

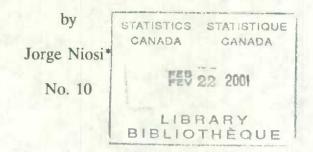
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THE RISE OF THE CONGLOMERATE ECONOMY

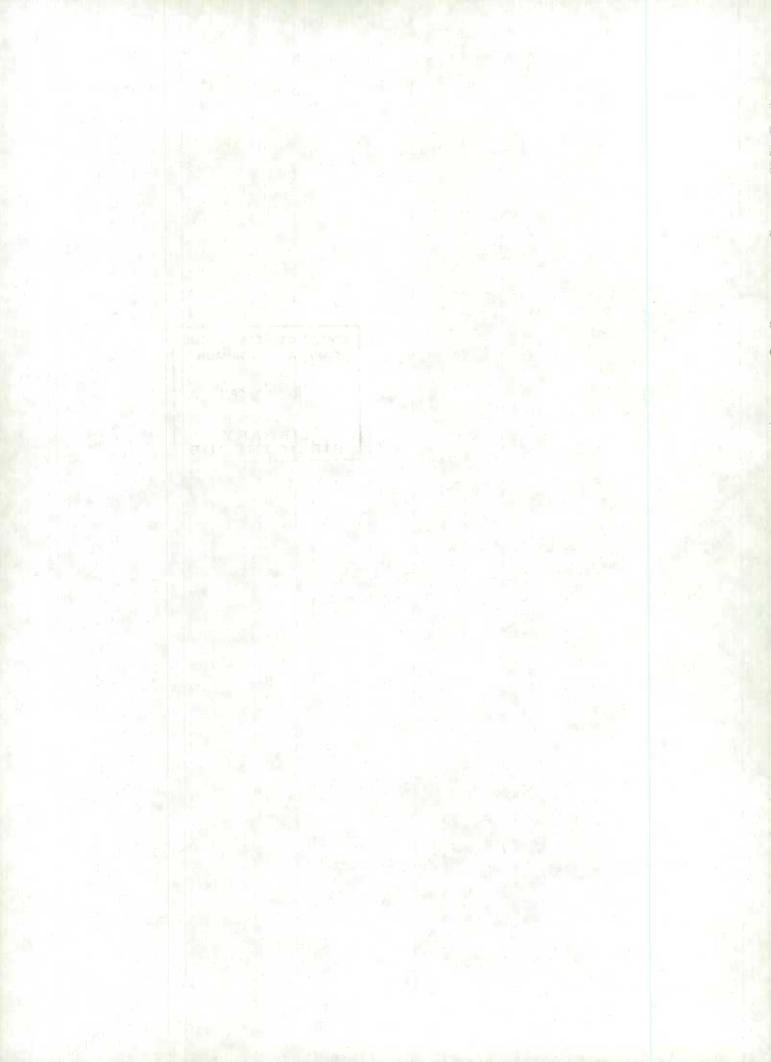


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ABSTRACT

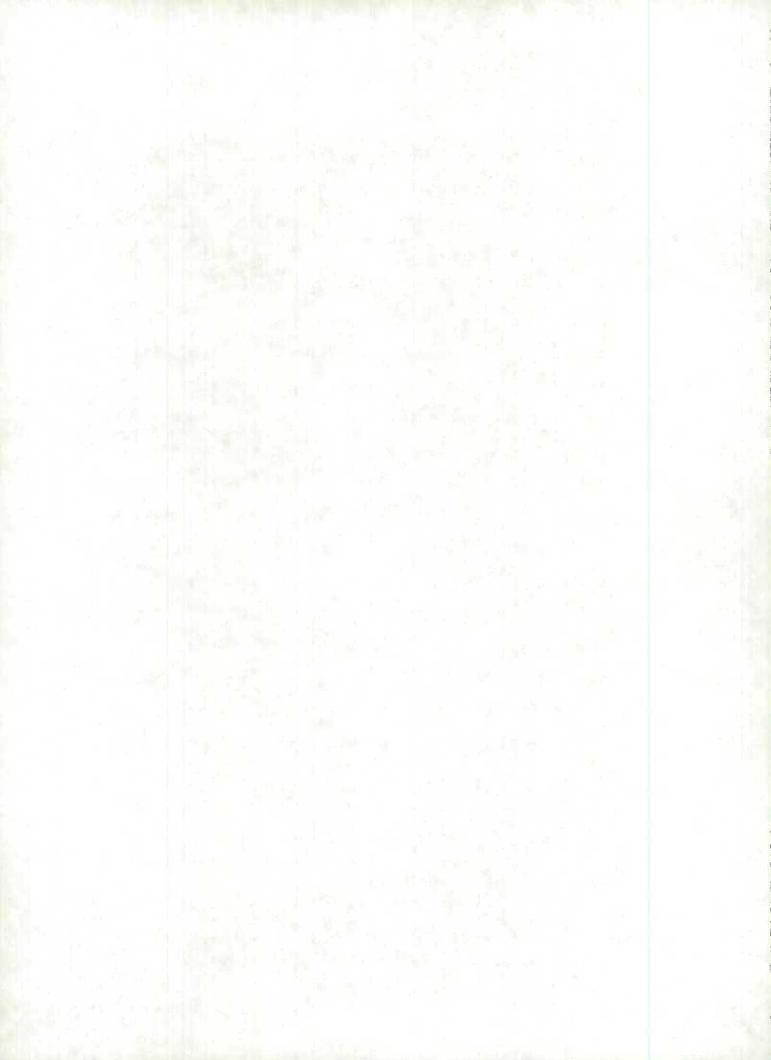
The paper estimates several characteristics of the largest Canadian conglomerates from 1969 to 1984. Conglomerates are diversified enterprises. For an enterprise to be considered diversified, more than 30% of its sales must be in a different line of business from its main activity.

Three estimates (for 1969, 1978 and 1984) show a high turnover rate among the 35 largest Canadian conglomerates. Only 28% of those existing in 1969 still were in the 1984 list. Most of the large conglomerates were created in the 1960's and 1970's. Usually a conglomerate is created by a large corporation acquiring one or several large corporations in unrelated industries; very seldom does a small conglomerate become a large one through internal growth. More than two thirds of the conglomerates studied were Canadian-owned and controlled but some were the Canadian replicas (subsidiaries) of foreign conglomerates. Canadian conglomerates are much more profitable than specialized enterprises of comparable size.

The trend shows a slight decline in the conglomerate part of the Canadian economy from 1969 to 1978, and a sharp rise between 1978 and 1984.

Data and conclusions are preliminary. More work is being currently done to eventually correct the estimates and get new figures for 1965, 1975 and 1978.

Key Words: diversified enterprises, conglomerates, large firms.



THE RISE OF THE CONGLOMERATE ECONOMY

by Jorge NIOSI Professor UQAM, Montreal. 7 August 1987

Many studies (Rosenbluth, 1957, Berkovitz et al 1976, Khemani, 1980, Caves et al, 1980) estimated Canadian industrial concentration both at the technical (establishment) and economic (corporation) levels. Several statistical surveys regularly publish data on this issue (Statistics Canada, Cat. 31-402 and 61-210). These studies, and data for the last twenty-five years, show a slow but steady growth of sellers' concentration for the Canadian economy and for particular industries.

Parallel to this rise of economic and technical concentration, but a less studied phenomenon, is a trend towards higher concentration at the enterprise level. Enterprises are groups of corporations under common control. Two different types of enterprises will be distinguished in this paper: the specialized and the conglomerates.

The specialized enterprise is a group of corporations operating in the same line of business. A group of pulp and paper companies, or a group of insurance and reinsurance corporations

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would, for example, be considered a specialized enterprise (see later, point 1 on definitions). The conglomerate enterprise is a group of corporations operating in different, unrelated industries.

It is our contention that for the last twenty-five years the growth of financial concentration in the Canadian economy has been very rapid, and that it has superseded the trend towards higher technical and economic concentration. The growth of conglomerates has been particularly swift. New conglomerates have been created in Canada since the sixties and, as the conglomerate wave swept the American economy at the same time, foreign conglomerates migrated to Canada as well, forging local replicas of their parent counterparts. Most conglomerates enjoyed a high rate of growth during the period, and they represent an increasing proportion of the sales, profits or assets of the Canadian economy. These trends have seldom been recognized, and still less studied, other than in a journalistic way. The goal of this report is to shed light on the main dimensions of the rise of the conglomerates, with quantitative, although preliminary, estimates for the largest of them.

BASIC DATA AND DEFINITIONS

Inter-corporate Ownership surveys (collected under the Corporations and Labour Unions Return Act) provide the main empirical basis for the study. Starting in 1962, with the most recent data available for 1984, they cover a fairly long time span (22 years) and thus permit estimates of changes in the composition both of specialized and of conglomerate enterprises. This source

was complemented with corporate financial information available from data bases created with CALURA and other Statistics Canada surveys. Owing to the large number of corporations involved in this study (more than 1500 every year) and to limits on the resources and time available, we decided to start the study in 1969 instead of 1965, the first year for which machine readable financial data for all corporations exist. We have also examined large enterprises for 1984 (latest available year) and for 1978, an intermediate point for which financial data, and the Intercorporate Ownership publication (an occasional survey) were also available.

Statistics Canada data was complemented with information for corporations available from other sources: annual company reports, Financial Post Surveys, Moody's Manuals, financial periodicals, Ontario and Quebec Securities Commissions Bulletins.

Our definition of an enterprise is not the same as that from CALURA used in their Statistics Canada data bases. In CALURA's basic definition a corporation controls another if it owns at least 50% of its voting shares. CALURA also recognizes cases of apparent minority control by taking into account the number of directors of the holding company that are also members of the subsidiary's board, and the distribution of the remaining shares. In fact, control is often held with less than 50%; empirical studies (Berle and Means, 1932; Larner, 1970; Chevalier, 1970, Morin, 1975; Niosi, 1978) use a threshold as low as 5% for minority control, while the US government statistics and the Quebec, Ontario and Alberta Securities Commissions use a 20% lower limit for minority control. Thus, some of our enterprises are larger

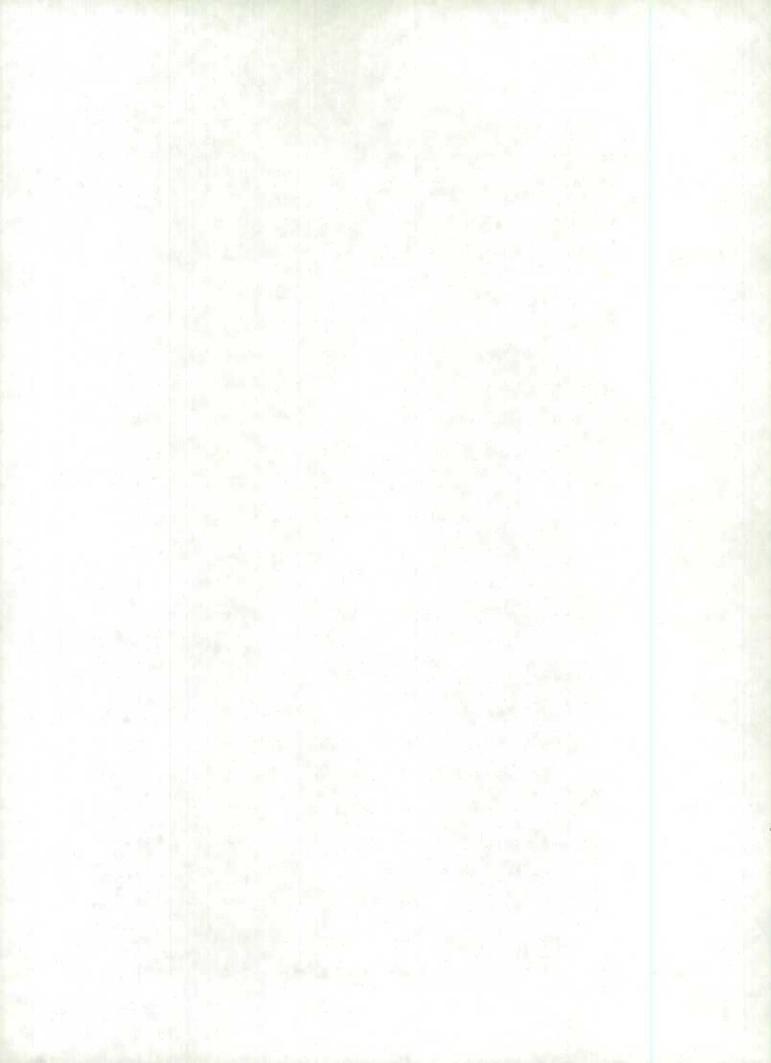
than those Statistics Canada data would suggest, because we have added a few minority-controlled subsidiaries not identified by CALURA.

A conglomerate is a diversified enterprise. For an enterprise to be considered diversified, more than 30% of its sales must be in a different line of business from its main activity. Conversely, where 70% and more of the sales are in the same line of business, the enterprise is classified as specialized.

Conglomerates thus are groups of corporations under common control operating in different, unrelated industries. "Different" means that they operate in at least two industries, classified at a three-digit level, and that these industries are not in the same line of business. Integrated enterprises, thus, are not conglomerates. The concept of "related industries", developed by Wrigley (1970), and applied by Rumelt (1974), Caves et al (1977 and 1980), Lecraw and Thompson (1978), has been used here.

As to control, it can be held either by a management company (a financial corporation classified with a 756 SIC number), by a corporation operating in manufacturing, commerce, transportation, real estate or other industry, or even by a charitable foundation. We find the same kind of situation in specialized enterprises, in which, however, operating holding companies are the rule.

Conglomerates can be under either public or private control. Some public enterprises are as diversified as privately held conglomerates. Some of them are under federal control, while others are controlled by provincial governments. Government-controlled conglomerates are, however, presented separately from privately-held ones.



In our analysis, conglomerates were ranked by sales. This decision gives a more balanced weight to the overall picture, because, if ranked by assets, financial institutions (with huge assets but small sales) would have taken the major part of the list. This methodological decision is also in line with previous Canadian studies. In this study, however, insurance companies and cooperative credit unions are excluded.

A final remark has to be made on the geographical restriction of the data. Statistics Canada data bases are for Canada only. Foreign operations are excluded. Therefore, if a multinational enterprise under Canadian control is specialized in Canada, but conglomerate on a worldwide basis, it will be classified as "specialized" in this study. We have at least one case falling in this category.

FINDINGS

With these definitions in mind, lists of the largest 35 conglomerates in 1969, 1978 and 1984 were prepared. We present here the results of our preliminary findings from the analysis.

1. Turnover.

We produced three lists of the largest conglomerates in Canada for 1969, 1978 and 1984, involving information on 57 conglomerates; sixteen of them appear in the three lists. This means that a fair proportion (28%) of Canada's largest conglomerates already existed in 1969.

Fourteen conglomerates in the 1969 list disappeared from the subsequent lists: they were either displaced to lower positions, (two cases), absorbed by larger conglomerates (six cases), dis-

membered (three cases), or became specialized (three cases).

Nine conglomerates from the 1978 list disappeared in 1984, for the same reasons as before. Four enterprises became specialized, three others merged within larger conglomerates, while two others became too small to remain into the top thirty-five.

Survivors are falling within the ranks of the conglomerate ladder: most of them occupy in 1984 a lower position than the one they had in 1969 (Table 1). And only 5 enterprises remain in 1984 in the same quintile they were in 1969.

Turnover among 22 Conglomerates ranked both in 1969 and 1984

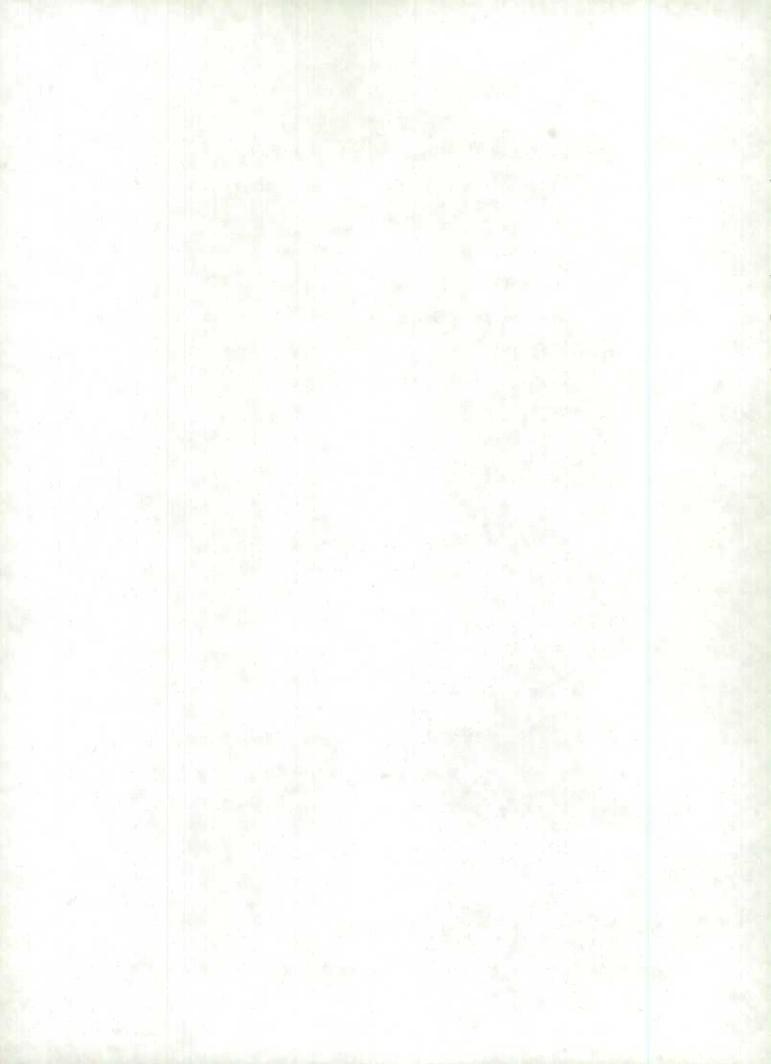
Table 1

			F	tank 198	34	
	1-7	1-7	8-14	15-21 1	22-28	29-35
	8-14		1	3	1	
Rank 1969	15-21			1- 1-	2	1
	22-28				100	1
	29-35					-

Finally, five survivors are foreign (31%) roughly the same proportion as in the total samples. Canadian and foreign-controlled groups seem to have the same ability to survive.

2. Age.

While conglomerates have drawn attention from economists only in the late sixties and early seventies (Blair, 1972, chap. 12), some of them have their origins well before 1960. In Canada



at least three of the largest existed before World War II, while several others have been founded or began their diversification in the forties and fifties. Five of the 35 conglomerates in the 1984 list have their origins before the merger period of the 1960's and 1970's.

The majority (62%) of the conglomerates in the 1984 list were created in the 1960/1979 period. In many cases this process involved the incorporation of new holding companies. In other cases a specialized enterprise diversified into totally unrelated industries. This was the case for two of the largest tobacco manufacturers and one of the largest breweries in the sixties. Finally, foreign conglomerates either invested in Canada through subsidiaries operating in different industries or acquired control, in Canada, of corporations in new lines of businesses.

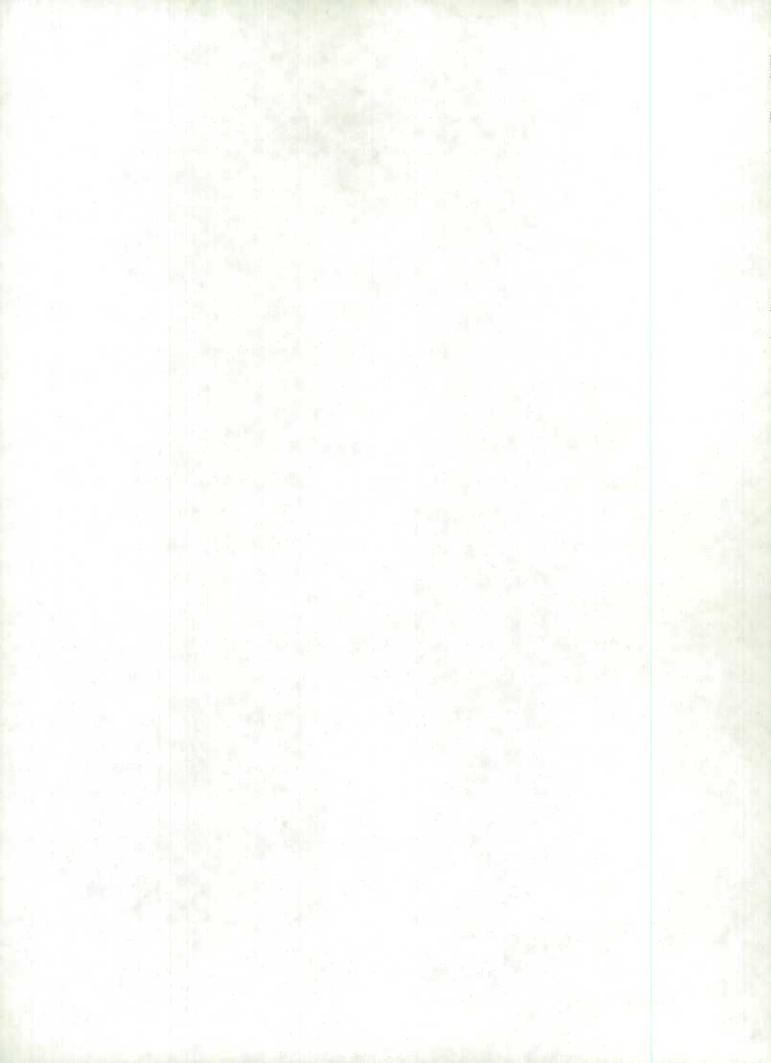
Only eight of the conglomerates in the 1984 list (23%) were created in the 1980's. This sublist includes the largest in Canada, which diversified only in 1983 and two others, among the largest conglomerates in 1984, diversified in 1980 into totally unrelated industries.

3. Originating industries.

From what industries do conglomerates emerge? Analysis of the 1984 list shows a varied sectoral distribution, as showed in Table 2.

Table 2

Industrial origins o	f 1	the	1984	Canadian	conglomerates
Industry				Number	
Services				5	
Finance				6	
Commerce				1	
Resources				4	
Manufacturin	g			19	



These figures, of course do not take into account the four conglomerates under government control that we present separately and that existed in 1984: the Canadian National and the Canada Development Corporation groups (federal) and the Société générale de financement du Québec and the Crown Investment Corporation of Saskatchewan (provincial). Two of these governemental enterprises were created in the sixties and seventies (the SGF and the CDC), one between the Wars (the CN) and one in the eighties (the C.I.C. of Saskatchewan).

Among private conglomerates manufacturing is by far the most important originating industry (54% of the 35): most cases are those of slow growth, high profits industries like alcoholic beverages, tobacco manufacturing and food. In services also, enterprises diversify into unrelated industries to escape from sluggish (like residential telephone services) or highly cyclical activities (like real estate and engineering).

4. Country of control.

In 1984, large conglomerates in Canada were mostly (66%) Canadian-owned and controlled, not including the four state-owned groups. Canadian-owned and controlled conglomerates include the nine largest in Canada in 1984.

Table 3 shows the picture for 1984 and compares it with that of 1969.

Table 3
Country of control of conglomerates, 1969 and 1984

	1969	>	1984	
Canada	27	(77%)	23	(66%)
U.S.A.	6	(17%)	8	(23%)
Other foreign	2	(6%)	4	(12%)
Total foreign	8	(23%)		(34%)
Total	35	(100%)	35	(100%)

	4	

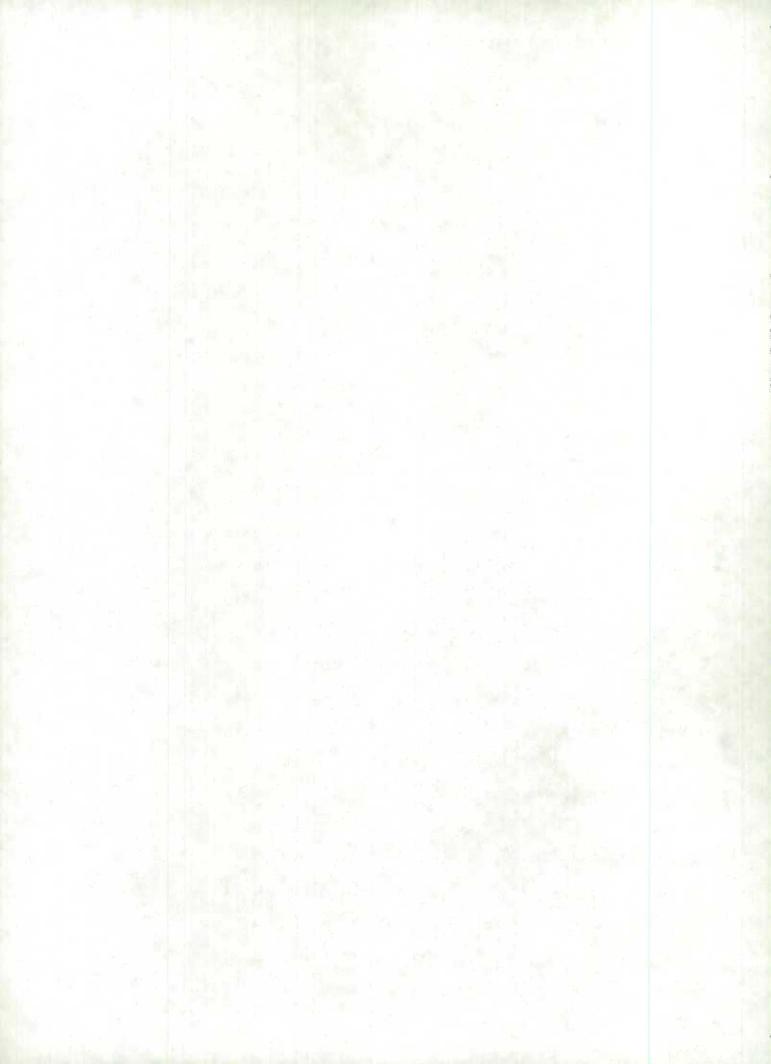
The small rise of foreign conglomerates as a proportion of the largest ones in Canada seems to be the consequence of two different trends. The first is the amalgamation of foreign subsidiaries in Canada produced by the conglomeration of their parent companies abroad. Thus, previously specialized subsidiary enterprises have been absorbed into larger conglomerates. The second is the regrouping of some Canadian conglomerates into larger units, and the phasing out (either by absorption or by dismembering) of several regionally-based ones.

5. Concentration.

As conglomerates operate over widely diverse industries, the issue of concentration only makes sense here with reference to the overall economy. It is possible to calculate "absolute" concentration, i.e. the proportion of the sales, assets, profits or any other corporate characteristic in the total sales, assets, profits, etc in the Canadian economy.

We calculated three of the five "major" financial variables in the corporate data bases of Statistics Canada: sales, total assets and profits for all corporations and for the largest 35 conglomerates. We are aware that each measure has its difficulties. Sales and profits are volatile and can vary enormously from one year to the other; all three are plagued with double counting, specially in large enterprises.

We also decided to compare large conglomerate enterprises with large but specialized firms. Table 4 presents the results for 1984. This table shows how highly skewed the distribution of enterprises is by size. Even though the analysis considers the 35



largest enterprises, the largest 20 or 30 account for most of their economic activity. Correspondingly, extending the analysis to the 50 largest enterprises, say, would not change the picture appreciably.

Table 4

<u>Conglomerate concentration in Canada, 1984</u>

			Conglome Assets			eciali Assets	zed Profits
Top	4	5%	7%	9%	6%	7%	7%
Top		7%	10%	13%	9%	13%	14%
Top	12	7%	10%	14%	12%	21%	16%
Top	20	9%	13%	17%	16%	26%	20%
Top	30	10%	13%	18%	18%	28%	22%
Top	35	10%	14%	18%	19%	28%	23%

By any measure, conglomerates are large, but 'smaller than specialized enterprises. The difference between conglomerates and non-diversified enterprises is wider in terms of assets, because the specialized list includes several banks and oil corporations with huge assets, compared to sales and profits. But the difference seems smaller in terms of profits; in other terms, conglomerates seem more profitable than specialized enterprises of comparative size. This hypothesis will be tested later in this paper.

As to trends in the 1969-1984 period, Table 5 (and its graphic representation) shows that the conglomerate part of the Canadian economy diminished during the 1969-78 period, then grew at a rapid pace, whatever the variable employed to measure it.

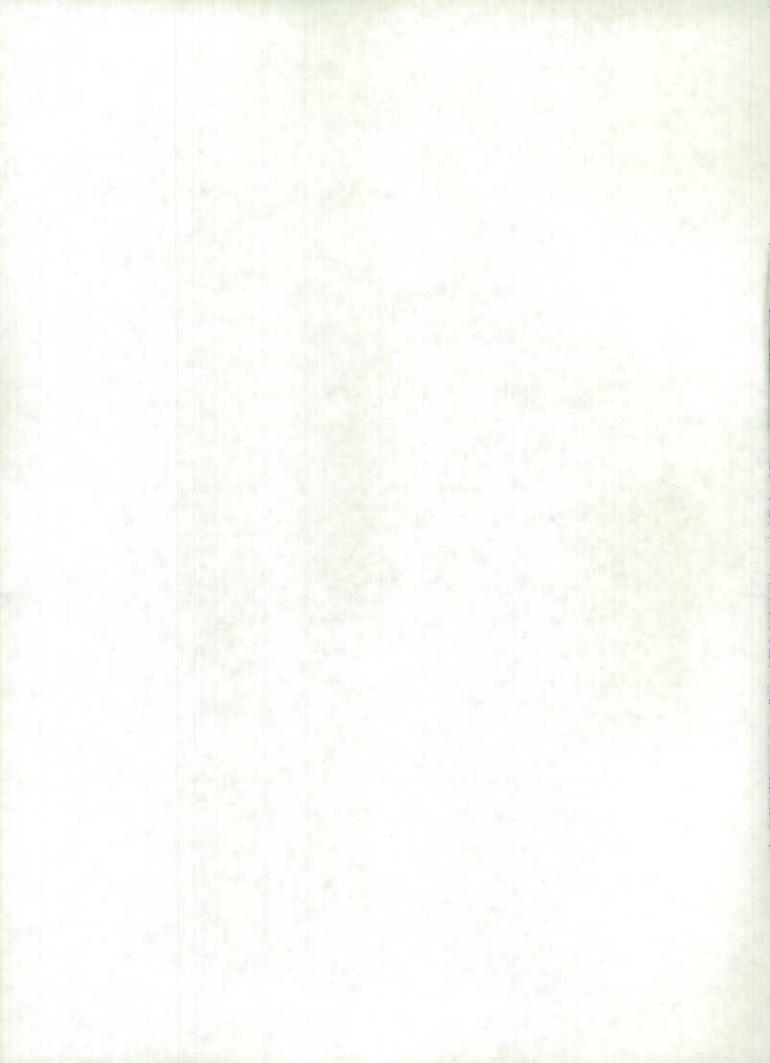
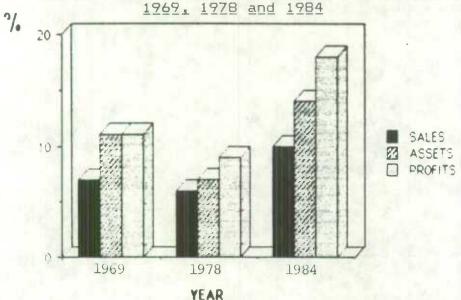


Table 5
Trends of conglomerate concentration, 1969-1984.

		Sales			Assets				Profits		
		1969	1978	1984	1969	1978	1984	1969	1978	1984	
-		0.07	0.9/	ET 4/	E*/	₹*/	70/	/ =/	/ •/	0*/	
Top		4%	4%	5%	5%	3%	7%	6%	6%	9%	
Top	8	5%	4%	7%	6%	4%	10%	8%	7%	13%	
Top	12	6%	5%	7%	8%	5%	10%	10%	9%	14%	
Top	20	6%	6%	9%	9%	6%	13%	10%	10%	17%	
Top	30	6%	6%	10%	9%	6%	13%	11%	9%	18%	
Тор	35	7%	6%	10%	11%	7%	14%	11%	9%	18%	

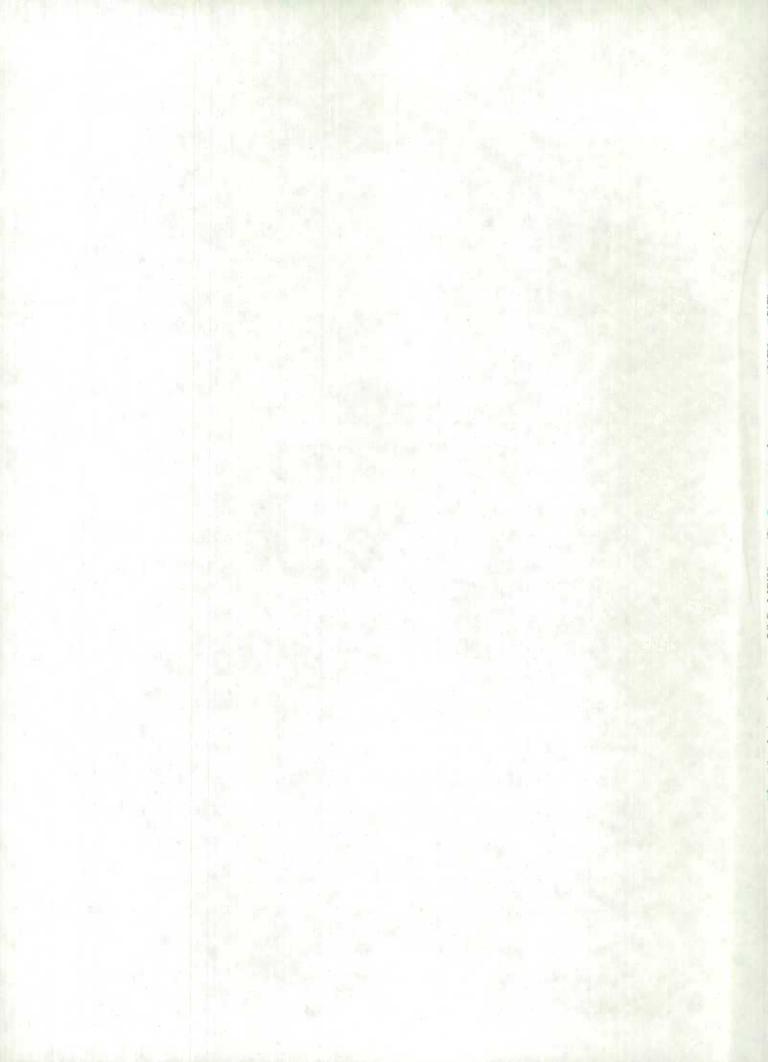
Graph I

The 35 largest conglomerates in the Canadian economy



It is not easy to explain this non-linear trend from only three observations in time. The explanation lies probably not in the conglomerate enterprises themselves but in the specialized ones. Several specialized enterprises grew very rapidly during the 1969-78 period: oil and gas producers, hydro-electric public utilities, car manufacturers and banks. The growth of conglomerates was probably less swift in that period, and they lost some share of the Canadian economy.

The opposite trend prevailed after 1981/2. Energy prices fell, and energy enterprises stagnated or even sold some of their



assets; car manufacturers stumbled under foreign competition, and banks stopped growing because of bad loans to oil companies and to Third World countries.

With the resumption of growth in 1983, conglomeration became possible again: the stock markets reached new heights, interest rates fell and the long term trend worked its way out anew.

6. Profitability.

The most surprising finding is that conglomerates appear (subject to data limitations such as double counting) more profitable than specialized enterprises. We used two measures of profitability: profits on sales, and profits on total assets. In both cases, conglomerates are strinkingly more profitable. And the difference remains constant through time (see Table 6). This pattern is not sensitive to one or two of the largest conglomerates being reclassified as specialized enterprises.

The opposite, however is true with government-owned conglomerates, that are less profitable than specialized public enterprises of comparative size, and have also lower profits than private conglomerates of the same volume of sales.

Table 6
Profitability of large Canadian enterprises

			Priv	vate			
	S	peciali	zed		Conglomerates		
	1969	1978	1984	1969	1978	1984	
Frofits on sales	9,6%	7,4%	8,7%	12,5%	11,2%	13,3%	
Profits on assets	3,0%	2,7%	3,4%	5,3%	6,6%	5,7%	
			Govern	nmental			
	S	peciali	zed		Conglome	rates	
	1969	1978	1984	1969	1978	1984	
Profits on sales	7,1%	10,9%	11,3%	-1,0%	6,1%	6,1%	
Profits on assets			2.4%		2.8%		

It would be difficult to explain this difference in terms of the particular composition of the lists. In both there are commercial corporations which have comparatively low profits to sales. In both private conglomerate and specialized enterprises lists there are Canadian firms and foreign subsidiaries.

This result runs against most literature on conglomerate enterprises (Blair, 1972; Meeks, 1977; Narver, 1967) and certainly merits a more thorough analysis. Other measures of profitability (and particularly profits on capital invested) should be used to confirm (or qualify) this finding. As well, all variables used, both in conglomerate and specialized enterprises should be adjusted to remove double counting (a complex but feasible task which is underway).

7. Diversification

Diversification grows with size, but the relationship between the two variables is not very strong. Table 7 shows diversification for the conglomerates in the 1969 and 1984 lists, ranked by sales and divided into five classes of seven enterprises each.

A diversification index has been calculated for each conglomerate, with the formula

where Pr is the value of sales of the principal activity. Firms are reranked each year.

Table 7

<u>Diversification in Canadian conglomerates, 1969 and 1984</u>

	1969	1984
First	0.66	0.51
Second	0.50	0.45
Third	0.47	0.46
Fourth	0.63	0.53
Fifth	0.57	0.49
Total	0.57	0.49

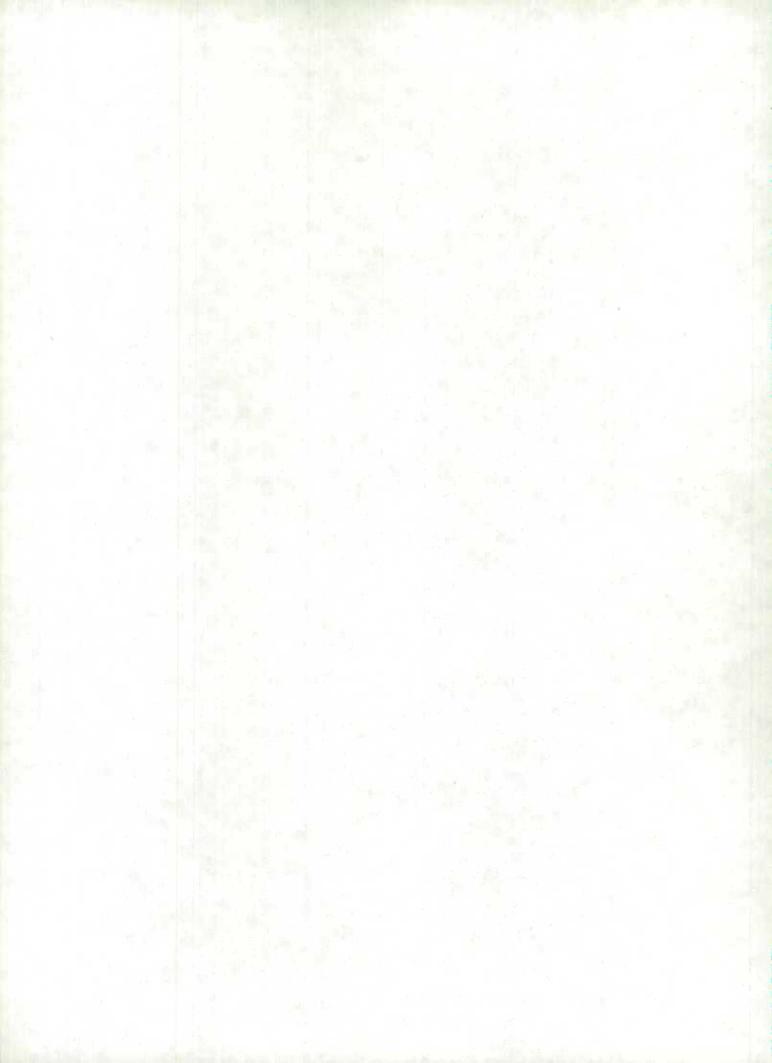
* Arithmetic averages for each group of seven enterprises.

The first group includes in 1984 the most diversified conglomerate in the country; it also includes (and is headed by) one of the least diversified conglomerates.

During the 15-year period, diversification within conglomerates has decreased, as shown in Table 7. Some very large conglomerates started a process of reorganization and rationalization and became less diversified; several small, regional, and very diversified groups disappeared both from the lists and from the economic landscape. It also appears that a number of conglomerates have pulled back from half a dozen or more markets to concentrate in two or three major areas.

CONCLUSION

During the last twenty-five years there is a general sense that a new type of economic centralization has been growing in Canada, namely conglomerate concentration. Mergers and acquisitions have reduced the number of independent corporations and increased the ranks and sizes of large diversified enterprises



operating in different, unrelated markets. The preliminary results reported in this analysis tend to support this view.

Three independent lists of the 35 largest conglomerates in Canada spanning a fifteen-year period with data for 1969, 1978 and 1984 have produced 57 names; we also produced a list of the 35 largest specialized enterprises for each year. Among the conglomerates, 16 appear in all three lists, yielding a high turnover rate of 72%. Survivors are more often large Canadian enterprises and foreign firms of any size. Disappearing conglomerates are more often regionally-based Canadian enterprises of small size.

Most conglomerates (62%) have been created in the 1960's and 1970's either through the incorporation of management holding companies or through the acquisition, by previously specialized enterprises, of independent operating corporations.

Diversified enterprises originate mostly in manufacturing, finance and services. But each industry shows a different tendency to conglomeration, the highest being railways, telephone service, food and beverages.

Conglomerates in Canada are both locally and foreign-controlled; while the largest of them are domestically owned and controlled (not including four under governmental control) 40% of them are the Canadian counterparts of conglomerate parents abroad.

Conglomerate concentration is significant and appears to have increased over the last 15 years in the Canadian economy. However the trend does not appear uniform; absolute concentration of conglomerate enterprises fell from 1969 to 1978 and then

increased at a more rapid pace from 1978 to 1984. This pattern is probably explained mostly by the changing fortunes of large specialized enterprises (which abound in energy, banking and vehicle manufacturing): these enterprises achieved their best performance in the late 1970's and then stagnated in the 1980's. Conglomerates then experienced their more rapid growth.

Contrary to most literature, conglomerates in Canada seem to show a better record than specialized enterprises in terms of profitability. Preliminary data on returns to assets and profit margins on sales are higher for private sector conglomerates over the entire period. This conclusion is however not true for government-owned conglomerates, which are less profitable than their private sector counterparts, as well as specialized governmental enterprises.

Diversification in Canadian conglomerates has been decreasing through time. Recent rationalization of large enterprises and the disappearance of small very diversified groups explains this pattern. Diversification also tends to increase slightly with the size of the enterprise.

The rise of conglomerate concentration, if it proceeds at the same swift pace of the latest period, will produce a new type of economy and society. Far from the mythical model of pure and perfect competition, and rather different also from the more realistic imperfect or oligopolistic schemes, new types of enterprises and markets are emerging that challenge our present understanding of Canadian society.

BIBLIOGRAPHY

Berkovitz, S.D. et al (1976): <u>Enterprise Structure and Corporate Concentration</u>, Technical Report prepared for the Royal Commission on Corporate Concentration, Ottawa, Supply and Services Canada.

Berle, A.A. and G. Means (1932): The Modern Corporation and Private Property, New York, Harcourt, Brace & World (reed.1968).

Blair, J (1972): <u>Economic Concentration</u>, New York, Harcourt, Brace & Jovanovitch.

Caves, R et al (1977): <u>Studies in Canadian Industrial</u> <u>Organization</u>, Study No. 26, Royal Commission on Corporate Concentration, Ottawa, Supply and Services.

Caves, R. et al (1980): <u>Competition in the Open Economy</u>, Cambridge, Harvard University Press.

Chevalier, J.-M. (1970): <u>La structure financière de l'industrie</u> américaine, Paris, Cujas.

Gort, M (1962): <u>Diversification and Integration in American</u>
<u>Industry</u>, Princeton, Princeton University Press.

Khemani, F.S. (1980): <u>Concentration in Canadian Manufacturing</u>
<u>Industries</u>, Ottawa, Consumers and Corporations Canada.

Larner, R. (1970): <u>Management Control and the Large Corporation</u>, New York, Dunellen.

Lecraw, D. J. and D. N. Thompson (1978): <u>Conglomerate Mergers in Canada</u>, Study No. 32, Royal Commission on Corporate Concentration, Ottawa, Supply and Services.

Meeks, G. (1977): <u>Disappointing Marriage: A Study of Gains from Merger</u>, Cambridge, Cambridge University Press.

Morin, F. (1975): <u>La structure financière du capitalisme français</u>, Paris, Calmann-Lévy.

Narver, J. C. (1967): <u>Conglomerate Merger and Market Competition</u>, Berkeley and Los Angeles, University of California Press.

Niosi, J (1978): <u>Le contrôle financier du capitalisme canadien</u>, Montréal, les Presses de l'Université du Québec. (English Translation: <u>The Economy of Canada</u>. <u>A Study of Ownership and Control</u>, Montreal, Black Rose)

Penrose, E. (1959): <u>The Theory of the Growth of the Firm</u>, Oxford, Basil Blackwell.

Rosenbluth, G. (1957): Concentration in Canadian Manufacturing Industries, Princeton, Princeton University Press.

Rumelt, R.F. (1974): Strategy, Structure and Economic Performance, Boston, Harvard University.

Wrigley, L. (1970): "Divisional Autonomy and Diversification", Unpublished Doctoral Dissertation, Harvard Business School, 1970.

Periodicals and other sources.

McLean Hunter Ltd: Financial Post Survey of Industrials, Toronto, Annual.

--- : Financial Post Survey of Mines and Energy Resources, Toronto, Annual.

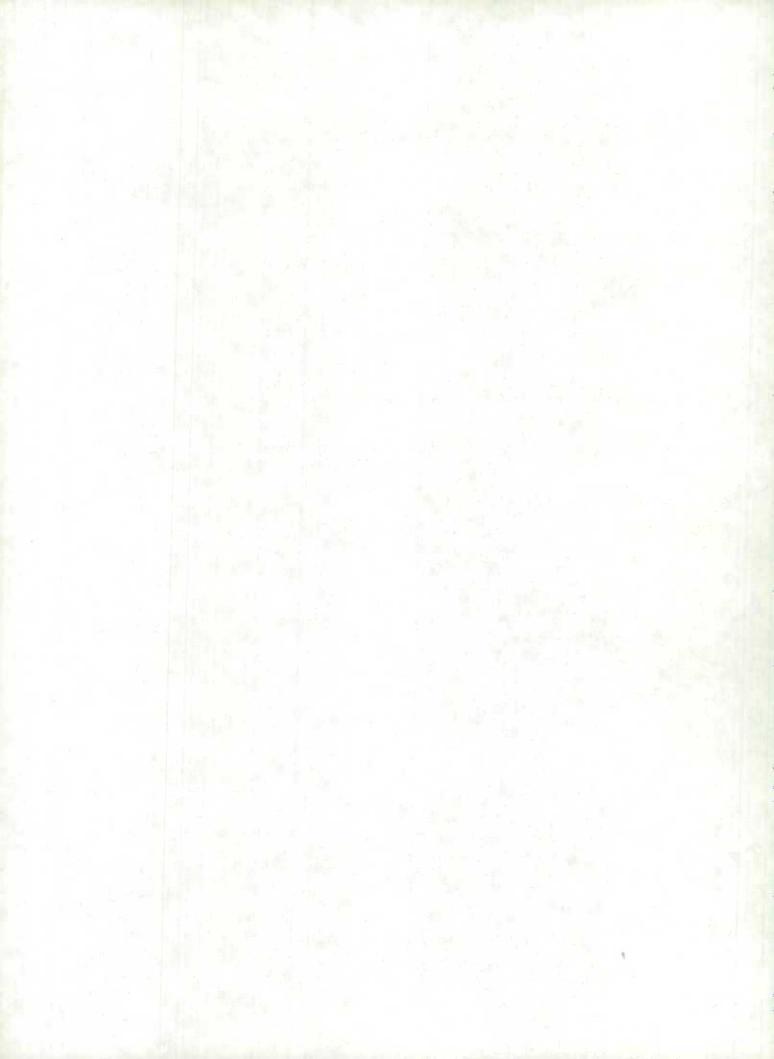
Moody's Investor Service Inc: Moody's Industrial Manual, New

York, Annual.

-: Moody's Bank & Finance, New York, Annual.

Ontario Securities Commission: Insiders Trading Bulletin, Toronto, monthly.

Commission des valeurs mobilières du Québec: <u>Bulletin mensuel</u>, Montréal.



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