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DISCUSSION PAPER NO. 349

Concentration and Competition in the Financial Sector

by

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RESUME

Cette étude a pour objet d'offrir une description de certains facteurs structurels liés à la concurrence dans le secteur financier canadien durant la vingtaine d'années précédant la réforme imminente de la réglementation des institutions financières. Le niveau de concentration, le degré de permutation dans le groupe des institutions les plus importantes et l'ampleur des barrières à l'entrée et à la sortie sont analysés.

Afin d'évaluer les niveaux de concentration, une approche "firme par firme" contrairement à une approche "groupe institutionnel" est utilisée. Les activités mondiales et domestiques des banques à charte, des sociétés de prêts hypothécaires, des sociétés de fiducie, des coopératives financières et des assureurs-vie ainsi que divers niveaux de propriété sont considérés.

L'industrie des services financiers, dominée par les banques à charte, était en 1967 et demeure encore aujourd'hui relativement concentrée en terme d'actifs totaux. Après s'être accentuée entre 1967 et 1979, la concentration de l'actif a cependant diminué quelque peu de 1979 à 1984. Dans le secteur bancaire, cela était attribuable notamment à l'arrivée des banques étrangères par suite de la révision de la Loi sur les banques de 1980. Comme les banques occupent une place importante dans le secteur financier, la baisse de la concentration dans le domaine bancaire s'est répercutée sur l'ensemble du système. Ce recul pourrait toutefois s'avérer de courte durée si l'essor des groupes financiers devait s'accélérer par le biais de fusions ou d'acquisitions.

Les niveaux de concentration dans le marché des prêts hypothécaires et dans le marché de l'assurance-vie sont relativement faibles alors qu'ils peuvent être qualifiés de relativement élevés dans le marché des dépôts et d'élevés dans le marché des prêts autres qu'hypothécaires. Cependant, tous les indices retenus montrent que le niveau de concentration a diminué depuis les dernières années dans le marché des dépôts et des prêts autres qu'hypothécaires. Au contraire, celui-ci a connu une très légère augmentation dans le marché des prêts hypothécaires et de l'assurance-vie. La concentration dans ces secteurs demeure néanmoins plus faible que dans les deux autres marchés.

Le degré de rotation des institutions formant le peloton de tête est plus élevé dans le marché des prêts hypothécaires et de l'assurance-vie que dans le marché des dépôts et des autres prêts. Finalement, quoique les barrières à l'entrée soient relativement élevées, elles semblent avoir diminuées depuis 1967.

Durant la période étudiée, la diversification semble avoir permis aux institutions financières de mieux soutenir la concurrence. Si l'on se base sur l'expérience passée, l'élargissement des pouvoirs des institutions financières devrait, afin de promouvoir la concurrence, être permis.

SUMMARY

The purpose of this study is to describe some of the structural factors that have affected competition in the Canadian financial sector during the twenty or so years leading up to the impending reform of financial institution regulation. Included in the analysis are: levels of concentration, turnover rates among the major institutions, and size of entry and exit barriers.

In assessing levels of concentration, a "firm-by-firm" approach is used, instead of the "institutional group" approach. Taken into consideration are the domestic and international activities of chartered banks, mortgage companies, trust companies, financial cooperatives and life insurance companies, as well as the various levels of ownership.

In terms of total assets, the degree of concentration in the financial service industry (dominated by the chartered banks) was relatively high in 1967, and remains so today. After rising between 1967 and 1979, asset concentration declined slightly between 1979 and 1984. In the banking sector, this trend can be linked to the influx of foreign banks following the 1980 Banking Law Revision Act. The importance of banks in the financial sector has meant that the effects of declining banking concentration have been felt throughout the system. This decline may prove to be short-lived, however, if financial groups expand more quickly as a result of mergers and takeovers.

Concentration levels in the mortgage loan and life insurance markets are relatively low, yet are relatively high in the deposit market and high in the nonmortgage loan market. However, all indications are that concentration has declined in recent years in the deposit and nonmortgage loan markets. In contrast, concentration has grown very slightly in the mortgage loan and life insurance markets, although it remains lower than in the other two markets.

Turnover among lending financial institutions is higher in the mortgage and life insurance market than in the other loan and deposit market. Finally, entry barriers, while relatively high, appear to have declined since 1967.

Over the study period, diversification appears to have helped financial institutions successfully weather competition. So, based on past experience, the powers of financial institutions should be expanded in order to encourage competitiveness.

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FOREWORD

This paper was prepared as part of a research project studying the Canadian financial system and financial regulation at the federal and provincial levels. Among the many reasons why the Economic Council of Canada decided to undertake this project, one of the most important was the fact that both the nature and range of financial institutions' activities have changed radically in the last ten years or so.

Last March the Council published the detailed results of its research in a Research Report entitled *A Framework for Financial Regulation*. A Consensus Statement entitled *Competition and Solvency: A Framework for Financial Regulation*, published in November 1986, had earlier presented the Council's 31 recommendations aimed at improving Canada's financial system, increasing public confidence in the stability of our financial institutions and encouraging competition among these institutions.

Concentration levels in the financial system provide one indication of how competitive the sector is. It is the evaluation of concentration levels and the links between concentration and competitiveness that is the subject of this paper.

Andrée Mayrand is currently a member of the Council's International Finance research group.

Judith Maxwell
Chairman

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NOTE

The following symbols, used by Statistics Canada, will be used in this paper:

..	figures not available
...	figures not appropriate or not applicable
--	amount too small to be expressed
-	nil or zero
e	estimate

1 INTRODUCTION

In April 1985, the federal government published a working document entitled "The Regulation of Canadian Financial Institutions: Proposals for Discussion" (Green Paper), with the goal of encouraging public debate and of beginning the process that would eventually lead to legislative changes in the financial system. Questions about concentration and its impact on competitiveness were often at the centre of this debate, which culminated in the publication of the White Paper in December 1986.[1] Even today, the subject is far from dead. Concern over competitiveness reflects the fact that competition is necessary for the financial system to run properly. It allows demand to be met at minimum cost, with revenues just enough to cover costs -- a situation known as "nil economic profit." Competition leads to a wider range of services and also encourages innovation. But can competitiveness, which is so necessary for economic efficiency, truly exist in markets apparently dominated by enormous financial conglomerates?[2]

There are two ways competition levels can be measured. The first involves looking directly at profits and prices, and the second involves studying the factors that determine firms' ability to influence or control prices and profits. Because it is difficult to determine whether prices are higher than they should be in a competitive market and whether profits are abnormally high, the indirect method of assessing competitiveness is preferable to the direct method.

We looked at two factors which influence the control firms are able to exercise over prices and profits: concentration and the size of entry and exit barriers. According to the traditional method of industry analysis (as originally developed by Mason (1939) and later refined by Bain (1965), Morvan (1978), Sherer (1980) and others), industry structure has the greatest impact on performance. According to this "structuralist" approach, the behaviour of firms is directly determined by the structure of the industry concerned. In order to avoid supply bottlenecks and to keep prices down, concentration should be low, i.e. the industry should not be dominated by a small number of large producers. When concentration is low, we can assume that the industry is competitive. But given high concentration, can we conclude that competition is absent? While structuralist theory would argue that this is so, high levels of concentration may stem more from the efficiency of large firms than from monopolistic power, with freedom of entry and exit in a concentrated industry preventing member firms from deviating from competitive behaviour. For if such firms try to set their prices above the marginal cost of production or to restrict production qualities in order to realize greater profits than would be possible using resources as efficiently as possible, then other firms will enter the market knowing they can set prices lower than those prevailing in the industry without suffering losses and so capture a certain market share. In order to avoid losing their markets, existing firms are thus forced to act as though they were operating in a low-concentration industry.

In his theory of contestable markets, Baumol (1982) showed that the absence of entry and exit barriers was a necessary and sufficient condition for efficient resource allocation. A contestable market (one with no entry and exit barriers) eliminates production inefficiencies and makes it impossible for prices to be set higher than the marginal cost of production. An oligopolistic or monopolistic industry can be considered contestable if there are no entry and exit barriers. The fact that no new companies attempt to take over such a concentrated but contestable market indicates that its constituent firms are behaving in such a way as to ensure fair remuneration of resources. The Baumol model, in contrast to the traditional method of industry analysis, defines structure endogeneously. Thus industry concentration does not necessarily determine the behaviour of firms. A high level of concentration may indeed coexist with behaviour similar to what might be expected in a situation of healthy competition, as long as there are no entry and exit barriers. When it is easy to enter a market, new companies will jump in to vie with existing firms as soon as they spot the possibility of offering better services and making profits. In theory, costs and prices should thus be minimized.

Before establishing a link between concentration and competition, another factor must be analyzed: the turnover rate among leading institutions. If, over time, the members of this group change, and this turnover is not the result of mergers and takeovers, then we can conclude that there is a certain degree of competition in the industry despite its concentration. We will analyze, in turn, concentration levels and turnover rates among the leading institutions over the period 1967-1984, as well as the size of entry and exit barriers.

Notes

1 The Honourable Thomas Hockin, Minister of State (Finances), *New Directions for the Financial Sector*, document tabled in the House of Commons, Ottawa, December 1986.

2 A financial conglomerate is an organization that offers financial products or services unrelated to each other. For example, a firm offering brokerage and insurance services, and also accepting deposits, would be a conglomerate. According to such a definition, Schedule A banks, trust companies and financial cooperatives are all conglomerates.

2 ESTIMATING CONCENTRATION LEVELS

Two concepts of concentration will be looked at: total-asset concentration and market concentration.[1]

Total-asset concentration refers to the power that size confers on an institution. It can act as an indicator of the political and social power wielded by large companies by virtue of their possessing resources sufficient to influence the political decision-making process. As Khemani (1986) noted in a study prepared for the MacDonald Commission: "The freedom of action of democratically elected government may become limited or constrained in economies dominated by large corporate entities because these corporations can, by shifting their financial resources, affect the level of economic activity or employment not only in specific industries but also in large segments of society as a whole."[2]

Market concentration gives an indication, for a specific market, of how much economic power is concentrated in the hands of firms, i.e. how much control firms have over the prices, the supply and the type of services offered. In order to study market concentration in a satisfactory way, the various markets must be defined. This is a complicated task, because product substitution possibilities at both the consumption and production levels must be taken into account. All firms in the market must be in competition with each other, and all other must be excluded. The problem is to distinguish between products that are good substitutes and those that are less so. For instance, a company may raise money by borrowing or by issuing stock. Can it be said, therefore, that a commercial loan made by a bank or trust company represents a good substitute for a corporate bond? Probably not, since the production processes involved are quite different. In this study, four markets will be analyzed: mortgage loans, other loans, deposits, and life insurance. We are well aware that it would be better to divide the "other loans" category into two sub-categories, personal and commercial loans. Data availability problems forced us to lump all non-mortgage loans into one category.

When concentration in the financial system is studied, the basic unit of analysis is often the institutional group. The usual focus is the overall market shares held by banks, trust companies, life insurance companies and other institutional groups. The results for this type of approach, aimed at determining the relative size of the leading financial institutional groups, are shown on Table 1. The dominant share of chartered banks in terms of total assets, deposits and other loans is unmistakable. While such an approach is appropriate when one is concerned with the

Table 1

Relative size of major institutional groups, per cent, 1967, 1979, 1984 and 1985.

	Total assets				Mortgage loans				Commercial loans				Consumer loans				Consumer and commercial loans				Total deposits			
	1967	1979	1984	1985	1967	1979	1984	1985	1967	1979	1984	1985	1967	1979	1984	1985	1967	1979	1984	1985	1967	1979	1984	1985
Chartered banks (Schedule A and B)[1]	42.2	54.3	56.2	55.8	6.6	22.6	30.8	32.2	99.4	88.6	84.2	83.0	55.2	71.5	70.3	69.2	78.1	81.4	78.7	77.1	75.0	66.1	64.7	63.6
Trust companies	5.8	7.9	8,1	8.1	18.9	27.6	27.2	27.0	..	0.6	2.0	2.1	..	2.5	5.3	6.3	..	1.4	3.3	3.9	15.1	16.3	18.3	18.8
Mortgage loan companies not associated with banks	3.7	2.5	1.2	1.3	16.2	9.7	4.2	4.6	..	0.3	1.1	1.0	..	0.2	2.5	3.5	..	0.3	1.6	2.1	7.9	3.6	2.4	2.6
Local credit unions	4.5	6.4	5.6	5.5	7.6	15.4	15.9	15.2	0.4	0.7	2.7	3.3	16.8	17.0	14.3	14.5	8.3	7.6	7.2	8.1	0.7	11.9	12.5	12.6
Central credit unions	0.6	1.2	1.4	1.4	0.3	0.3	0.2	0.3	0.2	0.4	1.1	1.3	...	...	...	...	0.1	0.2	0.7	0.7	1.3	2.1	2.2	2.4
Financial corporations	6.0	3.3	2.0	2.1	..	1.2	0.5	0.4	..	6.9	2.9	3.9	20.0	4.2	1.8	1.4	9.7	2.2	2.5	2.8	...	...	...	...
Financial leasing companies	..	0.4	0.4	0.4	..	-	-	-	..	0.4	0.1	0.1	...	...	...	...	..	0.2	--	--	...	...	...	...
Business financing companies	..	2.0	1.0	0.9	..	0.9	0.3	0.3	..	8.2	6.0	5.4	..	--	--	--	..	4.7	3.6	3.1	...	...	...	...
Investment companies[2]	3.7	1.1	1.3	1.7	0.1	1.6	1.0	1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Life insurance companies	23.4	10.4	11.3	11.8	47.0	15.5	15.8	15.6	...	...	...	...	7.9	4.5	5.8	5.0	3.8	1.9	2.3	2.1	...	...	...	...
Segregated funds in life insurance	..	1.3	1.4	1.5	..	1.3	1.0	0.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
General insurance companies	3.1	2.4	2.3	2.3	0.2	0.4	0.3	0.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Investment dealers	1.0	1.5	1.4	1.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trusteed pension plans	6.1	5.1	6.2	5.3[3]	..	3.3	2.4	2.3[3]	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1 International activities.

2 Investment companies include mutual funds and fixed-capital investment companies.

3 1984 data.

Source Bank of Canada Review, various years; Statistics Canada, Financial Institutions, Financial Statistics, Cat. No. 61-006, various years; Statistics Canada, Trusteed Pension Plans, Cat. No. 74-201, various years; Report of Superintendent of Insurance for Canada, trust and lending institutions, December 31, 1979.

relative changes that have taken place in the major institutional groups, we believe it is better to use (for any industry, in fact) a "firm-by-firm" approach, because concentration depends both on the number of firms in the industry and on their relative size. The difficulties involved in obtaining "firm-by-firm" information on a market-by-market basis explain why, to the best of our knowledge, such a task has never been undertaken before. Khemani alone (1986) has published data on financial system concentration using a "firm-by-firm" analysis, but his study dealt only with concentration in terms of total activity and did not deal with markets at all.

Measuring concentration

In order to measure economic concentration in an industry, the first step is to arrange the relevant units (firms or companies) in order of size, so as to determine to what extent activity is concentrated in the hands of a small number of large units.

There are several ways to measure industrial concentration; we have selected three that are often used: the concentration ratio, the inverse relation index, and the Hirschmann-Herfindahl index (Herfindahl for short). The concentration ratio (CR) reflects the relative market shares of the largest companies. It expresses the percentage of the industry's production value (in terms of total assets, mortgage loans, etc.) that is divided among the 4, 8, 12, 20 and 50 largest institutions (CR4, CR8, etc.) The inverse relation index represents the number of corporations controlling 80 per cent of the production value of the industry. The higher this index, the lower the concentration.[3] The Herfindahl index is the sum of the squares of the sizes of all companies expressed as a percentage of the overall size of the industry. The figure may range from 100 (when the industry contains but a single firm) to 0 (the lower limit approached when the industry contains an extremely large number of institutions of the same size). The higher the Herfindahl index, the higher industry concentration.

None of these measurements in itself is completely satisfactory. The concentration and inverse relation ratios do not take into account the total number of firms in an industry, nor their distribution in terms of relative size. The Herfindahl index, on the other hand, lumps these two factors into a single figure, but does not indicate, as do the other two indices, the market share of the leading companies. Thus it appears that the use of all three measurements is warranted.

Data base

Our study examines the years 1967, 1979 and 1984. The 1967 concentration levels can be considered representative of the situation existing prior to the government's incorporating into the Bank Act (1967) a number of the recommendations made by the 1964 Royal Commission on Banking and Finance (the Porter Commission). The objective of these reforms was to encourage competition. These recommendations included: banning interest rate agreements, eliminating the existing rate ceiling, allowing institutions to offer ordinary mortgage loans, changing the formula of required reserves in order to encourage greater diversity of deposits, banning overlapping of administrative positions, and forbidding an institution from owning more than 10 per cent stock in other corporations. 1979 was the year before the Bank Act was reformed to allow the entry of Schedule B chartered banks (another recommendation of the Porter Commission), and 1984 was the last year for which as complete a series of firm-by-firm data as possible was available.

The 1967 figures in our study of total-asset and market concentration included the following types of companies: chartered banks, trust companies, mortgage loan companies and life insurance companies (data base -- type A). In 1967 and 1979 figures, local financial cooperatives (such as caisses populaires and credit unions) were not included on a firm-by-firm basis because of lack of data. For comparison purposes, a similar sample was used for 1984. In the years 1967, 1979 and 1984, the total number of institutions (chartered banks, trust companies, mortgage loan companies and life insurance companies) was 250, 331 and 397 respectively (see Table 2).

In light of the importance of local financial cooperatives, however, additional calculations were made for the years 1979 and 1984. For 1984, three other data bases were used to study total-asset concentration. Like the first, the type B, C and D data bases included chartered banks, trust companies, mortgage loan companies and life insurance companies. Data base B also included the 100 largest caisses populaires (Quebec local financial cooperatives), as well as the 100 largest credit unions (financial cooperatives outside Quebec). Figures on total assets of financial cooperatives were not available on an individual basis for smaller institutions. The 100 largest caisses populaires and 100 largest credit unions accounted for just over 45.0 per cent of total assets (Appendix A), out of 3182 local savings and credit institutions.[4] Given the size of the Desjardins Group (a single financial group that owns all of Quebec's financial cooperatives, accounting for about 50 per cent of all local financial cooperatives in Canada in 1984 (see Appendix A)), special calculations were performed for the years 1979 and 1984 to take this group into account. Data base C includes caisses populaires but not credit unions, whereas data base D includes credit unions. To sum up, then, the type A data base was established for three particular years in order to compare total-asset and market

Table 2

Number of banks, trust companies, and life insurance companies in Canada, 1967, 1979 and 1984

	Federally incorporated companies		Provincially incorporated companies											
	Domestic	Foreign-owned	Nfld.	P.E.I.	N.B.	N.S.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All provinces	Total
1967														
Banks	8	...	...	...	...	..	..	..	..	..	..	..	..	
Trust companies	9	...	–	–	1	3	18	17	5	3	4	2	53	8
Loan companies	12	...	–	–	–	1	3	11	--	--	--	--	15	62
Life insurance companies	41	81	–	–	–	--	22	6	--	--	--	3	31	153[1]
Total	70	81	–	–	1	4	43	24	5	3	4	5	99	250
1979														
Banks	11	...	...	...	...	..	..	..	..	..	..	..	..	11
Trust companies	25	...	–	11	--	2	20	20	6	3	5	3	70	95
Loan companies	28	...	–	–	--	1	3	10	--	--	--	--	14	42
Life insurance companies	58	95	–	–	3	--	20	4	--	--	2	1	30	183[1]
Total	122	95	–	11	3	3	43	34	6	3	7	4	114	331
1984														
Banks														
Schedule A	14	...	...	...	..	..	..	..	..	..	..	..	..	14
Schedule B	...	58	...	...	..[2]	..	..	..	..	..	..	..	..	58
Trust companies	36	...	–	14	--	1	18	16	3	4	5	3	64	100
Loan companies	32	...	–	1	--	1	3	7	1	--	--	--	13	45
Life insurance companies	62	93	–	–	2	--	16	4	--	--	1	2	25	180[1]
Total	202	93	–	15	2	2	37	27	4	4	6	5	102	397

1 The Montreal City and District Savings Bank is also included. Thus the study covers in 1967, 1979 and 1984 respectively 251, 332 and 398 institutions. In 1984, the 100 largest caisses populaires and the 100 largest credit unions were included, for a total of 598 institutions covered.

2 Trust companies in Prince Edward Island are currently inactive.

Source <u>Canada Gazette</u>, the federal Superintendent of Insurance, and the superintendent of insurance for each province.

concentration levels between 1967 and 1984. The C type data base was used for 1979 and 1984 (market concentration and total-asset concentration), while the B and D type data bases could only be used for 1984 and then only for total assets.

Coverage of the activities of the financial system as a whole varies according to the type of data base, the sphere of activity and the year (Table 3). Anywhere between 75.1 and 82.6 per cent of total assets in the financial system are covered. In the mortgage-loan market, the percentage varies between 76.7 and 88.7 per cent. For other loans and deposits, the coverage rates range from 81.9 to 89.6 per cent and from 85.4 to 98 per cent, respectively. The life-insurance market is 100 per cent covered.

It might be assumed that the further below 100 per cent the coverage rates fall, the less exact the measurements of concentration levels. If the excluded companies belonged to the largest institutions, concentration might indeed be underestimated. However, as shown in Table 1, this is very likely not the case. With the exception of local savings and credit institutions and pension trust funds, the excluded companies are all members of relatively small institutional groups. Even though financial cooperatives, taken as a whole, are one of the largest types of institutions, individually they are relatively small. The largest of these institutions ranks 52nd, and the 200th ranks

Table 3

Overall coverage of financial system by data base,[1] 1967, 1979 and 1984.

	1967	1979		1984			
	Data base type A	Data base type A	Data base type C	Data base type A	Data base type B	Data base type C	Data base type D
	(Per cent)						
Total assets	75.1	76.4	79.3	78.2	80.7	80.8	82.6
Mortgage loans	88.7	76.7	84.0	79.0	..	86.4	..
Other loans	81.9	85.0	87.8	85.9	..	89.6	..
Deposits	98.0	86.0	91.6	85.4	..	91.4	..
Life insurance	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1 Data bank - type A: Chartered banks, trust companies, mortgage loan companies and life insurance companies.
Data bank - type B: Chartered banks, trust companies, mortgage loan companies and life insurance companies, 100 largest caisses populaires, 100 largest credit unions.
Data bank - type C: Chartered banks, trust companies, mortgage loan companies and life insurance companies, all caisses populaires (no credit unions).
Data bank - type D: Chartered banks, trust companies, mortgage loan companies and life insurance companies, all caisses populaires, 100 largest credit unions.

Source Table 1 and Appendix A.

433rd out of 588 institutions. As for trusteed pension plans, the two largest private pension plans according to data from 1985 -- Bell Canada and Canadian Pacific Investment Management[5] -- are ranked 27th and 29th respectively. Among the smaller institutional groups not included in the study is General Motors Acceptance Corporation of Canada, which is the largest financial corporation[6]; it ranked 43rd in 1984. The largest brokerage firm in terms of assets ranked 47th, and the largest general insurance carrier was in 62nd place.

Since it is the largest institutions of the financial system that are included (the largest excluded being a pension plan that would have occupied 27th place), the concentration ratios CR4, CR8, CR12 and CR20 are certainly not underestimated. On the contrary, the estimated concentration levels are somewhat high because a number of participants were excluded. Institutional groups were excluded when data were not available on an individual basis or when the anticipated costs involved in compiling the data were simply not worth the extra degree of precision. (For example, the cost involved in collecting data on the 325 general insurers (1984)[7] would probably be higher than the precision gained by including these data, since, overall, general insurance companies represented only 2.3 per cent of the financial sector's 1984 assets (Table 1)).

Data were collected from each individual corporate charter (legal classification). Three types of units were selected for analysis purposes. The first included institutions whose ownership links were evident (Level 1 classification) -- i.e., firms with similar names known to be controlled by a single institution but possessing their own charters under one name. For example, Trust Général du Canada and Trust Général Inc., two chartered Quebec corporations, were grouped together, as were Montreal Trust (federally incorporated) and Montreal Trust (provincially incorporated). The second type of unit consists of institutions grouped according to full ownership links (Level 2 classification). Thus, the two Montreal Trust corporations (federally and provincially incorporated), Acadia Trust, Canadian Trustco and Prince Edward Island Trust Co. were all grouped under the name Montreal Trustco because they are all controlled by this organization.[8] Similarly, the data for Trust General of Canada, Sherbrooke Trust and Sterling Trust were aggregated. Finally, institutions belonging to financial holding groups[9] were grouped under the name of the parent company (full ownership within a holding group: Level 3 classification). For example, Montreal Trustco, Investors Group and Great West Life Assurance Company were grouped under Power Financial Corporation. Examples of how institutions with intercorporate ownership links were classified are given in Table 4. Ownership information was based primarily on non-confidential returns filed under the Corporations and

Table 4

Examples of classification of institutions with intercorporate ownership links.

Legal classification	Level 1 Classification (obvious ownership links)	Level 2 Classification (full ownership links)	Level 3 Classification (full ownership links and financial holding company)
Montreal Trust, federally incorporated	Montreal Trust		
Montreal Trust, provincially incorporated			
Acadia Trust	Acadia Trust	Montreal Trustco	Power Financial Corp.
Canadian Trust Co.	Canadian Trust Co.		
Prince Edward Island Trust Co.	Prince Edward Island Trust Co.		
Investors Group	Investors Group	Investors Group	
Great-West Life Ass. Co.	Great West Life Ass. Co.	Great West Life Ass. Co.	
Trust Général du Canada			
Trust Général Inc.	Trust Général du Canada	Trust Général du Canada	Trust Général du Canada
Sherbrooke Trust	Sherbrooke Trust		
Sterling Trust	Sterling Trust		

Labour Unions Return Act (CALURA), which were used by Statistics Canada for its survey of corporate ownership from 1979 to 1984, the last year for which data were available.[10]

The Level 3 classification is best suited to measuring concentration because the ultimate owner is taken into consideration. However, when the members of one financial group might compete with each other, Level 2 classification should also be used. For example, Great West Life and Montreal Trustco are both owned by Power Financial Corporation, but are both active in the mortgage market. Since information on full ownership was not available for 1967, Level 1 classification (obvious ownership links) was used for comparison purposes.

Total-asset and market concentration calculations included both domestic and international activities. However, the most appropriate criterion to calculate political and social power concentration is worldwide assets, since such power depends on the overall size of the firm, whether it be local, national or multinational. On the other hand, domestic activity is better suited to our market concentration analysis because our subject is concentration on Canadian markets. It should be noted, however, that this information was not available for 1967.

Calculation of total-asset concentration was made with and without trust companies' estate, trust and agency business. The most appropriate measurement of asset concentration is worldwide assets excluding ETA, since trust companies do not exercise the same control over ETA activities as over their own assets. Moreover, profits do not feed back into company funds and losses are not reflected. H. Jackman, president of the E-L Financial Corporation and National Victoria and Grey Trust Co. was asked by the president of Ontario's Standing Committee on Finance and Economic Affairs, Corporate Concentration whether he was excluding ETA business in the figures on concentration presented to the Committee. Mr. Jackman replied:

> "Yes, I am. But you know, they are not assets [under our] control. I think National Trust has a $2 billion pension fund from one of the big industrial companies, but we do not control it. All we do is -- we do not even manage it. The bonds are in our vault, and we clip the coupons for them. They have outside managers."[11]

Table 5 summarizes in chart form the various series of calculations made.

Results

Estimated levels of concentration are presented below from two points of view: total-asset concentration and market concentration.

Table 5

Description of Calculations Involved in Various Measures of Concentration, 1967, 1979 and 1984

	Worldwide activities						Domestic activities					
	With ETA			Without ETA			With ETA			Without ETA		
	1967	1979	1984	1967	1979	1984	1967	1979	1984	1967	1979	1984
<u>Total-asset concentration</u>												
Obvious ownership links												
without CP, without CU	x	x	x	x	x	x	..	x	x	..	x	x
with 100 CP, with 100 CU	..	..	x	..	..	x	..	..	x	..	..	x
Full ownership links												
without CP, without CU	..	x	x	..	x	x	..	x	x	..	x	x
with 100 CP, with 100 CU	..	..	x	..	..	x	..	..	x	..	..	x
Full ownerhips links and financial holding group												
without CP, without CU	..	x	x	..	x	x	..	x	x	..	x	x
with 100 CP, with 100 CU	..	..	x	..	..	x	..	..	x	..	..	x
with Desjardins Group only												
without CU	..	x	x	..	x	x	..	x	x	..	x	x
with 100 CU	..	..	x	..	..	x	..	..	x	..	..	x
<u>Mortgage-loan market concentration</u>												
Obvious ownership links - without CP, without CU	x	x	x	..	..	..	..	..	..	..	..	..
Full ownership links - without CP, without CU	..	x	x	..	..	..	..	..	..	..	..	..
Full ownership links and financial holding group - without CP, without CU	..	x	x	..	..	..	..	..	..	..	..	..
- with Desjardins Group only, without CU	..	x	x	..	..	..	..	..	..	..	..	..
<u>Other-loan market concentration</u>												
Obvious ownership links - without CP, without CU	x	x	x	..	..	..	..	x	x	..	..	..
Full ownership links - without CP, without CU	..	x	x	..	..	..	..	x	x	..	..	..
Full ownership links and financial holding group - without CP, without CU	..	x	x	..	..	..	..	x	x	..	..	..
- with Desjardins Group only, without CU	..	x	x	..	..	..	..	x	x	..	..	..
<u>Deposit-market concentration</u>												
Obvious ownership links - without CP, without CU	x	x	x	..	..	..	..	x	x	..	..	..
Full ownership links - without CP, without CU	..	x	x	..	..	..	..	x	x	..	..	..
Full ownership links and financial holding group - without CP, without CU	..	x	x	..	..	..	..	x	x	..	..	..
- with Desjardins Group only, without CU	..	x	x	..	..	..	..	x	x	..	..	..

X: indicates this calculation was done.
..: indicates that data were not available.
CP: Caisses populaires.
CU: Credit unions.

Total-asset concentration

Our analysis is based on worldwide assets excluding trust companies' ETA business because these are the best data for measuring total-asset concentration. For comparison purposes, concentration levels using other measures are also presented.

As indicated in Table 6, the Canadian financial sector is characterized by relatively high asset concentration. Depending on whether financial cooperatives are included and on what ownership links are used, the share of worldwide assets held by the four largest corporations among those included ranged from 49.1 to 52.2 per cent; the eight largest firms accounted for between 66.6 and 68.9 per cent of this figure, and 80 per cent of total assets was held by 18 institutions (full ownership links and holding groups -- the entire Desjardins group and 100 credit unions.)

For comparison purposes, concentration levels among the 33 major non-financial industries are given in Table 7. Financial sector concentration seems to be relatively high compared to most sectors. In 1983, for example, the four largest companies in terms of sales in the manufacturing sector accounted for 11.1 per cent of assets; the same figure was only 6.0 per cent for non-financial services, and only one-third of the subsectors had CR4

Table 6

Concentration Indices in the Financial Sector,[1] 1967, 1979 and 1984 - Total World Assets

		Without ETA								With ETA							
		Concentraton ratios					Herfindahl index	Inverse relation index	Characterization of concentration	Concentration ratios					Herfindalh index	Inverse relation index	Characterization of concentration
		CR4	CR8	CR12	CR20	CR50				CR4	CR8	CR12	CR20	CR50			
Obvious ownership links, without CP[2], without CU[3]	- 1967	46.4	64.1	72.9	83.9	95.9	6.93	17	relatively high	37.3	58.8	69.5	81.9	95.5	5.34	19	relatively high
	- 1979	54.8	73.1	79.6	87.1	96.5	9.07	13	relatively high	46.2	67.7	76.4	84.3	96.1	7.07	16	relatively high
	- 1984	52.2	68.0	74.9	83.0	93.5	8.07	17	relatively high	42.2	63.3	73.1	81.6	93.6	6.17	19	relatively high
with 100 CP, 100 CU	- 1984	50.5	65.9	72.6	80.4	90.7	7.59	20	relatively high	41.1	61.7	71.2	79.5	91.3	5.83	21	relatively low
Full ownership links, wihtout CP, without CU	- 1979	54.8	73.1	79.6	87.1	96.6	9.07	13	relatively high	46.2	67.7	76.4	84.3	96.2	7.07	16	relatively high
	- 1984	52.2	68.0	74.9	83.0	94.0	8.07	17	relatively high	42.2	63.4	73.1	81.8	94.0	6.17	19	relatively high
with 100 CP, 100 CU	- 1984	50.5	65.9	72.6	80.4	91.1	7.59	20	relatively high	41.1	61.8	71.2	79.7	91.6	5.84	21	relatively low
Full ownership links and financial holding groups without CP, without CU	- 1979	54.8	73.0	80.0	87.5	97.0	9.07	12	relatively high	46.2	68.3	77.9	85.6	96.8	7.16	14	relatively high
	- 1984	52.2	68.9	76.4	84.3	94.7	8.13	16	relatively high	42.2	65.1	75.6	84.0	94.8	6.38	16	relatively high
with 100 CP, 100 CU	- 1984	50.3	66.4	73.7	81.6	93.8	7.61	19	relatively high	41.0	63.2	73.4	81.6	93.8	6.02	19	relatively high
with Desjardins Group only without CU	- 1979	53.1	72.1	79.5	87.5	97.1	8.63	13	relatively high	45.0	66.5	77.7	86.0	96.8	6.91	14	relatively high
	- 1984	50.4	68.4	76.2	84.5	94.9	7.75	16	relatively high	41.0	63.6	76.0	84.4	94.9	5.17	15	relatively high
with 100 CU	- 1984	49.1	66.6	74.3	82.4	94.2	7.39	18	relatively high	40.2	62.3	74.4	82.7	94.1	5.93	17	relatively high

1 As defined in this study.
2 CP: caisses populaires.
3 CU: credit unions.

Table 7

Concentation Levels in 33 Major Non-Financial Industries in Canada, 1983

Industry	CR4[1]	CR8
	(Per cent)	
Agriculture, forestry and fishing	2.6	3.8
Mining	18.4	28.9
Metal mining	48.0	66.3
Mineral fuels	23.1	36.0
Other mining	15.8	22.6
Manufacturing	11.1	17.1
Food	15.6	25.2
Beverages	33.8	68.3
Tobacco products	98.9	99.9
Rubber products	64.2	84.7
Leather products	15.7	28.3
Textile mills	45.4	52.7
Knitting mills	20.6	30.9
Clothing industries	7.8	10.8
Wood industries	28.9	37.6
Furniture industries	12.3	16.8
Paper and allied industries	33.6	51.7
Printing, publishing and allied industries	29.8	43.5
Primary metals	70.1	84.4
Metal fabricating	15.0	27.4
Machinery	19.7	26.3
Transport equipment	38.3	50.2
Electrical products	38.5	49.1
Non-metallic mineral products	53.3	66.0
Petroleum and coal products	64.5	87.8
Chemicals and chemical products	30.1	49.3
Miscellaneous manufacturing	11.8	17.2
Construction	4.7	8.5
Utilities	47.7	62.7
Transportation	53.4	65.8
Storage	73.4	77.7
Communications	74.4	86.4
Public utilities	72.0	77.2
Trade	15.6	19.1
Wholesale trade	16.8	20.8
Retail trade	18.2	25.5
Services (excluding financial services)	6.0	12.9

1 Share of assets held by the four largest corporations in terms of sales.

Source Statistics Canada, Corporations and Labour Unions Returns Act, Part I - Corporations, Cat. No. 61-210, Report for 1983.

values above 40 per cent.

Ownership links aside, the four largest institutions in terms of assets without ETA are the Royal Bank, the Bank of Montreal, the Canadian Imperial Bank of Commerce, and the Bank of Nova Scotia. No financial holding group had higher worldwide assets than these banks.

If funds administered on behalf of others (ETA) are included in worldwide assets, the share of the top four institutions discussed above falls about ten points (Table 6), since adding ETA business to trust company assets substantially increases the relative size of these companies (although they do not jump into the top positions).

When domestic assets are used instead of worldwide assets, the share of the top four institutions (still all banks) falls. Depending on the type of ownership links used, this figure varies from 40.6 to 42.3 per cent (Table 8).

The situation is somewhat different when domestic assets with ETA are used. (It must be noted that we are speaking of international ETA business, not domestic.) At the highest ownership level, the top four institutions hold no more than 35 per cent of total administered assets, and one holding group rises

Table 8

Concentration indices in the financial sector,[1]
1979 and 1984 - Total Domestic Assets

		Without ETA								With ETA							
		Concentration ratios					Herfindahl Index	Inverse relation Index	Characterization of concentration	Concentration ratios					Herfindahl Index	Inverse relation Index	Characterization of concentration
		CR4	CR8	CR12	CR20	CR50				CR4	CR8	CR12	CR20	CR50			
Obvious ownership links,																	
without CP[2], without CP[3]	- 1979	49.8	67.7	74.7	82.3	95.2	7.69	17	relatively high	40.8	62.0	72.3	81.2	94.9	5.87	19	relatively high
	- 1984	44.3	60.5	67.9	77.4	90.8	6.22	24	relatively low	36.0	57.3	68.7	77.8	91.5	4.93	23	relatively low
with 100 CP, 100 CU	- 1984	42.3	57.8	64.8	73.9	86.9	5.70	29	relatively low	34.8	55.4	66.4	75.2	88.5	4.60	27	relatively low
Full ownership links,																	
without CP, without CU	- 1979	49.8	67.7	74.8	83.3	95.3	7.69	17	relatively high	40.8	62.0	72.4	81.4	95.1	5.87	19	relatively high
	- 1984	44.3	60.5	67.9	77.4	91.1	6.22	24	relatively low	36.0	57.4	68.8	78.1	92.0	4.93	23	relatively low
with 100 CP, 100 CU	- 1984	42.3	57.8	64.9	73.9	87.4	5.70	29	relatively low	34.8	55.5	66.5	75.4	88.9	4.62	27	relatively low
Full ownership links and financial holding groups																	
without CP, without CU	- 1979	49.8	67.7	75.0		83.8	95.9	7.71		16	relatively high		40.8		62.4	73.7	
82.8		95.8	5.97	18	relatively high												
	- 1984	44.3	62.0	69.7	79.0	92.4	6.32	24	relatively low	37.1	58.8	71.5	80.5	93.1	5.26	20	relatively high
with 100 CP, 100 CU	- 1984	42.1	58.8	66.2	75.8	91.3	5.73	26	relatively low	35.7	56.6	68.8	77.7	91.3	4.89	23	relatively low
with Desjardins Group only																	
without CU	- 1979	47.7	67.0	73.5	84.1	96.0	7.07	16	relatively high	39.4	60.8	74.5	83.4	95.9	5.77	17	relatively high
	- 1984	42.2	61.5	70.0	79.8	92.8	6.01	21	relatively low	35.7	57.1	72.5	81.2	93.3	5.14	19	relatively high
with 100 CU	- 1984	40.6	59.3	67.5	77.2	91.8	5.62	24	relatively low	34.8	55.6	70.6	79.1	92.3	4.86	22	relatively low

1 As defined in this study.
2 CP: caisses populaires.
3 CU: credit unions.

to second spot, while the other three places are occupied by Schedule A chartered banks.

According to the concentration ratios -- the Herfindahl index and the inverse relation index -- asset concentration experienced a net rise between 1967 and 1984, despite slipping between 1979 and 1984. Regardless of the ownership links and measurements used, all indices agree that concentration fell between 1979 and 1984. The entry of Schedule B chartered banks following the 1984 revisions to the Bank Act played a role in the decline of concentration in the banking industry. Between 1979 and 1984, for instance, the Herfindahl index fell from 17.49 to 15.34. Given this sector's importance, the effects of the drop in concentration in the banking sector were felt throughout the financial system. Additional calculations showed that the Herfindahl index would have risen from 7.75 to 8.40 had Schedule B chartered banks not been included in the 1984 data base.

The relatively rapid growth of financial holding groups between 1979 and 1984 was apparently not enough to raise asset concentration. For instance, in 1984, nine holding groups held close to 10 per cent of assets held by all financial institutions, whereas by 1979, eight groups held 6.5 per cent (Table 9). However, despite the growth in relative size, individually these financial groups held only a very small share of total assets.

Table 9

Shares of nine financial holding groups in total assets, loan and deposits of all financial institutions,[1] 1979, 1974, and 1985

	Total assets			Mortgage loans			Other loans			Deposits		
	1979	1984	1985	1979	1984	1985	1979	1984	1985	1979	1984	1985
						(Per cent)						
Desjardins Group	2.94	3.26	3.33	6.15	6.79	6.63	2.90	5.06	5.94	5.14	6.31	6.56
Trilon Financial Corporation	...	2.45	2.63	...	5.48	5.84	...	1.59	1.76	...	3.33	3.63
Power Financial Corporation	1.65	1.95	2.01	3.53	3.84	4.36	0.31	0.39	0.46	0.61	0.77	0.82
Crown Financial Group	0.50	0.69	0.77	0.83	1.08	1.45	0.18	0.25	0.25	-	0.02	0.02
Laurentian Group	0.37	0.50	0.65	0.49	0.42	0.63	0.07	0.13	0.12	-	-	0.14
Traders Group	0.76	0.58	0.56	1.49	1.08	0.93	1.01	0.97	1.08	0.98	0.91	0.94
Eaton Financial Services	0.15	0.15	0.13	0.48	0.50	0.44	--	--	--	0.26	0.23	0.21
E-L Financial Corporation	0.12	0.11	0.14	0.12	0.08	0.09	0.02	0.02	0.02	-	-	-
Groupe Prêt et Revenu	0.04	0.06	0.06	0.11	0.16	0.15	--	0.02	0.02	0.06	0.11	0.11
Nine holding groups	6.54	9.77	10.29	13.20	19.44	20.51	4.49	8.43	9.66	7.06	11.69	12.44

1 Excluding assets of trusteed pension plans.

Source Appendix B; Bank of Canada Review, various years; Statistics Canada, Financial Institutions, Financial Statistics, Cat. No. 61-006, various years.

The Desjardins group, the largest holding group, ranked 7th among the leading institutions in 1979 and was in 6th place in 1984. The size of banks and the increased number of industry participants meant that, overall, the growth of holding groups did not exert any upward pressure on concentration levels. The fall in total-asset concentration between 1979 and 1984 may prove to be short-term if holding groups speed up their growth through mergers and takeovers and end up challenging the place of the industry leaders.

Market concentration

Mortgage loan concentration (Table 10) is lower than total-asset concentration. In 1984, at the highest ownership level, the four largest institutions accounted for only 32.6 per cent of mortgage loans. Concentration levels in 1967 and 1979 were quite similar (the CR4 and Herfindahl index are slightly higher in 1979 than in 1967, while the inverse relation index did not change at all), but concentration rose slightly between 1979 and 1984. This increase stems from considerable growth on the part of financial holding groups. In 1984, they accounted for close to 20 per cent of the mortgage loan market, after holding only 13 per cent in 1979 (Table 9). In 1984, the top four institutions included two holding groups, whereas in 1979 there was only one. This growth more than made up for the increased number of participants as

Table 10

Concentration Indices in the Financial Sector,[1]
1967, 1979 and 1984 - <u>Total Mortgage Loans</u> (Without ETA)

		Concentraton ratios					Herfindahl index	Inverse relation index	Characterization of concentration
		CR4	CR8	CR12	CR20	CR50			
Obvious ownership links, without CP[2], without CU[3]	- 1967	28.3	44.0	55.8	71.6	94.0	3.56	26	relatively low
	- 1979	28.7	46.0	58.1	73.4	93.3	3.68	26	relatively low
	- 1984	29.1	48.6	62.0	76.0	93.9	4.02	24	relatively low
Full ownership links, wihtout CP, without CU	- 1979	28.7	46.1	58.3	73.6	93.6	3.69	25	relatively low
	- 1984	29.1	48.8	62.2	76.1	94.4	4.04	23	relatively low
Full ownership links and financial holding groups without CP, without CU	- 1979	28.7	46.4	59.5	74.8	94.8	3.77	24	relatively low
	- 1984	31.7	51.8	66.2	79.0	95.5	4.44	21	relatively low
With Desjardins Group only without CU	- 1979	29.9	48.4	61.0	76.4	94.8	4.03	23	relatively low
	- 1984	32.6	52.9	67.3	80.4	95.9	4.56	20	relatively high

1 As defined in this study.
2 CP: caisses populaires.
3 CU: credit unions.

Schedule B chartered banks entered the market, since these banks did not engage much in mortgage lending.

Despite an increase, then, concentration remained clearly lower in this market than in the other-loan and deposit markets.

The level of concentration in the Canadian nonmortgage-loan market may be considered high (Table 11). In 1984, at the highest ownership level, the four largest companies accounted for 62.7 per cent of this market, and the eight largest for 82 per cent. All indices indicate, however, a drop in concentration between 1979 and 1984. International activity had to be used to trace the evolution of the other-loan market between 1967 and 1984, since data on domestic activity in 1967 were not available. Concentration indicators show that, even at the international level, concentration declined between 1967 and 1984. Since large institutions were less active abroad in 1967 than in 1984, we can assume that the gap between international and domestic activities was smaller in 1967 than in 1984 and that concentration levels in terms of international activities in 1967 provide a good indication of existing concentration levels in the domestic other-loan market in that year. According to this hypothesis, concentration in the domestic other-loan market declined not only between 1979 and 1984, but also between 1967 and 1979.

Table 11

Concentration Indices in the Financial Sector,[1] 1967, 1979 and 1984 - Other Loans

		Domestic activities								Worldwide activities							
		Concentraton ratios					Herfindahl index	Inverse relation index	Characterization of concentration	Concentration ratios					Herfindalh index	Inverse relation index	Characterization of concentration
		CR4	CR8	CR12	CR20	CR50				CR4	CR8	CR12	CR20	CR50			
Obvious ownership links, without CP[2], without CU[3]	- 1967	..	..	..	..	..	..	..	..	72.9	93.6	96.2	98.4	99.7	16.00	5	high
	- 1979	72.2	94.4	96.6	98.3	97.7	15.65	5	high	72.8	95.0	96.7	98.4	99.8	15.60	5	high
	- 1984	65.4	82.9	86.9	90.7	96.8	12.35	7	high	67.7	87.1	90.4	93.3	97.7	13.34	6	high
Full ownership links, without CP, without CU	- 1979	72.2	94.4	96.6	98.3	99.7	15.65	5	high	72.7	94.9	96.7	98.4	99.8	15.56	5	high
	- 1984	65.4	82.9	87.0	90.9	97.0	12.36	7	high	67.7	87.1	90.4	93.3	97.8	13.35	6	high
Full ownership links and financial holding groups without CP, without CU	- 1979	72.2	94.4	96.6	98.3	99.8	15.65	5	high	72.7	94.9	96.7	98.4	99.8	15.56	5	high
	- 1984	65.4	82.9	87.0	91.0	97.1	12.36	7	high	67.7	87.1	90.6	93.5	98.0	13.36	8	high
with Desjardins Group only without CU	- 1979	70.0	93.2	96.4	98.2	99.8	14.82	5	high	71.2	94.0	96.5	98.3	99.8	14.98	5	high
	- 1984	62.7	82.3	86.9	91.1	97.2	11.53	7	high	65.9	86.0	96.0	93.4	98.0	12.74	6	high

1 As defined in this study.
2 CP: caisses populaires.
3 CU: credit unions.

This market, like all the others, is dominated by the Schedule A chartered banks. In 1984, the largest financial holding group ranked only 6th and the largest trust company not connected to a holding group occupied 9th place. Growth among financial groups was not enough to boost concentration levels.

Concentration in the <u>domestic deposit market</u> is relatively high. In 1984, 47.7 per cent of the market was controlled by the four leading institutions, and 12 institutions accounted for 80 per cent of the market (Table 12). However, concentration declined between 1979 and 1984. Here again all concentration indices agree that banks monopolized the top four spots and that growth among holding groups was not enough to offset the impact of additional participants.

The <u>life insurance market</u> is less concentrated than the deposit and other-loan markets, and is similar in this regard to the mortgage-loan market. Its concentration level is relatively low in terms of directly written insurance in force. In 1984, the four largest life-insurance companies held 28.4 per cent of individual 39.6 per cent of group life insurance. Overall, the four largest institutions held 29.3 per cent of directly written insurance in force, and 26 firms accounted for 80 per cent of the market (Table 13). Since in 1967, 1979 and 1984 life insurance companies were the only institutions allowed to offer life

Table 12

Concentration Indices in the Financial Sector,[1] 1967, 1979 and 1984 - Deposits

		Domestic activities								Worldwide activities							
		Concentraton ratios					Herfindahl index	Inverse relation index	Characterization of concentration	Concentration ratios					Herfindalh index	Inverse relation index	Characterization of concentration
		CR4	CR8	CR12	CR20	CR50				CR4	CR8	CR12	CR20	CR50			
Obvious ownership links, without CP[2], without CU[3]	- 1967	..	..	..	..	..	..	..	..	70.1	88.2	93.2	97.2	99.9	14.09	6	high
	- 1979	57.5	79.3	87.7	94.5	99.2	10.28	9	relatively high	61.3	83.6	90.1	95.7	99.4	11.48	7	high
	- 1984	51.1	70.4	80.3	87.4	95.3	8.33	12	relatively high	57.9	77.3	84.7	90.7	96.5	9.95	10	relatively high
Full ownership links, wihtout CP, without CU	- 1979	57.5	79.3	87.8	94.5	99.3	10.38	9	relatively high	61.3	83.6	90.2	95.7	99.5	11.48	7	high
	- 1984	51.2	70.4	80.4	87.9	95.7	8.34	12	relatively high	57.9	77.3	84.8	90.8	96.8	9.97	10	relatively high
Full ownership links and financial holding groups without CP, without CU	- 1979	57.5	79.3	87.8	94.5	99.3	10.28	9	relatively high	61.3	83.6	90.2	95.7	99.5	11.46	7	high
	- 1984	51.2	70.4	80.4	88.0	95.8	8.34	12	relatively high	57.1	77.3	84.8	90.9	96.9	9.98	12	relatively high
with Desjardins Group only without CU	- 1979	53.8	77.3	87.7	94.5	99.4	9.46	9	relatively high	58.3	81.6	89.9	95.7	99.5	10.64	8	high
	- 1984	47.7	69.7	80.4	88.5	96.1	7.74	12	relatively high	54.9	75.9	84.5	91.0	97.1	9.26	10	relatively high

1 As defined in this study.
2 CP: caisses populaires.
3 CU: credit unions.

Table 13

Concentration in the Life-Insurance Market,[1]
1967, 1979 and 1984

	1967	1979	1984
Directly written life insurance in force in Canada			
group - CR4	..	..	39.6%
individual - CR4	..	..	28.4%
total - CR4	..	..	29.30%
total - reverse relation index	..	..	26.0
Worldwide assets			
CR4	43.3%	39.2%	40.2%
Herfindahl index	7.50	6.00	6.19
Domestic assets			
CR4	..	32.5%	33.2%
Herfindahl index	..	4.85	4.89

1 Legal classification.

Source Compiled form reports issued by various superintendents of insurance, 1967, 1979 and 1984.

insurance, concentration in this market may also be evaluated on the basis of total assets. As shown in Table 13, the share of the four largest institutions is slightly higher when assets are used instead of insurance in force. The level of concentration rises when worldwide assets are used instead of domestic assets, but this is likely because some of the leading companies maintain large portions of their assets outside of Canada.

Worldwide asset concentration declined between 1967 and 1979, but rose slightly between 1979 and 1984. The concentration ratio and Herfindahl index indicate that concentration in terms of domestic assets also increased slightly between 1979 and 1984, while remaining relatively low.

In conclusion, the level of concentration varies from market to market. It may be considered high in the other-loan market, relatively high in the deposit market, and relatively low in the life-insurance and mortgage-loan markets. However, regardless of the data and ownership definitions used, all concentration indices indicate that concentration has been declining in recent years, except in the mortgage-loan market and the life-insurance markets (domestic assets), where the levels of concentration edged up slightly. Nonetheless, concentration in these sectors remained lower than in the other markets.

Other factors

Concentration indices have certain inherent limitations. For instance, concentration is underestimated when the definition of markets includes non-substitutes or when the definition considers markets as national instead of regional. Concentration is overestimated when imports are high (and are not included) or when the market definition does not include substitutes. The latter case occurs in the nonmortgage-loan market: concentration is underestimated because personal and commercial loans are lumped together (due to data availability considerations), and yet are certainly not mutual substitutes. Conversely, concentration in the deposit market is slightly overestimated because, for example, deferred short-term annuities offered by life insurers and cash management accounts offered by brokerage firms (where the client may not only buy and sell stocks on a cash or credit basis but may also maintain a savings account, withdrawing money by cheque or bank card) are close substitutes for the deposit services offered by banks, trust companies and financial cooperatives, even though they are not identified as such.

In terms of imported services, the activities of foreign firms with Canadian charters have been included, but it was impossible to capture Canadians' purchase of services from foreign firms located outside the country. The greater such purchases, the more concentration levels will be overestimated. This probably does not represent a problem for mortgage loans and only slightly affects nonmortgage loans. The effect of this factor is likely the most telling in the deposit market.

In the financial service industry, as in other sectors of the economy, data are maintained on a national rather than a regional basis, so that it is difficult to make the adjustments necessary to take the regional picture into account. It is impossible to gauge the extent of this bias.

Notes

1 It should be noted that there is a third approach to the concept of concentration deserving of future study: ownership concentration. A sector may be very concentrated in terms of total assets and/or market, yet be much less concentrated in terms of ownership, providing the capital stock of the major firms is widely held. Ownership concentration rarely represents a problem in a non-concentrated industry. So in agriculture, for example, the fact that farm ownership is very limited is not really relevant. Since ownership concentration only represents a problem when concentration levels in terms of market and total assets are high, it makes sense to examine these types of concentration before looking at ownership concentration.

2 Khemani, R. S. "The Extent and Evolution of Competition in the Canadian Economy" in *Canadian Industry in Transition*. Royal Commission on the Economic Union and Development Prospects for Canada (MacDonald Commission), 1986, p. 136.

3 An inverse relation index less than or equal to 4 is considered to indicate "very high" concentration, between 4 and 8 "high" concentration, between 8 and 20 "relatively high," between 20 and 50 "relatively low," and above 50 "very low." These ranges were defined in a study by Consumer and Corporate Affairs, , 1971.

4 Outlets not included. Source: Canadian Cooperative Credit Society, *Annual Report*, 1984.

5 *Canadian Business*, June 1986.

6 *The Financial Post 500*, Summer 1985.

7 Department of Insurance Canada, *Report of Superintendent of Insurance for Canada*, concise financial statements of property and risk insurance companies, 1984; superintendents of insurance of various provinces; Superintendent of Insurance for Canada, *Provincial Insurance Companies and Fraternal Societies by Province of Incorporation*, unpublished document.

8 As indicated in Statistics Canada, *Inter-Corporate Ownership* (Cat. No. 61-517, occasional, 1984), "The primary determinant of control of a corporation by another corporation or individuals is the ownership of the majority of the corporation's voting rights [50% + 1]. However, in some of these cases where the ownership of voting rights is [in]sufficient to assign control, research is undertaken to determine if options or key privately held shares exist." Had

Statistics Canada's criteria for determining whether Corporation A was controlled by Corporation B been other than voting right ownership, we too would have considered these institutions to be owned.

9 Financial holding group: a group of firms consisting of a holding company that has controlling interest in two or more financial companies operating in different market segments, such as trust companies, life insurance companies, mutual funds, investment counsellors, general insurance companies and sometimes even banks and investment dealers. This definition is taken from *Financial Holding Companies*, a background paper by A. Ryba and M. Scinocca prepared for the Economic Council of Canada, 1986.

10 Statistics Canada, *Inter-Corporate Ownership*, Cat. No. 61-517, occasional, 1979 and 1984.

11 Government of Ontario, Standing Committee on Finance and Economic Affairs, Corporate Concentration, September 30, 1986, Morning Sitting, p. F-21.

3 TURNOVER AMONG MAJOR INSTITUTIONS

The Level 1 classification, based on obvious ownership links and worldwide activities, was used to evaluate the turnover rate among major institutions between 1967 and 1984, because only these data were available for the entire period. However, since firm turnover is best studied at the highest ownership level and in terms of domestic activities, the turnover rate for 1979-1984 according to these criteria will also be presented.

With obvious ownership links and international activities as criteria, turnover among the leading institutions in the deposit and other-loan markets was nil: between 1967 and 1984, the two markets were dominated by the same four banks in the same order. On the other hand, changes could be seen in the mortgage-loan market. In 1967, the four largest corporations were Sun Life, London Life, Canada Permanent and Manufacturers Life; in 1979 the Royal Bank, Royal Trust, Canada Trust and the Canadian Imperial Bank of Commerce (CIBC); and in 1984 the Royal Bank, the CIBC, the Bank of Montreal and Royal Trust.

In the life-insurance market, the leading institutions in terms of total assets were the same in 1967 and in 1979, although the third and fourth-ranking firms switched places. In 1984, a new firm appeared in the fourth spot, and the first and second-ranking firms exchanged positions.

With ultimate ownership links and domestic activities as criteria, the 1979 deposit market remained dominated by four banks. Five years later, the same institutions led the pack, although their order changed slightly, the first and second-ranking firms switching places. The above observations are true also of the nonmortgage-loan market. In the mortgage-loan market, turnover was more noticeable. In 1979, the four leading institutions were the Desjardins Group, the Royal Bank, Royal Trust and Canada Trust, while in 1984 the CIBC and Trilon Financial Corporation (which includes Royal Trust) replaced Royal Trust and Canada Trust, respectively. In the life-insurance market (still in terms of domestic assets), the four largest firms in 1979 were Sun Life, London Life, Mutual Life and Great-West Life, while in 1984 the leading institutions were Sun Life, Mutual Life, London Life and Manufacturers Life.

Regardless of the type of data used, the turnover rate among leading institutions is thus higher in the mortgage-loan and life-insurance markets than in the deposit market and other-loan markets; the latter two markets are much more concentrated than the first two. Considering that the mortgage-loan and life-insurance markets are relatively low in concentration and that between 1967 and 1984 there was a fairly high turnover rate among their leading institutions, it can be assumed that these two markets are quite competitive. On the basis of these two factors alone, however, we cannot conclude that the deposit market and other-loan markets are competitive, since concentration is relatively high and turnover fairly low. However, as discussed earlier, competition in a very concentrated market where the ranks of leading firms do not change from year to year can in fact be very high, as long as entry and exit barriers remain low.

4 ENTRY AND EXIT BARRIERS

There are two types of entry barriers in financial markets: regulatory barriers and economic barriers. Among regulatory barriers restricting entry are the various federal incorporation and licensing requirements, capital-base stipulations, widely held ownership requirements for certain types of institutions, and restrictions placed upon institutions against operating in certain markets. For example, banks, trusts, financial cooperatives, and investment dealers are not allowed to issue insurance policies or to act as investment dealers. Only trust companies may administer estate, trust and agency funds, but their commercial lending powers are limited. Insurers may not accept deposits.

Economic barriers "exist when, for reasons other than regulation, a new entrant must bear, either temporarily or permanently, higher operating costs than existing firms."[1] The cost of establishing a reputation that inspires public confidence and of setting up a branch system are the two major economic barriers in financial markets. A new institution must convince potential investors that their money will be safe. While the existence of deposit insurance has served to reduce the extent of this barrier for deposits, the question of customer confidence remains a factor for a new institution wishing to borrow on money markets or issue stock.

It has been mentioned several times in this study that the largest financial institutions are the chartered banks. Their vast branch networks constitute one of the distinctive traits of the Canadian financial system. New institutions with only a handful of branches are at a disadvantage compared to those with a multitude of branches because: clients prefer to deal with a multibranch institution (for a variety of reasons), regional diversification serves to reduce risks, and the unit cost of certain operations is lower for larger institutions than for smaller ones. As long as providing banking services to consumers relies on physical service sites, the high costs of setting up an extensive network of branches will represent a market entry barrier. The advent of automatic banking machines that can be shared by several institutions should reduce this entry barrier to some extent. Nevertheless, even if it is no longer necessary to set up an extensive network of branch sites, the other economic barrier of gaining customer confidence remains.

There are also regulatory exit barriers. A financial institution is not allowed to close without notifying the appropriate level of government; this is generally not the case for companies in most other industries. Financial institutions must apply for permission to cease operations or to cancel a charter. Rescue programs set up by governments in order to head off financial institution failures testify that it is not easy for an institution to abandon the financial services industry.

While entry barriers remain relatively high, they appear to have lessened since 1967, and the number of actors in several markets has increased (Table 2). The decline of entry barriers is primarily attributable to the 1967 and 1980 revisions to the Bank Act that allowed banks to enter the mortgage and consumer-loan markets (1967) and made it easier for branches of foreign institutions to enter Canadian markets and for chartered banks to achieve incorporation (1980).

Notes

1 Economic Council of Canada, *Efficiency and Regulation: A Study of Deposit Institutions*, 1976, p. 37.

5 COMPETITION: THE CURRENT SITUATION

In the course of the period under study, the structure of the financial system underwent major change. We have witnessed the breakdown of traditional divisions between the four pillars of the financial system. There was a time when commercial lending, administration of estates and trust funds, insurance services, and stock brokerage were the exclusive domains of banks, trust companies, insurance companies, and investment dealers, respectively. Mortgage and personal loans were the focus of a crusade by trust companies and financial cooperatives. While current legislation still maintains the distinction between the various types of institutions, over the last twenty years a great many financial institutions have attempted to expand beyond their traditional range of activities in order to grow or simply to survive. This trend is confirmed by changes in the market shares of the various types of institutions, as shown in Table 1. Today, only insurance brokerage and estate, trust and agency (ETA) business are still the exclusive reserves of a particular type of institution. Over the study period, diversification appears to have led to increased competition in several markets as the number of participants grew.

When concentration levels and turnover rates among the leading institutions in the mortgage-loan market are analyzed, the results suggest that these markets are competitive. Lower entry barriers also support this hypothesis. Moreover, the appearance during the study period of a multitude of new mortgage options (five, three, two, one-year and even six-month terms; weekly, bi-weekly and bi-monthly payments; and multiple-term, gradual-payment, variable-rate and indexed loans) shows that financial institutions have been attempting to respond to the wishes of consumers. This is another indication of competitive behaviour. The strong growth of financial holding groups has also likely contributed to increased competition; in 1984 certain of them, on the basis of mortgage loans, were closing in on the largest chartered banks in terms of size. Today they are in a better position to compete with the giants of the industry (the chartered banks).

In the deposit and other-loan markets, concentration is high, turnover among the largest institutions is low, and there are both regulatory and economic entry barriers. These points might indicate that these markets are not very competitive. However, many new types of deposit accounts are now being offered, not only by traditional deposit-taking institutions, but also by institutions not specializing in deposits that presently simultaneously deal in deposit substitutes (i.e., life insurers and investment dealers); this suggests that there is some degree of competition in these markets. The rising government deficit has also prompted governments to offer products that compete with deposits, such as Treasury Bills, which through denomination splitting have become accessible to middle-income households. These new mortgage bonds, which may be sold by investment dealers, banks, trusts and financial cooperatives, offer the investor liquidity, monthly payments, interest rates comparable to similar-term investment certificates, a potential for capital gains, and the security of Canada Mortgage and Housing Corporation (CMHC) backing, which guarantees complete reimbursement even if some mortgages within the mortgage block default. These bonds thus represent a good substitute for deposits.

In 1982, the Standing Committee on Finance, Business and Economic Affairs undertook an in-depth study of bank profits, looking into the level of product differentiation in terms of interest rates, services, and service costs. It concluded that "the personal savings deposit market in Canada is highly competitive."[1] And it certainly has not lessened since 1982. The Committee also found that the loan services available to households and businesses were generally good. (Although several interveners at hearings had complained about the quality of service, the Committee decided that these represented isolated incidents.) The Royal Commission of Inquiry on Corporation Concentration noted that the entry of banks into the consumer-loan market in 1967 had led to a decrease in loan interest rates relative to other interest rates and that consumer-loan interest rates had also become more consistent across Canada. In 1982, the Standing Committee on Finance came to the conclusion that "financial markets are competitive [there was apparently no price discrimination, prices being determined directly from costs], but future competition may be hindered by regulatory constraints placed on the banks' competitors."[2]

Notes

1 Report of the Standing Committee on Finance, Trade and Economic Affairs, *Bank Profits*, 1982, p. 124.

2 *Ibid*, p. 144.

6 CONCLUSION

The financial services industry, dominated by chartered banks, was in 1967 and remains today relatively concentrated in terms of total assets. After rising between 1967 and 1979, the level of concentration declined between 1979 and 1984 despite the growth of financial holding companies, although it never returned to 1967 levels. If, however, the holding group boom accelerates as a result of mergers and takeovers, total-asset concentration may rise again.

While the industry is generally concentrated in terms of total assets, these markets show evidence of competitive behaviour. To confirm this hypothesis, an analysis of rate structures and institutional profitability needs to be undertaken. Over the 1967-1984 period, diversification appears to have made it possible for institutions to remain competitive, despite the fact that their options for diversification were somewhat limited.

In its White Paper of December 1986, the federal government proposed expanding the direct powers of trust, lending and insurance institutions to make consumer loans, and recommended that banks, trust companies, lending institutions and insurance companies no longer be subject to restrictions in equity holdings in financial institutions within other "pillars" (including investment dealers).

If these expanded powers lead to the creation of new branches or departments within the institutions concerned, then such diversification will contribute to greater market competition (as the number of participants increases) and the concentration of power in terms of total assets should not be greatly affected. On the other hand, if these expanded powers result in takeovers of existing institutions, then asset concentration will rise and market concentration and competitiveness will change but little. Thus, lower entry barriers, by granting institutions greater power, will contribute to greater market competition and will not have much of a negative effect on total-asset concentration as long as the institutions concerned opt for internal expansion and new branch development rather than for takeovers and mergers.

Appendix A

Total assets, mortgage loans, other loans and deposits held by local savings and credit institutions, 1979 and 1984

	Total assets	Mortgage loans	Other loans	Deposits
1979				
Canada ($ millions)	27,337.7	13,751.3	7,264.1	21,769.6
Quebec ($ millions)	12,447.7	6,845.2	2,706.8	10,159.4
Quebec share (per cent)	45.5	47.2	37.3	46.7
1984				
Canada ($ millions)	40,624.9	19,940.0	10,678.8	35,056.7
Quebec ($ millions)	19,497.9	9,292.4	5,525.6	16,889.8
Quebec share (per cent)	48.0	46.4	51.7	48.2
100 largest caisses populaires	5,541.0	-	-	-
100 largest credit unions	12,763.6	-	-	-
Share of 100 largest caisses populaires and 100 largest credit unions	45.1	-	-	-
Overall share of 100 largest caisses populaires and 100 largest credit unions	79.4	-	-	-

Source Statistics Canada, Financial Institutions, Financial Statistics, Cat. 61-006, first quarter 1980 and first quarter 1985; Liste des 100 plus grandes caisses populaires, Mouvement Desjardins, unpublished, 1984; Canadian Co-operative Credit Society, List of the 100 Largest Credit Unions in Canada, data as of December 31, 1984.

Appendix B

Total assets, mortgage loans, other loans and deposits held by financial holding groups, 1979, 1984 and 1985

	Total assets[1]			Mortgage loans			Other loans			Deposits		
	1979	1984	1985	1979	1984	1985	1979	1984	1985	1979	1984	1985
	($ millions)											
Desjardins Group	11,900	23,243	26,368	5,302	10,225	11,340	2,509	6,443	7,948	9,439	19,189	21,709
Trilon Financial Corporation	-	17,466	20,830	-	8,256	9,994	-	2,030	2,361	-	10,133	12,010
Power Financial Corporation	6,693	13,907	15,948	3,048	5,790	7,453	267	493	615	1,128	2,330	2,720
Crown Financial Group	2,032	4,929	6,103	715	1,621	2,474	152	324	334	-	71	76
Traders Group	3,101	4,122	4,460	1,288	1,633	1,592	872	1,232	1,448	1,796	2,770	3,109
Groupe La Laurentienne	1,494	3,573	5,167	419	632	1,079	63	153	162	-	-	472
Eaton Financial Services	623	1,084	1,061	417	757	749	3	5	5	475	712	690
E-L Financial Corporation	487	777	1,118	104	129	147	16	23	23	-	-	-
Groupe Prêt et Revenu	181	461	503	95	242	257	4	22	21	114	341	368
Total	26,511	69,562	81,558	11,388	29,285	35,085	3,886	10,725	12,917	12,952	35,546	41,154

1 Only the assets of financial institutions are included. Unless otherwise indicated, assets are present on a non-consolidated basis; trust companies' estate, trust and agency business is excluded; assets of segregated funds in life insurance are included, since they belong to insurance companies and appear on their balance sheets.

2 Transactions between the Caisse centrale, federations and caisses populaires have been eliminated.

3 Trilon Financial Corporation was created in 1982.

4 In 1984, Crown X acquired 40 per cent of investments consellors Beutel and Goodman, as well as 100 per cent of Private Ledger Financial Services, Inc., which offers investment products to the United States. Data on these corporations' funds are not available.

5 These assets of E-L Financial Corporation are presented on a consolidated basis.

Source Estimates based on: various company annual reports; reports of the Superintendent of Insurance for Canada; concise financial statements of life insurance companies and mutual funds; concise financial statements of trust and lending companies; annual reports of the Superintendent of Insurance, Government of Quebec.

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