companies and because in the Sarnia environment it was considered the most economic feedstock for chemical companies to use. However, when it became evident that naphtha could not be processed locally in volume sufficient to sustain capacity operations, the decision was made to base the operation on Western Canadian crude oil. This would require an additional processing step to separate the naphtha from the crude and would result in the production of a large volume of fuel oils. In turn, this meant the expansion of SOAP into something much larger and costlier than originally envisaged, i.e., the Petrosar project that was launched in the spring of 1974 on a site near Sarnia at an estimated cost of $430 million.

Petrosar represents the first feedstock supplier to the Canadian petrochemical industry. Its world-scale size promises the unit cost advantage of large scale production. In February, 1973 Dow left the SOAP project to develop its own proposal based on an ethane cracker in Alberta and an ethylene line from Alberta to Sarnia via the U.S. In 1975, CDC assumed part of Polysar's majority share in the project (treated later). There are now the following equity partners in Petrosar: Polysar, 40%, Dupont of Canada, 20%, Union Carbide of Canada, 20%, and CDC, 20%.

Petrosar is designed to process 170,000 barrels per day of Western Canadian crude oil. This will make it the largest single consumer of Canada's oil production. Output from the plant will comprise 80% fuel products and 20% petrochemicals. Fuel product output will total 125,000 barrels per day and will include fuel oil, residual oil, liquefied petroleum gas, synthetic natural gas and gasoline. Annual petrochemical production will total one billion pounds of ethylene and two billion pounds of other primary petrochemicals such as benzene, propylene, isobutylene and butadiene. The vast majority of the petrochemical products and a significant proportion of the fuel products are to be sold under long-term take-or-pay contracts. Gasoline and some of the fuel products being subject to more volatile supply and demand contracts, the prices obtained under long-term contracts for them will be renegotiated annually.

The Petrosar complex itself consists of three major process areas, a crude oil distillation unit, an olefins unit, and a gasoline processing and aromatics unit. The crude oil distillation unit will produce the naphtha needed for the olefins unit, as well as large quantities of fuel oil. In the olefins unit, naphtha will be transformed in chemical and fuel-type hydrocarbons. Further processing in the third unit will produce benzene and gasoline. Start-up is slated for mid-1977, and the complex is expected to reach full production in 1980-81.

Petrosar's primary chemical output will be converted into more than 30 derivative petrochemicals for use in a vast array of industrial and consumer goods in the domestic and export markets. Annual sales are expected to reach the $1 billion mark by 1980. A substantial portion of Petrosar's revenues will come from sales to the participant and other customer companies priced on a formula basis linked heavily to the Canadian price of oil and protected by take-or-pay provisions. It is my understanding that the base price for Petrosar's products will be escalated to reflect changes in the Canadian crude oil price and in operating costs, these leading to a formula price being set for each year. Actual prices charged for the products are intended to be competitive with North American market prices as long as such prices fall within a range of plus or minus 5% of the formula price. The philosophy of the pricing formula is to guarantee that the return to Petrosar will not fall below a minimum by virtue of low market prices but, on the other hand, that there is an upper limit placed on the return to Petrosar if it is able to obtain high market prices for its products. The price formula applies for the longer of a period of 10 years after start-up or until the partners are released or discharged from guarantees concerning the financing of the plant. After the guarantee period the price will be the market price. Take-or-pay requirements cover an estimated 60% of Petrosar's total sales, including all the petrochemicals. They oblige customers to take a minimum 90% of the volume contracted for or to pay Petrosar the difference between the contract price and the actual sum realized by Petrosar up to 90% of the contract volume. Some relief is provided for reasons of *force majeure* on the part of the customer, but the contracts are designed to ensure that Petrosar operates at least at 90% of capacity under normal conditions and at 75% or coverage of fixed costs to that level in the event of customers' pleading *force majeure*.

With the promised availability of primary petrochemicals at competitive prices, sizable new facilities began emerging in the Sarnia area in phase with the Petrosar project. Union Carbide committed itself to a $150 million petroleum coking plant plus a downstream polyethylene complex, but late in 1975 announced it was reconsidering whether to proceed with this project at all. (Although the take-or-pay provisions oblige Union Carbide to purchase 90% of the total 30,000 barrels a day of residual oil to be used as a feedstock for this plant, there is concern over the ability of the southern Ontario market to absorb such a large quantity of residual oil, especially in the early years, and arrangements to overcome this problem are being considered by Union Carbide and Petrosar.) Dupont is undertaking a $50 million expansion of its polyethylene plant. Shell Canada is investing over $150 million in new aromatics, isopropyl alcohol and polypropylene plants. Polysar is adding to its styrene capacity a plant that can produce 600 million pounds per year and is estimated to cost some $90 million and to be completed in 1977. Styrene is a basic building block of the synthetic rubber, latex and plastics industries.

Petrosar is being built primarily on a cost-plus basis. Following a further detailed analysis completed in November, 1975 the estimated cost of the project has been revised to $575 million. Approximately half of the increase of $145 million is attributable to the additional cost of fixed assets, and the balance to higher than anticipated cost of crude oil, reduced cash flow during the first year of operations resulting from lower than anticipated sales volumes and prices for fuel products, and a probable delay in start-up, now scheduled for mid-1977.

The three participants originally agreed to put $50 million worth of equity into Petrosar. Of Polysar's $30 million subscription, representing a 60% interest, $20.1 million had been paid by October, 1975. In late 1973 CDC agreed to help Polysar with $25 million towards its investment in Petrosar. Two years later it was decided that CDC should use $9.9 million of this commitment to purchase for itself the balance owing in Polysar's equity subscription in Petrosar and that it would provide Polysar with the remaining $15.1 million in exchange for subordinated preferred shares (of Polysar) in 1976. As a result of this change of plan, CDC now owns approximately 20% of Petrosar, with Polysar's holding reduced to 40%. Consequently, Polysar need no longer consolidate Petrosar, which is shown in its balance sheet as a $20.1 million investment, with more to be invested later (see below). This puts Polysar's financial statements in a better "cosmetic" position, and there is no doubt, as the financial analysis in the next section will bear out, that the 60% consolidation sits more "comfortably" in the much larger and better padded CDC consolidated financial structure.

In September 1974, when the cost was estimated at $430 million, arrangements were made with a consortium of Canadian chartered banks for a $300 million accommodation -- a $265 million term loan (half of which could be advanced in U.S. funds) repayable in instalments by March 1988, and a $35 million demand operating loan. Thus, the banks put up 70% of the originally estimated cost. Concurrently, Ontario Hydro committed itself, subject to certain terms, to provide up to $40 million under an arrangement whereby it would buy residual oil from Petrosar. The financial commitment still stands, but Ontario Hydro is discussing with Petrosar whether the volume of fuel oil it is obliged to take might be lower in the early years.

With the cost of Petrosar now much higher, negotiations are being concluded with the banking consortium for increased loans to finance over half of the estimated cost overrun. The participants have undertaken with the banks and separately among themselves to invest sufficient additional funds in Petrosar to complete construction and meet interest and principal payments on the bank loans. Provisions and penalties are carefully spelled out in the event of default by a participant. Polysar now estimates its investment in Petrosar will aggregate approximately $59 million, made up of the $20.1 million in shares and $39 million in subordinated debentures. In addition to investing $25 million as mentioned above, CDC had guaranteed the performance by Polysar of certain of its obligations under the bank loan arrangements up to a maximum of $75 million.

Because of the high proportion of expenses represented by crude oil, it is not expected that the profitability of the Petrosar project will be materially affected by the higher capital requirements. Furthermore, its contractual take-or-pay provisions, based upon the Canadian price of crude, reduce the risks and sensitivity of Petrosar to rising and fluctuating oil prices. In particular, the consequences of oil or feedstocks becoming more cheaply available elsewhere would fall on the participants in Petrosar, rather than on Petrosar itself. However, Petrosar will stand the test that much more readily, and the cost-of-supply risks run by the participants in it will be minimized, as long as the Canadian crude oil price remains either below or sufficiently closely in line with U.S. oil prices. Currently, the Canadian oil price is being raised in stages from $8.00 to $9.75 per barrel, compared with a U.S. domestic price of approximately $10.80 and a world oil price of $13. Given the Ottawa-Alberta intent to raise the Canadian oil price to world levels over the space of the next few years, if Canadian prices were to exceed U.S. prices by more than the cost of transportation, the Petrosar export contracts would become increasingly onerous should customers be able to buy the same products more cheaply in the U.S. market. The same could be true if the Canadian oil price were ever to similarly exceed the world oil price. What the U.S. oil price, based on a mix of "old", "new" and imported oil -- or the world oil price will be in several years' time is anyone's guess. Initially, at least, Petrosar's domestic sales will be displacing more expensive imports for the most part and, within a basic viability range, this mammoth project has been designed to reduce sensitivity to international price changes and provide an element of stability during its formative stages.

Care has been taken to reduce the risks. Financing is effectively on a project basis and the take-or-pay penalties provide a basic built-in protection linked to the Canadian oil price. Yet, I still find Petrosar a mind-boggling proposition. There would surely be very real problems if the Canadian oil price were to get excessively out of line with the U.S. oil price in particular. There are also the risks associated with the Alberta government's intent to put in place a petrochemical industry in that province. "Awesome" is perhaps the word that describes Petrosar best at a stage of its development when the costs are running much higher than originally estimated. In one way or another CDC and Polysar are going to be very materially affected by Petrosar.

FINANCIAL ANALYSIS

The years 1969-75 showed strong sales growth and diversification, as recorded in Table 9. A breakdown of overall rubber sales, which have not grown as strongly in volume terms, revealed the superior growth of butyl (for tubes and inner linings) over SBR rubber. However, with the exceptions of 1969 and 1974, and 1973 to a lesser extent, the net income and equity returns from these sales have been inadequate over the seven years. Even recognizing the cyclical nature of the industry, the average returns over this 7-year period also fall short.

It is pointed out in company material that the petrochemical industry is highly capital intensive, with the result that the level of operations has a very direct and significant bearing on profitability. The level of operations, in turn, is sensitive to world economic developments. In 1975, the real gross national products of countries where Polysar does the bulk of its business fell significantly, with important rubber, plastic and petrochemical users like the automobile and construction industries being greatly affected. For Polysar this meant a significant plant underutilization that, combined with its capital intensity -- reflected in a leveraged capital structure -- and rapid cost inflation, had a cataclysmic effect on earnings. The same was true, though to a lesser extent, in the previous recession of 1971. The reverse applied in the recovery years of 1972-73, and likely also in 1976, as latest interim results point to a strong recovery in earnings. Peak profits were earned in 1974. Though they contained an artificial element, reflecting a temporary widening in the catch-up of price-cost inflation that was raging worldwide, these earnings were also achieved after a $14 million write-off of the abortive

Table 9

POLYSAR - FINANCIAL SUMMARY
(In $ Millions Unless Otherwise Noted)

	1975	1974	1973	1972	1971	1970	1969
Net Sales							
Rubber	222	215	n.a.	n.a.	118	114	121
Latex	65	66	n.a.	n.a.	25	19	18
Plastics	82	88	44	31	20	20	10
Other	23	23	-	-	12	4	12
	392	391	261	206	175	157	161
Location of Customer							
Canada	90	92	67	53	46	49	54
Europe	185	166	96	77	68	64	56
United States	95	103	76	57	45	28	28
Other	22	33	22	20	16	17	23
	392	392	261	207	175	158	161
Rubber & Resin Prod'n. (mlns.lbs.)	859	1,034	1,135	985	856	801	732
Net income	1.6	18.1	11.1	7.4	0.8	7.6	14.3
Preferred dividends	(3.0)	-	-	-	-	-	-
Net avail. common	(1.4)	18.1	11.1	7.4	0.8	7.6	14.3
Dividends on common	1.2	2.5	1.2	0.8	0.5	3.0	6.0
Cash generation	24.2	45.6	30.5	25.7	14.5	19.6	27.1
Capital spending	39.1	20.4	61.0	20.0	29.8	20.3	9.1
Total assets	416	398	341	237	233	224	207
Net fixed assets & investments	180	150	147	115	118	102	86
Working capital	92	84	77	2	55	58	70
Long-term debt	94	99	113	48	39	39	38
Preferred	50	-	-	-	-	-	-
Common	148	151	135	125	118	118	114
Ratios (%)							
Net profit margin	0.4	4.7	4.2	3.6	0.5	4.8	8.9
Return on common equity	1.0	12.0	8.2	5.9	0.7	6.4	12.6

Source: Polysar Ltd. Annual Reports
Polysar Ltd. Offering Circular, Dec. 17, 1975

diversification into modular housing. Thus, 1974 may have been representative of Polysar's true capabilities. 1976 may well be the same.

Cash generation did not keep pace with capital spending over the period reviewed, and the heavy investment in fixed assets has necessitated a trip to the capital markets in each of the past three years: debt issues in 1974 and 1976, and a bolstering of the equity base through a preferred issue in 1975. The expansion of butadiene extraction facilities, the building of a world-scale styrene plant, and the required further $39 million investment in the Petrosar project (helped by the promised $15.1 million preferred share subscription in Polysar by CDC) point to Polysar's capital needs remaining at a high level over the next several years.

The U.S. $30 million debt issue in the Eurodollar market early in 1976 means a current Polysar debt-to-equity ratio of approximately 0.6:1 which, combined with even a cursory examination of net profit margins and the return on common shareholders' equity, is high. (This is not strictly a comparison of like with like, but an analysis of interest coverage and the returns on total investment would lead to similar conclusions). Had Polysar's interest in Petrosar been kept at 60%, requiring Petrosar's continuing consolidation, a most recent *pro forma* would have shown some $270 million of debt poised on $230 million of total equity, for an untenably high and too thinly covered debt structure. Given Petrosar's great capital needs, the decision to "deconsolidate" the company is understandable. (It is now shown as a $20.1 million investment by Polysar.)

Table 10 on following page traces the quarterly trends in Polysar's overall and net income, as well as the inherent leverage in its results, since 1974. The mounting earnings recovery in recent quarters reflects improving North American and world economies, better plant utilization, lower breakeven points, and the benefits of cost-cutting. On a latest 12 months' basis net income has recovered to $10.3 million. While a strong economic recovery is clearly in evidence in the United States, latest results provide evidence that even if the Canadian, European and other international recoveries are slow, Polysar's sensitivity to minor volume increases combined with the leverage in its capital structure can result in sharply higher earnings for its common shareholder, CDC.

Maintenance of the tempo of the latest quarter over the full 1976 year would mean approximately $20 million of common share earnings after paying $4.0 million in preferred dividends. This would better the $18.1 million record in 1974 (or $22.0 million before writing off an unfortunate investment) and would be a dramatic reversal of the $1.4 million net deficit which had to be absorbed

Table 10

POLYSAR--QUARTERLY RESULTS
($ Millions)

Year/Quarter[1]		Sales	Net Income[2]
1974:	1	103.0	17.1
	2	107.3	3.3[3]
	3	89.2	3.7
	4	91.5	(6.0)
		388.3	18.1
1975:	1	90.5	(2.9)
	2	94.2	(0.7)
	3	97.7	2.2
	4	105.5	3.0
		387.9	1.6
1976:	1	113.4	5.8

1 - 1975 figures have been restated from those originally reported. 1974 figures should also be restated but have not been; however, resulting discrepancies on the revised basis are relatively small.

2 - Before preferred dividends in 1975 and 1976.

3 - After $4.9 million write-off of Building Systems investment.

by the common shareholders' equity in 1975. A $20 million net available for common would represent roughly a 13% return on Polysar's common shareholder equity. For CDC, this would represent a handsome return on an original $72 million investment, as well as on the $96.2 million at which this investment was carried by CDC at the latest year-end.

Thus, while remembering that leverage can work both ways, there is evidence in Polysar's results of the past two quarters to suggest an improving and increasingly satisfactory reward on a heavy level of capital and shareholder investment.

ASSESSMENT OF CDC INVESTMENT

Its incorporating act effectively gave CDC a right of first refusal on Polysar (then Polymer). Once CDC selected petro-chemicals as a prime industry area Polysar became its desired vehicle company. Its purchase from the federal government was negotiated in the summer of 1972 for $72 million worth of CDC shares -- $62 million payable immediately and $10 million depending upon earnings performance over the next two years (these shares duly issued).

There are those who maintain CDC did not have an entirely free choice in this first major purchase. Polysar had been a thorn in the side of the government conceptually for many years, with the problem of whether it should go public or be sold to an outsider. Since the government was being a fairly anxious seller, if CDC had decided against Polysar, the favourable attitude towards the corporation might have changed. However, from the government's point of view it would have been hard to sell Polysar to anyone else. These are academic points because CDC was a willing buyer. While it recognized that petrochemicals was an industry dominated by world giants, it also saw that a Canadian presence could be both meaningful and profitable, since the country had the required basic energy resources and Polysar had the industry and international skills. In addition, petrochemicals were a vital component in Canada's economic development and Polysar, which was seen as potentially profitable, fitted CDC's mandate admirably. It was going to require further large-scale, long-term investment that might not be readily forthcoming from the private sector. In other words, it was going to require time and patience to develop further. It was distinctively Canadian and was the ready-made link in the launching of a Canadian-owned petrochemical industry. It was multinational, as well as export oriented.

At first blush a $72 million selling price might have seemed low for a company with total assets exceeding $220 million and shareholders' equity of $123.5 million at the time of purchase. On CDC's balance sheet there was inserted $51.6 million of negative goodwill by which the net assets purchased exceeded the price paid. However, three independent estimates were obtained by the government prior to the sale, two by separate government departments and one by a leading investment dealer. All three were clustered within the $62-$72 million range of the CDC's purchase price. Clearly, these evaluators and CDC in its negotiations with the federal government were prepared to make allowances for the subnormal profits of 1971. But what was a representative estimate of earnings potential for a company whose profit growth in its main line of business was diminishing, which was facing a basic and expensive problem of economically priced feedstock and which was seeking to diversify into related and unrelated fields? An eight to nine times price/earnings ratio of more normal earnings, estimated in the $7-$8 million range, is judged fair when set against such a background. This is borne out by the subsequent record, the impossibility of predicting future profitability with any confidence, and the time, effort, resources and guarantees CDC is having to put into Polysar.

When based on CDC's fundamental profitability tests (a 15% growth in earnings and a 15% return on shareholders' equity) the investment in Polysar is inadequate, though several more years are going to be required before the venture can be judged properly.

In the two years following its purchase by CDC, Polysar's earnings grew strongly to $11.1 million in 1973, up from $7.4 million, and to $18.1 million in 1974, which met CDC's profit growth requirements handsomely. On common shareholders' equity, which rose from $125 to $150 million over these years, the 1974 performance came close to satisfying the return on equity criterion as well. If the returns are calculated on CDC's investment, whose carrying value as a result of retentions rose to $88.5 million in 1973 and $104 million in 1974, the 1974 results would also have met the 15% return test. Then came 1975, with a loss of $1.4 million to be absorbed by the common shareholder (i.e., CDC) on $392 million of sales. However, profits began recovering in the final quarter of 1975 and the recovery continued strongly in the first quarter of 1976. It does appear as though earnings could recover sufficiently this year to meet what CDC regards as a satisfactory return. A recovery of the magnitude suggested by results in the first quarter would put a much improved complexion on CDC's investment in Polysar.

This said, probably the single most important determinant in the ultimate success of CDC's investment in Polysar is going to be Petrosar, an awesome project whose economics are built fundamentally around the Canadian crude oil price and its relationship with the U.S. oil price.

There is a good deal of protection built into Petrosar, but there are certain combinations of risk that could leave this investment exposed. The fact that the original capital cost estimates have proved far too low points to the extreme difficulty, perhaps impossibility, of judging Petrosar with complete confidence at this stage.

A related topic, and risk, is the emerging strategic significance of Polysar as the hub of Canada's burgeoning petrochemical industry. This industry will be increasingly influenced by oil politics e.g., the western provinces (especially Alberta) versus the East, the domestic versus the world oil price, the spread between the Canadian and U.S. oil prices, etc. Despite their private sector bias, there is a certain irony in Polysar and Petrosar, huge users of Canadian oil, being controlled by a holding company which in turn could, if it were so desired, be effectively controlled by the state.

The petrochemical industry requires vast sums of capital investment and the national interest must be taken into account directly or indirectly. Can the profit motive be the overriding one in an industry of such strategic and national significance?

Can Petrosar, in particular, be adequately profitable? As observed earlier, take-or-pay contracts to sell its output could come under stress if certain of the assumptions on which it is based had to change, though admittedly as Petrosar is presently structured significant differentials would have to develop, especially between the Canadian and U.S. oil prices, for this to happen.

All CDC can do in facing these unknowns is to take as direct and helping a hand in its investment as deemed necessary. Its assumption of a direct 20% investment in Petrosar and its $75 million guarantee of the project are illustrations in point. Mr. Peter K. Powell of CDC has been appointed to the Petrosar board, providing an additional channel of direct communication with Petrosar.

The move to "deconsolidate" Petrosar from Polysar makes sense on several counts. The Polysar capital structure is now less leveraged and there is a direct CDC involvement in a project on which its investment in Polysar hinges critically. It is appropriate to stress that Polysar could almost certainly not have made its recent successful $30 million Eurodollar issue without CDC standing behind it, including the CDC $75 million guarantee of Polysar's commitments to Petrosar.

It is noted in recent company material that substantial future tax offsets are available from Polysar's domestic and foreign operations. How readily the tax losses outside Canada can be recaptured is questionable, though its extensive experience abroad has resulted in Polysar becoming skilled at international tax management. Similarly, the heavy capital cost allowances on the Petrosar project and the styrene plant resulting from the two-year write-off permitted by Canadian tax law cannot be used right away. Tax loss carry-forwards are only useful if there are profits to apply them against in the future.

Following its standard pattern, CDC has 4 representatives on the 12-man Polysar board, including its two top operating officers, Anthony Hampson and Donald Morrison. Hampson is also a member of the executive, finance and planning and audit committees set up at Polysar. CDC has also had a hand in appointing to the Polysar board: W.A. Dimma, now president of Toronto Star Ltd., who was previously an experienced executive with Union Carbide Canada; D.C.H. Stanley, vice president and director of Wood Gundy Ltd., who specializes in underwriting and includes petroleum as one of his particular areas of expertise; and D. Carlton Jones, president of Hudson's Bay Oil and Gas Company Ltd., who brings an Alberta oil perspective and a wealth of oil industry experience to the Polysar board table.

Thus, while the board make-up suggests the normal vehicle company pattern, there is evidence CDC is taking a more active hand in the Polysar investment than usual, because of the financial planning and guarantees that are being required if nothing more.

CONCLUSION

Given the greatly changed current Canadian oil situation, whether petrochemicals represent the most efficient usage of our natural and capital resources is a separate question. The domestic price of oil in Canada is rising and the price differentials with the U.S. and world oil prices narrowing. It is becoming apparent that our oil reserves are inadequate, oil exports to the U.S. are being phased out, and the longer term future of the Canadian oil industry may have to depend heavily on high-priced oil extracted from the Alberta oil sands and obtained from the northern frontier regions. A second petrochemical complex is being undertaken in Alberta by Dow Chemical, Dome Petroleum and Alberta Gas Trunk Line and whether Canada has sufficient oil resources to supply two such projects is another legitimate question.

Acknowledging these background risks, arising for the most part out of the tumultuous world oil developments of recent years, the sale of Polysar to CDC in 1972 began a new era of challenge for that company and could mark a breakthrough of Canada's own petrochemical industry. To date Polysar has generated relatively low returns on invested capital, and Petrosar is consuming considerably more capital than envisaged. Nevertheless, Polysar and Petrosar could have distinctive roles to play in Canada's economic development, and their social and economic implications could be far-reaching. Whether these investments can be ultimately brought to successful fruition and whether, in so doing, CDC's declared profit objectives and the national interest can be accommodated side by side remains to be seen. Encouragement is drawn from recent progress, but the background risks remain high.

The success of the investments in Polysar/Petrosar will be vital in CDC proving itself to the Canadian investing public and, concomitantly, in accomplishing its own ownership and investment objectives. Polysar and Petrosar are two very important eggs in CDC's basket. Several more years will be required before the potential and the adequacy of the returns they are capable of generating can be better gauged. In the meanwhile those investments are probably fairly valued in CDC's financial statements and 1976 could be the year in which they begin revealing their truer potential.

CDC OIL & GAS LIMITED
(formerly Tenneco Oil & Minerals, Ltd.)

CDC Investment

Acquired - December 31, 1975

Interest - 100%

Wholly owned subsidiary, but Tenneco Inc. has kept a 50% working interest in the majority of the producing properties purchased; works out at about 60% of the oil and gas producing properties formerly owned by the Tenneco group in Canada.

Cost and carrying value - $110.8 million cash, payable:

$102.5 million on December 31, 1975
$8.3 million on July 30, 1976

CDC OIL & GAS LIMITED

Public information is sparse on CDC's latest acquisition and its first venture in petroleum. However, sufficient can be pieced together to conclude that CDC has made an astute investment for which it paid a fair price for total control and on which it can build for the future at this critical juncture in the history and development of the Canadian oil industry.

BACKGROUND

At time of purchase, Tenneco Inc., a major U.S. oil company, had a long history of involvement in Canada where it has been active for close to 30 years. It was a founding shareholder in TransCanada Pipelines. It had been involved, as well, in petroleum exploration in eastern Canada, off the Labrador coast and as a participant in the ill-fated Elf Project. It bankrolled Panarctic to a very considerable extent and was a major "farmee" to participants in this important venture in the Arctic Islands. In more recent years its Canadian subsidiary Tenneco Oil & Minerals, Ltd. concentrated on the accumulation of gas reserves in the hopes that these would ultimately be exported to U.S. markets.

However, its heavy involvement in Panarctic and other ventures under federal jurisdiction saw Tenneco beginning to worry about the lack of land regulations, uncertainties about the imposition of federal royalties, and the general lack of clarification by the federal government of regulations covering mineral rights in the northern territories. The planned incorporation of Petro-Canada, a Crown corporation to take up the government's 45% interest in Panarctic and represent the state in its entry into the Canadian oil industry probably added to Tenneco's concern. Then came the conflict between the federal government and Alberta over energy tax sharing and the first National Energy Board report indicating Canada was going to be short of gas exports, and Tenneco concluded that Canada's aims were moving contrary to its primary objectives in this country.

In the changing Canadian environment Tenneco decided against additional exploration and began seeking ways of withdrawing from Canada, or at least scaling down its interests, without too many bruises.

CDC had singled out petroleum exploration and development, as distinct from a fully integrated oil company function, as one of its prime activity areas, and had made known it was prepared to invest a minimum $100 million in a suitable proposition.

Against this industry background and in this manner Tenneco and CDC came together in 1975.

ACQUISITION OF CDC OIL & GAS

By the fall of 1975 the two parties had reached an agreement of intent. CDC's primary interests were in producing properties and suitable exploration acreage. However, in the latter respect it did not want Tenneco's gas purchase rights agreement with Panarctic. Most of the properties to be purchased were owned by Tenneco Oil & Minerals and another Tenneco Inc. subsidiary, Kern County Land Co. (A minuscule holding was found in another subsidiary, LaTerre Petroleum of Canada Inc.) The purchase route, as to shares or assets, was left open depending on tax factors to be clarified in both countries.

In the end, it was decided that Kern County would be an asset purchase but Tenneco Oil & Minerals, the major component in the overall transaction, would be sold by means of a purchase of its shares by CDC. This method also had the advantage of bypassing much complicated title work (involving third parties having rights of first refusal) in the individual Tenneco Oil & Minerals properties. However, in order not to burn all its bridges, Tenneco determined from the beginning to keep a 50% working interest in the producing properties held by Tenneco Oil & Minerals, whose shares were to be purchased by CDC.

Over the final months of 1975 the deal between CDC and Tenneco Inc. was negotiated and consummated on this basis. The price payable by CDC was first put tentatively at $114.5 million. Upon further study and negotiation it was finally settled at $102.5 million payable on December 31, 1975 and $8.3 million on July 30, 1976 in respect of adjustments for net current assets (effectively all cash) -- or $110.8 million in all.

Upon purchase, Tenneco Oil & Minerals was renamed CDC Oil & Gas Ltd. The Kern County and other (small) properties acquired directly were sold by CDC to the new wholly owned subsidiary, which now owns:

- 50% working interests in the producing properties of the former Tenneco Oil & Minerals;
- a 100% interest in the former properties of Kern County Lands and LaTerre;
- an inventory of exploration prospects comprising 1.3 million gross acres, mostly in Alberta and British Columbia;
- a 51% interest in a 50,000-acre former Tenneco tar sands lease northeast of Fort McMurray, Alta. and two heavy oil property leases.

- participation in 16 gas processing plants in Alberta, including the Paddle River plant currently undergoing a major expansion and in which CDC Oil & Gas will have a 25.9% interest upon completion.

In physical terms these purchases translate into interests in 3.7 million gross acres of producing properties, comprising 93 net oil wells and 56 net gas wells, producing daily 4,000 barrels of crude oil and natural gas liquid equivalents and 37.7 million cubic feet of natural gas. Alberta accounts for 82% of the oil (and equivalents) and 90% of the natural gas production, with most of the remainder being in British Columbia.

ASSESSMENT OF CDC PURCHASE

In negotiating the overall purchase price, CDC and its consultants concentrated on the estimated cash flows from the various properties and assets discounted back to the present. It considered the petroleum industry a particularly attractive area for investment and felt that the Tenneco opportunity represented a relatively low risk. Hence, the use of a 15% discount factor was felt to fit very comfortably in this instance.

In the petroleum industry, as in others, the share purchase route is generally cheaper than the asset purchase route. For a cost of $110.8 million, or $102.5 million excluding cash adjustments, it would appear that CDC Oil & Gas bought net assets and reserves valued at somewhere between $150 million and $200 million using a discount factor appropriate to current financial market conditions. This would represent a discount of perhaps 35% range. Admittedly, this is a very rough and ready way of assessing value, but it is a widely used rule of thumb by investment analysts who regard a discount of 30% or higher from net asset value as attractive.

Because of a dearth of information on reserves and wholly owned subsidiaries it is difficult to judge relative size, but CDC Oil & Gas would probably rank about twentieth in terms of size in the Canadian oil industry. Thus it is classified as a medium-sized concern, in a bracket with Francana, Total Petroleum, Canadian Occidental, Canadian Hydrocarbons, North Canadian Oils and Siebens, to mention some likely comparable companies.

CDC Oil & Gas is reported to have a strong financial position, and perfunctory analysis would seem to bear this out. It owns the assets noted previously. It also has a good cash flow. In 1975, cash flow before depletion, depreciation, amortization and income taxes approximated $20 million, and is projected to rise comfortably above the $20 million level in 1976 and through $30 million when the Paddle River expansion makes a full annual contribution in 1977. This could mean net earnings, after write-offs and taxes, in the neighbourhood of $10 million in 1976, rising significantly higher in 1977. These cash flow and earning projections could be boosted by the forthcoming rises in the domestic crude oil and natural gas prices. Any revision of current federal and provincial tax formulas allowing companies to retain a larger proportion of revenues or providing further encouragement for exploration would be an additional plus.

In particular, CDC Oil & Gas intends to expand and revitalize its exploration activities, which Tenneco had wound down because of its disenchantment with developments in Canada. Options have been exercised on the return of certain key people from Houston to Calgary. This year's capital expenditure budget is estimated at $11 million, half of which is earmarked for Paddle River. No undue difficulties or delays are anticipated in putting exploration contracts out for tender.

As in other industries, value in the petroleum industry is a function of time and cash generation; hence CDC's use of discounted cash flow after taxes in valuing CDC Oil & Gas. Nevertheless, because it is not customary to disclose reserves, investment analysts are obliged to complement their asset value guesstimates with the use of cash flow multiples, at least as a measure of comparative value. A price representing a multiple of approximately 5.5. times latest cash flow would seem to be in line with comparable publicly traded companies involved in exploration and development (e.g., Western Decalta, 5 times cash flow, Alberta Eastern, 6 times, Voyager Petroleum and Chieftain Development, 8 times).

Therefore, measured in terms of the discount at which the assets were purchased (in excess of 30%) and the multiple of cash flow being generated (approximately 5.5 times) it would seem CDC made a first investment in the Canadian oil industry that was not necessarily a bargain but fairly priced, all factors considered.

DIRECTORS & STAFF

Because of conflicting interests within the oil industry the assembling of a suitable board for CDC Oil & Gas has presented some difficulties.

For example, John P. Gallagher, chairman and chief executive Officer of Dome Petroleum Limited, and a widely respected figure in the Canadian oil industry, sits on the CDC board and is a member of the CDC executive committee. However, he could not be invited onto the CDC Oil & Gas board because of a potential conflict of interest. (Conceivably, there will be occasions when Mr. Gallagher will have to excuse himself from discussions by the CDC board and executive committee on CDC Oil & Gas but these will be fewer than at the CDC Oil & Gas board level.)

Accordingly, CDC has preferred to keep the CDC Oil & Gas board as a small working board for the present. Donald C. Morrison, executive vice president of the CDC, is chairman of the board of CDC Oil & Gas. The five other directors are H. Anthony Hampson (president and chief executive officer of CDC, who is probably on the CDC Oil & Gas board on a short-term basis); J.N. Turvey (CDC director and chairman and chief executive officer of the Interprovincial Steel and Pipe Corporation Ltd. of Regina); John O'Brien, president of CDC Oil & Gas (and formerly president of Tenneco Oil & Minerals); one other member of the CDC Oil & Gas management; and the CDC Oil & Gas Calgary counsel. In this instance, CDC's total control seems to translate into a full involvement at the CDC Oil & Gas board level.

Since being acquired CDC Oil & Gas has been encouraged to assume increased responsibilities at the staff level. Some of the tax work, financing considerations and investor relations were previously handled at the Tenneco headquarters in Houston. Jobs have been rewritten and functions expanded so that these are now performed at the CDC Oil & Gas headquarters in Calgary where the staff numbers about one hundred people.

COMMENT

These are early days, but the evidence suggests CDC made a fairly priced investment in the upstream, and more attractive, segment of the Canadian oil industry at a propitious time.

The complications and tax-sharing problems of recent years are giving way to a common realization of the critical need to encourage the development of new petroleum reserves if Canada is going to meet its future energy requirements -- not to mention its natural gas export commitments to the U.S. In other words, prospects for the Canadian oil industry must almost, of necessity, be considered attractive. CDC has, for its part, made a substantial investment in the industry at this critical juncture. Moreover, rather than beginning from scratch, CDC chose to buy a relatively mature enterprise with an established base of assets, reserves and techniques and now with a revitalized, aggressive exploration program.

One has to be impressed by CDC's handling of a complicated purchase. Also, while gaining total control it has maintained a friendly and useful association with a leading oil group -- liaison with Tenneco management, access to Tenneco records and expertise, etc. Then, there is CDC's good fortune or judgment or both in moving in a different orbit from Petro-Canada, a Crown corporation destined to be an influence in developments in the regions solely under federal jurisdiction and therefore to be a government policy instrument. It is noteworthy that CDC, also a state-created enterprise, pressed ahead with its commitment to the petroleum industry despite the formation of Petro-Canada. Clearly, the two will have to be conscious of possible conflicts; e.g., of bidding against one another competitively and thereby forcing up the price, but such are the development needs of the Canadian petroleum industry that there is surely ample scope for both.

CDC's purchase of the Tenneco interests reaffirmed the role it sees for itself in capitalizing on attractive investment opportunities in the private sector. Its acquisition of the privately owned CDC Oil & Gas versus Petro-Canada's identification with the government sector is a distinction worthy of emphasis.

At this stage CDC Oil & Gas could perhaps best be summarized as a valuable, prospective cash-generating building block. Though these are early days, the signs are that CDC Oil & Gas fits CDC's distinctly Canadian mandate rather well. In similar fashion it seems to meet the policy objectives that CDC has set for itself. The economic and social implications of a successful CDC Oil & Gas are favourable and I do not see any potential abuses of significance.

In conclusion, CDC Oil & Gas seems to have the potential to make a positive, real contribution to both CDC and Canada -- though keeping in mind it cannot, as presently constituted, ever represent more than a small stake in this country's multibillion dollar petroleum industry. CDC, in turn, seems to have made a low profile but astute, timely and fairly priced entrance into the Canadian petroleum industry on terms that fit well within its policies and objectives.

5. OTHER INVESTMENTS

In comparison with Texasgulf, Petrosar and CDC Oil & Gas, the other five investments currently make an insignificant contribution to overall CDC net income. Accordingly this section, which describes each one in turn, will be much shorter than the preceding section. Table 11 sets out their respective values.

An appraisal of these investments should perhaps be approached as an exercise in probability: i.e., out of the five companies there is bound to be one winner that justifies a $50 million total investment. Nevertheless, it will be appropriate to focus attention on the rationale behind each of these investments and how they may help achieve CDC's stated objectives. Connlab, which is described first, emerges as an unusually interesting case study of CDC's holding company role.

Table 11

CDC - OTHER INVESTMENTS
($ Millions)

Category & Company	Date Acquired	Interest Held	Outlay by CDC	Carrying Value 1975 Year-end	Contri-bution in 1975
Health Care					
Connlab Holdings	1973 *	100%	35.5	32.5	(2.0)
Venture Capital					
Venturetek International	1972	32	4.7	6.4	
Innocan Investments	1973	40	3.7	3.6	0.8
Ventures West Capital	1973	49	2.2	2.2	
Pipelines					
Canadian Arctic Gas Study Ltd.	1972	3.9	3.8	3.8	-
			49.9	48.5	$(1.2)

* - Connaught Medical Research Laboratories bought in 1972; other health care acquisitions and Connlab Holdings set up in 1973.

CONNLAB HOLDINGS LIMITED

(Wholly owned subsidiary, heading
CDC acquisitions in health care.)

Incorporated, June, 1973

Date Acquired, Interest & Cost		CDC Interest	Cost ($ Millions)
1972	Connaught Laboratories Ltd., (After $3.5 million redemption of preferred and $0.5 million purchase adjustment.)	100%	21.0
1973	Raylo Chemicals Ltd., and R and L Molecular Research Ltd.	70%	0.3
	Omnimedic Inc.	70%	5.6*
	A/S Dumex	75%	11.0
Total Outlay by CDC			37.9
Carrying value (end 1975)			34.9

Contribution to CDC

	Sales	Loss
	($ Millions)	
1974	67.4	(0.3)
1975	83.8	(2.0)

* - $3.2 million paid to date, $2.4 million committed

CONNLAB HOLDINGS LIMITED

I found Connlab the most difficult of CDC's investments to appraise. Here unquestionably is another group of companies needing all the help CDC can provide. To date, however, expertise and application do not appear to have helped very much. Frankly, I cannot be hopeful for Connlab's future. Perhaps health care is an area not well suited to a private enterprise approach. Until proven otherwise Connlab, weighed down by Connaught Laboratories, must rank as a questionable investment casting a shadow over CDC's own abilities and investment merits.

ASSEMBLY

In the mid-1960's, the few major Canadian drug and pharmaceutical companies had been bought by U.S. companies, notably Merck's takeover of Chas. E. Frosst, and the health care industry was growing vigorously. CDC saw in health care an underexploited Canadian opportunity with three main ingredients it liked -- world-scale operations, a multinational approach and good profitability. Hence, health care was selected as one of the six areas for intensive study and investment.

The cornerstone of CDC's intended health care group was acquired in 1972 with the purchase for $25 million of the Connaught Medical Research Laboratories from the University of Toronto, which had decided to sell the previous year. Connaught represented the only health care entity of its size available in Canada at the time and was felt to possess an outstanding scientific and research base on which to build. Founded in 1913, it had operated as a nonprofit, nontaxpaying arm of the University of Toronto. In its early days it produced an antitoxin for diphtheria and later it moved into the production of insulin, discovered at the University of Toronto, which it was able to sell at prices significantly lower than in the United States. It also produced blood products and Salk polio and other vaccines, marketing them in some 100 countries although marketing was not known as one of its strong capabilities. Connaught possessed its own farm to raise disease-free animals, as well as numerous research and production units spread around the Toronto area. A staff of 800 included 200 scientists and researchers. Connaught's philosophy was to provide drugs to the public at prices as close to cost as possible, with any profit being ploughed back into research and capital needs. However, the University's decision to sell meant that Connaught's plant needed upgrading by the time of CDC's purchase.

CDC's intention was to upgrade and expand Connaught's research and production facilities and to blend Connaught's strong technical capability with marketing, thereby building a large-scale, combined health care group of national and international proportions. In a public address Anthony Hampson mentioned that Connaught was going to need an infusion of new management, as well as commercial, financial and administrative skills. He added that Connaught was being required to prepare budgets for the first time in its history. The job at hand was indeed challenging.

Early in 1973, for $300,000 a 70% interest was acquired in Raylo Chemicals Ltd. and R and L Molecular Research Ltd., Edmonton companies engaged in the manufacture of the fine chemicals and research related to pharmaceuticals, biochemistry and organic chemistry. This purchase would supplement new product development in the health care group. Soon afterwards CDC and Caisse de Depot et Placement du Quebec, the Quebec government pension fund agency, formed Omnimedic Inc., which in turn acquired majority control of two of the remaining independent pharmaceutical manufacturers with a national distribution capability. Both these companies were French Canadian, hence the partnership with Caisse de Depot. CDC put up 70% of a $5 million initial investment in Omnimedic, with Caisse de Depot providing the remaining 30%. The sponsors also committed to putting up an additional $3 million pro rata. The goal was to help create and develop a Canadian network of pharmaceutical/drug firms through Omnimedic.

In June 1973, Connlab Holdings Ltd. was incorporated as the vehicle company heading CDC's group of companies in health care and Donald B. McCaskill, a former president of Warner-Lambert Canada Ltd., and an experienced operating and marketing man who had joined CDC in 1972, was appointed president. In October of that year, for $11 million, a 75% interest was purchased in A/S Dumex, Denmark's largest pharmaceutical company with international sales of $40 million and joint ventures around the world. This interest was purchased from the East Asiatic Company, which retained the remaining 25%. Dumex, which manufactures and sells a complete range of pharmaceuticals, is a skilled, well run, efficient, multinational concern and was basically seen by CDC as a good investment in its own right, as well as a source of expertise with an international distribution network.

To complete the assembly of the health care group, early in 1976 CDC acquired an interest, described as significant, in Bio-Research Laboratories Ltd. of Montreal, renowned for its skills in pharmacology and with access to a large and valuable pool of research. Bio-Research could be the missing link in a group of investments that have yielded disappointing overall returns to date.

COMMENT

In 1974 and 1975, the two full years to time of writing since Connlab was formed and CDC entered health care, sales growth was excellent, but profit performance dismal. Of the $83.8 million worth of revenues in 1975, $60.2 million, or three quarters, came from Dumex (whose sales rose by 25%), $17.4 million from Connaught Laboratories (sales up 10.0%), and $4.4 million from the still small Omnimedic. Despite the strong sales growth the Connlab group recorded a $2.0 million loss compared with a $300,000 loss the previous year. The later loss was almost entirely attributable to Connaught Laboratories where the costs of production and quality control rose faster than sales growth, modest price increases did not help sufficiently, and performance remained significantly under budget. The loss at Connaught was aggravated by the nonreceipt of a $500,000 government grant, but that was a relatively inconsequential item. As a result of Connaught's problems CDC has had to invest more in the company, which in turn has had to borrow for its working capital and investment purposes. In a labour-and-capital-intensive business with a high break-even point, higher interest costs have accentuated the downswing in profits.

Clearly, the task of converting a traditional university organization into a commercial enterprise is proving more difficult than originally envisaged. Academic freedom (to the point of separation from the University of Toronto in previous years), tenure and research zeal do not give way readily to budgets, cost controls, performance goals and other modern management techniques aimed at achieving profits. When the institution concerned has a high product visibility and tradition of selling its products at close to cost, the task of conversion to a profit-motivated corporation becomes all the more difficult. At the same time Connaught's problems may also reflect a fundamental lack of profitability in the field of vaccines, which were hitherto so important to it, and a far-reaching problem could be a deficiency in new product development for marketing by Connlab group members, Omnimedic in particular.

Because of its conversion to a corporation, I believe Connaught is no longer eligible for research grants from the Medical Research Council of Canada. There have been alternative sources of government support (e.g., PAIT and IRDIA,) but in the prevailing atmosphere of retrenchment in Ottawa these too are being cut back -- hence the non-arrival of last year's anticipated $500,000 grant. However, worldwide there seems to be emerging a clear-cut distinction between the biological and pharmaceutical aspects of health care, with markets in the former coming increasingly under state influence and control and profitability assuming an ever diminishing role. A topical example is the situation in Denmark where Dumex operates profitably as a pharmaceutical producer and marketer and the state serum institute last year incurred a substantial loss. There are also examples of vaccine sales becoming more political than commercial at both the national and international levels. Multinational corporations like Merck and Hoffmann-La Roche, with their huge pharmaceutical bases, can afford to absorb the cost of expensive research and stay in the game.

Others cannot -- and there has been a noticeable exodus of smaller, less profitable companies from biological research in recent years.

In a country of Canada's size this poses real questions as to whether Connaught should remain in unprofitable vaccines without coming to a better understanding with governments -- often the major customers -- as to the costs involved. (To my understanding lack of profitability does not apply to blood products and insulin). To complicate these types of problems Connaught is a politically sensitive company and its pricing policies are highly visible -- as borne out by the fierce attack on it and CDC by the *Globe and Mail* in February 1975.

Rome was not built in a day and there is obviously much that can be done to rationalize a fragmented and old-fashioned cornerstone organization. For one thing management must obviously get a better grip on costs at Connaught and apparently is doing so. For another it is essential for the Connlab group to build up a pharmaceutical sales base with a world-scale competitiveness. Part of such a build-up must be the discovery and development of new products, to which Connaught can contribute, and CDC thinks that any gap in product development can be filled by Bio-Research, which has access to a large research pool. On the marketing side, Omnimedic is still comparatively small and will require time to be built up. Nevertheless, it seems probable that Omnimedic has the potential to grow into a sizable and profitable enterprise. While Dumex does not seem to be fitting in as well as hoped, it is a sound investment per se and its profit contribution doubtless helps. However, its international connections could become more valuable if and when the Canadian operations are built up more successfully, and Dumex could be a useful international conduit for the marketing of new products developed by Bio-Research and Connaught.

These are longer term considerations. According to CDC management Connaught's profit performance is likely to remain poor in the first half of 1976, but sales volumes could begin expanding more vigorously with the launching of several new products and the manufacture of flu vaccine recently undertaken to fulfill government programs. These projects, and prospects for the pharmaceutical elements in the Connlab group, give hope for an improved future profit performance beginning this year. On the other hand Dumex might not be having as good a year in 1976, so whether there will be any worthwhile nearer term recovery by Connlab as a whole is doubtful. To add to this year's uncertainties Donald McCaskill has resigned to take an appointment at Standard Brands, Anthony Hampson has taken over as the interim president of Connlab and S.R. McInnes has been appointed president of Connaught.

CDC has followed its familiar organizational approach with Connlab and Connaught. The 14-man Connlab board was composed of Donald McCaskill as President, two representatives from the CDC board, two representatives from CDC management (Messrs. Hampson and Morrison), one representative from each of Connaught, Dumex and Omnimedic, and six outside directors. The latter include three recent appointments: Dr. Roger Gaudry, former President of the Science Council of Canada; Dr. Pierre R. Gendron, President of the Pulp & Paper Research Institute of Canada; and Dr. William A. Cochrane, President and Vice Chancellor of the University of Calgary. These men are also on the Connaught board, and together with Dr. John D. Hamilton of the University of Toronto have been appointed to a Scientific Advisory Committee of Connaught and Connlab. Connlab has a seven-man executive committee with a strong CDC representation including Hampson and Morrison. There is also an audit committee with CDC representation. A five-year plan has been implemented for Connlab. The accounting approach is conservative, with research expenses being written off as incurred. Losses arising out of research expenditures can be carried forward indefinitely and the Connlab group has a significant tax shield as a result; but such a shield will only be valuable if there are future profits against which tax losses can be applied. Most of all Connaught must be made profitable.

CONCLUSION

Connaught Laboratories is the closest venture to a start-up that CDC has attempted -- as distinct from buying entities with an existing cash flow. This is all the more true of the pharmaceutical side of Connaught. Hindsight is easy. Health care fitted admirably in CDC's distinctly Canadian terms of reference. I can appreciate the logic of CDC's selection and the temptation to buy probably the only major vehicle available. But in Connaught it may, regrettably, have backed the wrong horse and despite the numerous remedial steps that are being taken, I question whether the Connlab investment can ever meet CDC's criteria of 15% profit growth and return on equity.

There can be no turning back on the total investment, or jettisoning of Connaught at this stage. I don't envy CDC its investment in health care and until proven otherwise seeing must be believing.

VENTURE CAPITAL

Interests	Year Acquired	Equity Ownership	Outlay by CDC	Carrying Value end 1975
VENTURETEK INTERNATIONAL	1972	32%	$4.7 million	$6.4 million
- Conat Industries, 77.8% Oil combustion and environmental control systems				
- Gestalt International, 54% Mapping instruments				
- Hermes Electronics, 74% Ocean engineering products				
- McPhar Instrument Corporation, 51% Geophysical instruments				
- Pop Shoppes International, 56% Soft drinks vendor				
- STAKE Technology, 60% Conversion of ligno-cellulosic materials into cattle feed				
- Ventek International, 90% Data processing systems and word processing equipment				
- VENTURES WEST CAPITAL Venture capital investments in Western and Northern Canada	1973	49%	$2.2 million	$2.2 million
- Frio Oil, 41% Oil and gas properties principally in north-eastern British Columbia				
- Foremost International Industries, 9% Off-highway vehicles for Arctic, muskeg and desert use				
- Controlled Environments, controlling interest Research growth chambers				
- A. Freen, controlling interest New rear projection screens				

VENTURE CAPITAL
(Continued)

Interests	Year Acquired	Equity Ownership	Outlay by CDC	Carrying Value end 1975
INNOCAN INVESTMENTS	1973	40%	$3.7 million	$3.6 million

- AES Data, 82%
  Word processing and tele-protection equipment

- Coroplast, 55%
  Corrugated plastic packaging material

- Cybermedix, 22%
  Testing and health screening programs

- InnoPop Beverages, 85%
  Owns Pop franchises for Quebec

- Innotech Aviation, 67%
  Aviation sales, maintenance and support

- International Systcoms, 32%
  Radio telephones and two-way mobile radios

- Laurentian Concentrates, 56%
  Protein, and aqueous film foams

- Sentrol Systems, 74%
  Electronic sensing and control equipment

- Vulcan Industrial Packaging, 19%
  Metal containers and decorations, wire products

Contribution (of Venture Capital group of companies)

1975	$0.8 million
1974	1.1 million

VENTURE CAPITAL

CDC's investments in venture capital are summarized in the preceding table which show the corporation's wide-ranging but indirect investments in some thirty young companies generating $73.5 million worth of revenues in 1975. The return remains modest on a $10.6 million capital outlay, whose carrying value, arrived at essentially by adding CDC's share of retained earnings to its investment outlay, had risen to $12.2 million at latest year-end. Little can be expected at this stage from a collection of small, diverse companies mostly still in the conceptual or early stages of their development. The investment in Venturetek International seems to be showing particular promise and there is reason to expect this overall commitment to yield a worthwhile return over the longer term.

The adequate provision of venture capital is acknowledged to be vital to Canada's economic development. In the early 1970's there was a popular view that it was a field inadequately provided for by established financial institutions and capital market facilities. Here, it was felt, was an obvious gap-filling role for CDC. This may have been somewhat of a misconception. A publication by the Department of Industry, Trade and Commerce in 1973 listed some 50 Canadian venture capital groups, many headed by principals experienced in the business. Indeed, the real dearth may well have been in ventures to invest in. Thus, it was not as necessary for CDC to fill venture capital gaps as was generally thought. In any case CDC had the good judgment to recognize that venture capital investment, which it had selected as one of its six broad areas for investment, required a definite plan rather than a scatter-gun approach. Instead of investing directly it chose to make substantial, but not controlling, proportionate investments in three of the leading venture capital providers, in the same manner as other financial institutions. The following factors probably influenced CDC in taking an indirect approach to venture capital investments.

First, its incorporating legislation directs CDC away from companies with equities of less than $1 million (after investment in them); since most venture capital companies are smaller than this in their initial or formative years, they would be effectively precluded from direct CDC investment. Second, CDC's management capability was limited. Venture capital investments, more than others, are time consuming and direct investment in them might cause CDC to spread its resources too thinly so that it would lose the firm grip essential to the success of its other investments. Third, even allowing for the constraints of minimum size, there were the limits on the amount CDC could invest in venture capital form at a stage when it had first to establish itself and build a base of cash flow and earnings.

For these reasons, then, CDC felt it best to take a wholesale as opposed to a retail approach and to invest via specialist venture capital firms. In 1972-73 it took substantial equity interests in three widely located venture capital specialists -- Venturetek International of Toronto, in which CDC has a 32% interest, Ventures West Capital of Vancouver, 49%, and Innocan Investments of Montreal, 40%. As mentioned, other institutions also have investments in these holding companies.

Note that the three companies are associates rather than subsidiaries of CDC. While CDC is the largest single shareholder in each of them, it prefers to be a behind-the-scenes partner as opposed to an active investor. However, CDC is represented on the boards and all three companies have audit committees with CDC executives on them. Each company has the objective of providing capital to embryonic or young business ventures considered to have substantial potential for growth over the longer term, and each is managed by its own autonomous management group which has an equity interest in that company. In turn, the interests taken in the companies invested in can range from 90% (in the case of Ventek International) to 9% (Foremost International Industries), though it would seem that controlling interests are preferred for the most part. This would reflect the fact that equity interests in new companies carrying high risks must be large enough for CDC to exert control when deemed necessary and to reap a meaningful reward should the investment ultimately prove successful.

In this manner CDC has become associated with the largest pool of venture capital in Canada. I believe it <u>had</u> to choose venture capital as a preferred area for investment (though there was no direct government pressure to do so). At the same time by backing an established leader and promoting the establishment of two new companies, CDC has approached this area logically, and within prudent management and financial limits. Given the approach taken, the probability must be rated good of eventual worthwhile overall rewards because a few winners will more than compensate for those that fail to make the grade.

A holding company in Eastern Canada would round out CDC's geographical coverage of the broad venture capital field. As CDC becomes better established itself, and the returns on the venture capital investments improve, it may well want to provide more such funds for investment and begin undertaking direct venture investments itself.

PIPELINES

CDC Investment

Acquired	- November, 1972
Interest	- 3.9% in Canadian Arctic Gas Pipeline
Cost	- $3.8 million
Carrying Value	- $3.8 million

PIPELINES

Pipelines and related northern transportation were singled out by CDC as a broad industry area for study and probable investment. Early on, CDC declined its option to negotiate for the purchase of Northern Transportation Ltd., feeling that this Crown corporation was overly affected by noneconomic considerations and that, consequently, it would not yield a sufficiently profitable return. (Northern Transportation's subsequent performance has borne out this judgment.) Instead, CDC chose in late 1972 to join the Gas Arctic-Northwest Project Study Group, a consortium of 17 large corporations, most of them integrated oil companies or oil and gas users that were planning a pipeline to carry natural gas from the Mackenzie River delta and the Alaskan north slope to markets in Canada and the United States.

The Canadian Arctic Gas Pipeline (Arctic Gas) emerges as a mammoth project whose total cost has risen from an originally estimated $4-$6 billion range to about $8 billion currently. The project will require the permission of Canada's National Energy Board, the U.S. Federal Power Commission and other regulatory bodies. Indeed, such is the controversy it has created, its magnitude and importance that it will likely require the eventual approval of both the Canadian federal government and Congress.

It is not within the scope of this study to discuss the number of important issues involved in Arctic Gas. I can well understand why CDC, with its planned emphasis on large resource projects, was anxious to enter the consortium and record its interest as a potential equity investor in a project that fitted its mandate well. It is hoped that adequate proven reserves and long-term supply contracts will permit 80% of Arctic Gas' total capital to be debt. On an $8 billion estimate this would mean an equity subscription of $1.6 billion, or $160 million for a 10% interest. In April 1975 CDC indicated an interest in subscribing for $100 million of the project's equity securities subject to certain conditions as to timing, financial attractiveness and Canadian private sector control of the project.

However, by the end of 1975, when Arctic Gas had spent over $100 million on the project, of which CDC's share amounted to $3.8 million, CDC gave notice that it wished to cease bearing its share of development costs and become a nonvoting associate rather than a full pro rata member of the consortium. It was emphasized, however, that this change of status did not affect its indication of provisional interest given earlier.

In fairness it should be pointed out that CDC is the only remaining outsider in this project, the other members of the consortium being either prospective suppliers or purchasers of Arctic gas.

A critical longer term shortage of natural gas is emerging in Canada and in a dramatically unfolding energy scene there is a definite requirement for at least one major pipeline to southern markets from the north. Arctic Gas would seem to be a strong candidate and an equity stake in it could be a potentially valuable investment for the 1980's, as well as a subscription in the national interest. But the lengthy regulatory hearings are nowhere near complete and there are the bids of rival pipeline groups to be considered. One of the emerging rivals is the Polar Gas project to pipe natural gas to southern markets from the high Arctic and in which Petro-Canada, the federal government-owned petroleum corporation, and Panarctic, its effectively controlled associate, will feature prominently. Therefore, Arctic Gas must be regarded as a risk capital, portfolio investment at this stage -- and CDC's decision to stand aside until its future becomes clearer is understandable.

6. PUBLIC SHARE ISSUES & INVESTOR RELATIONS

CDC's goals are to contribute meaningfully towards the development and maintenance of strong and growing Canadian-controlled and -managed corporations in the private sector of the economy, and in so doing to widen the opportunities for Canadians to invest in Canada's economic development.

To make an impact and to fulfill its gap-filling, investment building roles, e.g., in Polysar or Arctic Gas, CDC must have considerable resources of its own to invest. CDC must, by definition, be large. The federal government wishes to limit its investment in CDC to the initial statutory $250 million subscription plus the $72 million of shares issued in exchange for Polysar. Moreover, the intent of the incorporating legislation is that 90% of CDC's voting (i.e., common) shares be sold to Canadian investors; and there is even a provision under which the CDC directors may, at their discretion, redeem government-held shares at book value to expedite this ultimate goal. However, the redemption approach would not bring in fresh capital for CDC's own investment purposes and would, except under special circumstances, be largely self-defeating.

Clearly, the best way for CDC to meet its all-round objectives is for it to successfully sell treasury stock to the Canadian investing public. The resultant greater availability of its shares in the market place would also increase CDC's operating flexibility, since shares as well as cash could then be used to make acquisitions.

Demand for securities is created by investors' perception of a company, its operating record, management and prospects. By any measure CDC is a complex entity. Its size, the diversity of its investments and its growth by acquisition make the job of creating an informed market in its shares difficult at the best of times. Add to these factors the special implications to CDC's future profits of the long-range nature of developments such as Polysar/Petrosar and the inherently cyclical and volatile nature of CDC's investments in natural resources, and the task becomes doubly challenging. While growth in earnings and dividends is vital, more than that will be required for CDC to attract the large sums of capital it needs.

This early in its history, and because several of its major investments are years away from fruition in terms of earnings and dividends, CDC shares must rightfully be labelled "speculative". Consequently, the ability to sell CDC on its unique longer term development role and its above-average ultimate earnings potential becomes all the more difficult. This said, relations and communications with its shareholders and the investment community at large assume critical importance at so early a stage in CDC's history. The fact that existing public shareholders have the right to redeem their shares after five years adds urgency to the dual challenge of performance and communication.

CDC's ability to sell treasury stock and cultivate its investor relations are closely interrelated and are as important factors in ensuring its future as the success of its investments in TXG, Polysar, CDC Oil & Gas, Connlab, etc. The purpose of this section will be to examine the corporation's capability to attract investors.

PREPARATIONS FOR PUBLIC SHARE ISSUE

The strategy proposed for CDC during its gestation stage was to accumulate a substantial portfolio of companies using seed money provided by the federal government. Then within five to ten years a share offer would be made to the public based upon a demonstrated record of earnings, dividends and management. Risk was to be the essential time consideration -- the sooner a public issue was made the greater would be the risk attached to the shares offered. Early thoughts of a glorified mutual fund offering shares at five dollars a share gave way to the view that it would be better to reduce the risk by waiting until a track record had been established.

However, when the corporation was launched, the strategy of the CDC board and management was to go public as soon as reasonably possible. Furthermore, it was resolved to achieve the widest possible distribution network so as to reach those who do not normally invest in common stocks. This idea could have been somewhat of a contradiction in terms because, by going public early, the risks were obviously higher and a risk investment in this sense might not be appropriate for first-time stock buyers -- which CDC was seeking to attract. To facilitate distribution chartered banks should, it was felt, be involved and instalment purchase plans allowed. The risks would have to be pointed out (sic), but a counterattraction would be the opportunities for Canadian citizens to invest in an exciting enterprise with potentially high rewards at a relatively ground-floor stage. Rather than waiting for an earnings record to be established it was felt the emphasis should be on earnings potential.

Management began espousing a public share issue as early as 1972. Initial forays into the private capital markets were encouraging. There was the $160 million line of credit obtained from the Toronto Dominion Bank to help finance the TXG acquisition, and the knowledge that the bank had granted this unprecedented loan on the credibility of CDC (Allen Lambert testifying before the Royal Commission on Corporate Concentration). In late 1973 there was a successful $50 million offering of short-term promissory notes in the Canadian money market. In the spring of 1974 there was the private placement of $100 million 5-3/4% nonvoting Class A preferred to a group of twenty Canadian financial institutions and business corporations, and significantly 60% of this issue was subscribed for by the five major chartered banks.

The eventually successful tender offer for TXG in October of 1973 brought CDC much favourable publicity and provided it with an underpinning of cash flow and earnings. This added to management's resolve to go public as soon as possible.

Unfortunately, conditions in the Canadian equity markets were deteriorating by that time. The Six-Day War and the unfolding energy crisis hastened the downtrend in a declining U.S. market. The Canadian market, which had reached an all-time peak in the fall of 1973, went into decline as well. The year 1974 proved a bleak one in Canadian securities markets, reflecting a combination of recession, rising energy and commodity prices, climbing interest rates and escalating, worldwide inflation. Canada escaped the worst effects of the recession and its securities markets showed signs of rallying in April-May when a public issue again began being seriously considered by CDC and its underwriters. However, the ill-fated budget of May 1974, the general election two months later and an ensuing slump in Canadian stock markets put paid to any further thoughts of a CDC issue that year.

However, in the summer of 1974, when pessimism reigned, CDC commissioned a public opinion poll from which it was concluded that 12-20% of households in Canada were seriously interested in buying its securities at that time. Bolstered by these findings and the record results being achieved by TXG and Polysar, in turn reflecting in its own results, CDC pressed ahead with its plans for an issue. It also talked boldly of this issue being the largest equity issue ever done in Canada. Unofficial estimates ranged in excess of $200 million covering perhaps as many as 100,000 shareholders.

TYPE OF ISSUE

Conditions in the equity markets of the mid-1970's called for more than future growth prospects to attract investors. The growth equity cult of the late 1960's had long since faded out. The size of CDC's requirements, an ultimate capital base of over 300 million common shares if the government interest was to be reduced to 10% through share issues to the public and for acquisitions, and the limitations on cash flow and dividends in the early years (with none of its investments near their full potential) meant it would have been difficult anyway for CDC to sell straight equity under favourable conditions. The capital market conditions of 1974-75 meant straight equity was out of the question.

Thus, an offering had to be constructed that would compete with the returns generally available on investment instruments in the depressed bond and equity markets of the time. This pointed to an instrument combining an adequate measure of immediate income with future growth prospects -- and this in turn involved the cost of capital to CDC in terms of yield and the differing requirements of institutional and retail investors.

Because it is an equity investor CDC has relatively little interest or other form of income to write borrowing costs off against. Therefore, other than income debentures with their limited appeal, borrowing is not a realistic way for CDC itself to raise funds, and the leverage in its group is best left in its member companies. Dividends from one Canadian corporation to another being tax free, a CDC preferred share issue yielding 5-3/4%, as did the 1973 issue, provides tax-paying corporations like the banks with the same after-tax return as an 11-1/2% bond (assuming a 50% tax rate). While representing a relatively cheaper way for CDC to raise capital, this type of institutional market is also relatively limited and was certainly not attractive enough for the retail investor in the markets of 1975. And it was the retail investor CDC was obliged to attract above all else.

At the same time there was a limit to how much CDC could afford in dividends, especially with major investments like TXG and Polysar experiencing steep declines in earnings and so putting pressure on their dividends to CDC. Consequently, various sweeteners had to be considered to bridge any yield gap and raise the value of the instrument to be created to commensurate levels.

Complicating the convertible preferred route was the difficulty in determining the true value of the underlying common (into which the preferred was convertible) and the fact that the federal government had paid an average $10.48 per share for its investment in CDC. Ideally the hypothetical value of the underlying common should not be less than that. Last, and by no means least, was the fact that many first-time investors would be buying CDC shares for patriotic reasons, and it was important that such investors not be disappointed in seeing the value of their shares decline in the developing aftermarket. In other words, this issue more than any had to hold its initial value.

These were the types of problems CDC and its advisers wrestled with in 1974-75. They involved repeated and extended discussions within investment dealer firms and in the investment community generally.

To ensure the widest possible distribution CDC pressed for the chartered banks to be allowed to sell the shares as well and this led to a heated debate with the Investment Dealers Association and securities commissions before the proposal was withdrawn.

(The latter ruled that bank employees would have to pass securities exams and be suitably qualified before they could sell CDC shares to the public.)

In the investment community a successful new issue is usually sold promptly with the minimum of advance word and delay. In the case of the CDC issue the reverse happened. The net result, to which CDC itself contributed with frequent public statements, was that this issue had become somewhat tarnished and controversial even before the prospectus covering its first public issue was filed for registration.

PUBLIC ISSUE

In late July 1975 the long-delayed issue was approved by the CDC board and a preliminary prospectus filed with securities commissions across the country. The issue was confidently expected to break the record of $125 million for a Canadian equity issue, and it was rumoured that CDC hoped to raise as much as $250 million and attract over 100,000 outside shareholders. On the terms proposed a $250 million issue would have raised the ownership by the Canadian public of the corporation's outstanding voting stock to 45% and potentially to 49% upon the issue of attached bonus shares.

Investors were to be offered a complicated package made up of $100 units comprising the following features:

- a 7% cumulative $100 par value Class B preferred share ranking junior to the Class A preferred;
- each unit convertible at any time into 10 common shares (thus putting an effective price of $10 each on the common);
- each preferred share possessing 10 votes (compared with 1 vote per common share);
- each preferred share carrying the right to receive 2 additional bonus common shares to be issued on October 1, 1980 and 1985 respectively (the CDC directors to fix the record dates for such payment), or upon prior conversion. The first bonus share had to be issued but entitlement to the second would be extinguished if the preferred were redeemed after October 1980;
- redeemable at the Company's option, beginning October 2, 1980 at $105 and scaling down $1 annually to $100 from October 2, 1985;
- redeemable at par value at the holder's option between October 1985 and October 1986;
- a purchase fund to redeem outstanding shares at a rate of one-quarter per cent monthly commencing in November 1986.

The formal offering was expected to be made in late August and through early September. There was to be no top limit, but it was made clear the offering would not be kept open indefinitely. To ensure the widest distribution the shares were to be offered through all investment dealers and members of Canadian stock exchanges, and orders were also to be accepted through bank branches, though the banks could not receive a commission and were not permitted to be part of the 55-member banking group formed to underwrite and market the issue. To facilitate purchase by small investors there was an instalment plan for individuals up to $2,000, 20% payable on signing the application form (plus a small service charge) and the balance over eight months in 10% instalments.

It was clearly stated on the front page of the prospectus that the securities were speculative and were not guaranteed in any way by the Government of Canada. However, within the bounds of securities laws, an elaborate campaign was undertaken to explain CDC and the issue to the investing public. Advertisements inviting requests for the preliminary prospectus were placed in most leading newspapers and journals. Factual literature on CDC and kits covering the issue were made available. A coast-to-coast road show, in which CDC management participated, was arranged by Wood Gundy Ltd., the lead underwriter, to present the issue to the investment dealing community. The underwriters endorsed President Anthony Hampson's expectation of a wide and successful distribution. There was to be a special emphasis on individual investors who were to be given priority in ordering shares. Investment dealers announced plans to remain open until 8:30 at night to deal with questions on CDC and process orders.

There were several unusual features about the offering. The total dollar amount to be raised and shares to be issued were not specified and would not be determined until the final prospectus was signed -- or as it subsequently transpired, until the issue was completed in October. However, the intended dividend rate of 7% and unit price of $100 were spelled out from the beginning. Investors were given a month to examine the offering and place expressions of interest before the units went on sale formally. The issue was the first in Canada to offer an instalment purchase plan for new equity securities.

The issue did eventually turn out to be the largest ever carried out entirely in Canada, but not without controversy and revision. It quickly became apparent the expected flood of orders was not materializing. Institutional interest, a requirement in any successful issue, was negligible. Rising interest rates and a deteriorating stock market did not help. The issue was criticized on the grounds there was no indication of how the funds were to be used and no stated ceiling. Doubts about CDC being truly independent of the government surfaced once again, as did apprehension about the mammoth number of shares that would be ultimately outstanding if government ownership was reduced to 10% through the public share issue route. The loudest critic was the ex-Liberal cabinet minister, Professor Eric Kierans of McGill University, who faulted the issue on the complicated, and in his view confusing, way in which pertinent information and the financial statements were presented in the prospectus.

In late August 1975, upon the advice of the underwriters, the CDC board revised the dividend rate on the convertible preferred shared in the offering to 8% (from 7%) and introduced an additional, earlier optional redemption feature -- the shares were now also to be redeemable at the holder's option between October 2, 1980 and December 31, 1980 (as well as between October 2, 1985 and October 1, 1986). Even then there were apparently doubts in the underwriters' minds as to whether $100 million could be raised under the revised terms. These were quickly dispelled when institutional support for the issue was received from two chartered banks, Nova Scotia and Toronto Dominion, who ordered an estimated $25 million between them. Two of the smaller banks also participated in a minor way, but the fact that the other major banks declined is an interesting example of the banks not always acting in unison. A maximum of $125 million was set for the issue, but the difficulties of tallying the installment plan purchases accurately and the weight of orders received under the revised terms saw the issue rising higher than that. This was accomplished through the underwriters invoking the rarely used "green shoe" clause under which, where there are extenuating circumstances and at the underwriter's discretion, but within limits agreed to by the issuer and securities commissions, 25% of the issue in this instance, the ceiling may be raised by an additional specified maximum. Thus, the authorities and CDC were agreeable to an additional $31.25 million for a total of up to $156.25 million. The final figure was eventually settled at $145 million of which $142.5 million had been paid for by the end of 1975, and $144.8 million upon completion of purchases under the installment plan at the end of June 1976.

Including shares held in nominee name at trust companies and brokers, it is estimated that the issue brought CDC some 20,000 shareholders. It resulted in 32% of the Company's outstanding voting stock being put in the hands of the Canadian public. The full issuance of the attached bonus shares would result in this ratio rising to 36% -- or, conversely, the federal government ownership declining to 64%.

INVESTOR RELATIONS

Investor relations is the process of communication that establishes the credibility of a corporation by providing wholly reliable and usable information in the form of annual reports, special presentations of corporate operations, information in the printing and visual media, etc. The result is the development of an informed market for a company's securities.

For reasons explained, the primary objective of CDC's investor relations program should be to create an informed market for its securities. In a shareholder survey commissioned by CDC, Dr. Robert F. Kelly of the University of British Columbia concluded that a substantial number of shareholders had "totally inaccurate perceptions about the nature of CDC and its objectives". Whether or not the statistics support this conclusion as strongly as Dr. Kelly suggests they do, the corporation through its investor relations program must do all it can to correct misconceptions so that an informed market is created for its securities.

As a major force of corporate concentration in Canada, CDC has a responsibility to maintain a standard of excellence in its communications with its different publics. There would seem to be several problems which CDC's program must solve if it is to be successful in this respect. These are developed below.

The retail market has been, and will continue to be, a major source of capital to CDC if the corporation is to achieve its funding goals. Individuals will buy CDC's shares as long as they are perceived to be a sensible and profitable way in which to employ savings.

The investment information needs of the individual are different from those of the institutional or corporate investor who normally has direct access to informed opinion on a public company. Above all, the individual's decision to buy securities starts from a good understanding of the nature of the investments. It is obvious the lack of understanding among the Canadian public about CDC was a contributing factor to the relatively low level of retail participation in last fall's preferred share issue. For example, 40.7% of respondents to the survey thought that "CDC was designed to buy back Canada from foreign investors." Lack of "reach" and investment dealers closing off once they had filled their allotments may also have been a factor. CDC has an urgent need to develop information which is intelligible to the individual investor.

CDC's investor relations program has the task of establishing the corporation's image while at the same time correcting the erroneous views about the corporation which are apparently held by a significant number of Canadians. CDC has been a public company for less than a year and has been operating for barely five years. The corporation therefore is still in the early stages of building its image with the investing public. Unlike other new-issue companies, however, by the time CDC came to market it already had an image of sorts established, the product of its highly publicized evolution through the 1960's from the original concept of CDC as an instrument of Canadian economic nationalism to that of an instrument of genuine industrial development. The impressions that the public gained during this formative and often contentious phase no doubt contributed to some of the misconceptions that shareholders have of CDC, misconceptions which are certainly shared by the print media, most notably the *Toronto Star* which in successive headlines of May 21-22, 1976 described CDC as a "government agency" and as an "Ottawa agency".

CDC is highly visible and is likely to remain so. The corporation is therefore vulnerable to outside criticism. This is why it is so important that CDC establish an accurate image with the investing public.

Dr. Kelly's survey showed that the majority of individuals who acquired CDC shares in last year's issue were relatively affluent -- 60% have an annual income in excess of $15,000 -- and probably not representative of the general Canadian population. Recognizing that many Canadians simply chose not to invest in CDC and that misconceptions about CDC deterred potential buyers, the performance of the investment industry in marketing the issue may also have left something to be desired. Perhaps CDC's failure to achieve a greater share distribution is more understandable when one considers how seriously the retail marketing capability of the investment industry has been weakened in recent years; e.g., since 1973 the number of retail salesmen has dropped from 6,000 to 4,000.

The implications of the 1975 share offering to future CDC share issues are quite clear. Whatever distribution process is involved, CDC must build its public image to the point that a large number of Canadians understand the corporation better. This may not be sufficient in itself, but a well-informed audience is a necessary precondition of successful future issues.

It is apparent, then, that a substantial number of Canadians, including many existing shareholders, have an inaccurate perception of CDC. It would seem, as well, that this lack of understanding resulted in fewer Canadians buying the CDC convertible preferred shares than might otherwise have been the case. Unless corrected this lack of understanding will seriously impair the corporation's capacity to raise the capital required to achieve its goals.

Clearly, CDC has a serious and urgent communications problem to overcome. Management has made an encouraging start by defining and tackling the problem. The quality of the annual report has been further raised, shareholders surveyed for their opinions, an audio-visual presentation prepared on the corporation, and a dividend reinvestment plan announced for introduction later this year. These are all steps in the right direction.

ASSESSMENT

One of CDC's declared objectives is "to widen the investment opportunities open to Canadians". Indeed, this will be supremely important if it is going to maintain its percentage ownership in its major subsidiaries and associates and assist in the larger scale financing that these ventures will require. Since the federal government does not wish to invest more dollars in the corporation, CDC must stand on its own feet in the capital markets as soon as possible. Last year's public issue helped in this regard. At the same time the issue fell short in certain key respects and there are valuable future lessons to be learned from it.

The intrinsic merits of the complex, multi-feature vehicle that was ultimately constructed deserve examination. The shares needed to have substantial value for the public's sake, that is, to ensure a satisfactory experience in this all-important initial issue. Assuming reasonably stable future capital markets, examination reveals that the investing public has a worthy investment either way. If CDC succeeds, the conversion and bonus features are potentially valuable. If it does not, holders may "put" their shares back to the corporation at par after five or ten years. In the waiting period the shares provide an attractive yield enhanced by the dividend tax credit available to tax-paying investors. On the reverse side of the coin the dividend coverage is thin and there is volatility in the underlying investments; e.g., based on 1975 *pro forma* unconsolidated results the dividend on the Class B would barely be covered after paying the dividend on the Class A shares. If a renewed wave of inflation were to propel interest rates upwards in the same manner as, for example, in Great Britain, and fixed income instruments were to depreciate drastically in value as a result, CDC and many other companies would likely be hit with redemption calls which could undermine their future plans for raising capital. CDC is banking on an abatement of inflation.

There are investment people who maintain that the government connection was used to advantage, that CDC played on its parent sponsorship in the preparatory discussions with the investment industry, that securities salesmen downplayed the "no-government-guarantee" feature, etc. These are ticklish aspersions, but I believe they can be confidently rebutted.

Analysis of Professor Kierans' criticisms reveals he had not done his homework. The information he claimed was lacking was to be found in the prospectus, while the summary on the front inside page of the prospectus was designed to highlight the main features for the unsophisticated investor. At the same time CDC is indeed complicated, and existing securities laws and accountancy requirements do make it difficult to explain CDC to the type of investor it is seeking to attract.

In the light of experience I suggest it can be legitimately questioned whether the investment dealer industry can bring the broad ownership and wide distribution CDC requires to raise the large sums of capital it needs to fulfill its mandate. The chartered banks, with their extensive branch networks, would surely be a considerable help to CDC in reaching out in the desired manner, although this touches on the extremely delicate area of how far the banks should be allowed to intrude into near-banking and investment banking. But there is a weight of evidence to suggest that the ultimate measure of public acceptance of this widely marketed and heavily promoted issue fell short and that the banks and others could have assisted much more meaningfully than they did in covering the required market properly.

CDC would have liked many more shareholders than the 20,000 the issue brought it. In this regard one wonders whether there are any lessons to be learned from the experiences of the Alberta Energy Company Ltd., a holding company bearing some resemblance to CDC at the provincial level. AEC is designed to provide special opportunities for Albertans and other Canadians (in that order) to profitably participate in Alberta's industrial and energy-related growth. It too went public in the fall of 1975 (shortly after completion of the CDC issue), with an offering of $75 million in straight, nondividend-paying common shares priced at $10 per share -- following the issue of the same number of shares to the Government of Alberta earlier in the year. Alberta residents were given the opportunity to subscribe for the shares during a 15-day Alberta Priority Period, after which the remainder was to be offered to other Canadians. However, Albertans oversubscribed for the issue and the plan to sell AEC shares outside the province had to be set aside. The consent of the Alberta Securities Commission was received to use wider distribution channels in that province and the issue attracted subscriptions for 7.8 million shares and resulted in the recruitment of over 60,000 shareholders, 83% of whom own 100 shares or less. These holders are almost totally in Alberta, a province in which CDC has attracted barely 1,500 shareholders. Approximately 77% of all AEC applications were received from the chartered banks, trust companies, credit unions and Alberta treasury branches, who provided sales facilities throughout the province in addition to the customary investment dealer offices. What a difference in public response that seemed to bring!

Finally, there is obviously much that can be done to improve CDC's investor relations and public image, which are so important in the context of necessary large-scale raising of capital.

7. GENERAL IMPRESSIONS & CONCLUSIONS

The concept of profit-motivated holding companies formed by the state to pursue national objectives is not new.

For example, in Italy in 1933 Mussolini began a system of "mixed capitalism" under which the state bought or created firms to promote broad social goals -- and to make a profit. Today the Italian government controls or has interests in companies that account for some 50% of that country's industrial output, have assumed ever wider powers and have grown to gargantuan proportions, though of late frequent abuses seem to have crept in and large losses have been incurred. The West German government's postwar takeover of the Krupp steel empire is another example of a state-controlled, profit-making enterprise. In Spain, Instituto Nacional de Industria (INI), a government holding company set up after the war, controls the national airline, as well as shipping, petroleum and other important activities. Mexico's experience with a state-controlled holding company is interesting in view of Canada's and Mexico's common problem of living beside the dominant U.S. economy. Set up as a farmer's credit bank by a revolutionary president in 1934, Nacional Financiera, generally known as NAFIN, has become a bank and development corporation controlled by the Mexican government. It is reported to be profitable, although it seems to attempt too much, e.g., it offers bond issues to the man in the street, its shares are subscribed for by private and institutional investors, it is a major source of capital for the large and growing sector of industry under state control, and it is the agent for the Mexican government to buy out foreign-controlled companies.

The oil industry has many state-controlled giants. Some, like British Petroleum and Aramco, were acquired or expropriated by the state. Others, usually more recently formed, like Ente Nazionale Idrocarburi (ENI) in Italy, Petrobras in Brazil, and the embryonic British National Oil Corporation, were founded for the specific purpose of acquiring and developing national petroleum resources. ENI had additional powers conferred upon it, namely to operate internationally in petroleum, and also in chemicals and nuclear energy. Its operations have grown to include pipelines, textiles and manufacturing, and it has 150 subsidiaries and affiliates for which it provides overall policy and direction along with planning, coordination and financial assistance. Petro-Canada, this country's newly formed state oil company, is similar, although it does not possess the exclusive powers of ENI, Petrobras or Aramco.

In most of these cases ownership includes the investing public, but typically the state owns the majority control.

Regrettably, limited time and resources do not permit comparison of CDC with other expressly created government holding companies. However, while the corporation is almost certainly not unique, one can conclude from even a superficial comparison that CDC is distinctive on an international basis. In addition, it would seem that it has avoided the pitfalls and ills of so many of the other international companies who often seem to end up reflecting the ideologies of their controlling governments or dominant pressure groups, e.g., the doctrine of the Mexican revolution in the case of NAFIN, and fascist legacies in the Italian and Spanish cases.

In Canada, where government participation in the economy is assuming ever-growing proportions, CDC has remained under the countervailing influences of the private sector and, for its part, has consciously strived to identify with the private sector -- as, indeed, its mandate requires. As will be illustrated later, CDC could become a very large corporation in absolute terms. Nevertheless, there are practical limits to its growth which make it unlikely that CDC, as constituted, will become dominant enough to have more than marginal impact on Canada's corporate sector, let alone its economy. Thus, even if CDC were to quintuple in size from its latest $1.3 billion worth of assets and $480 million worth of revenues it would only be approximately as large as Bell Canada was in 1975. In fact, it may well take to the turn of the century for CDC to become a $10 billion corporation, and then only if all goes well. By the time CDC becomes a $5 billion corporation, the assets of all financial intermediaries in Canada will likely be in the range of $500 billion and a CDC of this size would be smaller than the annual growth in the assets of the Canadian banking system.

Estimates of Canada's capital needs range as high as $500 billion in 1975 dollars over the next 10 years and $800 billion over the last quarter of the century if this country's full potential is to be attained. A CDC growing successfully will remain relatively small in such an environment, even if it were to enjoy advantages not available to other corporations, which it does not. CDC's absolute size certainly does not seem to be a threat to the Canadian public interest. It, and other Canadian corporate concentrations for that matter, are dwarfed by the sheer size of Canada's capital requirements.

In a nationalistic Canadian context, the CDC should rather be judged on whether it is playing a sufficiently important catalytic role in filling gaps in the economy, in making pools of capital available for new ventures, in assisting in the mobilization of capital for major Canadian projects, in encouraging Canadians to save and invest in the form of equity capital and, through its own successful growth, in augmenting the equity resources available to Canadians for investment, albeit in a relatively small way. These are tall orders, but I believe CDC is meeting these criteria in a reasonably successful manner to date.

Certainly in Canada there are few companies formed as controversially, refined as much during gestation and given such distinctively Canadian terms of reference. Its predominant identification with the private sector, and the ultimate objective of a 90% ownership by the Canadian investing public -- with provision to speed up this process by redeeming government-owned shares -- are in my view CDC's most distinctive features. Furthermore, the Canadian government has not departed from its original determination to see CDC as an independently operated and profit-motivated institution in the private sector. Neither has CDC's management deviated from this creed in carrying out its mandate. CDC is a cooperative venture launched by government but designed to be run by an independent board of directors for the benefit of all its shareholders (government and public). I did not properly appreciate CDC's de facto independence and its exclusive private sector bias before undertaking this study. I do so now, and I find them very refreshing.

The initial sections of this study posed a number of questions and suggested potential conflicts in the carrying out of CDC's mandate. These have been resolved by research, as summarized here.

Is CDC different from other companies?

At the international level the corporation is distinctive; within Canada it is different. It has an unusual set of shareholders: the federal government, numerous individuals, few institutional investors. It has been set objectives additional to that of making money. These differences notwithstanding, I believe CDC has a legitimate reason for existence that sets it apart from other Canadian corporations.

Does CDC, by virtue of the federal government shareholding, have the power or potential power to seek preferred treatment and to compete unfairly?

No, unless it flagrantly contravened its act of incorporation. No evidence of any such abuse turned up in the course of my investigation for this study. Any public conception that CDC is a quasi-government agency receiving favours from the state is incorrect. A situation might arise where CDC seeks preferred treatment because it believes its shareholders would benefit but the likelihood is remote.

Is CDC a ready-made instrument of state control and power?

No, not without contravening its act of incorporation (as previously). In any case, the limit to its authorized share capital (which only Parliament can change) and the practical constraints imposed by the Canadian capital markets make it difficult to see how CDC can grow large enough to exert more than a marginal influence on the Canadian economy in terms of absolute size.

Can there be a genuine assurance that the federal government will <u>not interfere in the affairs of CDC?</u>

Unfortunately no, as the federal government's recent decision to oppose Simon Reisman's re-election to the CDC board of directors has borne out. But, in fairness, Reisman, former Deputy Minister of Finance, had been openly critical of the federal government's economic policies and must have been aware of the risks of antagonizing the shareholder on whom his election depended. Far more important to my way of thinking is the federal government's reaffirmation, in a letter explaining its decision to vote against Reisman, of CDC as an independently operated institution in the private sector, with the profit motive paramount.

Will there be conflicts between maximizing profits and gap-filling to build a strong <u>Canadian presence in any industry?</u>

Most often there should not be, though I can conceive of exceptions. For example, if the Canadian oil price were to rise through U.S. and world prices, CDC Oil & Gas would benefit but the Canadian chemical industry as a whole and conceivably also Polysar/Petrosar would be hurt (take-or-pay contracts notwithstanding). On the other hand, there might be adverse reaction by the general public and politicians if Polysar/Petrosar were to earn profits deemed to be excessive considering that they are effectively controlled by the federal government (via CDC) and constitute the hub of Canada's burgeoning petrochemical industry. However, there have been no such conflicts to date, especially in petrochemicals and health care, the industries involving CDC that come most readily to mind. In this whole context it is also important to appreciate that CDC's investments are of a long-term nature requiring years to attain full maturity.

If a profit-motivated organization like CDC strives to improve the national economy is not one of its two masters, the common shareholders <u>or the Canadian public, bound to be dissatisfied?</u>

There could conceivably be exceptional conflicts, though none have arisen so far. Here, too, it should be appreciated that CDC is unlikely to dominate the Canadian scene by virtue of size, that by taking a long-term view with its investments it is minimizing the likelihood of gouging out profits in the short term, and that by putting its stakes in growth sectors of the economy its shareholders, with the Canadian public ultimately in preponderance, may have the happy experience of seeing their investments in CDC grow in value over time. Therefore, I would minimize this potential conflict, though stressing the need for profits by which to gain acceptability and attract investment.

Can a hands-off, free enterprise,
profit-oriented institution provide
Canadian citizens with the rising degree
of direct control of the Canadian economy
being sought?

Yes, in time and to a modest extent. CDC is not big enough yet and will likely never be big enough to make a significant impact in this respect. However, it can help by making judicious, gap-filling, long-term investments, but always within the size constraints mentioned earlier.

A very wide public ownership will be an important check and balance in any misuse of CDC by the federal government and in CDC's relationships with its public shareholders. CDC will only reach its potential size and obtain a majority public ownership if it is successful in persuading the public that investment in its securities is a sensible and profitable way for them to employ their savings. This, in turn, will depend upon the success of CDC's investments.

POTENTIAL SIZE

To raise capital for use in its investments and to strive towards its ultimate 90% public ownership objective, CDC will need to issue treasury stock frequently to the Canadian public and, later on, in the making of acquisitions. Its act of incorporation limits CDC to 200 million no par value common shares of which 47.8 million are presently issued or reserved for the conversion of the Class B preferred and the issue of bonus shares. In round figures this leaves 150 million common shares available for CDC to issue without recourse to Parliament.

In 1975, CDC issued $142.5 million worth of $100 par value 8% Class B preferred shares, which were convertible into 14.3 million common shares and entitled to 2.8 million bonus common shares, for a total of 17.1 million issuable new common shares which, added to the 30.7 million shares held by the federal government, gives a current potential common share base of 47.8 million shares. In my judgment CDC will do extremely well to repeat an issue of this size every second year. Perhaps $150 million is too high and a $100 million new issue every other year would be more realistic, but the marketing of future issues will surely reach out more broadly (especially by using the facilities of the chartered banks), CDC's developing track record should help boost investor confidence, and the Canadian capital markets will grow in size along with the economy and the dilution of money stocks through inflation. Therefore, a $150 million issue every second year over the time span that is going to be required for CDC to meet its investment and ownership goals may not be as unrealistic an average as it appears at first blush -- as long as CDC proves itself satisfactorily to Canadian investors. If not, or if circumstances are unfavourable (e.g., inflation pushes up interest rates) and the Class B shares are more than marginally below their issue price at the time of the next issue, CDC could probably not then finance on similar terms.

Until a proper market develops in CDC common shares, future issues will almost certainly have to again be in convertible preferred form, though possibly without attached bonus common shares. In the 1975 Class B issue the equivalent conversion price on the common was set at $10 per share (each $100 preferred being convertible into 10 shares of common). In Table 12 an attempt is made to estimate potential fully diluted earnings per common share, in order to gauge the price at which the common might be valued for conversion purposes in future, similar preferred issues. Based on numerous assumptions (in footnotes), two possibilities are shown for CDC fully diluted earnings per share in 1980 -- one an "unacceptable" case in which the major investments do not fare well or in which they suffer cyclical declines, the other a "realistic" case in which they grow as anticipated.

CDC's diluted common share earnings can hardly be accorded a multiple higher than that on the markets as a whole -- currently about 9 times estimated 1976 earnings. Thus, it would not be unreasonable to assume an equivalent conversion price of about $10 on the underlying common shares in CDC issues in the early years, rising to and through $15 in the years ahead as major investments mature successfully and are reflected in earnings. At the same time it must be remembered that the return on successful investments will be tempered by the dilution effects of new issues. Therefore, the equivalent conversion price on underlying common shares could remain within the $10 to $15 range for some time to come, and certainly up to 1980, the year targeted in the table.

Table 13, also necessarily and heavily based on a number of assumptions, traces the size to which CDC could conceivably grow over a period stretching to or beyond the turn of the century if it were to issue $150 million worth of convertible or straight equity every second year up to the maximum 200 million common shares permitted by its charter. Two hypotheses are posed, one that the conversion or equivalent price of the underlying common is $10 per share throughout, the other that it is $15. It is further assumed that CDC invests the proceeds of each issue in new or existing subsidiaries or associates, and there are additional assumptions as to the average return on equity, dividend payout, supportable debt and current liabilities, all of which are footnoted in the table.

Table 12

CDC -- ESTIMATED COMMON SHARE EARNINGS
($ Millions)

Company	1975	1976	1977	Unacceptable 1980	Realistic 1980
		Net Income Contribution			
Texasgulf[1]	27.6	30.5	33.6	35.0	51.0
Polysar/Petrosar[2]	(1.3)	20.0	20.0	25.0	50.0
CDC Oil & Gas[3]		10.0	11.0	13.0	20.0
Connlab Holdings	(2.0)	-	2.0	2.0	5.0
Venture Capital	0.8	1.0	2.0	3.0	6.0
CDC[4]	0.9	1.5	1.0	-	2.0
New Issues[5]	N/A	-	7.0	16.0	35.0
	26.0	63.0	76.6	94.0	169.0
Class A pref. div.[6]	5.8	5.8	5.8	7.5	6.5
	21.2	58.2	71.8	86.5	162.5
Avge. common shares	37.2	47.8	55.3	62.8	72.8
Fully diluted earnings per share	$0.57	$1.20	$1.30	$1.38	$2.23

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1 - Earnings grow at 10% annually through 1977. Thereafter, at 15% annually in Realistic Case, but suffer cyclical decline back to 1977 level in Unacceptable Case.

2 - Petrosar start-up loss interrupts growth trend in 1977. Thereafter cost viability, cyclical problems and downward leverage impede growth in Unnaceptable Case, while profits grow as anticipated in Realistic Case.

3 - Net income could be held back by exploration write-offs and development expenses; this typical of developing oil and gas producers.

4 - Interest income net of expenses and taxes on short-term monies and proceeds of past issues awaiting investment.

5 - $150 million preferred issue convertible into 15.0 million common shares in mid-1977. In Unacceptable Case no further issue by 1980, and return on investment and retained earnings limited to 10%. In Realistic Case return on 1977 issue proceeds and retained earnings thereon rises to 12% by 1980; plus a further $150 million preferred issue convertible into 10.0 million common shares in mid-1979 on which 10% earned in first full year. Earnings per share calculated on average number of common shares in 1977, and on full underlying common share base in 1980.

6 - Class A preferred are rolled over in 1979 at 7-1/2% and 6-1/2% respectively.

Table 13

CDC--EFFECT OF $150 MILLION BIENNIAL ISSUES
(In Millions)

	Conversion or Equivalent Price of Common	
	$10	$15
No. of common shares per issue	15.0	10.0
No. of issues (actual)	10	15
Time period (actual)	20 years	30 years
Last issue in	1995	2005
Total capital raised[1]	$1,500	$2,250
Retained earnings thereon[2]	1,200	3,150
Total equity	2,700	5,400
Debt leverage[3]	1,300	2,700
Total capital employed	4,000	8,100
Current liabilities[4]	1,300	2,700
Total new assets 1976-1995	5,300	10,800
Total assets end 1975	1,300	1,300
Ultimate total consolidated assets	$6,600	$12,100
No. of common shares issued	197.8	197.8
- owned by federal government	15.5%	15.5%
- owned by public	84.5	84.5
	100.0%	100.0%

1 - Capital issue proceeds invested wholly in subsidiaries and associates.

2 - Return on equity raised and retained averages 10% annually, this to reflect substantial size of equity base, cyclical nature of underlying investments and dilution effects of recurring new issues. Dividend payout of one-third to 1989; thereafter, raised to one-half to reflect maturing of established investments.

3 - Debt approximates one-half of underlying equity.

4 - Current liabilities approximate one-third of total capital employed.

Among the largest Canadian corporations besides the banks, Bell Canada had total assets in the $6.5 billion range at latest year-end, Canadian Pacific $6 billion, and Imperial Oil and INCO $3 billion. Even allowing for a time differential of 20 to 30 years (in which other successful corporations will grow significantly as well), CDC has the potential to become a very major Canadian entity. The table also illustrates that the more successful CDC turns out to be, the higher will be the equivalent common share price, the fewer will be the number of common shares issued or becoming issuable in any one issue, and the longer will it take to build up the percentage ownership by the public -- or, alternatively, to reduce the proportionate federal government ownership. Furthermore, it may just not be feasible to make equity issues of the size or frequency shown in the table, in which event it would take even longer to build up public ownership. Clearly, the ultimate goal of 90% public ownership is going to take a very long time to accomplish via the treasury stock route. In fact, it may prove to be a pipedream without involving the right to redeem government-held shares at book value. Obviously, too, many hurdles will have to be successfully negotiated if CDC is going to make as many issues and build up public ownership to the degree indicated, thereby achieving its all-important objective of contributing to the growth and control of Canada's capital sector and widening the investment opportunities available to Canadians. The negotiation of many of these hurdles will depend directly upon CDC's own success, the negotiation of others upon capital market, economic and inflationary conditions over which CDC has no control.

I stress the assumptions and conditions upon which Table 13 is built. It may well be too ambitious to expect CDC to raise a total of $1.5 to $2.25 billion worth of new equity capital over the next two to three decades and to become a huge, multibillion dollar corporation owned predominantly by the Canadian public. Besides, there could be the additional practical constraint as to what CDC could invest resources of this magnitude in. There are limits to the number of established companies it can take over and it may be compelled to undertake more direct investments and venture capital propositions. This in turn could be quite desirable, but it would probably hold down CDC's earnings and equity returns, thereby making future capital issues that much harder and protracting the whole process of building up public ownership.

A key purpose of a probably too hypothetical exercise is to illustrate the difficulties CDC faces if it is to successfully carry out its mandate in the foreseeable future. Above all, it would seem that the next five years are going to be crucial.

COMMON DIVIDENDS

Until the Class B shares are converted in sufficient numbers there can hardly be a representative market in CDC's common shares.

Growth of available net earnings (after paying the Class A preferred dividends) will help, but conversion of the Class B preferred will only become a reality when there is a sufficient dividend on the underlying common shares such that conversion of each Class B share into 10 common, which will automatically bring with it the issue of two bonus shares, will result in total common dividends in excess of the $8 payable on each Class B share. For example, a 60-cent common dividend would bring an equivalent $7.20 of dividend income if the Class B preferred were converted and would obviously not be enough to induce conversion. A 70-cent common dividend would bring an equivalent $8.40, and this level indicates the minimum common dividend that will be required to begin interesting Class B shareholders in conversion. However their interest would be contingent upon when the 70-cent common dividend rate was attained. If attained in 1980, Class B holders would probably be unwilling to convert because they automatically receive the first bonus share in October of that year, meaning a total dividend of $8.70 if they were to stick with their Class B shares versus $8.40 if they were to convert. On the other hand, if the 70-cent common dividend level were to be reached earlier, in say 1979, the Class B shareholders would be more tempted to convert because they would thereby receive two bonus shares immediately and a higher overall total dividend would result.

Normally convertible preferred holders require a premium in terms of the indicated common dividend to compensate them for the higher risks they will run through converting to a lower-ranking equity. In the case of Canadian Pacific Investments Ltd., for example, it required a 15% premium to induce large-scale conversion. Canadian Pacific Investments had $100 million of widely held convertible preferred in issue and might well be a suitable criterion for CDC in this particular respect. In that event a CDC common dividend rate of 75 to 80 cents in 1979 and 85 cents by late 1980 would probably be needed to make conversion of the Class B a feasible proposition.

Dividends on the Class B convertible preferred are payable quarterly, on the first days of January, April, July and October. The shares are redeemable at the option of holders between October 2nd and December 31st 1980 (and then again over a 12-month period from October, 1985 to 1986). Therefore, I feel it will be essential for CDC to be paying common dividends at least at a 70-cent annual rate by the last quarter of 1980 to reduce or neutralize the redemption risk. Better still, CDC should be up to a 70-cent common dividend rate by 1979 and be in a position to declare and pay a quarterly dividend of 20 cents or better in that critical decision-making quarter late in 1980. In triggering conversion, dividend rates at these respective levels in 1979-80 would have the additional advantage of helping create the necessary representative market in CDC common shares. Remember, too, that by 1980-81 there should ideally have been two more convertible preferred issues of $150 million each, or $300 million in all, involving further prior charge dividends and a potential 20 to 30 million common shares to add to the 47.8 million shares currently either issued or reserved.

In Table 5 (p. 25) it was estimated that, after allowing for the inclusion of CDC Oil & Gas, CDC would have had $11.3 million of net cash earnings available for dividends on its Class B and common shares in 1975, equivalent to 26 cents per share on a fully diluted basis. Admittedly, 1975 was a particularly adverse year, but it is the most recent fiscal year and serves to illustrate the magnitude of the task ahead. By 1981 CDC must be able, by approximate calculations, to pay some $60-65 million on 75-80 million common shares or run the risk of large-scale redemptions of the Class B preferred and the concomitant failure to create a proper market in its common shares (1.4 million bonus common shares in the public's hands will not be enough). In a still-early stage of CDC's development this dividend-paying ability emerges as the key requirement on which the success of its mandate from Parliament (and effectively from the Canadian investing public) will hinge. The possibility of CDC being able to meet this requirement is assessed in Table 14 (p. 104) which also needs to be read in careful conjunction with the numerous assumptions on which it is based.

Table 14 reflects my best assessment of the contributions from CDC members, especially its main earnings and dividend contributors, under two sets of explained circumstances. Estimates that are contingent on so many future variables must be highly subjective. Furthermore, I have tried to err on the conservative side and the calculation of earnings available for common dividends on a fully diluted basis is probably excessive in that future convertible preferred issues could be structured so that conversion not be permitted until a specified later date. Nevertheless, the table does illustrate what CDC is up against in avoiding large-scale redemption calls on it (or having to renegotiate with the Class B shareholders), in launching a public market in its common shares, and in successfully selling further tranches of stock from its treasury, thereby raising public ownership and fulfilling its mandate.

A bonus would be a decline in interest rates such that preferreds of this quality and dividend rate rose to a sufficient premium in the market place and CDC could call the Class B for redemption on or after October 2nd, 1980, thereby forcing conversion. On the other hand if interest rates rose abnormally (e.g., to compensate for renewed inflation) such that the preferred fell to a discount, large numbers of the Class B shareholders would obviously want to avail themselves of their right to put the shares back to the corporation at par.

Table 14

CDC - ESTIMATED EARNINGS AVAILABLE FOR DIVIDENDS IN 1980[1]

($ Millions)

Source	Unacceptable Case	Realistic Case
Texasgulf[2]	14.0	20.0
Polysar/Petrosar	8.0	17.0
CDC Oil & Gas[3]	4.0	6.0
Connlab Holdings	-	1.5
Venture Capital	1.0	2.5
CDC (net after expenses)	-	2.0
New investments[4]	6.0	16.0
	33.0	65.0
Class A preferred[5]	7.5	6.5
Earnings for common dividends	25.5	58.5
No. of common shares	62.8	72.8
Fully diluted earnings per share available for common dividends	0.41	0.80

1 - Based on the new issue assumptions and assumed contributions to net income in Table 12, and unless stated otherwise assumed that companies pay out approximately one-third of their earnings.

2 - A number of large-scale investments maturing by then; therefore, a 40% payout.

3 - A developing oil company; therefore, a relatively low payout.

4 - New investment of $150 million in mid-1977 in both cases; and another $150 million in mid-1979 in Realistic Case; further, that the dividend return remains at 4% in the Unacceptable Case but rises by 1% per annum in the Realistic Case.

5 - Class A shares rolled over in 1979, at 7-1/2% in Unacceptable Case and 6.5% in Realistic Case.

The nearer-term task seems truly formidable. On the basis of the assumptions and calculations in Table 14 there is not much room for accidents along CDC's way over the crucial five years that lie ahead.

OTHER REQUIREMENTS FOR SUCCESS

While the ability to pay an adequate common dividend by 1979-80 is key, there are two very important other, and related, requirements in ensuring the success of CDC's future. One concerns management, the other investor relations.

Familiarity with the Texasgulf and Polysar managements brings respect for their managements' knowledge of the industry and skills in running their companies. Further, the obvious progress of CDC Oil & Gas bears testimony to its management, and esprit de corps at this company could well have risen now that it has a true Canadian identity. The approach taken towards managing the venture capital enterprise is sound and, apart from Connlab where there are acute problems, the operating managements within the CDC group would seem to rate high. The setting up of executive and audit committees which include CDC representatives is also sound in so diverse a group of companies. However, the investment decisions, the role of catalyst within its group of companies, and the ability to raise funds, none of which can be legislated or decreed, are in many ways very personally related to the quality of the people running CDC itself. The next five years in particular will provide the ultimate test of CDC's own management. At this stage the calibre of people assembled as the CDC management team is impressive. The problems of attracting and retaining top quality executives to such high-profile hot seats must be very real. To date, Anthony Hampson seems to have done a good job of it.

CDC's ability to sell treasury stock and cultivate its investor relations are closely interrelated and absolutely vital. Unfortunately, the first main public issue had to be formulated and tested under unsettled capital market and political conditions. At the same time there is much that could be improved upon in the planning and handling of future issues, such as the chartered banks, trust companies and other near banks in future public issues to ensure broader distribution. CDC, in turn, must work hard at rectifying the obvious communications problems that exist between it and all investors, investment dealers and counsellors, institutions and individuals. The recent survey of its shareholders and the analysis by Dr. Kelly, the film prepared by CDC on itself, the improving quality of the annual reports, and the pending dividend reinvestment plan will all help. Other corporations are not properly understood by investors either. But CDC is a particularly complex concept and corporation to understand, there is much that must be done and time is short.

8. CONCLUSION

I have undergone several changes of mood and thinking in the course of this study. I began with a certain amount of built-in prejudice against CDC. I have an aversion to government intrusion in private enterprise and I had been put off by the numerous investment dealer discussions on the terms of the much-heralded CDC public issue which, in my view, had become somewhat shop-soiled by the time it was finally unveiled and did not in the end live up to its advance billing. However, this study has made me realize that my prejudices also stemmed very largely from a basic lack of understanding of CDC and what it is trying to accomplish.

My background reading brought back invaluable memories of the 1960's, a period in which Canada matured and stood up on its own feet in so many ways. CDC must be seen in its historical perspective. My detailed analysis made me appreciate CDC's place in the Canadian economy, its independence from the federal government and the planning and skills with which it has gone about its mandate. I now see CDC in much truer proportions and, while I still have certain reservations, I am impressed.

Initially, I doubted whether it really made much sense to have a profit-oriented organization trying to fill in gaps and improve the national economy. Now I believe it is certainly worth a try. Any organization that can contribute meaningfully to Canada's huge capital needs should be welcome. CDC can so contribute -- both directly and indirectly.

Then there is CDC itself, and its range of accomplishments in less than five eventful years. At one extreme is the Texasgulf "coup" which was nothing short of brilliant; and I endorse the merits of initially purchasing such a worthwhile base of earnings and cash flow; i.e., of making a sound investment in an established entity, before pursuing other more visionary and useful goals. In the middle of the range is Polysar/Petrosar, a mammoth, mind-boggling project that fits CDC's mandate admirably but where, the insulation of take-or-pay contracts notwithstanding, my intuition, aided by a much-improved understanding, tells me the high rewards must be weighed against the high risks and where the jury is still out. At the other extreme of the range is Connlab, perhaps the closest example of CDC building a business enterprise from scratch -- in this instance by buying a medical laboratory as a cornerstone of a Canadian-controlled pharmaceutical group. Connlab has fared very poorly and in its case seeing will be believing.

These are still early days. The next five years in particular should tell how useful a role CDC will play in Canada's development. However, in CDC's case, as well as that of other corporations, it is the market place for capital, directly and indirectly made up of the savings of millions of Canadians, that will be the final arbiter. It is the market place that dictates and equates economic and investment terms regardless of size, parentage or patriotic appeal. There is another factor worth stressing; CDC, perhaps more than other corporations, is banking a lot on the abatement of inflation.

In the intervening period I see CDC as a useful, but not dominant, institution within contemporary and future Canada. In the longer term it could contribute quite meaningfully to this country's development as it becomes established - perhaps less in buying up existing companies and increasingly in investing directly in significant developments and in directing its resources into venture capital.

The risks -- some within its control, others beyond -- are many. Success is by no means assured. What if CDC fails to make the grade in the manner envisaged in its mandate and projected in this study? Then it would likely end up as another large and not necessarily uninteresting holding company, a potpourri of investments -- with some holdings like Texasgulf having exceptional promise, others less so. This need not be a disaster. CDC could still be an interesting and valuable investment in itself, and the CDC concept would still have been worth trying.

Other countries have similar institutions, but the Canadian example could prove to be one of the best conceived and firmest based. To date, I believe CDC is carrying out its distinctive and worthwhile mandate purposely and well. There are flaws to be corrected, but these are recognized and management is obviously prepared to learn from its experiences.

In my view there is a need for bigness in Canada's business organizations and financial institutions. Bigness is something to be encouraged rather than feared in this country -- CDC included. Thus, I see the nature and role of this particular concentration of corporate power in Canada as positive and its economic and social implications as favourable for the public interest. It is worth repeating that any corporation or institution that can assist meaningfully in Canada's mammoth capital-raising task should be welcomed. The potential pluses to me greatly outweigh any possible abuses of power by or through CDC -- which abuses are few that I can see and would be limited in any event if the market place, the final judge, "decides" against CDC.

I wish the Canada Development Corporation well.

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