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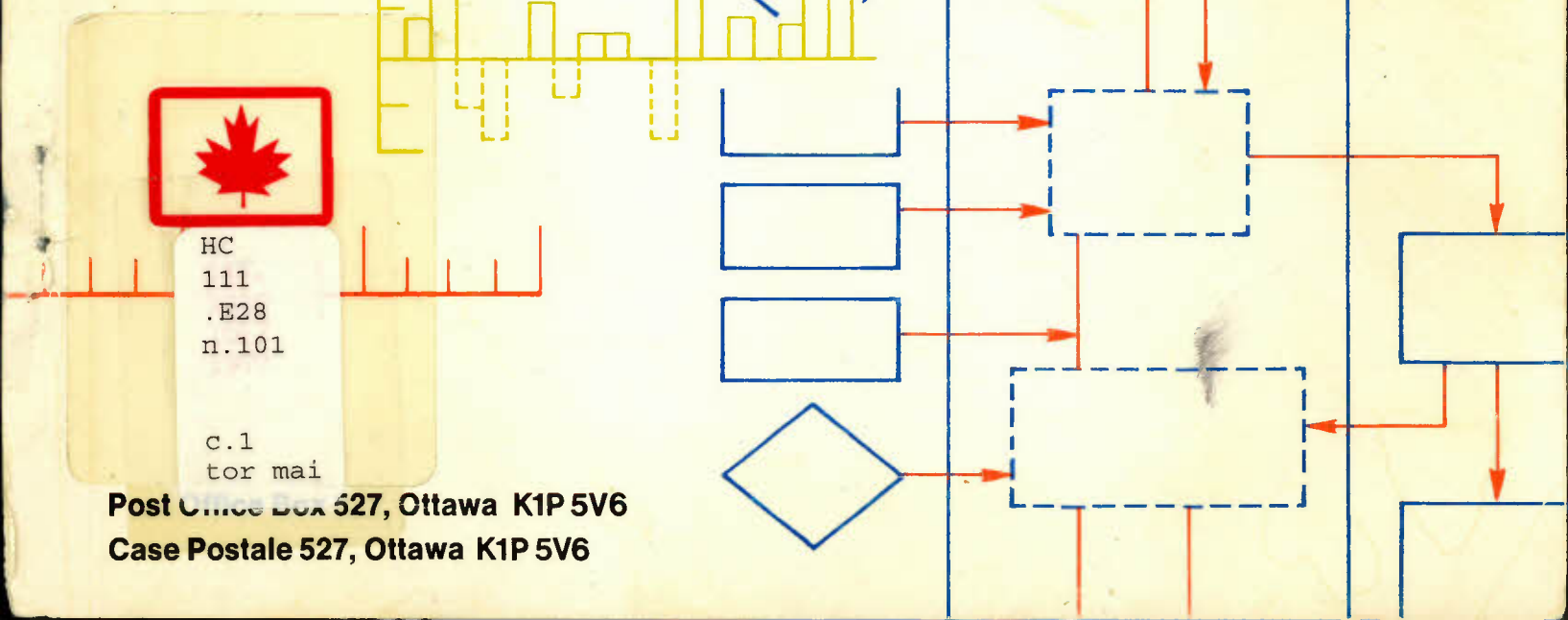

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DISCUSSION PAPER NO. 101

The Measure of Profitability in Canadian Banking

by

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PREFACE

This study was written as a background analysis of rates of return to capital earned by Canadian chartered banks. Some of the data in this report was incorporated in the Economic Council of Canada's report Efficiency and Regulation: A Study of Deposit Institutions. The primary purpose of this document was to provide a detailed description of the methodology chosen to calculate profit rates and a comparison of bank profitability with trust and loan corporations of Canada, Canadian industrial sectors, and banks of the United States.

In addition, the focus of work was on factors that contribute to profitability for the years 1963 to 1973. A detailed description of international activities of Canadian banks was excluded.

The author wishes to acknowledge with appreciation the funding by the Economic Council of Canada for this project. Comments were gratefully received from members of the Financial Markets Group of the Economic Council of Canada; in particular, J. Chant, G. Lermer, F. Roseman, W. Clendenning, J. Babin, and G. Post. I wish to thank Lillian Hughes and my wife Eleanor for editorial comments. Naturally, all responsibility for errors remains with the author. It is hoped that this study will enable a richer development of analysis of Canadian deposit institutions in Canada.

Abstract

The revision of the Bank Act for the year 1977 stimulated a number of studies analysing the market structure of Canadian banking. One of these studies, the Economic Council of Canada's, Efficiency and Regulation: A Study of Deposit Institutions, emphasized the need for the relaxation of governmental restrictions that inhibit the entry of new firms into banking markets to compete with established institutions. To support the Council's thesis, evidence was presented that Canadian banks earned excess profits that would have been reduced had there been more firms competing in banking markets.

The following background study to the Council's report was written as a detailed analysis of the concept and measure of the profitability of Canadian banks. Theoretical and methodological considerations suggest that it is appropriate to adopt a rate of return to shareholders' capital as an indicator of profitability in banking rather than alternative measures used in other studies.

Based on the calculations of the rate of return to shareholders' capital, it is found that Canadian banks earned higher after tax and before tax profit rates after 1967 than those earned by the trust and loan corporations, Canadian industrial sectors and all U.S. insured and New York City banks. Several factors are examined to determine the reasons for Canadian bank profit rates being greater than those experienced by other sectors.

It is suggested that not all the difference between profit rates earned by Canadian banks and those of trust and loan corporations, is related to economies of scale in banking, foreign business activities of Canadian banks or higher asset/capital ratios in Canadian banking. Moreover, Canadian banks benefited particularly from an increase in profit earned on domestic currency loans.

The higher rates of return to capital earned by Canadian banks in comparison to those of other industrial sectors cannot be explained by banking shareholders facing greater risk in investing in bank shares than in the shares of the average of all sectors or by accounting procedures that would adjust profitability for inflation. In addition, Canadian established banks seem not to benefit from specialized resources unavailable to new entrants into banking markets as the difference between the profit rates of Canadian banks and manufacturing firms was considerably greater than that experienced in the United States.

Furthermore, the differences between U.S. and Canadian banks' profit rates do not result from the differences in non-interest expenses, asset/capital ratios, the composition of asset and liability portfolios, and tax levies. It is also shown that the difference between the average loan rate and average cost of deposits for Canadian banks seems to be higher than that experienced by U.S. banks once the costs of servicing demand deposits are included in calculations.

A measurement of excess after tax profits earned by Canadian bank shareholders and excess taxes earned by the Canadian government are provided. For the period 1968-73, it is proposed that Canadian bank shareholders earned $219.7 million to $478.5 million in after tax excess profits and the Canadian government raised $197.3 million to $425.7 million in excess taxes.

Résumé

A l'occasion de la revision de la Loi sur les banques prévue pour 1977, un certain nombre d'études ont été effectuées sur la structure du marché bancaire au Canada. L'une d'elles, intitulée Efficacité et réglementation : Une étude des institutions de dépôts, réalisée par le Conseil économique du Canada, a souligné en particulier la nécessité d'assouplir les lois fédérales et provinciales qui interdisent l'accès au marché bancaire de nouvelles institutions qui viendraient concurrencer celles qui sont déjà en place. Pour appuyer sa thèse, le Conseil a démontré que les banques canadiennes ont réalisé des bénéfices excessifs qui auraient été réduits si les entreprises concurrentes sur le marché bancaire avaient été plus nombreuses.

Dans la présente étude, qui a été rédigée pour servir de documentation au rapport du Conseil, l'auteur analyse en détail la notion et l'étendue de la profitabilité des banques canadiennes. Pour des considérations théoriques et méthodologiques, il conviendrait d'adopter, à titre d'indicateur de profitabilité des banques, un taux de rendement aux actionnaires, de préférence aux diverses mesures utilisées dans d'autres études.

Les calculs des taux de rendement aux actionnaires révèlent que les bénéfices avant ou après impôt réalisés par les banques canadiennes ont été, depuis 1967, plus élevés que ceux des sociétés de fiducie et de prêts; des secteurs industriels canadiens et de toutes les banques américaines assurées, y compris celles de la ville de New York. Par l'examen de plusieurs facteurs, l'auteur cherche à déterminer pourquoi les taux de bénéfices des banques canadiennes sont plus élevés que ceux des autres secteurs.

La différence entre les taux de bénéfices réalisés par les banques canadiennes et ceux des sociétés de fiducie et de prêt ne serait pas entièrement attribuable, semble-t-il, aux économies d'échelle de l'exploitation bancaire, ni aux activités des banques canadiennes à l'étranger, ni au coefficient d'endettement plus élevés dans le cas des banques canadiennes. De plus, ces dernières ont particulièrement bénéficié d'une augmentation des bénéfices réalisés sur les prêts en devises canadiennes.

Les taux de rendement plus élevés des banques canadiennes par rapport à ceux des autres secteurs industriels ne peuvent non plus être attribués au fait que les actionnaires des banques courent un plus grand risque que ceux de la moyenne des autres secteurs, ni à des méthodes de comptabilité

où la profitabilité serait ajustée pour tenir compte du taux d'inflation. Par ailleurs, il ne semble pas que les banques établies au Canada bénéficient de ressources spécialisées qui ne seraient pas disponibles aux nouveaux arrivants sur les marchés bancaires, car la différence entre les taux de bénéfices des banques canadiennes et des entreprises manufacturières est beaucoup plus considérable qu'elle ne l'est aux Etats-Unis.

En outre, les différences dans les taux de bénéfices des banques canadiennes et américaines ne résultent pas des écarts qui pourraient exister dans le cas de dépenses ne portant pas intérêt, dans les coefficients d'endettement, dans la composition de l'actif et du passif, ni dans les sommes payées en impôts. Il est démontré également que la différence entre le taux moyen des prêts et le coût moyen des dépôts, dans le cas des banques canadiennes, serait plus élevée que dans le cas des banques américaines, compte tenu des différences dans les frais de service sur les dépôts à vue.

Enfin, l'auteur a calculé les bénéfices excessifs aprés impôt réalisés par les actionnaires des banques canadiennes, du même que les impôts excessifs prélevés par le gouvernement du Canada. Ainsi, durant la période 1968-1973, les actionnaires des banques canadiennes auraient réalisé de 219.7 millions à 478.5 millions de dollars en bénéfices excessifs après impôt et le gouvernement du Canada aurait prélevé de 197.3 millions à 425.7 millions de dollars en impôts excessifs.

CHAPTER 1

THE CONCEPT OF MEASURING PROFITABILITY IN BANKING

The Bank Act amendments of 1967 were intended to promote competition among the chartered banks in Canada in order to increase the efficiency of financial intermediation. The changes included the removal of the 6 per cent ceiling on interest rate charges on loans, increased powers for chartered banks in conventional mortgage lending,[1] the ability to sell debentures as a source of funds,[2] an effective reduction in cash reserve ratios,[3] and new rules with respect to ownership, interest rate agreements, and interlocking directorships to inhibit opportunities for co-operative behaviour among individual banks and trust and loan corporations.[4] However

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1 Commercial mortgage holdings were unrestricted but residential mortgages, excluding NHA housing, were limited to 4 per cent of Canadian deposit and debenture liabilities for the first fiscal year of the bank (or 1967) rising 1 per cent each year thereafter to a maximum of 10 per cent (Section 75(4) of the Bank Act).

2 In Section 77, debentures issued in Canadian currency were able to be redeemed only after five years. The total issue was not able to exceed one-half of the paid-up capital and rest account.

3 In 1967, the ratio fell from 8 per cent of total Canadian dollar deposit liabilities to 6.6 per cent as a 4 per cent ratio applied to all noncurrent account deposits and 12 per cent to demand deposits.

4 Section 76(1) and (6) limited the ownership of equity by a bank to 10 per cent in a trust or loan corporation. Ownership of a bank was restricted to 10 per cent of equity by any one shareholder (Section 52 to 57). An individual was not able to be a bank director if already a nonfinancial corporate director when one-fifth or more of the nonfinancial corporate board were directors of the same bank. Section 13 prohibited collusive agreements by banks on interest rate charges.

the Bank Act amendments did not allow for the elimination of restrictions that would encourage the competition of chartered banks with new entrants, domestic and foreign. Trust and loan corporations were essentially limited, by federal and provincial legislation and regulation, to mortgage lending and the acquisition of longer-term deposits since commercial lending remained primarily with the chartered banks. Meanwhile, the minimum capital requirements to forming a bank were unaltered, and the granting of charters continued to require the political approval of Parliament and the investment of at least ten private firms or individuals.[5] Foreign commercial bank competition, except in the case of loans to large corporations from head offices and mortgage lending, leasing, and factoring through foreign owned nonbank subsidiaries, was effectively banned by ownership provisions.[6] Certain markets were left to the Canadian chartered banks to service: in particular, commercial lending to smaller businesses and, to a lesser extent, personal loans that credit unions also offered. Free entry into these markets was inhibited by regulation.

The purpose of this study is to investigate the economic performance of Canadian chartered banks after the 1967 Bank Act amendments became effective. The prime objective is to determine whether the chartered banks earned excess profits after 1967. Excess profits become apparent when one compares the before and after tax

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5 In the case of Unity Bank of Canada, $15.3 million of equity capital was required to start operations in 1973 (see The Canada Gazette).

6 Nonresident shareholding of a Canadian bank was not able to exceed 25 per cent and one shareholder was not able to hold more than 10 per cent of equity. The Mercantile Bank of Canada was permitted ten years to reach this requirement.

rates of return to shareholders' capital of the Canadian chartered banks with the profit rates earned in other industries. The first section of this chapter outlines the theoretical justification for the comparison of rates of return to capital earned by various groups of firms. The second section discusses the measurement of profitability.

I. The Role of Profitability

Profit of any individual firm in the economy is the return to shareholders' capital (equity and reserves) as compensation for i) postponement of present-day consumption, ii) risk particular to the firm, and iii) the expected rate of inflation. The rate of return to shareholders' capital is also a barometer of the financial performance of the firm. If the rate of return to banking shareholders' capital, adjusted for a risk difference, is above other sectors' rates of return, then one would expect capital to flow into the banking industry until the risk-adjusted rate of return declines to equate with the market rate of return. On the other hand, with a risk-adjusted rate of return in banking lower than the market rate of return, capital would flow to other sectors until all risk-adjusted rates of return were equivalent. If this does not occur, entry or exit of capital is impaired by barriers that may be erected by firms operating within the industry or by government regulation.

There are several economic factors that could contribute to entry barriers in the banking industry, thereby impeding competition. First, market-oriented industries, such as banking, may be able to attain market power through a physical location that would exclude the possibility of competition from new entrants. The rent from the acquisition of a specific retail market would be reflected in the

profit rates of established firms as the expected profits of new entrants would be zero or negative. Concerned with this potential entry barrier, this study compares banks with trust and loan corporations and market-oriented industrial sectors. Profit rates earned by banks and other types of firms that locate in a particular area would both reflect the excess profits arising from market power due to locational advantages.

Second, it may be argued that banking requires specialized highly trained management and technology to conduct financial intermediation. Managers may not acquire the full rent as payment for this specialization because large established firms may be able to retain executives unwilling to administer small fledgling banks. On the other hand, managerial specialization is not an important barrier to entry if other large domestic or foreign owned institutions are able to participate in banking markets. In analysing the effect of managerial specialization, comparisons of Canadian bank profit rates were made with trust and loan and U.S. bank rates of return to capital. The former industry is characterized by relatively easy entry under government regulation, although the trust and loan companies are restricted to fewer functions than chartered banks. On the other hand, the U.S. banks have relatively similar functions as Canadian banks and, hence, conditions of specialization also should affect the profit rates of U.S. banks. Further, U.S. bank profit rates are compared with U.S. all manufacturing rates of return to capital in order to analyse the comparable premium for specialization of banking over manufacturing.

A third possible barrier to entry has been related to economies of scale in banking. If significant reductions in cost per dollar of output are achieved with increasing size of a firm, then it would be difficult for new entrants operating on a small scale to achieve profitability. While some studies in the United States have pointed to economies of scale in banking, there are a number of objections to the applicability of this work to Canadian banks. First, studies that have tested for economies of scale have not allowed for the changes in the term and size composition of the asset and liability portfolios of banks.[7] The noninterest costs per dollar of servicing large size and long-term assets and deposits are lower than for small size and short-term assets and deposits. If banks experience a shift from short-to long-term or from small size to large size assets and liabilities, then noninterest costs per dollar decline due to a change in the nature of business, not a technological improvement. Thus banks may have lower noninterest costs per dollar of assets and liabilities than other firms but one cannot argue for economies of scale unless data are available on the size and term structure of assets and liabilities.

Second, property expenses reported by the Canadian chartered banks understate the actual cost of property associated with banking. Canadian chartered banks have built large office centres where only a fraction of the space was required for banking functions. Rents paid by tenants on bank owned property is subtracted from bank property

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7 For example, see F.W. Bell and N.B. Murphy, "Economies of Scale and Division of Labor in Commercial Banking," Southern Economic Journal, vol. 35, October 1968, pp. 131-39, and G.J. Benston, "Economies of Scale of Financial Institutions," Journal of Money, Credit and Banking, vol. 4, no. 2, pp. 312-41.

expenses but the total rental payment compensates the banks not just for maintenance and depreciation expense, but also for a return on capital invested in real estate. Also, some banks have formed realty subsidiaries that hold as assets, property rented to parent banks. Some of the realty subsidiaries were not consolidated in Canadian chartered bank accounting reports. Rental payments made to unconsolidated subsidiaries from parent banks were understated, if the amount was less than would have been transacted between two separately owned corporations.

If economies of scale were sufficiently important, then one would expect that after tax rates of return to capital would be substantially lower for firms of small size. In Chapter 2, the relationship between asset size and profit rates for banks and trust and loan corporations is to be examined in order to consider the possibility of economies of scale.

One other potential barrier to entry in banking may be related to the actual size of the bank. Consumers may have confidence in a large institution that may have less probability of bankruptcy. However, government insurance via the Canada Deposit Insurance Corporation, introduced in 1967, mitigates the default risk for deposits of less than $20,000 in any one financial institution. In addition, larger financial institutions may provide services not available from smaller intermediaries: foreign exchange, consumer credit, and financial advice. However, a bank itself need not be large in size to supply the aforementioned services to consumers.

After describing the role of the rate of return to capital as an indicator of profitable opportunities available in an industry,[8] one may then consider some of the variables that are components of profitability. To derive some of the factors affecting a rate of return to capital, one may symbolize the following variables:

$\frac{\pi}{K}$ = Profit to capital

r_L = Rate of interest charged on loans

r_S = Rate of return earned on securities

r_d = Rate of interest paid for deposits

D = Deposits L = Loans S = Securities A = Assets

$\emptyset_R$ = Other revenue (charges for servicing of deposits, safety deposit boxes, foreign exchange commissions, and profit and loss on swaps).

$\emptyset C$ = Other costs (wages, rent, depreciation, and raw material expense).

The rate of return to capital may be expressed as:

$$(1) \quad \frac{\pi}{K} = \left(r_L \frac{L}{A} + r_S \frac{S}{A} - r_D \frac{D}{A}\right) \frac{A}{K} + \left(\frac{\emptyset R - \emptyset C}{A}\right) \frac{A}{K}$$

and profit to asset margins are:

$$(2) \quad \frac{\pi}{A} = \left(r_L \frac{L}{A} + r_S \frac{S}{A} - r_D \frac{D}{A}\right) + \left(\frac{\emptyset R - \emptyset C}{A}\right).$$

The second equation may be converted to yield spreads:

$$(3) \quad \frac{\pi}{A} = (r_L - r_D) \frac{L}{A} + (r_S - r_D) \frac{S}{A} + \frac{\emptyset R - \emptyset C}{A} - \left(\frac{D-L-S}{A}\right) r_D$$

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8 See A.W. Throop, "Capital Investment and Entry in Commercial Banking," Journal of Money, Credit, and Banking, vol VII, May 1975, pp. 193-214. Throop found that the rate of return to capital in other industries affected entry conditions into banking as predicted by the previous analysis.

The above expressions point to several factors contributing to profitability that are to be investigated in this study. The yield spread, the difference between loan or security yield earned and deposit rate paid ($r_L - r_D$ and $r_S - r_D$), is the margin required to pay for financial intermediation: the compensation to the firm that assumes the costs of acquiring information, accepting financial risks, and matching lenders and borrowers. If the firm operates in a competitive environment, then yield margins reflect the minimum payment necessary to attract the resources for financial intermediation: labour, capital, and management. Depositors would be paid a return on funds that would be available on other alternative investments. The borrowers would be charged the lowest rate of interest to attract the demand for bank assets from other competing sources of funds. Also, other important components of profitability are suggested in the above expressions: volume (asset/captial ratios), portfolio composition, costs of factors of production, and earnings from other services provided by financial firms such as that related to trust activity.

II. The Measurement of Rates of Return to Capital

There are two methods one may use to compute a rate of return to shareholders' capital: accrued and realized. The accrued rate of return to capital is based on the criterion that the firm is in a position at each point of time to withdraw its investment (sell its assets) and invest the funds in an alternative opportunity. The accrued rate of return includes not only operating income earned and the gains and losses on sales of securities but also, changes in the

market value of assets and liabilities. In contrast, the realized rate of return to capital measures profitability available for i) reinvestment in the expansion of a firm's activities, supplemented by bond and equity financing, or ii) the distribution of dividends to shareholders. The realized profit rate then includes all profit derived from operation,and all profits and losses earned by trading securities.

The realized definition was used to calculate profit rates of trust and loan corporations, Canadian industrial sectors, and banks in the United States. The reason accrued profits and capital were not computed was due to a lack of data available involving assets and liabilities at market prices. In the case of the Canadian banks, however, both accrued and realized definitions of profits were used although accrued profits did not include market value changes in Government of Canada securities, held as assets, and debentures,held as liabilities in book value only. In addition, realized profits of Canadian banks were only $0.8 million per year lower than accrued profits and the realized rate of return to capital was only .04 percentage points per year less than the accrued profit rate for the period 1968-73.

Another distinction is made between before tax and after tax profit rates earned by firms. The after tax rate of return signifies profitability attained by the shareholders; the before tax rate of return is indicative of the profitability that the government, imposing a corporate income tax, and the shareholders earn.

Furthermore, two specific problems are associated with the measurement of both profits and capital. First, accounting data may not include all the changes in profits arising from omitted assets (certain items such as prepaid expenses, and hidden investment reserves). Also, special revaluations of assets such as goodwill may affect the profits and capital measures in any one year. Second, rates of return to capital may be significantly altered if profits under inflation accounting are reported. Inflation accounting is discussed in Appendix D. In periods of inflation, replacement prices of capital stock and inventories diverge from historical book value, and matching of long-term assets with short-term liabilities creates a liquidity problem for firms.

The basic methodology used to calculate firms' rates of return to capital is described in Chapter 2. The data derived for Canadian banks and trust and loan companies were incorporated in Chapters 2 and 3. Chapters 3 and 4 discuss in detail the specific methodology employed to calculate Canadian industrial sectors' and U.S. banks' rates of return respectively.

Profits per dollar of assets may be computed as an alternative measure of profitability. However, several reasons may be suggested for criticizing the use of such a measure. First, financial assets are not a measure of real output of banks and trust and loan corporations. Output is the service provided to different types of consumers. That service includes financial intermediation, foreign exchange, financial advice, leasing, and handling of trust accounts. A firm that provides only financial intermediation could

have the same amount of profit but more financial assets than a firm that participates in several activities. Profits per dollar of assets for the first firm are lower than for the second firm.

Similarly, profits per dollar of assets do not assist one in a cross-section analysis, if firms are supplying differentiated financial intermediary services. For example, the net yield per dollar of assets of a bank operating primarily in the wholesale market (lending to corporations) may be substantially lower than a financial intermediary lending to a retail market where the average size of loans given to individuals is smaller. The default risk, transaction, and information costs borne in lending to the large corporation is lower per dollar of assets than in lending to small businesses or individuals.

A second problem associated with the measure of profit per dollar of assets is related to the concept of debt in banking. For nonfinancial firms, one statistic utilized to measure profit margins has been profit before deduction of interest divided by total assets. Assets in this sense is real capital (property and inventories) financed by equity and debt. Dividends and retained earnings are the payments to equity holders; interest is a return to purchasers of debt. Debt for a financial firm, though, has a distinct meaning. First, debentures and capital notes issued by banks are, in reality, long-term deposits. Second, deposits themselves are not employed to finance expenditure on real capital but are transformed by the banking firm into financial assets. Deposits supply means of payment services, and return to the depositor (depending on risk and liquidity). The bank assumes the

costs of managing risk, handling transactions, and gathering information. If shareholders' equity is smaller than property assets and cash held for reserves, then some of the deposits are financing production of the banking firms. However, shareholders' equity was greater than property assets and cash held by Canadian banks.

III. The Structure of this Report

A detailed analysis of the difference between profit rates earned by Canadian chartered banks and those earned by other types of firms is provided in each chapter. In Chapter 2, individual Canadian banks are compared to individual trust and loan corporations, that are financial firms competing for mortgages and term deposits. The factors that contribute to profitability in each sector are studied: yield spreads, foreign business, noninterest costs and asset/capital ratios.

Chapter 3 compares profitability of Canadian banks and trust and loan corporations with market-oriented Canadian industries. The after tax profit rates, the before tax profit rates, and the corporate income tax rates on book profits are presented for each sector.

Chapter 4 discusses the differences between the U.S. and Canadian banks in profitability. The regulatory structures and methodologies used to compile the data are contrasted for each country's banking system. Before tax and after tax rates of return to capital are compared for Canadian banks, all U.S. insured banks, and New York City banks. Also, yield spreads, noninterest costs, portfolio mix and asset/capital ratios are examined for U.S. and Canadian banks.

A measurement of excess profits earned by Canadian banks is presented in Chapter 5. The calculation of excess profits is based on a comparison of the rates of return to capital of Canadian chartered banks with those of trust and loan corporations, manufacturing, retail trade, and all U.S. insured banks.

Four appendices are also provided. The first appendix presents a sample calculation of accrued and realized rates of return to capital. The second appendix lists the problems encountered with the computation of profit rates for individual Canadian banks and trust and loan corporations. In the third appendix, profit rates and tax rates for individual Canadian banks and trust and loan corporations are presented,for the years 1963 to 1973. Finally, the fourth appendix discusses the measure of profitability under inflation accounting and the effect of inflation accounting on the profit rates of Canadian banks vis-à-vis other sectors in Canada.

CHAPTER 2

CANADIAN CHARTERED BANKS AND TRUST AND LOAN CORPORATIONS

As outlined in Chapter 1, the Bank Act of 1967 was responsible for providing new profitable opportunities for Canadian chartered banks. Nevertheless, the loan and trust corporations faced additional competitive pressures, especially in mortgage lending. One would expect that the risk adjusted rate of return to capital for Canadian chartered banks would have risen since the promulgation of the 1967 Bank Act because of the removal of some of the restrictions on bank activity, and the abolition of the ceiling on interest rate charges applied to loans. For trust and loan corporations, however, one would expect relative profitability would diminish in comparison to the chartered banks.

This chapter analyses individual firms' profit rates and investigates some of the factors that contribute to profitability: yield margins, foreign business, noninterest expenses, the portfolio mix of assets and liabilities, and asset/capital ratios. In the first section, the structural differences of the two industries are noted. In the second section, the methodology utilized to calculate individual companies' rates of return to capital is outlined. In the third section, profit rates are reported and an analysis of factors affecting the profitability of both industries is provided.

I. A Structural Comparison of Chartered Banking and Trust and Loan Corporations

There were significant functional and structural differences under which banks and trust and loan companies operated as a result

of the regulatory policy adopted in Canada throughout the years. These differences are reviewed as they would affect the comparison of the profitability of banks with that of trust and loan corporations.

A. Domestic Activity

Trust and loan corporations were confined to particular areas of financial intermediation compared to the chartered banks. With reference to the holding of assets, the trust and loan companies engaged primarily in lending mortgage funds[1] (mortgages were 55 per cent of total assets in 1963, rising to 67 per cent of total assets in 1973 for the ten trust and loan companies sampled). Unsecured loans, permitted to be held after 1969, were restricted to 7 per cent of book value of assets or 15 per cent of unimpaired capital.[2] Because of the above, trust and loan investments were effectively limited to hold secured mortgages, collateral loans, bonds, debentures and stocks of corporations. Banks, however, were able to lend to consumers, corporations and small businesses, except for legislative restrictions with regard to residential mortgages.

The holding of liabilities was less restricted by regulation in comparison to the holding of assets for trust and loan corporations. Under provincial legislation trust and loan companies accepted funds

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1 Section 60(2) of the Federal Loan Companies Act and 68(1) of the Trust Companies Act limited mortgages to 75 per cent of the value of real estate unless the mortgage was insured.

2 Section 60(5) of the Loan Companies Act and Section 68(6) of the Trust Companies Act basically limited unsecured consumer, real estate and corporate lending to the aforementioned basket clause.

from depositors "in trust."[3] A minimum of thirty days' notice was sometimes requested but most often the trust and loan companies did not insist on advance notification of withdrawal. In addition, trust corporations were not able to issue debentures that were longer in term than five years, and they were also allowed to borrow money upon the credit of the company. Loan companies were permitted to issue debentures to the public but there was no "right of first claim to assets," in case of bankruptcy of the firms, given to either debenture or ordinary deposit and debt holders (Section 67 of the Loan Companies Act).

For the chartered banks, one constraint placed on the holding of liabilities was the limit applied to the issuance of debentures (Footnote 2 in Chapter 1). Another constraint was that arising from the agreements sometimes made between the chartered banks and the Government of Canada after 1967. An interest rate ceiling, only applied to Canadian currency deposits, somewhat curtailed the ability of the chartered banks to compete for deposit liabilities. The ceiling was not altogether successful as the chartered banks were able to convert Canadian currency to foreign currency deposits especially for corporate depositors.

B. Foreign Activity

A further important distinction between a trust and loan corporation and a chartered bank was the latter's power to participate

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3 Section 91 of the British North America Act of 1867 stipulated that the central government had power over currency and banking. However, provincial governments were permitted by the courts to incorporate building loan companies and trust companies but deposits were to be given "in trust."

in international business. Trust and loan corporations were limited in operating foreign agencies in two ways. First, the withholding tax on gross interest (15 per cent) was levied on foreign currency deposits of firms not operating under the Bank Act. Trust and loan companies that booked foreign currency deposits paid the withholding tax to the Canadian government prior to the distribution of interest income to foreign residents. The effect of this provision was to reduce the after tax return on trust and loan deposits in comparison to Canadian chartered banks for the foreign depositor. Second, trust and loan firms were regulated to retain assets, in Canada, equal to liabilities in Canada plus a significant portion of net worth.[4] With the above two regulations, the overall profit rate may be higher for banks than that earned by trust and loan companies to the extent that chartered banks were able to earn a higher after tax rate of return to capital on foreign business.

C. Nonfinancial Intermediary Activity

Nonfinancial intermediary business was conducted by the firms themselves or by subsidiaries. For instance, fields of activity permitted to trust and loan corporations included fiduciary activity and real estate brokerage. Banks formed data processing, mortgage insurance and real estate companies. While profit earned from non-financial intermediary business may alter the rate of return to capital earned by firms, no data were available to isolate the impact on profitability of such activity.

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4 Section 68.1(2) of the Trust Companies Act and 60.1(2) of the Loan Companies Act.

D. Reserve Requirements and Asset/Capital Ratio Limitations

Another major difference between the banking and trust and loan industries was in the application of regulations intended to promote a stable financial system. Borrowing powers for deposits of trust and loan companies were limited by government by-law to a multiple of unimpaired capital and reserves.[5] No similar restriction applied to the chartered banks. Also, trust and loan corporations were to hold liquid assets that were 20 per cent of all debentures and securities issued by the firm with a maturity of less than a hundred days. The reserve was composed of cash, bank deposits and Government of Canada securities, with a term of three years or less (25 per cent of the reserve was to be maintained in the three aforementioned assets), and Government of Canada securities of three- to ten-year terms (50 per cent of the reserve was to include all four assets). The balance of the reserve was composed of provincial government securities and demand loans guaranteed by Government of Canada securities as collateral.[6] In 1973, the percentage of cash, bank deposits, and treasury bills to total deposits for all trust and loan corporations, operating at least one branch in Ontario, was 6.5 per cent.

Banks, however, were required to hold two reserves for liquidity purposes. First, primary reserves were noninterest earning assets: cash, and deposits and notes of the Bank of Canada.

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5 Section 68(2) of the Loan Companies Act and Section 70(4) of the Trust Companies Act (cannot surpass 20 times the excess of a company's assets minus liabilities). Borrowing powers in 1971 were increased from 15 to 20.

6 Section 65(4) of the Loan Companies Act and Section 68.2 of the Trust Companies Act.

Primary reserves were slowly reduced as a ratio of Canadian dollar deposits, from 8.0 per cent in 1963 and 1967 to 6.1 per cent by 1973. Second, secondary reserves, ranging from 0 to 12 per cent of Canadian currency deposits (the percentage was administered by the Bank of Canada), included cash not used for primary reserves, day-to-day loans and treasury bills. The total effective ratio for both reserves was increased since the interest forgone in holding alternative higher yielding investments was an additional cost in handling Canadian currency deposits. Unlike the banks, trust and loan corporations were able to earn interest on at least 75 per cent of their reserve in the form of bank deposits and government securities, thereby lessening the impact of holding reserves on profitability. While reserve requirements were more costly to the banks, asset/capital limits lowered the profitability of trust and loan corporations.

II. Methodology

In Chapter 1, it was suggested that one could calculate two rates of return to capital: accrued and realized. The methodology involved to compute these rates of return is now outlined in this section. An example of a calculation is provided in Appendix A. In Appendix B, data problems encountered in the derivation of profit rates are listed.

Two alternative methods were available to calculate accrued rates of return for individual Canadian banks and trust and loan corporations.[7] First, profits were stated in the following manner:

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7 M. Guy Mercier, "Bénéfices déclarés et bénéfices réel des banques à charte canadienne," CA, Vol. 102, No. 6, June 1973.

Method I After tax profits =
+Profits and losses on loans less provision in other operating expenses
+Profits and losses on securities including provision to reduce securities on balance sheet not exceeding market values
+Profits and loss on nonrecurring items
-Provision relating to income taxes
+Credit for income tax relating to appropriation for losses

The same figure (except for error due to rounding) was arrived at by considering changes in net worth:

Method II After tax profits =
Shareholders' equity[8] (Year t + 1)
-Shareholders' equity (Year t)
+Dividends (including dividends to directors)
-New issues (including premium on capital)
+Excess cost over book value (due to amalgamation)
+Change in assets not admitted (trust companies only)

Reconciliation was required when the changes in net worth calculated by Method II did not equal the profit computed by Method I. In those cases, detailed examination of the accounts determined the source of the discrepancy and appropriate adjustments were made.

Two rates of return to capital were possible to compute for the banks and trust and loan companies: simple and compound. The simple rate of return to capital was annual profits divided by shareholders' capital at the beginning of the year. The compound rate of return to capital was annual profits divided by shareholders' capital averaged for each point of time during the year. The former profit rate implied that firms did not have the means to reinvest

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8 Shareholders' equity is comprised of the following (terms in brackets were employed in trust and loan company accounting):
Shareholders' Capital;
Rest Account (General Reserve);
Undivided Profits (Retained Earnings);
Appropriation for Losses (Investment Reserves).

profits until the end of the year. Financial firms, however, had the freedom to reinvest earned income immediately. The compound rate of return to capital was a more appropriate measure of profitability than a simple profit rate.

Two compound rates of return to capital were calculated for Canadian banks: one by the "discrete" method and the other by the "continuous" method.[9] Generally, the "continuous" rates of return were .3 to .5 percentage points less than the "discrete" rates of return. Only "discrete" profit rates are reported in this study. Let the following be symbolized:

C =Shareholders' capital

D =Dividends

NI =New issues

t =Point of time (t and t + 1)

EC =Excess cost over book value (for amalgametion in trust company data)

ANA =Assets not admitted (trust company data)

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9 For a "continuous" rate of return to capital over the period, one may calculate, letting K = capital, and t indicate a point of time

$$\text{Ln } K_{t+1} - \text{Ln } K_t = r$$

This is equal to $\frac{K_{t+1}}{K_t} = e^r$

or $K_{t+1} = K_t e^r$

The "discrete" rate of return to capital was a second order approximation of continuous rates of return to capital: annual profits divided by an average of capital at the beginning and end of the period.

A =Accrued Profits (losses) on securities

B =Portion of year new issue was effective (B =0 if new issues made at end of fiscal year, B =1 if at beginning of year)

The appropriate formula to calculate the capital figure by the "discrete" method was:

$$K_{t+1} = \frac{1}{2}\left[C_{t+1} + C_t - NI + EC + ANA_{t+1} + ANA_t + A + B(NI - EC)\right]$$

With cases of amalgamation, new issues were made and the provision for the excess cost over book value was applicable. Excess cost and new issues were taken to occur at the midpoint of the year ($B = \frac{1}{2}$) if no other sources (such as Financial Post summary sheets or bank reports) pinpointed the issuing date or merger date. Prior to and including 1968, "assets not admitted" of trust and loan corporations were part of investment reserves. Thus, some of the change indicated in investment reserves in 1968 in comparison to that stated in the 1969 report resulted from the exclusion of "assets not admitted" under the revision of accounting data in 1969.

It should be noted that, in some cases, stocks were issued at a particular date but shareholders were given a long period of time to accept or reject a company's offer. In these cases, B was revised to account for this discrepancy. For example, if a trust company issued shares to shareholders that were to be accepted between the dates of August 31 and October 31: the midpoint was September 30. If the fiscal year ended December 31, then $B = \frac{1}{4}$.

The accrued rate of return to capital formula obtained by the discrete method was simply $r_A = \frac{\pi A}{K_{t+1}}$ where πA was accrued

profits (after tax). For the realized rate of return, the adjustment made was the following:

$$r_R = \frac{\pi A - \pi sec}{K_{t+1} - \frac{\pi sec}{2}}$$

where πsec = profits (loss) accrued on holding securities.

With the realized rate of return to capital, data for individual firms were available from two sources: annual bank reports (for the years 1963 to 1973) and the Report of the Registrar of Loan and Trust Corporations for the Province of Ontario (1963-73). The problem associated with data from bank annual reports was that realized profits or losses on the sale of securities were not shown separately from accrued profits (the difference between book value and maximum statutory value of securities).[10] Furthermore, the measure of accrued profits of banks was deficient since federal and provincial bonds held as assets were amortized rather than reduced to market value. Similarly, the deficiency in trust and loan corporate data was twofold. First, the detailed statement of securities (indicating accrued changes in profits) was not available earlier than 1967; therefore, a comparison of trust and loan corporations on an accrued basis was limited to the post-1967 period. Second, the difference between book and market values of mortgages was unavailable for the computation of accrued rates of return.

To measure an industry rate of return to capital, an arithmetic weighted mean was utilized where

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10 Maximum statutory value is the amortized book value of federal and provincial bonds and market value of all other securities.

$$r_I = \sum_{j=1}^{n} \left[\frac{K_j \quad \pi_j}{\left[\sum_{j=1}^{n} K_j \right] K_j} \right] = \frac{\sum_{j=1}^{n} \pi_j}{\sum_{j=1}^{n} K_j} \qquad j = 1, \ldots n \text{ firms}$$

But, for each firm, the average annual rate of return to capital was obtained by computing the geometric mean:

$$R = \left[\prod_{i=1}^{m} (1 + \frac{\pi_i}{K_i}) \right]^{\frac{1}{m}} - 1 \qquad i = 1, \ldots m \text{ years},$$

The geometric rate of return was lower if the variance of observations was greater, given the same arithmetic mean of two separate sequences. Another attribute of a geometric mean was that it approximated a continuous rate of return to capital.

The before tax rates of return to capital were easily calculated by obtaining the effective tax rates on profit on either an accrued or realized basis. The after tax rate of return was divided by the factor, one minus the effective tax rate on profits. The effective tax rate on accrued profits was:

$$\frac{T}{T + \pi A}$$

where T is annual taxes paid. On a realized basis, the tax rate was

$$\frac{T}{T + \pi A - \pi sec}$$

Industry effective tax rates were calculated by the summation of all firms' taxes divided by the summation of all firms' before tax profits for each year. A firm's average effective tax rate was derived by summing all taxes paid during the period and dividing that by total profits earned.

For measuring the profitability of banks and trust and loan corporations, a sample of firms was selected for each industry. All ten banks were included in the rates of return calculations although for industry averages three banks were excluded (Unity Bank of Canada and the Bank of British Columbia were relatively young in operation, and The Mercantile Bank of Canada's equity was subjected to erratic fluctuations in capital resulting from the control of its foreign parent over the dividend payout ratio and new issue policy). For the trust and loan companies, rates of return to capital were calculated for the four loan corporations that were largest, by asset size, and operating at least one branch in Ontario (The Huron & Erie Mortgage Corporation, Canada Permanent Mortgage Corporation, Kinross Mortgage Corporation, and Credit Foncier Franco-Canadien) and for the seven trust corporations that were largest, by asset size (The Royal Trust Company, Canada Permanent Trust Company, National Trust Company Ltd., Guaranty Trust Company of Canada, The Canada Trust Company, Montreal Trust Company, and Victoria and Grey Trust Company). In addition, two smaller size companies were included in the sample (The Metropolitan Trust Company and United Trust Company). A consolidation of Canada Permanent Mortgage Corporation -- Canada Permanent Trust Company, and Huron & Erie Mortgage Corporation -- The Canada Trust Company was devised to overcome problems associated with the dividend payout ratio of the subsidiaries (see Appendix B). For trust and loan corporations, the total company fund assets of the sample excluding The Metropolitan Trust Company, United Trust Company and Kinross Mortgage Corporation, represented 67 per cent of the total trust and loan industry's company fund assets of 1972.

As for measuring other variables used in this chapter, Table 2-1 lists adjustments made to data for various assets and liabilities, yields earned on assets and rates paid on deposits, property expenses and salaries and wages. These factors contributing to profitability will be discussed in the fourth section.

III. Profitability of Individual Firms

In this section, after tax profit rates are reported for individual banks and trust and loan corporations. These after tax rates of return to capital measure the profitability available to shareholders in both financial industries. The implications of the after tax profit rates earned by individual firms are discussed with regard to economies of scale and entry into the banking industry.

From Table 2-2, it is evident that both the banks and trust and loan companies improved profitability since the 1967 Bank Act became operative. In the 1963-66 period, the chartered banks earned lower rates of return to capital than did trust and loan corporations but the 1967 Bank Act helped reverse the position of the two industries in terms of performance. The geometric rate of return for the seven chartered banks rose 5.4 percentage points, while the trust and loan corporations improved profitability by only 1.6 percentage points.

Table 2-1

Variables Employed in Comparing the Canadian Chartered Banks and Trust and Loan Companies

Variable	Description	Adjustments	
		Trust and Loan Companies	Chartered Banks
1. Total Assets	Averaged end of fiscal years.	No adjustment made to investment reserves prior to 1969. All asset figures of The Canada Trust Company and Canada Permanent Trust Company were adjusted by a factor representing the proportion of ownership in the firms by parents (.995 and .98 respectively).	Removed customers' liability, under guarantee and letters of credit. Domestic assets: all cash, Canadian currency notes, securities and loans, items in transit, other assets, shares in controlled corporations. Foreign assets: Foreign currency securities, loans, bank and government notes.
2. Loans	Averaged end of the years.	Mortgages, consumer and collateral loans. Does not include deposits held in chartered banks.	Canadian loans: NHA mortgages, day, call and short loans, loans to provinces and municipalities, other loans, deposits with banks, Canadian currency. Foreign loans: other loans in foreign currency and deposits in banks, foreign currency.
3. Securities	Averaged end of years-- all government bonds, debentures, corporate bonds and stocks, treasury bills. Does not include stock held in controlled corporations.	Treasury bills were not included (.04 per cent of assets in 1973.) Prior to 1968, shares held in controlled corporations were included in stocks.	Prior to 1967, not all foreign currency securities were separated from government bonds or debentures.
4. Deposits	Averaged end of year-demand, term, debentures and borrowed money.		Foreign currency deposits: deposits by banks and other deposits in Canadian currency. Canadian deposits: demand personal savings, federal and provincial deposits, other deposits on notice, debentures.
5. Loan Yield	Annual revenue earned from loans divided by average loans.		Include service charges on personal loans for Canadian loans prior to 1966. For 1963, estimated $29.5 million as service charge.
6. Security Yield	Annual revenue earned from securities divided by average securities. Included all realized profits or losses on sale of securities.		
7. Deposit Pate	Annual interest paid on deposits and borrowed money divided by average deposits and borrowed money.		
8. Property Expense	All maintenance, depreciation, and rental costs for property and equipment. Rents paid by tenants and subtenants on owned property were subtracted from property expense.	No depreciation cost for 1963.	
9. Salary and Wages	All wages, salaries and staff benefits.	Included real estate commissions: 24.5 of total labour cost in 1973.	

Table 2-2

After Tax Realized Rates of Return for Individual Chartered Banks and Loan Corporations, Averaged for the 1963-66 and 1968-73 Periods
(in percentages)

Chartered Banks	Geometric Rate of Return 1963-66	Geometric Rate of Return 1968-73	Difference	Average Asset Size (Millions of dollars)
The Toronto-Dominion Bank	7.2	14.2	7.0	5,715
Canadian Imperial Bank of Commerce [1]	8.1	12.0	3.9	10,546
Bank Canadian National	6.5	11.5	5.0	1,986
Bank of Montreal [2]	13.1	12.4	-.7	8,967
The Bank of Nova Scotia	6.3	13.3	7.0	6,525
The Royal Bank of Canada	7.4	12.9	5.5	11,442
The Provincial Bank of Canada [2]	6.5	14.2	7.7	1,195
The Mercantile Bank of Canada	-	10.8	-	268
Bank of British Columbia	-	3.3	-	134
Unity Bank of Canada	-	-6.0	-	50
Industry Average [3]	7.4	12.8	5.4	-
Trust and Loan Corporation				
The Huron & Erie Mortgage Corp.-The Canada Trust Co	14.5	12.1	-2.4	1,946
Canada Permanent Mortgage Corp.-Canada Permanent Trust Company	9.6	11.6	2.0	1,457
Credit Foncier Franco-Canadien	6.6	6.9	.3	501
National Trust Company Limited	7.2	11.1	3.9	590
Guaranty Trust Company of Canada	10.5	9.3	1.2	682
The Royal Trust Company	10.9	12.0	1.1	2,184
Victoria and Grey Trust Company	8.8	15.2	6.4	488
Montreal Trust Company	7.5	8.2	.7	616
The Metropolitan Trust Company	2.1	9.1	7.0	125
United Trust Company	-	2.7	-	25
Kinross Mortgage Corporation	5.5	7.0	1.5	330
Industry Average [4]	9.3	10.9	1.6	-

[1] 1964 to 1966 only.

[2] 1966 only.

[3] Excludes Bank of British Columbia, The Mercantile Bank of Canada and Unity Bank of Canada.

[4] Excludes The Metropolitan Trust Company, United Trust Company and Kinross Mortgage Corporation.

Source: Report of the Registrar of Loan and Trust Corporations for the Province of Ontario; and annual reports of banks.

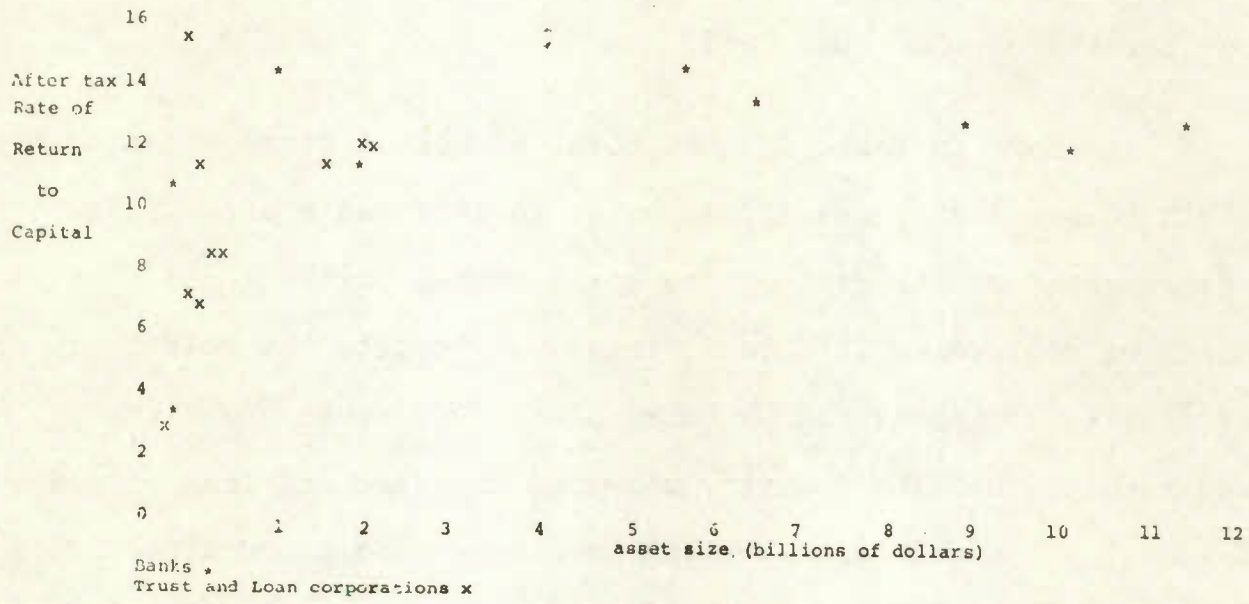
Nonetheless, not all firms' profit margins moved in harmony. While five banks and two trust companies increased their rates of return to capital by over 5 percentage points, two firms experienced a decline in profitability since 1967. During the 1968-73 period, six of the ten banks and three of the eleven trust and loan companies that were surveyed, attained an average after tax rate of return of at least 12 per cent. Yet it was a trust company, Victoria and Grey Trust Company, that earned the highest after tax profit margin of the firms included in the sample.

In the graph below, the relationship between after tax rates of return to capital and asset size is depicted. It was difficult to infer higher profitability in financial intermediation with greater size as measured by total assets. As warned in Chapter 1, asset mix varied across firms such that the services provided by financial intermediaries was no longer equivalent. Certainly, the functional and structural differences between chartered banks and trust and loan corporations were so important that asset size was not a good indicator of the size of total services provided by each firm.

One may test the relationship of asset size and profitability under two hypotheses. First, it could be assumed that profit rates rise with asset size throughout the range displayed in Graph 2-1. On the other hand, it could be hypothesized that rates of return to capital peak at a certain asset size and then decline for larger firms because of a reduction of managerial efficiency in handling large bureaucracies. No econometric test is reported since the few degrees of freedom for each population did not permit one to confirm the hypothesis that firms of large size earn higher profit margins than firms of small size (especially for the chartered banks).

Graph 2-1

After Tax Rates of Return to Capital and Asset Size Relationship for Chartered Banks and Trust and Loan Corporations (Averaged over 1968 to 1973)



Upon examining the individual firms, the outstanding performers in the banking industry were banks of medium size. For the trust and loan group, both large-sized and medium-sized companies were most profitable. At least one bank and two trust companies of less than $1 billion in asset size earned an after tax rate of return greater than 10 per cent. One of these firms, The Mercantile Bank of Canada, was restricted in asset growth until divesture of control to the Canadian residents was completed.[11] This empirical evidence was not sufficient to allow any conclusions to be drawn regarding the existence of economies of scale as barrier to entry into banking.

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11 The Mercantile Bank of Canada was limited to a ratio of total liability to authorized capital of twenty, until 25 per cent foreign ownership was attained. Section 75(2)(g) of the Bank Act.

The after tax profit rates indicated the profitable opportunities awaiting new entrants. By the data provided thus far, one would expect, for the 1963-66 period, relatively less entry of new firms into banking than into the trust and loan sector, while the converse would be true for the period after 1967.

As shown in Table 2-3 the total number of firms entering the trust and loan industry was 22, 13 prior to 1967 and 9 after 1968. This represented 37 per cent of the total number of trust and loan corporations registered in Ontario in 1973. Despite the relatively higher profit margins earned by banks after 1967, less new firms entered into the banking industry compared to trust and loan corporations. Only three new banking firms have begun operation since 1967: one in 1968, one in 1973, and one in 1976.[12]

Table 2-3

Entry of New Firms by Year for the Years 1963 to 1973

Year	Trust and Loan Corporations[1]	Chartered Banks
1963	4	-
1964	9	-
1965	-	-
1966	-	-
1967	-	-
1968	2	2
1969	1	-
1970	1	-
1971	1	-
1972	3	-
1973	1	1
Total	22	2[2]

1 Operating in Ontario. In 1973 there was a total of 60 in operation in Ontario.

2 The People's Bank, beginning operation in late 1968, merged with The Provincial Bank of Canada in 1969.

Source Report of the Registrar of Trust and Loan Corporations for the Province of Ontario, various years; and The Canada Gazette.

12 Northland Bank, like Canadian Commercial and Industrial Bank, was chartered in 1975 but was not yet operating by August 1976. Both banks intend to specialize in the wholesale lending market.

One may also note that there was no apparent relationship between after tax rates of return to capital and size of trust business. For example, Victoria and Grey Trust Company, earning an after tax rate of return of 15.2 per cent, raised only 1.0 per cent of total income from trust business in 1973, compared to The Royal Trust Company's 12.0 per cent profit rate and 24.9 per cent trust business share of total income. Similarly, National Trust Company Limited, Guaranty Trust Company of Canada and Montreal Trust Company earned after tax rates of return, 11.1 per cent, 9.3 per cent and 8.2 per cent, respectively, but the trust business share of total income was 20.8 per cent, 10.2 per cent and 36.2 per cent, respectively, for the year 1973.

IV. Factors Contributing to Profitability

The factors that have contributed to differences in after tax profitability in the banking and trust and loan industries are reviewed in this section. These are yield spreads or margins (the difference between the yield per dollar of assets and interest paid per dollar of deposits), foreign business of chartered banks, the portfolio composition of assets and liabilities, noninterest expenses, and asset/capital ratios.

A. Yield Margins

To compare the trust and loan corporations with the Canadian banks, one ought to distinguish domestic from foreign business of the Canadian banks. Two analyses are provided. First loan yield spreads

(described in Chapter 1) of overall consolidated banking data are investigated with trust and loan corporation data. Next, foreign and domestic business (utilizing the currency definition) is separated for Canadian banks.

From Table 2-4, one notes that the loan yield spread for trust and loan companies, was reduced from the 1963-66 average of 2.34 per cent to the 1968-73 average of 2.03 per cent. The Canadian banks' overall loan yield spread rose from 3.39 per cent to 3.58 per cent over the period. The opposite behaviour of the two sectors may be explained for a variety of reasons. Each group of firms will be separately discussed.

The reduction in the loan yield spread of trust and loan corporations was a result of the improved matching of term structures of asset and liability portfolios. Since mortgages were longer in term than trust deposits, rising interest rates due to unexpected inflation had the effect of increasing the cost of deposits more than the yield earned on mortgages (see Table 2-5). However, the risk from fluctuations in interest rates, accepted by trust and loan corporations was substantially reduced in the post-1967 period as a result of improved matching between five-year guaranteed certificates and adjustable interest rate NHA mortgages.[13] As shown in Table 2-5, the mortgage yield spread after 1970 improved, as reduced interest rate levels in 1971 encouraged a recovery in the housing market. On

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13 Interest rates were permitted to be charged every five years on mortgages in 1969 with a minimum of a twenty-five-year term under the National Housing Act. See Central Mortgage and Housing Corporation, Canadian Housing Statistics, 1969, Ottawa, 1970, p. 16. Of total loan and trust company assets, National Housing Act mortgages were 9.6 per cent of total assets in 1967, and 13.0 per cent in 1973; Bank of Canada Review, 1974.

Table 2-4

Loan and Security Yield Spreads of Canadian Banks, Trust and Loan Corporations, for the Years 1963 to 1973

(in percentages)

	Canadian Banks - Consolidated					Trust and Loan Companies				
Year	Loan Yield	Deposit Yield	Loan Yield Spread	Security Yield	Security Yield Spread	Loan Yield	Deposit Yield	Loan Yield Spread	Security Yield	Security Yield Spread
1963	5.50	2.10	3.30	4.25	2.15	6.17	4.39	2.38	5.76	1.37
1964	5.60	2.20	3.40	4.39	2.19	6.82	4.34	2.48	5.67	1.33
1965	5.63	2.32	3.31	4.55	2.23	6.87	4.45	2.42	5.70	1.25
1966	6.02	2.58	3.44	4.63	2.05	6.98	4.83	2.15	6.16	1.33
1967	6.12	2.76	3.36	5.01	2.25	7.19	5.10	2.09	6.41	1.31
1968	6.98	3.36	3.62	5.52	2.16	7.38	5.60	1.78	7.11	1.51
1969	8.15	4.34	3.81	5.94	1.60	7.79	6.29	1.50	7.15	.86
1970	8.82	5.07	3.75	5.87	1.30	8.49	7.13	1.36	6.58	.45
1971	7.66	4.11	3.55	6.02	1.93	8.80	6.51	2.29	6.87	.36
1972	7.31	3.71	3.60	5.67	1.96	9.97	6.47	2.60	6.15	-.32
1973	8.30	4.57	3.73	5.72	1.44	9.00	6.86	2.14	6.46	-.40
Averages										
1963-66	5.71	2.32	3.39	4.44	2.12	6.88	4.54	2.34	5.83	1.29
1968-73	7.81	4.23	3.58	5.82	1.59	8.58	6.55	2.03	6.87	.32
Difference	2.10	1.91	.29	1.38	-.53	1.70	2.01	-.31	1.04	-.97

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario; reports submitted to the Inspector General of Banks under Schedule Q; and The Canada Gazette.

the liability side, there was no shift, however, to over one-year term deposits[14] from less-than-one-year deposits.

Table 2-5

Mortgage and Personal Loan Yield Spreads for Trust and Loan Corporations for the Years 1963 to 1973

(Per cent)

Year	Mortgage Yield	Personal Loans	Mortgage Yield Spread	Personal Loan Yield Spread
1963	6.97	3.81	2.58	-.58
1964	6.91	4.88	2.57	.54
1965	6.84	7.36	2.39	2.91
1966	6.97	7.45	2.14	2.62
1967	7.19	7.29	2.09	2.19
1968	7.34	8.82	1.74	3.22
1969	7.77	8.62	1.48	2.33
1970	8.46	9.52	1.33	2.39
1971	8.85	7.35	2.34	.84
1972	9.17	6.46	2.70	-.01
1973	9.05	7.74	2.19	.88

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

Another possible reason for reduced loan yield spreads for trust and loan corporations was the increased competition promoted by the entry of banks into the conventional residential mortgage lending after the 1967 Bank Act amendments. Consumers of housing benefited from lower lending rates, to the extent that competition by banks

14 In 1967, the proportion of borrowed money in over-one-year debt was 74.4 per cent, and, in 1973, 71.4 per cent. Bank of Canada Review, 1974. The category of one- to five-year term certificates was not detailed sufficiently to indicate a shift from short- to long-term deposits within these years.

reduced mortgage yield spreads for trust and loan corporations. It is difficult to assess whether the above proposition is true. First, entry into the trust and loan industry by firms was unrestricted as indicated in Table 2-3. Secondly, lower mortgage yield margins may have been transitory as interest rates rose substantially from 1968 to 1970; trust companies holding low yield mortgages from earlier years may not have anticipated the inflation rate as reflected in long-term interest rates prior to 1968. When deposit interest rates declined in 1971 and 1972, the lower cost of deposits and the increase in mortgage lending with adjusted interest rates charged allowed trust and loan companies to improve yield margins (see Table 2-5).

As for the Canadian chartered banks, it is more instructive to separate assets and deposits into Canadian and foreign business (Table 2-6). The use of currency definition of assets and liabilities does not include foreign currency assets and liabilities booked with Canadian residents. However, the proportion of foreign currency business booked with Canadians is a small proportion of Canadian currency assets and incurs low-yield margins as large corporate transactions are involved. The increase in the consolidated loan yield spread of the chartered banks was not due to higher yield margins earned on foreign currency loans and deposits. The slight fall in the foreign loan yield margin from the 1963-66 period to the 1968-73 period of .1 percentage point reflected the increased activity of U.S. banks in the international market.

Moreover, the data demonstrated that the average loan yield spread on foreign business was much smaller (approximately 1 per cent)

Table 2-6

Yield Spreads on Canadian and Foreign Currency Assets for Canadian Chartered Banks for the Years 1963 to 1967

(in percentages)

	Canadian Currency					Foreign Currency				
Year	Loan Yield	Deposit Rate	Loan Yield Spread	Security Yield	Security Yield Spread	Loan Yield	Deposit Rate	Loan Yield Spread	Security Yield	Security Yield Spread
1963	6.04	1.82	4.22	4.40	2.58	4.11	3.01	1.10	3.23	.21
1964	6.20	1.89	4.31	4.57	2.68	4.18	3.18	1.00	3.11	-.07
1965	6.07	1.96	4.11	4.81	2.85	4.49	3.46	1.07	3.08	-.38
1966	6.30	2.13	4.17	4.73	2.60	5.25	4.16	1.09	3.81	-.35
1967	6.38	2.31	4.07	5.05	2.74	5.38	4.40	1.02	4.37	-.03
1968	7.48	2.98	4.50	5.64	2.66	5.63	4.69	1.02	4.36	-.33
1969	8.48	3.57	4.91	6.15	2.58	7.37	6.41	1.07	4.51	-1.90
1970	9.08	3.95	5.13	6.42	2.47	7.59	7.54	.85	6.40	-1.14
1971	8.13	3.39	4.74	6.01	2.62	6.80	5.76	1.13	5.40	-.46
1972	7.96	3.22	4.74	5.64	2.42	6.02	4.91	1.19	4.74	-.17
1973	8.59	3.61	4.98	5.91	2.30	7.68	6.66	1.11	5.85	-.81
Average										
1963-66	6.16	1.94	4.22	4.62	2.68	4.56	3.49	1.07	3.29	-.20
1968-73	8.21	3.50	4.71	5.96	2.43	7.07	6.10	.97	5.15	-.95
Difference	2.06	1.56	.50	1.31	-.25	2.51	2.61	-.10	1.86	-.75

Source Same as Table 2-4.

than on domestic currency business. This had resulted from the nature of foreign business: the Eurodollar market was highly competitive and yield margins on large deposits and loans were small due to the low cost of servicing and the risk managed by the banks.

On the other hand, the domestic loan yield spread rose on the average .50 percentage points from the pre- to post-1967 period. There are a number of factors that could cause the increase in the margin. First, the loan rate ceiling was removed so that profit rates improved compared to the pre-1967 Bank Act period. However, prior to 1967, the banks were enabled to partly avoid the ceiling on loan rates by levying a service charge for personal loans. Second, the reduction in costs of holding primary and secondary reserves contributed to banks being able to earn a higher yield margin per dollar of deposit. The lack of entry of new entrants into small business and personal lending in Canada may have allowed Canadian banks to earn a rate of return to capital greater than that of other firms in the economy. Competition, however, from new entrants might have eroded the ability of banks to increase their yield margins above the amount required to earn a market rate of return to capital.

One additional comment is made with regard to the security yield spreads shown in Tables 2-4 and 2-6. There were two reasons that the security yield spreads were lower than the loan yield spreads earned by the banks, and trust and loan companies (security yield spreads earned in some years were actually negative). First, it was profitable for the institutions to hold securities as assets since the cost per dollar of servicing securities was lower than that for loans. Loans were generally more expensive per dollar to handle because each transaction between a borrower and a bank, required

individual evaluation by the managers while securities were less likely to default, particularly government bonds. Second, liquid asset requirements, reviewed in the first section, forced institutions to hold government securities, that had low yields. As will be shown in Tables 2-9 and 2-10, the banks and trust and loan corporations shifted away from holding securities (less securities were held as a percentage of total assets).

B. Foreign Business Activity

One of the arguments suggested by chartered banks for increased profit rates since 1967 is that there has been an improvement in foreign business profitability.[15] To argue this point, one would need to notice an increase in the yield spread earned on foreign loans and securities, a significant increase in volume of foreign business, or a general improvement in the share of foreign profits to total profits. It is difficult to derive an exact measure of profits from the data that were available to us. Foreign data are deficient in not including i) head office costs in handling foreign business, ii) losses less recoveries on foreign loans, and iii) profits (losses) realized on securities. While realized profits (losses) on all securities are small (only -$.3 million from 1967 to 1973), the total loss less recoveries on loans is quite significant ($207.9 million or 7.45 per

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15 For example, see The Bank of Nova Scotia,"Corporate Concentration and Banking in Canada," A Submission to the Royal Commission on Corporate Concentration, February 1976, pp. 32 and 33.

cent of realized before tax profits from 1967 to 1973). Hence, any foreign profit figures reported in Schedule Q may overstate the actual profit earned.

In Table 2-6, it was already demonstrated that yield spreads earned on foreign currency loans and securities were not a contributor of any total increase in profitability assuming there was no reduction in handling costs per dollar of foreign currency assets. In fact, the loan yield spread declined from 1.07 to .97 percentage points in pre- and post-1967 periods (until 1973). The foreign security yield spread was actually negative (-.20 and -.95 percentage points in each period, respectively). Nevertheless, if one investigated volume growth of assets as in Table 2-7, it can be noted that foreign assets tripled in growth rate from 7.0 per cent to 20.0 per cent on average after 1967, compared to the previous period. However, domestic assets almost doubled in growth rate (6.9 per cent to 12.7 per cent) as well. This growth in volume of foreign assets accompanied the noted decline in the foreign loan and security yield spread from 1967 to 1973.

In order to determine the contribution of foreign business to total profitability, a before tax rate of return to capital was computed for domestic business. As stated earlier, foreign profits may be overestimated because expenses related to foreign loss on loans and head office operation costs were not included in total costs. Similarly, equity capital for domestic business was exaggerated as the total equity capital figure was accepted: new equity issues and retained earnings were financing capital for both domestic and foreign business. As shown in Table 2-8, the domestic profit rate was greater

than the before tax rate of return to capital for the manufacturing industry for every year after 1967, despite domestic profits being underestimated and domestic equity capital figures overestimated. Also, the domestic profit rates calculated here were greater than those earned by retail trade, wholesale trade, textile, and transportation sectors (see Table 3-3).

The argument that foreign business has been a major source of increased profitability of chartered banks since 1967 can be questioned by the above data. From investigating New York City bank profits in Chapter 4, it will be demonstrated that foreign business was not an important factor in contributing to high profit rates.

Table 2-7

Bank Asset Growth (natural logarithms) for the Years 1963 to 1973

(in percentages)

Year	Canadian Assets	Foreign Assets	Total Assets
1963	2.37	10.08	4.03
1964	5.76	16.02	8.14
1965	11.60	-.72	8.78
1966	7.93	3.67	7.02
1967	10.45	13.14	11.00
1968	11.73	23.07	15.29
1969	6.98	35.96	14.56
1970	7.59	16.96	10.39
1971	16.42	2.30	12.24
1972	16.91	9.84	14.99
1973	17.23	32.57	21.41
Geometric Average			
1963-1966	6.9	7.0	7.0
1968-1973	12.7	20.0	14.8

Source Same as Table 2-6.

Table 2-8

The Impact of Foreign Activity on Profitability for the Years 1967 to 1973

Year	(1) Foreign Profit[1] (Millions of $)	(2) Total Before Tax Realized Profit[2] (Millions of $)	(3) Foreign Profit as a Share of Total Profit (Per cent)	(4) Total Average Capital (Millions of $)	(5) Overall Before Tax Rate of Return (Per cent)	(6) Domestic Profit Over Total Average Capital (Per cent)	(7) Manufacturing Before Tax Rate of Return (Per cent)	(8) Difference Between (6) and (7) (Per cent)
1967	35.6	293.0	12.2	1,686.1	17.4	15.3	15.5	- .2
1968	52.6	385.4	13.6	1,835.0	21.0	18.1	16.7	1.4
1969	54.0	471.0	11.5	1,990.5	23.7	20.9	17.4	3.5
1970	49.8	494.7	10.1	2,151.6	23.0	20.7	12.6	8.1
1971	105.3	538.1	19.6	2,316.4	23.2	18.7	16.0	2.7
1972	104.3	671.9	15.6	2,554.5	26.3	22.2	18.1	4.1
1973	55.1	783.5	7.0	2,856.5	27.4	25.5	23.7	1.8

1 Note that foreign profit is not corrected for

i) head office expense;

ii) loss on foreign loans less recoveries;

iii) realized profits (losses) on securities.

2 Before tax realized profit is accrued profits less market value change in securities. The definition of realized profits differs slightly from that used by the Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions, Appendix A.

3 Total average capital is shareholders' equity and accumulated appropriations for losses. Note that equity is composed of retained earnings from previous domestic and foreign activity and new equity that may be issued to acquire financing funds for domestic or foreign activity.

Source Report submitted to the Inspector General of Banks under Schedule Q; The Canada Gazette; and Statistic Canada, Industrial Corporations, 61-003.

C. Portfolio Composition

The portfolio composition of assets and liabilities helps one to note the structural difference between the banking, and the trust and loan industries. The term structure of assets and liabilities is also an indicator of the ability of banks and trust and loan corporations to cope with inflation. When assets are shorter (longer) in term than deposits, the yield earned on assets rises at a faster (slower) rate than the interest rate payable on deposits if the transacted interest rates payable on newly issued assets and liabilities rise due to inflation. Thus yield margins rise (fall) if assets are shorter (longer) in term than deposits with greater inflation. The yield margins are constant with fluctuations in the level of interest rates payable on newly issued assets and deposits if the assets and liabilities have the same term structure.

In Table 2-9, one may deduce that Canadian banks and trust and loan corporations increased the share of loans to total assets.[16] For the Canadian banks, there was a shift from securities to loans, especially in the case of foreign currency assets. The same applied to trust and loan corporations.

Unfortunately, no published data was available on the term structure of assets and liabilities. Data from the Inspector General of Banks indicated that the chartered banks' foreign currency assets were longer in term than liabilities.[17] As for domestic currency

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16 The proportion of loans to total assets for the trust and loan corporations would be higher, if deposits held with chartered banks (part of liquidity requirements) were included (6.9 per cent of assets in 1973).

17 As of July 31, 1974, 19 per cent of foreign currency assets and only 3 per cent of deposits were of a term more than a year.

Table 2-9

Portfolio Breakdown of Canadian and Foreign Currency Assets for Canadian Chartered Banks and Trust and Loan Corporations, for the Years 1963 to 1973

(in percentages)

Year	Canadian Chartered Banks									Trust and Loan Corporations		
	Loans to Assets			Securities to Assets			Deposits to Assets			Loans to Assets	Securities to Assets	Other
	Canadian	Foreign	Total	Canadian	Foreign	Total	Canadian	Foreign	Total			
1963	52.12	79.40	61.11	28.34	19.61	26.47	90.12	99.16	92.03	58.82	31.61	9.67
1964	57.76	82.52	63.46	29.19	16.58	26.29	92.76	99.38	94.28	59.75	34.23	6.02
1965	60.93	83.52	66.07	26.31	15.56	23.86	93.17	99.57	94.63	62.23	31.74	6.03
1966	62.14	85.64	67.16	24.58	13.34	22.18	93.85	100.06	94.85	64.65	28.56	6.79
1967	62.87	86.12	67.81	24.30	12.60	21.82	95.01	95.63	95.14	64.63	27.64	7.73
1968	63.58	86.80	68.81	25.52	11.75	22.42	95.80	94.63	95.53	63.45	27.71	8.84
1969	65.58	90.64	72.20	24.54	8.14	20.21	94.74	98.59	95.76	63.54	25.94	10.52
1970	66.47	93.35	74.45	24.05	5.45	18.46	94.23	100.00	95.96	65.01	23.31	11.68
1971	65.04	94.30	73.65	25.68	4.42	19.43	94.84	99.41	96.18	66.76	21.83	11.41
1972	66.36	95.16	74.22	24.03	3.58	18.45	94.04	102.17	96.26	69.47	19.90	10.63
1973	69.85	96.15	77.31	20.24	2.79	15.29	92.34	106.84	96.45	72.55	16.21	11.24

Source The Canada Gazette; and Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

business of chartered banks and trust and loan corporations' portfolios, no information on the term structure could be acquired.

One could derive information from examining the yield margins. In Graph 2-2, the Canadian prime loan rate is compared with yield margins for bank domestic loans, domestic securities and deposits, and trust and loan company mortgages and deposits. The variation in the prime loan rate serves a proxy for the variation in the transacted interest rates payable on newly issued assets and deposits. If the loan prime rate rises, and the yield margin rises, then assets are shorter in term than deposits. The data indicated that assets were shorter in term than deposits for Canadian bank domestic loans[18] as yield margins generally increase with a rising prime loan rate. Assets were longer in term than deposits for Canadian bank securities and trust and loan company mortgages as yield margins tended to decrease with an increase in the prime loan rate. From the evidence provided here, the Canadian bank profitability had been protected from rising interest rates over time. It should be noted, however, that the before tax profit rate for Canadian banks did not decline in 1971 and 1972, when the loan yield spread was lower, nor did the yield spread fall to the level observed prior to 1967.

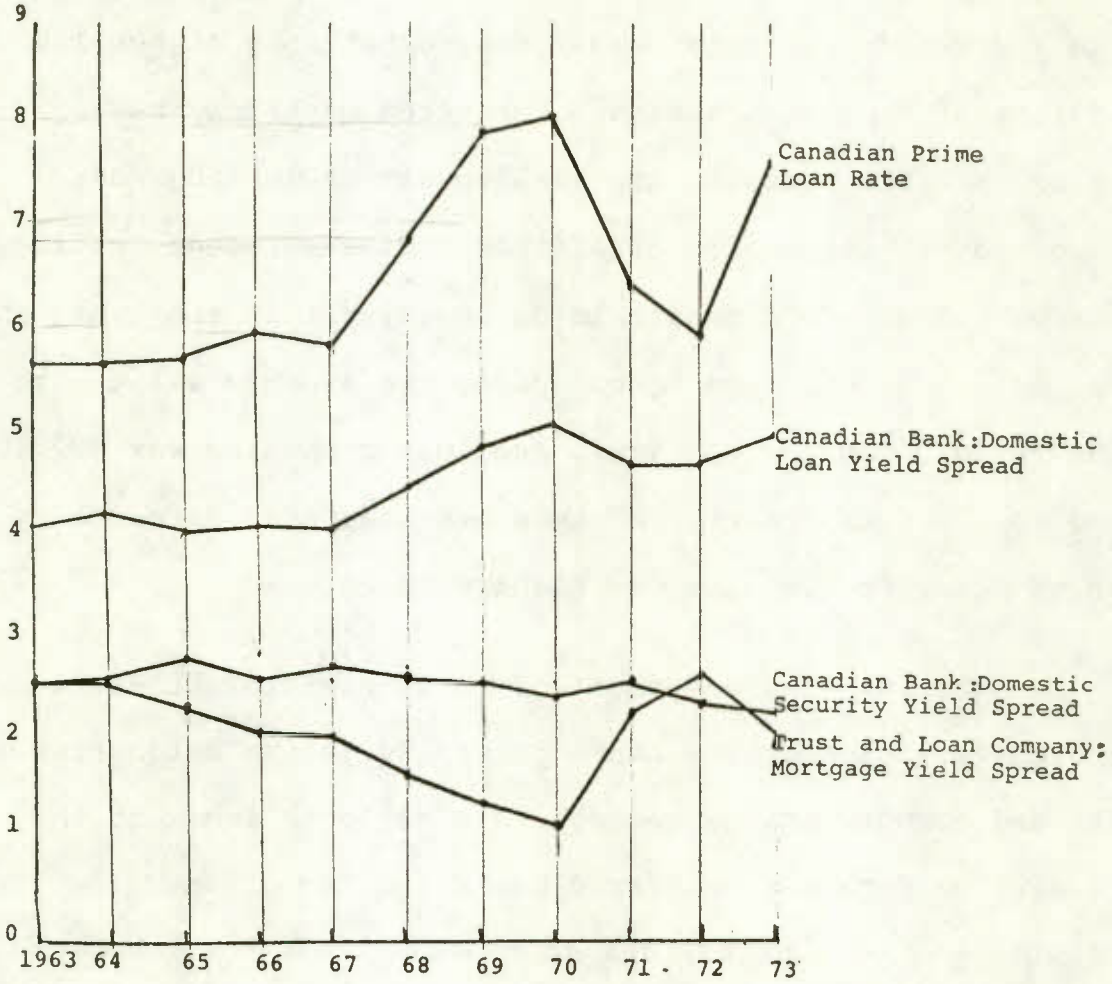
D. Noninterest Expenses

Higher yield spreads may be associated with an increase in noninterest expenses per dollar of assets for a financial industry.

18 One problem with yield spreads as an indicator of the term structure of assets and liabilities is that any ceiling reduces the sensitivity of the yields earned on assets and interest rates payable on deposits to variability in the prime loan rate. For example, demand deposits are noninterest bearing except for federal, provincial and large corporate demand deposits. This point is discussed in greater detail in Chapter 4.

Graph 2-2

Canadian Prime Rate and Yield Spreads for Canadian Bank Domestic Loans, and Securities and Trust and Loan Company Mortgages for the Years 1963 to 1973



If the cost of attracting factors of production to conduct financial services rises per dollar of output, then one would expect the price of financial intermediation, the yield spread, to rise. Financial assets, however, are not a good measure of output, and inflation would cause both assets and expenses to increase in value. Nevertheless, noninterest expense per dollar of assets helps to understand the size of yield spreads.

As shown in Table 2-10, Canadian chartered banks seem to encounter higher property expense per dollar of assets and less labour cost per dollar of assets than trust and loan corporations.

This difference in relative costs may be partly explained by the type of activity the institutions conduct. Trust and loan corporations, with trust and real estate business, experience higher labour cost per dollar of financial assets. Chartered banks may have smaller branches since personal and small business lending may require geographical dispersion of offices unlike mortgage lending. Unfortunately, no data were available on employment in the trust and loan companies. However, from branch data, the average asset size of branches in 1973 for the ten trust and loan companies was $22.49 million and for Canadian chartered banks average Canadian currency asset size of domestic branches was $7.01 million.

The other expense component of total noninterest costs increased significantly for the banks primarily in the categories of advertising and communications costs. This reflects somewhat the induced rivalry of Canadian chartered banks for loans after the lifting of the ceiling applied to loan rates in 1967. Overall, the Canadian chartered banks experienced a rise in total noninterest expense by .07 cents per dollar of assets in the post-1967 period. This aids in the understanding of only a portion of the increase in loan yield spreads.

Opposite to the chartered banks, trust and loan total non-interest expense per dollar of assets improved particularly in the other expense category. Overall, total noninterest expense declined per dollar of assets permitting trust and loan companies to retain profitability with a decrease in the loan and security yield spreads.

Table 2-10

Non-Interest Operating Expenses[1] Per Dollar of Assets for the Years 1963 to 1973 (in cents)

	Canadian Chartered Banks - Overall				Trust and Loan Corporations			
Year	Total Non-Interest Expense	Property Expense	Salary and Wages	Other	Total Non-Interest Expense	Property Expense	Salary and Wages	Other
1963	2.20	.40	1.43	.37	2.61	.27	1.64	.70
1964	2.21	.35	1.42	.44	2.70	.35	1.56	.79
1965	2.16	.39	1.39	.38	2.59	.37	1.45	.77
1966	2.26	.41	1.45	.40	2.45	.35	1.37	.73
1967	2.34	.41	1.50	.43	2.45	.34	1.39	.72
1968	2.35	.40	1.49	.46	2.40	.33	1.36	.71
1969	2.35	.40	1.49	.46	2.40	.33	1.40	.67
1970	2.32	.42	1.46	.44	2.21	.34	1.42	.45
1971	2.26	.41	1.41	.44	2.24	.31	1.39	.54
1972	2.21	.40	1.36	.45	2.31	.28	1.41	.62
1973	2.25	.39	1.40	.46	2.48	.33	1.57	.58
Averages								
1963-66	2.21	.39	1.42	.40	2.58	.34	1.49	.75
1968-73	2.28	.40	1.42	.46	2.35	.32	1.44	.59
Difference	.07	.01	.00	.06	-.23	-.02	-.05	-.16

1 Excludes provision for loan losses.

Source Same as Table 2-4.

E. Asset/Capital Ratios

Earlier, it was remarked that trust and loan corporations were restricted in assets per dollar of working (unimpaired) capital while chartered banks were not regulated in size. The effect of limited asset/capital ratios is to reduce the volume of assets accepted, thereby possibly lowering profitability as measured by the rate of return to capital. From Table 2-11, it is seen that the asset/capital ratios of trust and loan corporations were only 79 per cent of the level of those of the Canadian banks, during the 1968-73 period. If one increased the asset/capital ratio to the level of the chartered banks and allowed for a rise in the deposit cost with no adjustment for additional expenditure to service new deposits (to be subtracted from before tax profits), but retained the same amount of assets, the average 1968-73 before tax profit rate of trust and loan companies would be augmented by 3.5 percentage points. The new before tax rate of return to capital for trust and loan corporations of 22.2 per cent would still be 2.0 per cent lower than for the Canadian chartered banks.

V. Conclusion

The chartered banks earned higher after tax rates of return to capital than those earned by the trust and loan corporations after 1967. The difference in profitability of the two industries was associated with the following:

1) There was no relationship between asset size and the after tax rates of return to capital earned by individual firms in both industries.
2) More new firms entered into the trust and loan industry than into the banking industry despite the fact that the latter had experienced higher after tax profit rates.

Table 2-11

Asset/Capital Ratios for Canadian Banks and Trust and Loan Corporations, for the Years 1963 to 1973

Year	Canadian Banks Consolidated	Trust and Loan Corporations
1963	14.55	10.51
1964	14.90	11.28
1965	15.21	11.82
1966	16.18	12.47
1967	16.88	13.86
1968	17.76	13.25
1969	18.92	14.07
1970	19.78	15.36
1971	20.57	16.73
1972	21.38	17.30
1973	22.97	18.83
Averages		
1963-66	15.24	11.62
1968-73	20.48	16.14

Source The Canada Gazette; and Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

3) Loan yield spreads earned by the chartered banks, on a consolidated basis, were higher than those earned by trust and loan corporations. The only yield spread to increase since 1967 was that earned on domestic currency loans held by the chartered banks.

4) Profits from foreign activity was not a major source of profitability of the chartered banks.

5) Banks experienced a small increase in noninterest expense per dollar of assets while trust and loan noninterest expense per dollar of assets had declined.

6) Higher asset/capital ratios of the chartered banks did not explain fully the difference in before tax profit rates earned by the banks and the trust and loan corporations.

CHAPTER 3

A COMPARISON OF BANKING AND TRUST AND LOAN CORPORATIONS WITH OTHER INDUSTRIES IN THE CANADIAN ECONOMY

It was suggested that Canadian chartered banks were more profitable than trust and loan corporations in Chapter 2. However the data were not sufficient to determine excess profits in Canadian banking, unless it was demonstrated that the chartered banks earned higher rates of return to shareholders' capital than those earned in other Canadian industries. After all, no excess profits were earned,if capital flowed freely from one sector to another causing risk-adjusted rates of return to banking shareholders' capital to be equal to those of other industries.

This chapter compares the profitability of Canadian chartered banks and trust and loan corporations with market-oriented industrial sectors. The first section outlines the methodology employed in calculating nonfinancial rates of return to capital. In the second section, after tax profit rates, before tax profit rates,and corporate income tax rates are presented for banking, trust and loan wholesale trade, retail trade, manufacturing, textile, food and beverage,and transportation corporations.

I. Methodology

The calculation of the nonfinancial sectors' rates of return to capital was based upon quarterly data presented in Statistic Canada's Industrial Corporations. This source provided a consistent series

of figures from 1962 to 1971. In 1972, the 1971 data were amended to incorporate changes in industrial structure. Since rates of return to capital were estimated by averaging the fourth quarter shareholders' equity of two consecutive years, the 1972 and 1973 rates of return to capital were derived from the new data compiled by Statistics Canada. However it was expected that, in the aggregate, the rate of return to capital did not diverge significantly from that calculated from the old series.

The other source of data for corporate financial statements of assets, liabilities, income, and expenses was Corporation Financial Statistics, also published by Statistics Canada. Although this publication provided data taken from annual accounting statements of corporations and entailed a more detailed classification of industries, Corporate Financial Statistics was reliable only for the short period from 1966 to 1971. The companion to Corporate Financial Statistics, Corporate Taxation Statistics, reported taxable income, not book profit, for the years earlier than 1966. In definition, taxable income varied from book profit in that i) the deduction of book depletion and depreciation was lower in magnitude from that allowed for tax purposes; ii) capital gains and losses, and nontaxable dividends, were excluded from taxable income; and iii) prior years' losses were deductible from profit for tax purposes. Other serious limitations in the scope of Corporation Financial Statistics were the following:

1) in 1970, the sample was expanded which affected principally the consistency of the shareholders' equity series,

2) with the use of unconsolidated reports, some of the dividends between firms were double counted, leading to an upward bias in rates of return to capital; and

3) 1971 was the latest year available.

Many of the above problems were avoided in Industrial Corporations with quarterly corporate financial statistics. The series was based on a survey of 800 corporations on a consolidated basis. The sample size included all firms with at least $5 million in assets and a selection of small firms. Only "major groups" industries, as defined under the Standard Industrial Classification, were available: three mining, fifteen manufacturing and seven other.

The sectors selected to compare profit rates with the banks and trust and loan corporations were all manufacturing, textile, food and beverage, transportation, wholesale trade,and retail trade. The objective was to investigate market-oriented industries but each was individually characterized by different market conditions with respect to structural barriers to entry. Textile industries were protected by tariff policy although some reduction of tariffs occurred in the late 1960's. The food and beverage industry was primarily composed of oligopolistic firms. All manufacturing was a pot pourri of large, small, vertically integrated, single, competitive and monopolistic establishments. Transportation included government-regulated firms (pipelines, airlines, ships, railways, trucks, buses, and taxicabs) that were able to assume less risk where, in some cases, rates of return were "guaranteed" by the public agencies. Wholesale and retail trade were composed of numerous firms of small size. In the fourth quarter of 1973, the above selected sectors accounted for 47.8 per cent of total assets of all industrial corporations surveyed by Statistics Canada.

The industrial corporation data excluded the following: foreign subsidiaries and branches of Canadian corporations; most co-operatives; nonprofit companies; personal corporations; and government business enterprises including Crown corporations. Excluding public corporations,when measuring rates of return to shareholders' capital,was advantageous. Neglecting foreign subsidiaries and branches owned by Canadian corporations, however, was inconsistent with the methodology employed to calculate rates of return to capital for those banks that had international operations. From Chapter 2, it was suggested that the rate of return to banking capital was underestimated since the profit rate on foreign activity was less than the profit rate on domestic capital. However, the implicit assumption involved in this chapter for all sectors was that the rate of return to capital was the same wherever capital was invested.

Industrial corporation data included income and capital belonging to another source besides the "major group" industry. For example, some vertically-integrated firms, such as petroleum companies, participated in production, manufacturing, and distribution activities but all the revenue, expenses, assets and liabilities of the firms were included in manufacturing only. Rates of return to capital of manufacturing firms were understated slightly when manufacturing activity was less profitable than production and distribution.

The realized rates of return to capital in each of the sectors were computed on the same basis as for chartered banks and trust and loan corporations (see the second section of Chapter 2). After tax profits for nonfinancial firms were defined as the difference

between revenue and expenses, and gains or losses realized on the sale of securities and fixed assets, less corporate income taxes.

To obtain capital figures, the fourth-quarter figures for the present and the preceding years' shareholders' equity were averaged. Shareholders' equity was defined as equity, reserves and retained earnings. It was not possible to adjust capital figures for items like goodwill, mergers, reorganizations, and special dividends to parent companies, since Statistics Canada was not able to provide the data as found in company reports. For new issues of equity stock, it was assumed that changes in paid-up capital and the premium earned by selling shares, occurred continuously throughout the year with the mean new issue date being June 30. Therefore, $B = \frac{1}{2}$. The formula for capital was:

$$\tfrac{1}{2}\,(C_{t+1} + C_t - NI) + BNI = \tfrac{1}{2}(C_{t+1} + C_t)$$

where C_{t+1} = Shareholders' equity: present year

C_t = Shareholders' equity: prior year

NI = New Issues

B = Portion of Year New Issue was in Effect

This methodology was consistent with that used for trust and loan corporations and chartered banks when no issue date was known ($B = \frac{1}{2}$). With these profit and capital figures computed, geometric averages were calculated for each sector for pre- and post-1967 periods.

II. Presentation of Results

A. After Tax Rates of Return to Capital

The after tax rates of return to capital earned by Canadian bank shareholders were generally lower than those of other sectors

Table 3-1

After Tax Realized Rates of Return to Average Shareholders' Equity
by Selected Sectors for the Years 1963 to 1973

(in percentages)

Sector	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Chartered Banks	6.3	7.4	6.5	9.5	10.6	14.2	11.9	10.4	11.4	14.1	15.1
Trust and Loan Corp.	8.2	9.7	9.7	10.0	10.1	9.6	8.0	7.6	12.4	14.1	13.6
All Manufacturing	10.4	11.3	11.3	12.3	9.4	10.1	10.4	7.5	9.8	11.1	14.6
Food and Beverage	10.5	11.6	12.2	11.7	11.0	11.2	12.5	10.8	11.2	11.8	14.0
Textile	12.8	12.6	12.0	9.7	7.4	7.6	8.3	4.7	7.9	6.8	12.1
Transportation	6.9	9.0	10.6	8.7	7.2	7.4	6.9	7.0	8.5	9.7	10.8
Wholesale Trade	8.7	11.2	14.6	13.5	11.5	11.8	10.7	8.7	9.6	13.6	15.2
Retail Trade	10.2	9.8	11.4	10.6	10.5	10.3	8.4	7.2	9.2	10.2	10.2

Source Annual Reports of seven largest banks; Report of the Registrar of Trust and Loan Corporations for the Province of Ontario; Statistics Canada, Industrial Corporations, 61-003.

before the 1967 Bank Act became effective. As shown in Tables 3-1 and 3-2, the chartered banks earned an average after tax rate of return to capital of 7.4 per cent for the 1963-66 period that was

Table 3-2

Average Geometric Rates of Return to Shareholders' Equity for the 1963-66 and 1968-73 Periods, by Selected Sectors

(in percentages)

Sector	Average After Tax Rate of Return	
	1963-66	1968-73
Chartered Banks	7.4	12.8
Trust and Loan Corp.	9.3	10.9
All Manufacturing	11.4	10.9
Food and Beverage	11.5	11.9
Textile	11.8	7.8
Transportation	8.7	8.4
Wholesale Trade	11.9	11.6
Retail Trade	10.5	9.2

Source Annual Reports of seven largest banks; Report of the Registrar of Loan and Trust Corporations for the Province of Ontario; Statistics Canada, Industrial Corporations, Cat. No. 61-003.

considerably lower than those earned by other market-oriented sectors. After the Bank Act was amended in 1967, the after tax profit rate earned by Canadian bank shareholders increased substantially to an average of 12.8 per cent for the period from 1968 to 1973. Canadian chartered banks also earned an average after tax rate of return to capital that was 2.2 percentage points greater than the average profit rate earned by all market-oriented sectors after 1967.

The increase in profitability of Canadian chartered banks was attributed to a number of factors that were listed in Chapters 1 and 2. These factors were: i) the removal of the 6 per cent ceiling on interest rates charged on loans, ii) the reduced effective cash reserve ratio, iii) the increased holdings of residential mortgages, and iv) the rapid growth in volume of loans due to an expansionary monetary policy. As a result of the above changes, one would expect that the after tax rate of return to capital for chartered banks would rise to the average profit rate earned by all market-oriented industries (10.6 per cent). On the other hand, one would not expect that after tax rate of return to capital earned by bank shareholders would be greater than that earned by other sectors,if there were no barriers to the entry of new capital into banking activities.

It is noteworthy that the trust and loan corporations after 1967 earned an average after tax rate of return to capital of 10.9 per cent which was 1.9 percentage points lower than that earned by the chartered banks. However the trust and loan corporations' after tax profit rate was 10.3 percentage points above the average after tax rate of return earned by all the market-oriented sectors. The relative ease of entry of new firms into the trust and loan industry (see Table 2-3) can be related to the fact that the after tax rate of return to capital was approximately equivalent to the average after tax profit rate of all market-oriented sectors.

After tax profit rates earned by bank shareholders might have been higher after 1967 than those earned by shareholders of all other sectors, if banking had been considered a riskier industry. From the analysis of stock market returns that was undertaken by the

Economic Council of Canada, there is evidence that bank shareholders faced no more risk than did shareholders of all industries.[1] Thus the difference between the after tax rates of return to capital for Canadian banks and the profit rates of all other market-oriented sectors for the 1968-73 period was not due to banking being riskier than all other sectors.

B. Before Tax Rates of Return to Capital

The before tax rates of return to capital earned by the chartered banks, as presented in Tables 3-3 and 3-4, indicated that both the shareholders and the government benefited substantially from excess before tax profits after 1967. Canadian banks earned a before tax profit rate that was 2.6 percentage points lower than the average for all market-oriented sectors for the period 1963 to 1966 but was 6.6 percentage points higher than the average for all market-oriented sectors after 1967. The marked improvement in Canadian bank profitability after the 1967 Bank Act became effective led to the before tax profit rates being,in all years, higher than those earned by all other sectors.

The before tax profit rates of Canadian banks were considerably higher than those earned by other sectors while the after tax profit rates earned by Canadian bank shareholders were less significantly greater than those earned by shareholders of other sectors. The above is explained by comparing the higher corporate income tax rate (see Table 3-4), as applied to book profits of Canadian banks, the rate applied to other sectors' profits. Canadian banks paid taxes

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1 Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions, Appendix A, 1975.

Table 3-3

Before Tax Realized Rates of Return to
Average Shareholders' Equity by
Selected Sectors for the Years 1963 to 1973

(in percentages)

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Chartered Banks	12.1	13.4	12.2	15.9	17.2	21.4	24.1	23.4	23.6	26.3	27.6
Trust and Loan Corp.	14.3	16.5	15.5	15.3	15.6	15.3	13.7	12.9	22.5	24.7	24.5
All Manufacturing	17.2	18.5	18.7	19.3	15.5	16.7	17.4	12.6	16.0	18.1	23.7
Food and Beverages	18.2	19.5	20.7	19.5	19.0	19.7	21.6	19.0	18.8	19.2	23.5
Textile	20.6	19.6	17.7	13.8	10.1	11.9	12.4	7.9	12.3	11.7	18.3
Transportation	10.8	13.6	15.4	13.4	11.4	11.8	10.8	11.5	12.9	14.3	16.2
Wholesale Trade	14.0	17.4	21.3	20.4	17.8	17.9	16.7	14.5	15.5	21.0	23.8
Retail Trade	16.4	16.0	18.0	16.3	16.4	16.0	14.2	12.3	14.7	16.5	16.4

Source Annual Reports of seven largest banks; Report of the Registrar of Loan and Trust Corporations for the Province of Ontario; Statistics Canada, Industrial Corporations, 61-003.

at a rate approximately 4.7, 8.4, 12.6, 11.4, and 9.1 percentage points greater than that applied to trust and loan corporations, manufacturing, transportation, wholesale trade,and retail trade, respectively.

There were specific corporate income tax laws that had a varying impact on after tax book profitability earned by each industry. First, certain tax deductions reduced substantially the amount of taxable business income. Banks were permitted before 1968

Table 3-4

Average Geometric Before Tax Rates of Return to Shareholders' Equity and the Effective Tax Rates on Book Profits for the 1963-66 and 1968-73 Periods, by Selected Sectors

(in percentages)

Sector	1963-1966		1968-1973	
	Average Before Tax Rate of Return to Capital	Average Effective Tax Rate	Average Before Tax Rate of Return to Capital	Average Effective Tax Rate
Chartered Banks	13.3	43.8	24.4	47.6
Trust and Loan Corp.	15.4	38.6	18.7	42.9
All Manufacturing	18.4	38.4	17.4	39.2
Food and Beverage	19.5	40.8	20.3	41.3
Textile	17.9	32.6	12.5	37.1
Transportation	13.3	33.5	12.9	35.0
Wholesale Trade	18.2	34.2	18.2	36.2
Retail Trade	16.7	37.1	15.0	38.5

Source Annual Report of seven largest banks; Report of the Registrar for Loan and Trust Corporations for the Province of Ontario; Statistics Canada, Industrial Corporations, Cat. No. 61-003.

to deduct transfers to a contingency reserve that was no more than 3 per cent of eligible assets. After 1968 the contingency reserve was reduced to 1½ per cent of eligible assets with a ten-year transition period in order to enable the contingency reserve to be reduced by .15 per cent of eligible assets each year. The trust and loan corporations were allowed the same deduction except that contingency reserves were defined as a percentage of mortgages. Manufacturing firms (petroleum and mining vertically integrated companies), however, were able to deduct a depletion allowance, comprised of 1/3 of production profits before 1971 and a less liberal depletion allowance that was equal to exploration and development expenditure after 1971. Also, nonfinancial firms, in particular transportation and manufacturing, deducted from taxable income a capital cost allowance based on various formulae applied to different types of property and machinery. In 1972 capital cost allowances were increased by permitting a two-year writeoff (50 per cent allowance per year on a straight-line basis) for production machinery.

Second, capital gains or losses realized by selling property and other assets were excluded from the taxable income of nonfinancial firms prior to 1971. After 1971, one-half of the realized capital gains or losses was included in taxable income. Trust and loan corporations and chartered banks included all capital gains or losses realized by trading investment securities. One-half of capital gains or losses from selling nonrecurring items was added to taxable income after 1971, and excluded from taxable income previous to 1971.

Third, effective corporate income tax rates were lower for some sectors due to the application of the small business tax. Before 1971, a corporate income tax rate of 22 per cent was applied to the first $35,000 of taxable income and 50 per cent to the excess amount. After 1971 a corporate income tax rate of 25 per cent was levied on the first $50,000 of taxable income and 45 per cent on the excess income of Canadian corporations that earned no more than $100,000 in taxable income.[2] Sectors such as retail trade and wholesale trade, composed primarily of firms of small size, experienced lower effective tax rates than sectors composed of firms of large size, such as food and beverage, and banking.

The before tax profit rates earned by Canadian banks emphasized the profitable opportunities that were available to firms wishing to enter banking activities. New entrants did not need to pay corporate income taxes at the effective rate that applied to Canadian chartered banks. Lower effective tax rates levied on a new entrant's book profit would have permitted shareholders to earn an after tax profit rate higher than the 12.8 per cent that was earned by chartered banks.

III. Conclusion

Canadian chartered banks earned higher after tax and higher before tax rates of return to capital, in comparison to other market-oriented sectors. Firms operating in other sectors might have been able to participate in profitable banking markets.

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2 The corporate tax rates for manufacturing corporations were reduced from 45 to 40 per cent and 25 to 20 per cent in 1972.

The entry of firms into banking activities might have promoted increased competition to sell services to banking consumers and the difference in profit rates earned by Canadian banks over those earned by other sectors should have been reduced.

Book rates of return to capital are reported in this chapter. However book profit rates will be affected, if calculations are based on data derived from inflation accounting. Appendix D discusses the details of inflation accounting. It is suggested that the difference between Canadian bank profit rates and those of other sectors are relatively no less under inflation accounting as found under the book accounting in this chapter.

CHAPTER 4

THE PROFITABILITY OF THE CANADIAN AND UNITED STATES BANKING SYSTEMS

Some other studies have suggested that the Canadian banks provided lower cost services to banking consumers than those supplied by commercial banks in the United States.[1] However, this empirical documentation is introduced without sufficient acknowledgment of the differences in regulation and in the methodology of compiling data between the two systems. This deficiency has generated conclusions that suggest that a more efficient banking structure exists in Canada. In this chapter the measurement of efficiency used by other studies is discussed, as well as the profitability of the banks in each country.

The objective of this chapter is to explain the differences in rates of return to banking capital earned by Canadian and U.S. banks. To do this, first, the regulatory environments of Canadian and U.S. banks are contrasted. Second, the methodology employed in assembling data that appear in various publications is outlined. Third, rates of return to capital are analysed for both Canadian and U.S. banks and these are compared to all manufacturing profit rates in each country. Fourth, factors affecting profitability are investigated: namely, yield spreads, noninterest expenses, the asset and liability portfolio mix, and asset/capital ratios.

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1 For example, the Canadian Bankers' Association quoted U.S. loan yield spreads greater than Canadian loan yield spreads. Nevertheless, this chapter will outline the reasons for this comparison being fallacious. See, "Government Place in Bank Ownership: The Industry View," CBA Bulletin, 17, February 1974, p. 5.

I. Comparability of the U.S. and Canadian Banking Systems

The structures of Canadian and U.S. banking are different in character as a consequence of the regulatory approaches taken by each country. In Canada branching was unrestricted in number and in geographical location, but the entry of new firms was restrained by regulation. The result was the formation of an industry composed of ten firms (five national, dominant banks), each having numerous branches of various sizes. In the United States, the concept of protecting the public from concentration of economic power in banking was fundamental in banning branching across state boundaries or in confining the number of branches to a limited few. Entry was not impeded as much as in Canada, although granting of charters was dependent upon the policy of state and federal regulatory authorities.[2] The U.S. banking system was composed of large and small, branched and unit firms. The larger banks, as those found in New York City and Chicago, had served as correspondents for small banks located in urban and rural areas.

The large number of banks in the United States does not necessarily indicate a more competitive industry. Regulation, causing specialization by geography or by function, can create local monopolies. Hence, risk-adjusted profit rates of U.S. banks may be higher than those earned by other industrial sectors if competitors are prevented from entry into banking markets. If regulation encourages the development of an economically inefficient system, then U.S. banking is not a benchmark of optimal performance. Thus the excess profits earned by Canadian banks are understated if the U.S. banks are found to be less profitable than the Canadian banks. Notwithstanding, the

2 The growth rate of banks formed per year never exceeded 2 per cent except during the years 1962 to 1965, when James Saxon was the Comptroller of the Currency. See Adrian W. Throop, "Capital Investment and Entry in Commercial Banking," Journal of Money Credit and Banking, 7, May 1975, p. 202.

analysis of Canadian banking in light of U.S. market behaviour points to the attributes or inadequacies of the banking structure of Canada.

A. Branching

The regulation of branching in the United States was based on two principles as appeared in the Glass-Steagall Act of 1933. First, state boundaries generally acted as geographical limits, and, second, both state and national banks had to comply to state legislation. Also, the Bank Holding Act of 1956 specified that holding companies may not merge with a resident corporation in another state without the express approval of the legislature of the subsidiary's state. Moreover, no state law has allowed the entry of nonresident holding corporations.[3] In 1973, fifteen states prohibited branching; sixteen confined branching to local areas; eleven permitted the formation of multiple bank holding companies; and twelve states placed no impediments on statewide branching or multiple holding companies.[4] Notwithstanding, there was a marked increase in branching in the United States. In 1960, 13,986 head offices and 10,969 branches existed, but in 1973 head offices numbered 14,653 and branches more than doubled at 27,946.

The trend in population per branch in the United States, due to the relaxation of branching laws, is demonstrated in Table 4-1. Prohibition of interest paid on demand deposits and Regulation Q interest rate ceilings on retail time deposits have

3 C. H. Golembe, "The Organization of Modern Banking," Changing World of Banking, eds., H. V. Prachnow and H. V. Prachnow, Jr. (Harper and Row: New York, N.Y., 1974), p. 22.

4 D. Baker, "Chartered Banking and Concentration," Policies For a More Competitive Financial System, Federal Reserve Bank of Boston, Conference Series No. 8, 1973, pp. 25-26.

probably assisted in the decline in population per branch as banks competed in reducing transport and time costs of consumers rather than increasing deposit rates.[5] It is noteworthy that population per branch in the United States decreased 20.0 per cent, but in Canada only 5.6 per cent from 1968 to 1973. In Canada, the reduction in population per branch had occurred with greater rivalry among chartered banks after the 1967 Bank Act amendments became effective, and with higher income levels of consumers. Rivalry among Canadian banks took the form of either increasing interest rates paid for deposit and lowering charges on loans, or reducing transport and time costs of banking consumers. It cannot be claimed with any confidence that Canadian banks are "overbranched" since U.S. banks may be "underbranched" because of regulation.

The restriction on branching in the United States may cause banks in local areas to be protected from competition provided by new entrants. The profit rates earned by U.S. banks would be higher to the degree that branching laws in the United States were effective in restraining entry of new firms by branching. Thus one would expect Canadian bank profit rates to be lower than those earned by U.S. banks if there were no barriers to entry of new firms into Canadian banking markets.

B. Capital

Capital has a dual role in banking: the financing of assets needed for the production of services, and the assurance

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5 Lawrence J. White had found that branching increased if the number of firms in a metropolitan area was less concentrated in terms of holding deposit liabilities. See "Price Regulation and Quality Rivalry in a Profit-Maximizing Model: The Case of Bank Branching," Journal of Money, Credit and Banking, 8, 1976, pp. 97-105.

of stability in banking. With the establishment of government deposit insurance in 1933 for U.S. banks and in 1967 for Canadian banks, the second role of capital has been moderated. Nevertheless, regulatory authorities in the United States have restricted the growth of bank assets unless there was a commensurate increase in shareholders' equity.[6] Thus U.S. banks, unable to hold additional assets and deposits that would have increased profits earned by bank shareholders, have experienced a lower rate of return to capital due to asset/capital ratio restrictions.

Table 4-1

Banking Density in the United States and Canada for the Years 1968 to 1973

	Population per Branch	
Year	United States	Canada
1968	5,918	3,517
1969	5,764	3,521
1970	5,548	3,478
1971	5,371	3,421
1972	5,156	3,380
1973	4,933	3,329

Source Canadian Bankers' Association, Fact Book; Federal Reserve, Board of Governors Bulletin; United Nations, Demographic Yearbook, 1972, Table 4, p. 173; United Nations, Population and Vital Statistics Report, April 1974, p. 96.

C. Deposit and Loan Interest Rate Ceilings

Prior to the 1967 Bank Act amendments, a 6 per cent ceiling was imposed on interest rates charged on loans in Canada. The actual interest rate rose above 6 per cent in some of these years, if service charges for personal loans were included. After 1967, the loan rate ceiling was repealed and banks were freed to

6 See American Bankers' Association, The Commercial Banking Industry, Prentice Hall, Inc., 1962, p. 322.

compete with other financial intermediaries for loans and deposits. After 1967, however, an interest rate ceiling on Canadian dollar deposits was established at times by an agreement of the Government of Canada with the chartered banks. The effectiveness of the ceiling was somewhat curtailed by mechanisms such as swap deposits that enabled large depositors to convert Canadian currency funds to U.S. dollar deposits.

Commercial banks in the United States operated under different conditions. Regulation Q deposit rate ceilings listed in Table 4-2, were applied during the 1963-73 period. Retail deposit business was especially subject to regulation as interest rate ceilings on deposits of more than $100,000 in size were withdrawn after 1970. Furthermore, explicit interest paid for demand deposits was prohibited by the Bank Act of 1933. Although Canadian banks' demand deposits were noninterest-bearing (except for provincial and municipal demand deposits, and recently large corporate deposits), no legal restraint had been placed on the payment of interest.

The principle behind the U.S. regulation of interest rates was the prevention of bankruptcy of smaller financial institutions due to "unsound" business practices.[7] When interest rate ceilings became effective, depositors shifted funds from the commercial bank to nonbank markets. While the cost of funds for U.S. commercial banks was stabilized, the source of funds was not secured. In the 1968-70 period, Fair and Jaffee estimated

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7 C. T. Arlt, "The Changing Character of Bank Deposits," The Changing World of Banking, note 3, p. 56.

that interest rates payable on bank savings and term deposits would have surpassed those permitted by Regulation Q if there had been no application of interest rate ceilings.[8]

Table 4-2

Maximum Interest Rates Payable on Time and Savings Deposits in the United States for Various Dates after 1963

(Per cent per annum)

Type of Deposit	July 17 1963	Nov.24 1964	Dec.6 1965	July 20 1966	Sept.26 1966	April 19 1968	Jan.21 1970	July 1 1973
Savings Deposits	3½-4	4	4	4	4	4	4½	5
Multiple Maturity								
30-89 Days	1	4	5½	4	4	4	4½	5
90 days to 1 year	4	4½	5½	5	5	5	5	5½
1 year to 2 years	4	4½	5½	5	5	5	5½	6
2 years and over	4	4½	5½	5	5	5	5¾	6½
Single Maturity								
Less than $100,000								
30 days to 89 days	1	4	5½	5½	5	5	5	5½
90 days to 1 year	4	4½	5½	5½	5	5	5	5½
1 year to 2 years	4	4½	5½	5½	5	5	5½	6
2 years and over	4	4½	5½	5½	5	5	5¾	6½ [3]
$100,000 or more								
30-59 days	1	4	5½	5½	5½	5½	6½ [1]	--
60 -89 days	1	4	5½	5½	5½	5¾	6½ [1]	--
90-179 days	4	4	5½	5½	5½	6	6¾ [2]	--
180 days to 1 year	4	4	5½	5½	5½	6½	7 [2]	--
1 year or more	4	4	5½	5½	5½	6½	7½ [2]	--

1. Ceiling suspended June 24, 1970.

2 Ceiling suspended May 16, 1973.

3 From July 1 to October 1973, there was no ceiling on certificates of more than 4 years' maturity with a minimum denomination of $1,000. Maximum allowable issue by a bank was 5.0 per cent of total time and savings deposit. As of July 1, 1973, on 2-2½ year certificates, the maximum interest rate was 6 per cent and 6½ per cent was the interest rate ceiling on certificates maturing in 2½ years or more.

Source Federal Reserve, Board of Governors Bulletin.

8 R. C. Fair and D. M. Jaffee, "An Empirical Study of Hunt Commission Report Proposals for Mortgage and Housing Markets," Policies for a More Competitive Financial System, note 4, p. 112.

To avoid the constraint of Regulation Q and the disallowance of interest paid on demand deposits, U.S. commercial banks employed various methods of attracting deposits. Confronted with the problem of adequate funding, the banks created new sources of funds, most of which were not subject to Regulation Q. First, one source of funds available to the banks came from the loans advanced by Federal Reserve banks. The share of these borrowings to total liabilities had declined since the 1920s because of the development of new money markets and the reluctance of Federal Reserve regulators to lend longer-term funds, particularly in times of rising interest rates.[9] Second, the Federal Funds market evolved and furnished opportunities for banks to sell their excess reserves to other banks needing additional funds. The Federal Funds were (1) short-term (often loaned only overnight); (2) unregulated and interest-bearing; and (3) exchangeable for securities or loans (under resale purchase agreements). Third, the Eurodollar market, largely created as a result of efforts to minimize the impact of Regulation Q and reserve requirements, was composed of international banks' lending and borrowing activities that involved small yield margins. As mentioned for Canadian banks in Chapter 2, Section IV, the term structure of Eurodollar assets was longer than deposits, and the loan yield spread was approximately 1 per cent from 1963 to 1973.

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9 G. W. Woodworth, "Theories of Cyclical Liquidity Management," Money, Banking and Monetary Policy, eds. H. R. Williams and H. W. Woodenberg (Harper and Row: New York, N.Y., 1970), pp. 141-44.

Other methods were used to attract deposits by U.S. banks. For example, the use of "compensating" balances[10] (interest rates charged on loans were reduced, if demand deposits were held with the bank), free chequeing privileges, remission of service charges, and additional unpriced services packaged with demand deposits, were implicit interest payments payable for demand deposits.[11] Branching, where possible, allowed banks to reduce transport costs of consumers as a means of attracting deposits.

D. Taxation

In Chapter 3, the income taxation of Canadian chartered banks was demonstrated to be more burdensome in comparison to other sectors. U.S. commercial banks were also taxed at a lower effective rate than banks in Canada, because of tax advantages that the U.S. banking industry was able to obtain in the calculation of tax levies. The differences between the U.S. and Canadian taxation of bank income may be summarized below as follows --

(1) Tax Exempt Securities: In the United States, earnings on state and local debt were tax-exempt for the purchaser. The tax forgone by the federal government granted regional governments

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10 Compensating balances would not affect yield spreads since one expects that interest rate charges on loans would increase along with the cost of deposits. As a means of rationing credit, see D. G. Harris, "Credit Rationing at Commercial Banks," Journal of Money, Credit and Banking, 6, 1974, p.232.

11 R. J. Barro and A. M. Santomero,"Household Money Holdings and the Demand Deposit Rate," Journal of Money, Credit and Banking, 4, 1972, p. 400.

a less costly source of finance.[12] Thus, the before tax rate of return of U.S. banks was lower than would have been the case if taxed bonds were held. The option of holding tax-exempt securities was unavailable to banks in Canada as no such security existed in Canada.

(2) Transfers of Earnings to Nontaxable Reserve Funds: Banks in the United States, until 1965, were allowed either to deduct fully from taxable income all realized losses on loans, or to deduct the average loss experience of the previous 20 years. After 1965, U.S. banks were given the additional alternative of deducting transfers to a reserve for tax purposes that had a par value not greater than 2.4 per cent of outstanding loans. The par value of reserves for tax purposes was reduced to 1.8 per cent of loans in 1969. Prior to 1969, the Canadian banks were permitted to deduct more broadly defined asset losses from taxable income than that allowed for U.S. banks, based on a reserve with a par value of 3 per cent of eligible assets of more than .5 per cent of eligible assets each year. In 1969, the par value of reserves was lowered to 1.5 per cent of eligible assets with a ten-year transition period established to allow banks to reduce the par value of reserves for tax purposes to .15 percentage points each year. With the 1974 amendments of the Income Tax Act, the par value of reserves for banks was further reduced to 1 per cent

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12 This implied a marginal tax rate of 30 per cent on tax-exempt bonds. See E. J. Kane, "A Cross-Section Study of Tax Avoidance by Large Commercial Banks," forthcoming in Inflation, Trade and Taxes: Essays in Honour of Alice Bouneuf, eds. D. Belsey, E. Kane, P. Samuelson and R. Solow. Kane compared the yields of municipal and corporate bonds of the same quality to arrive at the marginal tax rate.

of eligible assets in excess of $1 billion. It is apparent that the nontaxable reserve fund provision was more favourable to Canadian banks than that allowed by U.S. tax authorities during most of the 1963-73 period, as the eligible assets' definition was broader for Canadian banks and the percentage applied for deduction was higher for most years than that permitted for U.S. banks.

(3) Taxation of Capital Gains and Losses on Market Securities: Prior to 1969, U.S. banks were allowed to reduce their taxes by fully deducting capital losses from ordinary income with an unlimited carry-over provision. Furthermore, capital gains were taxed at the special rate of 25 per cent, which was less than that on other profits. After the promulgation of the 1969 Tax Reform Act, however, long-term capital gains of U.S. banks no longer received special tax considerations and were treated as current income.[13] In Canada, all capital gains from trading securities were fully taxable and deductible with a general carry-over provision of losses applied to profits.[14] Capital gains arising from investment activity (fixed assets) were exempt from tax prior to 1971 and taxed at one-half the rate after 1971. The net effect of these legislative differences was higher tax rates for Canadian banks.

(4) General Tax Rules: The general tax rate applied to corporate taxable income in Canada was 50 per cent, reduced in 1971 by 1 percentage point each year to 46 per cent. Before 1971,

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13 L. S. Prussia, Jr., "Bank Investment Portfolio Management," The Changing World of Banking, note 3, p. 183.

14 Royal Commission on Taxation, Report, 4, Queen's Printer, Ottawa, p. 383.

a small business tax rate of 22 per cent was levied on income of less than $35,000, and after 1971, the rate imposed was 25 per cent on income up to $50,000, if the company had less than $100,000 income. In the United States, a tax rate of 22 per cent applied to the first $25,000 of income and the excess was taxed at a rate of 48 per cent. With numerous small banks in the United States, the small business tax had a greater impact on reducing the tax burden in the United States than in Canada.[15] Also a special deduction, a 7 per cent investment credit for property expense, was allowed for U.S. commercial banks (as well as other corporations), but no such deduction was incorporated in the Canadian tax system.

E. Reserve Ratios

Reserve ratios tended to reduce the amount of before tax profits earned by forcing banks to hold nonyielding or lower yielding assets than otherwise. In the United States, reserve ratios were applied to demand deposits net of items in transit, and time deposits during the 1963-73 period, according to size of bank and term of deposit. The legal reserve requirement for demand deposits was a minimum of 10 per cent and a maximum of 22 per cent for reserve city banks, 7 per cent and 14 per cent for other banks, and 3 per cent and 10 per cent for time deposits. The time deposit reserve ratio from 1963 to 1973 was actually greater than 6 per cent and usually less than 5 per cent, but

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15 E. J. Kane, "A Cross-Section Study of Tax Avoidance by Large Commercial Banks," note 12. Kane found that the small business tax deduction lowered the effective tax rate by 2 percentage points.

the demand deposit ratio fluctuated from 12 per cent to 18 per cent. Prior to October 16, 1959, no reserve ratio was levied on deposits booked at foreign branches. After that time a reserve ratio of 10 per cent until January 7, 1971, 20 per cent until June 21, 1973, and 8 per cent afterwards was applicable to foreign branch loans made to U.S. citizens, plus net liabilities above a specified base that were booked at domestic offices and owed to foreign branches (gradually the base was eliminated by April 1974).

Two reserve requirements existed in Canada during the same time span. First, a primary reserve ratio of 8 per cent on all Canadian currency deposits was in effect from 1963 to 1967. After the revisions to the Bank Act became effective in 1967, reserves held by chartered banks in cash or Bank of Canada noninterest-bearing notes or deposits were 12 per cent of demand deposits and 4 per cent of time and savings deposits. Second, secondary reserves, administered by applying a ratio of zero per cent to 12 per cent of Canadian dollar deposits, were composed of Treasury Bills, day-to-day loans, and any excess cash not held as primary reserves. Although secondary reserves were interest-bearing, the banks were compelled to hold assets of lower yield than those available as alternative investments (for example, personal loans and government bonds). Secondary reserve ratios were not legally binding until 1967, although banks were persuaded by the Bank of Canada to hold Treasury Bills in the earlier years.

F. Trust Business

Unlike Canadian chartered banks, U.S. commercial banks were permitted to administer trust funds. Member banks of the Federal Reserve reported that 3.2 per cent of total income in 1973 accrued from trust activity.[16] Rates of return to capital of U.S. banks engaged in trust activity were not necessarily higher than those earned by Canadian banks that conduct no trust business, since less shareholders' capital would have been needed if trust department profits had been excluded. From the data available on Canadian trust and loan corporations' rates of return to capital, and on the size of their trust business, higher profitability was not associated with substantial trust activity.

G. Computerization

During the 1955-56 period, utilization of computers in the U.S. banking industry increased the efficiency of "back-office" procedures: processing cheques, auditing and dividend disbursement.[17] Rapid development of computerization assisted the initiation of new services provided by the banks. These included the issuance of credit cards, movement towards an automated payment system, and data processing. Canadian banks employed computerization in the late 1950s primarily for "back-office" economies, but additional

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16 Federal Reserve Board of Governors, Bulletin, 60, June 1974.

17 R. Cooley and P. C. Overmire, "The Role of Automation and the Financial Payments System," The Changing World of Banking, note 3, p. 226.

expenses were incurred in the late 1960s particularly due to credit card operations. For the Canadian banks, depreciation of computers and payments to computer service bureaus rose from 7.3 per cent of property expenses in 1970 to 13.7 per cent in 1973.[18] Canadian banks might have realized less profits from a slower development of computerization than the U.S. banks during the 1967-73 period. Thus Canadian bank profit rates might have been higher if computerization in Canadian banks developed with the same speed as that for U.S. banks.

II. Methodology

The methodology used to calculate rates of return to capital and variables that contribute to profitability (assets, loans, securities, deposits, noninterest costs, yields on assets, and interest paid on deposits) for U.S. banks is based on that used for the Canadian chartered banks (see Chapter 2, Section II.). Also in Table 4-3, all the variables used in this chapter are listed. Furthermore, adjustments made to the data for Canadian chartered banks, all U.S. insured banks and New York City banks, are provided in Table 4-3. However, two pertinent comments are made here with regard to the data utilized in this chapter. First, the important accounting differences between U.S. and Canadian bank profits and shareholders' equity are stated. Second, the definition of domestic business is outlined for U.S. and Canadian banks.

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18 However, part of the increase in computer expenses relative to property costs may have resulted from an increased share of rents paid by tenants of bank property that were subtracted from total property expenses. Data were available in the report to the Inspector General of Banks under Schedule Q.

Table 4-3
Variables Employed in Comparing Canadian Chartered Banks, All U.S. Insured Banks and New York City Banks

Variable	Description	Adjustments Made to Data		
		Canadian Chartered Banks	All U.S. Insured Banks	New York City Banks
1. Profits	Total Revenue Less Expenses and Losses	Included all changes in the market value of securities except government bonds.	Interest expense on debentures estimated from dividends paid on preferred stock and added to expenses for the years earlier than 1963.	Interest expense on debentures estimated from dividends paid on preferred stock and added to expenses for the years earlier than 1969.
2. Shareholders' Capital	Paid-up equity, retained earnings, all reserves include those for losses on assets.		Debentures were estimated and excluded from capital data for the years earlier than 1969.	Debentures were estimated and and excluded from capital data for the years earlier than 1969.
3. Total Assets	a) Foreign and Domestic Total. All reported assets included except customers' acceptances guarantees and letters of credit.	Averaged end of years		Averaged end of years.[1]
	b) Domestic Only - All reported assets except customers' acceptances guarantees and letters of credit.	Averaged end of years	Averaged Jan. 1, June 30 and Dec. 31 totals.	
4. Loans	a) Foreign and Domestic Total - All loans and inter bank deposits.	Averaged end of years		Averaged end of years.[1] Included Federal Funds sold under resale purchase agreement
	b) Domestic Only - All loans and interbank deposits	Averaged end of years	Averaged Jan. 1, June 30 and Dec. 31 totals. Included Federal Funds sold under resale purchase agreements. Excluded interbank demand deposits but included interbank short term and long-term loans.	

Cont.....

Table 4-3
Variables Employed in Comparing Canadian Chartered Banks, U.S. Insured Banks and New York City Banks (cont.)

Variable	Description	Adjustments Made to Data		
		Canadian Chartered Banks	All U.S. Insured Banks	New York City Banks
5. Securities	a) Foreign and Domestic Total Treasury bills, government bonds, corporate bonds and stocks.	Averaged end of Years		Averaged end of years.[1]
	b) Domestic only - Treasury bills, government bonds, corporate bonds and stocks.	Averaged end of years.	Averaged Jan. 1, June 30 and Dec. 31 totals. Excluded trading account securities (not available for all years - 4.5% of total securities in 1973).	
6. Deposits	a) Foreign and Domestic Total Demand and term deposits, debentures and borrowed funds.	Averaged end of years		Averaged end of years.[1] Included Federal Funds purchased under resale purchase agreements.
	b) Domestic only - Demand and term deposits, debentures and borrowed funds.	Averaged end of years	Averaged Jan. 1, June 30 and Dec. 31 totals. Estimated debentures for the years earlier than 1969. Included Federal Funds purchased under resale purchase agreements.	
7. Loan Yield	Revenue raised by interest and discounts divided by average loan assets	Included personal loan charges	Included revenue from Federal Funds sold under resale purchase agreements.	Included revenue from Federal Funds sold under resale purchase agreements.[1]
8. Security Yield	Interest, dividends and capital gains (losses) divided by average securities.			
9. Deposit Rate	Interest paid dividend by average deposits		Included interest that was estimated for debentures. Included cost from Federal Funds purchased under resale purchase agreements.	Included cost from Federal Funds purchased under resale purchase agreements.

Cont....

Table 4-3
Variables Employed in Comparing Canadian Chartered Banks, U.S. Insured Banks and New York City Banks (cont.)

Variable	Description	Adjustments Made to Data		
		Canadian Chartered Banks	All U.S. Insured Banks	New York City Banks
10. Property Expense (Net Occupancy Expense)	Depreciation, computer costs rents and maintenance, minus rents paid by tenants and subtenants of bank-owned property.			
11. Salaries and Wages	Wages, salaries and staff benefits. Director salaries excluded.			

1. Eight New York City Banks were included in the sample for the years 1971, 1972 and 1973. The banks were Bank of New York, Chemical New York Corporation, Bankers Trust Company (New York), Manufacturers Hanover Trust Company, National Bank of North America, Citibank Chase Manhattan Bank, and Charter Bank. Manufacturers Hanover Trust Company was excluded from 1971 data.

Source Federal Reserve, Board of Governors Bulletin; Moody's Bank and Finance Munval; The Canada Gazette; Reports submitted to the Inspector General of Banks under Schedule Q; Bank of Canada Review.

Rates of return to capital calculations for the U.S. banks are based on Federal Reserve, Board of Governors Bulletin statistics for profits and shareholders' capital. Profits and reserves for retained earnings (a part of shareholders' capital) of the U.S. banks during the 1969-73 period include all profits accruing from domestic branches, foreign agencies and foreign branches, and dividends from and retained earnings held in foreign-owned subsidiaries.[19] Prior to 1969, profits and reserves for retained earnings included all profits earned from domestic and foreign business except for retained earnings held in foreign-owned subsidiaries. Canadian bank profits and reserves for retained earnings include all profits from domestic and foreign activity during the 1963-73 period. If retained earnings of foreign-owned subsidiaries were added to U.S. bank profits and shareholders' capital figures for years earlier than 1969, then the U.S. bank profit rates could be increased, in relation to Canadian bank rates of return to capital. However, for all years (except 1968) after the Canadian Bank Act was amended in 1967, U.S. and Canadian profit rates are based on the same methodology.

In measuring consolidated (foreign and domestic) loan yields, security yields and deposit rates, a serious problem is encountered with data published in various sources. Assets, liabilities, revenue and expenses reported in the Federal Reserve Bulletin covered those booked at U.S. branches only. Foreign branch data of U.S. banks are not included in the statistics available in the Federal Reserve Bulletin. The only published consolidated (foreign and domestic business) data that is

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19 Letter received from T. A. Sidmen, Assistant Director, Board of Governors of the Federal Reserve System, July 8, 1975.

possible to obtain for U.S. banks is from individual bank balance sheets provided in Moody's Bank and Finance Manual. Since accounting practices often changed the basis for reported statistics in Moody's publication, a consistent series of figures is available only for the years 1971 to 1973. Thus, Canadian bank earnings on consolidated deposits are comparable with data from Moody's publication, but the years that are surveyed are limited in number.

It is appropriate, however, to compare Canadian bank domestic loan yields, security yields and deposit rates with U.S. bank data from the Federal Reserve Bulletin. Canadian domestic asset yields and deposit rates are calculated from data appearing in two sources: The Canada Gazette and the Schedule Q reports submitted to the Inspector General of Banks. The definition of domestic business of banks in Canada is based on Canadian currency assets, liabilities, revenue and expense data, while in the United States, domestic business is defined according to assets, liabilities, revenue and expense booked at U.S. branches.

The differences between the currency and booked definitions of domestic business for Canadian and U.S. banks, respectively, are not important in affecting comparisons made between Canadian and U.S. bank asset yields and deposit rates. The currency definition used in Canada differs from the booked definition in the United States in regard to three matters.

First, the U.S. booked definition, unlike the currency definition, includes foreign currency assets, liabilities, revenue and expenses booked at head offices in the United States for U.S. and foreign residents. However, reserve requirements apply primarily to domestic deposits and thus U.S. banks minimize foreign currency liabilities booked at domestic offices. For example, claims on foreigners payable in foreign currency but booked at domestic branches in the United States were only .1 per cent of total assets booked at U.S. domestic branches on December 31 of 1973.

Second, the booked definition as opposed to the currency definition, includes domestic currency assets and liabilities booked by U.S. bank foreign branches payable to U.S. and foreign residents. However, domestic currency assets booked by U.S. branches abroad were only .5 per cent of total assets booked at U.S. branches as of December 31, 1973. Furthermore, domestic currency assets and liabilities booked abroad reflected the prominent role of the U.S. dollar as a medium of exchange in the international money market. The Canadian dollar does not serve such a function.

A third difference between the booked and currency definitions is that U.S. banks' head offices book assets and liabilities for branches abroad. The amount of claims of the parent bank in the U.S. on foreign branches are small; claims on foreign branches were .2 per cent of total assets booked at domestic branches as of December 31, 1973.

In Section IV, several factors contributing to profitability (yield spreads, noninterest costs, asset and liability portfolio mixes and asset/capital ratios) are analysed. Due to the aforementioned problems with data, two comparisons are made: (1) consolidated data of Canadian banks with those of New York City banks, and (2) domestic data of Canadian banks with those of all U.S. insured banks.

III. Rates of Return to Capital

After tax and before tax rates of return to shareholders' capital of Canadian banks are compared with those earned by all U.S. insured banks and New York City banks. U.S. insured banks, which include most banks existing in the United States, are representative of the total U.S. banking system. New York City banks hold a substantial portion of total assets as foreign assets (foreign assets were 29.5 and 9.8 per cent of total assets for New York City banks and all U.S.insured banks, respectively, as of December 31, 1973). Thus a major part of profits accrue from foreign activity for New York City banks, compared to all U.S. insured banks, thereby indicating the importance of international business to the profitability of New York City banks. Evidence in Table 4-4 points to the ability of Canadian banks to increase profitability since 1967 with no similar occurrence in the United States. The annual after tax profit rate for Canadian banks rose 5.2 percentage points on average in the 1968-73 period, but only .8 percentage points for all U.S. insured banks and -1.0 percentage point for New York City banks. By examining the profit margins

for New York City banks, it was obvious that international activity was not a factor contributing to higher rates of return to capital. The New York City bank profit rate was 1.9 percentage points less than that earned by all U.S. insured banks for the 1968-73 period. This confirmed the conclusion of Chapter 2 that foreign business of Canadian banks was not a primary source of profitability, since yield spreads earned on foreign currency assets and liabilities had been small.

Table 4-4

The After Tax Rate of Return to Capital for Canadian and U.S. banks for the Years 1963 to 1973

(Per cent)

Year	Canadian Chartered Banks*	All U.S. Insured Banks	U.S. New York City	U.S. All Manufacturing
1963	6.9	9.9	10.1	10.3
1964	8.0	10.4	10.2	11.6
1965	7.9	10.5	10.8	13.0
1966	7.3	9.8	8.6	13.4
1967	10.0	11.1	10.6	11.7
1968	14.3	11.3	10.1	12.1
1969	10.1	12.0	8.0	11.5
1970	9.2	10.0	7.6	9.3
1971	14.4	10.3	8.4	9.7
1972	14.4	10.9	9.9	10.6
1973	13.9	11.2	10.2	11.2
Geometric Averages				
1963-66	7.5	10.1	10.0	12.0
1968-73	12.7	10.9	9.0	10.8

*Accrued rates of return to capital.

Source Schedule Q reports submitted to the Inspector General of Banks; The Canada Gazette; The Bank of Canada Review; Federal Reserve Board of Governors Bulletin; Federal Trade Commission "Quarterly Financial Report of Manufacturing Corporations."

One may note that the all-manufacturing average after tax rate of return to capital in the United States was only slightly below the after tax profit rate for all U.S. insured banks after 1967 (10.8 per cent and 10.9 per cent, respectively). On the other hand, it was found in Chapter 3, that the Canadian chartered banks earned after tax profit rates well above Canadian all-manufacturing corporations. This point is emphasized in Table 4-5 below, where the difference in after tax profit rates of banks and manufacturing companies in Canada was greater than in the United States after 1967.

Table 4-5

Difference Between After Tax Rates of Return of Banks and Manufacturing Corporations for the United States and Canada, for the Years 1963 to 1973

(Per cent)

Year	(1) Canadian Chartered Banks and Canadian Manufacturing	(2) All U.S. Insured Banks and U.S. Manufacturing	(3) Difference Between (1) and (2)
1963	-4.1	-0.4	-3.7
1964	-3.9	-1.2	-2.7
1965	-3.8	-2.5	-1.3
1966	-2.8	-3.6	-0.8
1967	1.2	-0.6	1.8
1968	4.1	-0.8	4.9
1969	1.5	0.5	1.0
1970	2.9	0.7	2.2
1971	1.6	0.6	1.0
1972	3.0	0.3	2.7
1973	.5	0.0	.5
Geometric Averages			
1963-66	-3.9	-1.9	-2.0
1968-73	1.8	0.1	1.7

Source Same as Table 4-4.

The before tax rates of return to capital permit one to measure the excess profits that are shared by both bank shareholders and the government. In Table 4-5, the before tax rates of return are illustrated for Canadian chartered banks, all U.S. insured banks, New York City banks and U.S. manufacturing. One notes that there was a substantial rise of 10.6 percentage points in the before tax profit rate for Canadian banks, but only .8 percentage points for all U.S. insured banks and only -.3 per cent for New York City banks. Also, before tax rates of return for all U.S. insured banks were higher than for the New York City banks.

Table 4-6

The Before Tax Rate of Return to Capital for Canadian and U.S. Banks for the Years 1963 to 1973

(Per cent)

Year	Canadian Chartered Banks	All U.S. Insured Banks	U.S. New York City	U.S. All Manufacturing
1963	13.0	14.9	15.3	18.4
1964	14.1	15.0	15.0	19.8
1965	13.6	14.2	13.7	22.0
1966	13.7	13.3	11.6	22.5
1967	16.6	14.9	15.2	19.3
1968	21.3	15.1	14.2	20.8
1969	22.3	18.0	13.7	20.0
1970	22.1	14.8	12.8	15.7
1971	26.3	13.8	12.7	16.6
1972	26.5	14.1	13.6	18.4
1973	26.3	15.1	14.6	21.8
Geometric Averages				
1963-66	13.6	14.4	13.9	20.7
1968-73	24.2	15.2	13.6	18.9

Source Same as Table 4-4.

One of the important differences between the U.S. and Canadian banking systems was with regard to the taxation of bank profits as reviewed in this chapter, Section I., Part D. The average tax rate applied to all U.S. insured banks' profits was 28.3 for the 1968-73 period, but the average tax rate experienced by Canadian banks was 47.5 per cent in the same period.[20] One of the reasons why effective tax rates based on book profits were lower for U.S. banks than for Canadian banks was due to a tax exemption given on earnings from state and municipal bonds. However, an implicit tax was paid as the banks held securities that earned lower yields than on corporate bonds. Also, the lower amount of earnings on tax-exempt securities meant that the before tax profits of U.S. banks were lower than would be the case if the U.S. banks held taxable securities instead. Table 4-7 provides the new before tax rates of return for U.S. banks if one assumes that the difference between the yield on tax-exempt bonds and taxable corporate bonds was 30 per cent. One notes that the new U.S. tax rates on bank profits were still 10.8 per cent lower for the 1969-73 period than for Canadian chartered banks. The average before tax rate of return for U.S. banks increased by 2.7 percentage points but was still 6.1 percentage points less than the Canadian banking profit rate. Also, the new effective tax rate on U.S. bank book profits on average was 39.0 per cent, which was 4.2 percentage points less than that for U.S. manufacturing firms.

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20 The tax rate differs slightly from the previous calculation in Chapter 3. In this chapter, accrued profits and all ten Canadian banks are included in the computation of tax rates, while in Chapter 3 realized profits of the seven large banks are used.

Table 4-7

Before Tax Rates of Return and Tax Rates for U.S. and Canadian Banks Adjusting for the Holding of Tax-Exempt Bonds for the Years 1969 to 1973

(Per cent)

	U.S. Banks					Canadian Banks	
Year	Old Before Tax Rate of Return	Addition to Before Tax Rate of Return If not Holding Tax Exempt Bonds	New Before Tax Rate of Return	Old Tax Rate	New Tax Rate	Before Tax Rate of Return	Tax Rate
1969	18.0	2.6	20.6	33.3	41.7	24.1	50.6
1970	14.8	2.5	17.3	32.4	42.1	23.4	55.6
1971	13.8	2.8	16.6	25.4	37.8	23.6	51.7
1972	14.1	2.9	17.0	22.7	36.0	26.3	46.4
1973	15.1	2.8	17.9	25.8	37.2	27.6	45.3
Average							
1969-73	15.2	2.7	17.9			25.0	

Source: Same as Table 4-4.

The implications of this country comparison of rates of return to capital are no less striking than those affirmed by the results listed in Chapter 3. Canadian banks earned excess profits after 1967 by comparing the after and before tax rates of return to capital accruing to Canadian banks with those achieved by all U.S. insured banks or by New York City banks. Also, Canadian banks earned substantially higher after tax rates of return to capital than those of Canadian manufacturing corporations. However, there was little difference in after tax profit rates accruing to U.S. banks and U.S. manufacturing companies, suggesting that managerial specialization in banking is not an important factor contributing to profitability.

IV. Factors Contributing to the Rate of Return to Capital

In order to analyse the difference between the rate of return to capital earned by U.S. banks with that of Canadian banks,

factors that contribute to profitability are surveyed. These factors are yield spreads (the yield earned on an asset minus the interest rate payable for deposits), noninterest costs, asset and liability portfolio mixes, and asset/capital ratios.

A. Yield Spreads

The yield spread provides a measure of the price of financial intermediation paid by all banking consumers, including governments. The yield earned on assets is the price paid by borrowers of bank funds, while the interest paid on deposits is the cost to banks of acquiring deposits. The difference between the asset yield and deposit rate is the payment per dollar made as profits, wages, salaries and rents to banks to conduct financial intermediation.

Three tables are presented to examine yield spreads. First, the eight New York City banks' yield spreads (for consolidated foreign and domestic business) were computed in Table 4-8. If one corrected these loan yield spreads for the loan loss ratio of Canadian and New York City banks (Table 4-9), the yield spreads of Canadian and New York City banks were almost equivalent (3.46 per cent and 3.48 per cent, respectively, for the years 1971-73). In addition, the security yield spread for New York City banks in 1973 was substantially lower than that earned in the two earlier years due to a significant capital loss from selling securities in 1973.

Table 4-8

Loan and Security Yield Spreads at Canadian Banks and Eight New York City Banks for the Years 1971 to 1973

(Per cent)

	Canadian Banks					New York City Banks				
	Loan Yield	Deposit Rate	Loan Yield Spread	Security Yield	Security Yield Spread	Loan Yield	Deposit Rate	Loan Yield Spread	Security Yield	Security Yield Spread
1971	7.66	4.11	3.55	6.02	1.93	7.12	3.31	3.31	5.40	2.09
1972	7.31	3.71	3.60	5.67	1.96	6.49	2.91	3.58	4.90	1.99
1973	8.30	4.57	3.73	5.72	1.44	8.82	4.95	3.87	5.01	.06
Average 1971-73	7.76	4.13	3.63	5.80	2.17	7.62	3.85	3.77	5.09	1.24

Source Schedule Q Reports submitted to the Inspector General of Banks; The Canada Gazette; and Moody's Bank and Finance Manual.

Table 4-9

Loan Loss Ratio[1] for Canadian Banks, All U.S. Insured Banks and New York City Banks for the Years 1963 to 1973

(Per cent)

Year	Canadian Banks Consolidated	All U.S. Insured Banks[1]	New York City Banks[1]
1963		.16	.18
1964		.15	.08
1965		.17	.13
1966		.20	.17
1967	.12	.20	.13
1968	.08	.17	.08
1969	.08	.17	.09
1970	.19	.33	.39
1971	.19	.33	.44
1972	.18	.24	.29
1973	.16	.25	.39
Averages			
1963-66		.17	.14
1968-73	.15	.25	.29

1 Loan loss ratios were calculated by subtracting net recoveries from losses on loans divided by loans as defined in Table 4-3.

2 Loan loss ratio for assets booked at U.S. offices only.

Source: Schedule Q Reports submitted to the Inspector General of Banks; The Canada Gazette; and the Federal Reserve, Board of Governors Bulletin.

There was little difference between the U.S. and the Canadian loan yield spreads, as demonstrated in Table 4-10, when only domestic activity was considered. Furthermore, the Canadian banks increased the domestic loan yield spread by .51 per cent per annum after the 1967 Bank Act amendments, while the U.S. banks experienced a lower increase of .37 percentage points per annum. Also the Canadian security yield spread was higher than that earned by U.S. banks due to the tax exemption given in the United States to state and municipal bond holders. The actual yield earned on tax-exempt securities was lower than on taxable U.S. corporate bonds of similar term. Hence, U.S. banks that hold tax-exempt securities earned a lower yield on securities than that accruing to Canadian banks. The Canadian actual yield on securities was 1.17 percentage points higher per annum than the U.S. yield for the 1968-73 period, although Canadian banks were forced to hold lower yielding treasury bills in comparison to other securities, because of secondary reserve requirements.

Domestic yield spread comparisons were influenced by a series of factors. First, were U.S. and Canadian banks similarly matched in the term structure of the asset and liability portfolios? Banks that hold long-term loans and short-term loans manage more risk and require a higher yield spread than other banks that match their term of assets and liabilities closely. Even with interest ceilings on deposits, the loan yield spread may fluctuate less but the risk of substantial shifts in funds from bank to nonbank competing assets by depositors remains an important cost to the banks. The

loan and deposit portfolio mixes of U.S. and Canadian banks is to be compared in the third part of this section.

Table 4-10

Loan and Security Yield Spreads for Canadian Banks, All U.S. Insured Banks and New York City Banks, Domestic Business Only, for the Years 1963 to 1973

(Per cent)

	Canadian Banks[1]					All U.S. Insured Banks[2]				
Year	Loan Yield	Deposit Rate	Loan Yield Spread	Security Yield	Security Yield Spread	Loan Yield	Deposit Rate	Loan Yield Spread	Security Yield	Security Yield Spread
1963	6.04	1.82	4.22	4.40	2.58	5.98	1.34	4.64	3.35	2.01
1964	6.20	1.89	4.31	4.57	2.68	5.94	1.45	4.49	3.34	1.89
1965	6.07	1.96	4.11	4.81	2.85	5.97	1.65	4.32	3.45	1.80
1966	6.30	2.13	4.17	4.73	2.60	6.32	1.91	4.41	3.29	1.38
1967	6.38	2.31	4.07	5.05	2.74	6.38	2.06	4.32	3.97	1.91
1968	7.48	2.98	4.50	5.64	2.66	6.88	2.23	4.65	3.87	1.54
1969	8.48	3.57	4.91	6.15	2.58	7.60	2.59	5.01	4.34	1.75
1970	9.08	3.95	5.13	6.42	2.47	6.94	2.64	5.30	4.98	2.34
1971	8.13	3.39	4.74	6.01	2.62	6.30	2.55	4.75	5.10	2.55
1972	7.96	3.22	4.74	5.64	2.42	6.06	2.58	4.48	4.96	2.38
1973	8.59	3.61	4.98	5.91	2.30	8.34	3.55	4.79	5.15	1.60
Averages										
1963-66	6.16	1.94	4.22	4.62	2.68	6.07	1.61	4.46	3.36	1.75
1968-73	8.21	3.50	4.71	5.96	2.43	7.58	2.75	4.83	4.79	2.04
Difference	2.06	1.56	.51	1.31	-.25	1.51	1.15	.37	1.43	.29

1 Canadian currency only.

2 Booked at U.S. branches only.

Source Same as Table 4-4.

Second, the default risk on loans increases the yield margin needed to cover the cost of financial intermediation. If one made a correction for default on loans, the domestic loan yield spread for the 1968-73 period was 4.56 per cent and the U.S. banks 4.58 per cent. Thus there was little difference in the yield spreads earned by the U.S. and the Canadian banks after 1967, when one accounted for the actual losses on loans.

Third, changes in reserve requirements affect earnings on securities and loan assets. For example, increases in the reserve requirements decreased more the gross yield spread as additional nonyielding and low yield assets were needed to handle deposits. In the United States there was a shift to lower reserve requirements, while in Canada a lower primary reserve ratio was offset by the imposition of secondary reserve ratios (Table 4-11). In the period before 1971, reserve ratios had been greater in the United States, suggesting that yield spreads should be higher for all U.S. insured banks. After 1972, the difference between Canadian and U.S. reserve requirements was reversed, indicating that the cost of holding reserves for Canadian banks was relatively higher than for American banks.

Table 4-11

Actual Reserve Requirement Ratios for Canadian and U.S. Banks as of December 31 of each Year, for the Years 1963 to 1973

(Per cent)

	Canadian		
Year	Primary	Primary and Secondary	United States
1963	8.0	8.0	10.3
1964	8.0	8.0	10.0
1965	8.0	8.0	9.5
1966	8.0	8.0	9.3
1967	6.7	7.8	9.3
1968	6.3	6.5	9.2
1969	6.2	6.8	9.6
1970	6.1	6.1	8.9
1971	6.2	8.2	8.5
1972	6.1	9.4	7.7
1973	6.1	8.0	7.8

Note The secondary reserve ratio, converted to a primary ratio, was estimated by assuming that the investment of all secondary reserves would be made in Government of Canada 1 to 3 year bonds, not treasury bills or day to day loans. Interest rates were assumed to be unaffected by shifts in the banks' portfolio. Previous unwritten rules prior to 1967, that Canadian banks had to hold treasury bills as a percentage of assets, were not adopted in computations.

Source: Bank of Canada Review, and the Federal Reserve, Board of Governors Bulletin.

The prohibition of interest payments on demand deposits and Regulation Q ceilings applicable in the United States had the effect of not only limiting growth of deposits, but also lowering the banks' cost of funds. As previously mentioned, however, banks resorted to other means of attracting funds that required the acceptance of explicit or implicit costs. For example, revenue may have been forgone that was earned from service charges levied for the handling of payment services.

Santomero and Barro computed the remission of service charges as a proportion of demand deposits for a sample of 100 U.S. banks for the years 1950 to 1968.[21] If these implicit costs were added to the interest paid on deposits, then the 1963-66 loan yield spread for U.S. domestic business would have been 3.36 per cent rather than 4.46 per cent. The 1968 loan yield spread would have been reduced to 3.41 per cent from 4.65 per cent.

The Canadian banks, however, did pay some interest on government and large corporate demand deposits. According to the data available, the rate of interest paid on demand deposits was .4 per cent in 1968. If Canadian banks remitted service charges as well, then a lower yield spread for 1968 would have been calculated. To have an equivalent reduction in the loan yield spread to that computed for all U.S. insured banks in 1968, the interest rate paid on demand deposits by Canadian banks would need to have been approximately 4.9 per cent, twice the U.S. rate of 2.4 per cent.[22]

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21 R. J. Barro and A. M. Santomero, "Householding Money Holdings and the Demand Deposit Rate," note 11, p. 400.

22 The above calculations depended on the proportion of domestic demand deposits to total domestic deposits: 27.3 per cent in Canada and 51.3 per cent in the United States (1968 figures).

As an alternative, one could subtract charges on servicing deposits for cheque transactions from interest payable on deposits as a method of comparing the overall interest rates paid for deposits by U.S. and Canadian banks. The Canadian average service charge per dollar of total Canadian currency deposits was .4 per cent for the 1968-73 period, which was higher than the U.S. service charge per dollar of domestic booked deposits of .23 per cent, assuming the turnover rates of demand deposits in the United States were the same as those experienced by Canadian banks. If one corrected the domestic loan yield spreads for service charge costs of depositors and the loan loss ratio, then the Canadian 1968-73 average of 4.96 was greater than the 4.81 per cent spread earned by all U.S. insured banks.

It had been demonstrated that the loan yield spread of Canadian banks was equivalent to that earned by banks in the United States. Nevertheless, if one considered the remission of service charges on demand deposits and loan loss ratios, Canadian banks had a higher domestic loan yield spread than that earned by the U.S. banks. When one investigates the term structure of assets and portfolios, there is further confirmation that the loan yield spread of Canadian banks was indeed greater than that experienced in the United States. However, the difference between the loan yield margins earned by Canadian and U.S. banks may be explained by noninterest costs per dollar of assets, the subject of the next section.

B. Noninterest Costs

In this part, noninterest costs per dollar of assets is considered as a variable contributing to profitability.

Noninterest costs per dollar of assets rather than profitability, may be the factor that explains the reason why loan yield margins of banks on one country were greater than those earned by banks in another country. If total noninterest expense per dollar of assets was greater in one country's banking system compared to another, then two hypotheses may be proposed. First, one country encountered a higher level of wage, rental, and raw material costs than those experienced by another, and the noninterest expenses per dollar of assets reflected those higher costs. Second, banking firms in a country were protected by regulation or economic factors from competition provided by potential entrants. To the extent that competition was lacking, then higher payments to management, labour and property in one country could result, as banks did not minimize costs in servicing all banking consumers. As an example, competition could lead to innovation, such as computerization of payment services, that reduces the costs of financial intermediation.

Two comparisons are made of noninterest expense per dollar of assets: (1) Canadian banks (consolidated foreign and domestic data) with New York City banks (consolidated foreign and domestic data), and (2) Canadian banks (Canadian currency data) with all U.S. insured banks (booked at U.S. branches data). Two methodological problems are associated with the above comparisons. First, both comparisons are affected by the fact that U.S. bank noninterest costs reflect servicing of trust accounts, but trust activity does not appear in the measurement of assets. Hence, U.S. bank noninterest expense per dollar of assets tends to be exaggerated in comparison to Canadian bank data. Second, the

comparison of domestic expense per dollar of assets for U.S. and Canadian banks does not include a proper allocation of head office costs for servicing foreign assets, thereby tending to overestimate the noninterest expense per dollar of domestic assets.

In Table 4-12, the eight New York City banks are compared to the Canadian banks (consolidated data). The eight New York City banks incurred noninterest expenses per dollar of assets for the 1971-73 period that were .36 or 16.1 per cent less than that experienced by Canadian banks. Lower expenses per dollar of assets, however, were not necessarily indicative of greater efficiency of New York City banks vis-à-vis Canadian banks. New York City banks were prominent in servicing the domestic wholesale market with large-sized deposits and loans, while Canadian banks participated in a significant manner in the retail market, although international activity was proportionately the same in terms of the share of total assets.

Table 4-12

Noninterest Operating Expenses[1] per dollar of Assets of Canadian Banks and Eight New York City Banks for the Years 1971 to 1973

(Cents)

	Canadian Banks				New York City		
Year	Total Non-interest Expense	Property Expense	Salary and Wages	Other	Total Non-interest Expense	Salary and Wages	Other
1971	2.26	.41	1.41	.44	2.05	1.20	.85
1972	2.21	.40	1.36	.45	1.87	.08	.79
1973	2.25	.39	1.40	.46	1.79	1.00	.79
Averages 1971-73	2.24	.40	1.39	.45	1.88	1.08	.80

1 Excludes provision for loan losses.

Source See Table 6.

Although the U.S. and Canadian bank domestic yield spreads were approximately the same after adjusting for the loan loss ratio, the domestic noninterest costs per dollar of assets were lower for U.S. banks in comparison to Canadian banks (Table 4-13). Thus Canadian banks were able to earn greater profits than U.S. banks as reflected in the rate of return to capital data. In addition, Canadian banks experienced noninterest costs of .52 cents per dollar of domestic assets or 21.4 per cent more than those of all U.S. insured banks. Furthermore, the increase in the domestic loan yield spread of all U.S. insured banks from the pre- to post-1967 periods, was matched by the increase in non-interest costs per dollar of assets (.37 cents change in the domestic yield spread and .37 cents increase in noninterest expense per dollar of assets). On the other hand, only a portion of the increase in Canadian yield margins was attributed to greater expenses (expense per dollar of assets increased .23 cents, while the loan yield spread rose .51 cents). The remaining portion of the increase in the Canadian domestic loan yield spread (.28 percentage points) would be the payment of profits made to Canadian bank shareholders.

Noninterest expenses were payments made either as wages and property expense, or as other expenses (travelling of employees, advertising, insurance cost and communications). Other expenses per dollar of domestic assets in Canada rose considerably after the 1967 Bank Act was amended, primarily in the categories of advertising and communication (see Table 4-13). In addition. other expenses were only 16 per cent and 19 per cent of total noninterest expense for each respective period for Canadian banks.

Table 4-13

Noninterest Operating Expenses per Dollar of Assets
for All U.S. Insured Banks and Canadian Banks, for the Years 1963 to 1973

(In cents)

	Canadian Chartered Banks[1]				All U.S. Insured Banks			
Year	Total Non-interest Expense	Property Expense	Salary and Wages	Other	Total Non-interest Expense	Property Expense	Salary and Wages	Other
1963	2.56	.48	1.68	.40	2.07	.31	1.27	.49
1964	2.62	.49	1.71	.42	2.06	.32	1.24	.50
1965	2.57	.48	1.66	.43	2.03	.32	1.21	.50
1966	2.63	.49	1.71	.43	2.08	.33	1.22	.53
1967	2.77	.49	1.78	.50	2.13	.34	1.24	.55
1968	2.84	.49	1.81	.54	2.18	.34	1.26	.58
1969	2.98	.52	1.89	.57	2.34	.36	1.32	.66
1970	3.08	.56	1.94	.58	2.67	.40	1.42	.85
1971	2.99	.55	1.86	.58	2.53	.40	1.40	.73
1972	2.86	.52	1.75	.59	2.43	.40	1.34	.69
1973	2.97	.52	1.85	.60	2.40	.39	1.31	.70
Average								
1963-66	2.60	.49	1.69	.42	2.06	.32	1.23	.51
1968-73	2.95	.53	1.85	.57	2.43	.38	1.34	.71
Difference	.35	.04	.16	.15	.37	.06	.11	.20

1 Excludes foreign currency expenses or expenses of branches abroad and provision for loan losses.

Source Same as Table 4-4.

Other expenses per dollar of domestic assets in the United States not only increased appreciably, but claimed 25 per cent of total noninterest expenses from 1963 to 1966, and 29 per cent from 1968 to 1973. The expenses per dollar of assets data suggest that restricted branching laws in the United States stimulated commercial banks to employ other means to attract financial intermediary business such as advertising, travelling of personnel to banking consumers and deposit by mail, rather than branching.

To analyse fully the cost data presented in Table 4-13 a number of basic features are studied. These include domestic wage rates and domestic assets per domestic employee, domestic property expenses per domestic branch, domestic assets per domestic branch, and domestic employees per domestic branch.

(a) Domestic Wage and Salary Rates and Domestic Assets per Domestic Employee

Although wages and salary levels for the U.S. banks were higher than for Canadian banks (Table 4-14), the amount of domestic assets per employee handled by the U.S. banks was substantially greater than that attained by Canadian chartered banks. Only 59 per cent of the U.S. level of domestic assets per employee was achieved by Canadian banks for the 1968-73 period. Since U.S. banks also handled trust business, it is difficult to understand how U.S. banks managed higher domestic assets per employee than Canadian banks. Nevertheless, there were a number of factors that explained some of the differences in the amount

Table 4-14

Domestic Assets per Domestic Employee and Wage Rates and Salary Per Annum for the Years 1963 to 1973 -- Canadian and U.S. Banks

(Thousands of dollars)

Year	Canadian Banks		All U.S. Insured[1] Banks		Ratio - Canadian Divided by U.S.	
	Assets Per Employee	Wage and Salary Expense Per Employee	Assets Per Employee	Wage and Salary Expense Per Employee	Assets Per Employee	Wage and Salary Expense Per Employee
1963	242.5	4.082	488.0	6.218	.50	.66
1964	244.8	4.177	520.6	6.448	.47	.65
1965	257.3	4.283	547.7	6.609	.47	.65
1966	277.6	4.753	557.6	6.698	.50	.71
1967	291.4	5.178	577.5	7.176	.50	.72
1968	313.8	5.676	602.6	7.579	.52	.75
1969	328.6	6.223	611.3	8.072	.54	.77
1970	337.8	6.568	590.0	8.400	.57	.78
1971	369.8	6.896	619.6	8.650	.60	.80
1972	416.6	7.300	653.6	8.774	.64	.83
1973	448.5	8.293	708.8	9.273	.63	.89
Averages						
1963-66	256.0	4.331	528.5	6.493	.48	.67
1968-73	373.2	6.896	631.0	8.458	.59	.82

Note Wages and salaries include all staff benefits paid to employees.

1 Converted to Canadian dollars.

Source Same as Table 4-4.

of domestic assets per employee experienced in each country. First, higher domestic assets per employee in the U.S. than in Canada may have been caused by relatively higher banking wage and salary rates in the United States. Higher banking salary and wage rates partly resulted from a greater U.S. wage level than in Canada. The higher general wage level (Table 4-15) in the United States explained all but 8.25 per cent of the U.S. banks' wage and salary rates for the 1963-66 period and 7.50 per cent of U.S. bank average labour expense of the 1968-73 period. This suggested that labour in the U.S. banking industry was relatively more expensive than in Canada, since more specialized labour was employed. Assuming that the production functions of U.S. and Canadian banks were comparable and the technology that evolved had labour-saving content, then relatively higher wage rates encouraged U.S. banks to substitute unskilled labour for capital equipment (computerization) and skilled labour. Thus domestic assets per employee did not measure efficiency in the two banking systems, since factor price differentials encouraged banks to utilize a different input mix in each country.

A second explanation offered to rationalize higher domestic assets per employee in U.S. banking than in Canada concerns the size of banks. Smaller banks in the United States did not provide services, such as foreign exchange, that demanded specialized labour. Also, managers in a small unit bank economized on labour by performing functions normally given to less specialized employees, or the unit banks purchased services of other firms thereby shifting costs from "labour" to the "other expenses"

category. Domestic assets per employee were thus overestimated to the extent that labour was contracted, rather than hired directly by the firms.

Table 4-15

Proportion of Canadian to U.S. Average Hourly Rates, for the Years 1963 to 1973

(Per cent)

Year	(1) Proportion of Canadian General Wage Rate to U.S	(2) Proportion of U.S. Banks' Salary Expense per Employee not Explained by the General Wage Rate Difference between the United States and Canada
1963	.74	.08
1964	.74	.09
1965	.75	.10
1966	.77	.06
1967	.79	.07
1968	.80	.05
1969	.81	.04
1970	.86	.08
1971	.91	.11
1972	.94	.11
1973	.95	.06

Source Bank of Canada, Review; and P. Wonnacott, Canada's Trade Options, Economic Council of Canada, Ottawa, 1975, p. 175.

(b) Domestic Property Expense per Domestic Branch and Domestic Assets per Domestic Branch

Property expense per branch in Canada during the 1968-73 period was on average only 45 per cent of the expense of U.S. branches (Table 4-16), illustrating that Canadian bank branches were small in size compared to U.S. banks. Furthermore, domestic assets per branch in Canada, in the same period, were 32 per cent of the level experienced in the United States. However, the

Table 4-16

Domestic Assets Per Domestic Branch and Property Expense Per Branch for the Years 1963 to 1973 -- Canadian and U.S. Banks

(Thousands of dollars)

Year	Canadian Banks		All U.S. Insured Banks[1]		Ratio - Canadian Divided by U.S.	
	Assets Per Branch	Property Expense Per Branch	Assets Per Branch	Property Expense Per Branch	Assets Per Branch	Cost Per Branch
1963	3046.8	14.7	11996.8	37.1	.25	.40
1964	3104.6	15.3	11547.8	39.7	.27	.39
1965	3292.6	15.8	13098.8	42.1	.25	.38
1966	3564.5	17.5	13654.6	44.7	.26	.39
1967	3829.7	18.9	14394.7	48.3	.27	.39
1968	4268.9	21.1	15465.6	53.2	.28	.40
1969	4623.7	23.9	16446.6	53.2	.28	.45
1970	4833.2	27.2	16044.5	61.9	.30	.44
1971	5310.8	29.3	16474.9	66.5	.32	.44
1972	6054.6	31.8	17576.3	68.7	.34	.46
1973	7005.7	36.5	19089.6	73.6	.37	.50
Averages						
1963-66	3257.0	15.9	12574.5	40.9	.26	.39
1968-73	5396.9	28.5	16849.6	62.9	.32	.45

1 Converted to Canadian dollars.

Source See Table 4-4.

Canadian proportion of U.S. assets per branch had risen, reflecting the relaxation of branching laws in the United States, particularly in New York State. The larger size of U.S. branches, compared to Canada, was a result of several factors influencing the different development of banking in each country. First, branching regulations in the United States restricted growth in the number of banking offices, particularly firms desiring widely branched networks. Second, lower costs per branch and less domestic assets per branch in Canada indicated that smaller bank branches serviced dispersed populated areas in Canada in comparison to banking in the United States. Third, computerization[23] and travel of employees to banking consumers were substituted for branches, as factors of production, in the United States.

(c) Domestic Employees per Domestic Branch

The ratio of domestic employees per branch in Canada to that of the United States (Table 4-17) for the 1968-73 period was on average .54, not substantially different from the 1963-66 average proportion of .52. In addition, the alleviation of restricted branching laws in the United States since 1969 resulted in the maintenance of a constant ratio of domestic employees per branch. However, in Canada, there was an increase in the number of domestic employees per branch after 1969 as no regulatory constraint on branching existed prior to or after 1969.

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23 R. P. Cooley and P. L. Overmire,"The Role of Automation and the Internal Payments System," note 3, p. 237.

Table 4-17

Domestic Employees Per Domestic Branch for U.S. and Canadian Banks for the Years 1963 to 1973

Year	Canadian Banks[1]	All U.S. Insured Banks[1]	Ratio - Canadian Divided by U.S.
1963	12.6	24.3	.52
1964	12.7	23.9	.53
1965	12.8	23.9	.54
1966	12.8	24.5	.52
1967	13.1	24.9	.53
1968	13.6	25.7	.53
1969	14.1	26.9	.52
1970	14.3	27.2	.53
1971	14.4	26.6	.54
1972	14.7	26.6	.55
1973	15.6	26.9	.58
Average			
1963-66	12.7	24.2	.52
1968-73	14.5	26.7	.54

1 Branching and employees in Canada or United States only.

Source See Table 4-4.

23. R.P. Cooley and P.L. Overmire, "The Role of Automation and the Internal Payments System," op. cit., supra, note 3, p. 237.

With reference to expense data presented in Tables 4-13 to 4-17, the domestic assets and domestic wage cost per employee, domestic assets and domestic property expense per branch, and domestic employees per branch, confirmed that Canadian banks, with unrestricted branching, required more labour and property to service consumers than in the United States. Nevertheless, U.S. banks incurred other offsetting expenses to attract consumers of financial intermediation and improve office operations. Non-interest expense per dollar of assets in Canada rose less quickly than in the United States (see Table 4-13), due to greater growth in assets per branch and assets per employee in Canada. However, the general level of noninterest costs per dollar of domestic assets in Canada was greater than in the United States.

To develop an understanding of the different mix of inputs utilized in U.S. and Canadian banking, factor price and input ratios (for labour, branches and working financial capital) are presented in Table 4-18. If the relative price of one factor declines, then that factor should be employed relatively more than the other inputs. Over a time period, however, technology (or a change in banking service output) may be introduced such that relatively less of the input would be employed in production despite the fall in the relative price of the factor. When one examines the indices of factor price and input ratios in Table 4-18, one notes the relationship between labour and working capital inputs in U.S. and Canadian banking. In the United States both the wage/profit rate index and working capital per employee index increased from 1.00 to 1.21 and from 1.00 to 1.19, respectively, as would be expected with the minimization of costs. However, in Canada the wage/profit rate index declined from .90 to .84, but working capital per employee rose substantially. On the other hand, if the Canadian banks' shareholders earned a risk adjusted rate of return to capital equal to the market rate of return 10.6 per cent, rather than the actual profit rate of 12.8 per cent used in Table 4-18, then the index of wages and salary expense per employee to the profit rate in Canada would have risen from .90 to .98 in the pre- and post-1967 Bank Act periods, consistent with the increase of working financial capital per employee. It is also noteworthy that the working financial

capital per employee and per branch in the United States was higher than in Canada, suggesting that greater shareholders' equity financing was required for operation in the United States.

Table 4-18

Factor Price and Input Ratios for Canadian and U.S. Banks Averaged for the 1963-66 and 1968-73 Periods

(Index based on the U.S. 1963-66 average equalling 1.0)

	Canadian Banks	U.S. Banks
Wage and Salary Per Employee[1]/Profit Rate[2]		
1963-66	.90	1.00
1968-73	.84	1.21
Cost Per Branch[1]/Profit Rate[2]		
1963-66	.52	1.00
1968-73	.55	1.42
Working Capital/Employees		
1963-66	.52	1.00
1968-73	.96	1.19
Working Capital/Branches		
1963-66	.27	1.00
1968-73	.36	1.31

1 U.S. figures converted to Canadian dollars.

2 After tax profit rate of return for capital.

Source Same as Table 4-4.

C. Portfolio Mix

In this part, the term structure of the assets and liabilities portfolios held by U.S. and Canadian banks is considered. The investigation of the term structure assists in analysing two matters. First, less noninterest costs per dollar of assets and liabilities are experienced by the banks in handling long-term as compared to short-term loans and deposits. Second, when interest rates fluctuate over time, the loan yield spread is expected

to remain constant if the loan and deposit portfolios are perfectly matched in maturity. When banks hold assets and liabilities portfolios that are well matched in term, then the risk encountered by the banks' shareholders from fluctuations in yield spreads is minimized. With a reduction of risk arising from matching the term structure of the banks' assets and liabilities, then less profits are required by shareholders to compensate for the risk in holding bank shares. Unfortunately, the maturity distribution of assets and deposits of Canadian and U.S. banks was not available from published sources. However, a detailed classification of the portfolios according to type of asset and liability for all U.S. commercial banks was available for one year, as of December 31, 1973. In Table 4-19, all U.S. commercial banks are compared with Canadian banks with reference to the distribution of assets. One particular difference to be noted between the two banking systems is the proportion of mortgages held by the banks. Mortgages are generally long term in nature and interest payments are not adjusted each year to reflect changes in the level of interest rates charged on newly issued assets. The U.S. banks held 12.7 per cent of total assets or 14.3 per cent of domestic assets in long-term mortgages, while Canadian banks held only 5.9 per cent of total assets or 8.4 per cent of domestic assets in mortgages. Also, U.S. banks offered more term loans (maturity over one year) rather than demand loans (maturity less than one year) in comparison to Canadian banks.[24]

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24 J. A. Galbraith, Canadian Banking (Toronto: Ryerson Press, 1970), p. 217; and J. C. Archibald, "Loans and Discounts," The Changing World of Banking, note 3, pp. 131 and 132.

Table 4-19

A Distribution of Assets of Canadian and U.S. Commercial Banks, as of December 31, 1973

(Per cent)

Assets	Canadian Banks	U.S. Banks
Cash	.2	1.1
Items in Process of Transit	3.1	4.8
Central Bank Deposits	3.8	3.0
Securities - Home Country		
- Treasury Bills	4.5	6.3
- Federal Government and Agencies	4.9	3.1
- Political Subdivisions	1.2	10.2
- Other	1.9	.7
Federal Funds Sold	-	3.8
Loans		
- Demand Balances Held in Banks in Country	-	3.7
- Day to Day Loans	.3	1.3
- Call and Short Loans	1.0	
- Loans to Provinces/States	.2	-
- Loans to Municipalities	1.5	-
- Grain Dealers	.8	-
- Canada Savings Bonds	.4	-
- Other Financial Institutions	.7	3.3
- Loans - Personal	12.7	10.7
- Farmers	2.6	1.9
- Business	22.2	17.1
- Mortgages	5.9	12.7
- Deposits in and Loans to Foreign Banks	19.1	6.1
- Other Foreign Loans	9.9	4.8
- Foreign Securities	.7	
- Other Loans	1.0	2.5
Fixed Assets	.8	1.4
Investments in subsidiaries	.3	.2
Other Assets	.3	1.4
Total Assets	100.0	100.0

Source Federal Reserve, Board of Governors Bulletin; and Bank of Canada Review.

Evidence on deposits as provided in Table 4-20 implies the Canadian banks held proportionately more long-term deposits (39.0 per cent of total deposits) than U.S. banks (34.4 per cent of total deposits) if term deposits and other borrowings (such as debentures) were considered as long-term deposits. However, term deposits may mature in a period of less than one year or are cashable at any time with payment of a lower interest rate than on those funds held to maturity. Thus some of the loan deposits are short-term in nature, and the above figures overestimate the amount of long-term deposits.

Table 4-20

Distribution of Deposits for Canadian and U.S. Commercial Banks as of December 31, 1973

(Per cent)

	Canadian	United States
Demand	20.2	40.3
Federal Government	4.8	1.3
Sub-Total	25.0	41.6
Federal Funds Purchased	-	6.9
Chequable Savings	15.1	-
Sub-Total	40.1	48.5
Non-chequable Savings	20.9	17.1
Deposits Accumulated for Personal Loans	-	.1
Sub-Total	61.0	65.6
Term	37.6	32.8
Other Borrowings	1.4	1.6
Total	100.0	100.0

Source Federal Reserve Bulletin; and Bank of Canada Review.

To estimate the term structure of U.S. and Canadian portfolios, one may test the effect of the variation in the annual interest rate charged on newly issued assets and liabilities on the variation in the annual yield on bank loans and interest paid on bank deposits. The prime loan rate series was the only one available in both countries for the aforementioned interest rates. The variation in prime loan rate served as a proxy for the variation in the interest rates charged on newly issued assets and liabilities. However, the sensitivity of the variation in deposit rates to the variation in the prime loan rate was reduced by Regulation Q interest rate ceilings applied to deposits in the United States and by the noninterest-bearing demand deposits held by banks in the United States and Canada.

The equation to be estimated was the following:

$$R_t = B_0 + B_1 r_t + B_2 R_{t-1} + U_t \ ;$$

where

R_t = loan yield or deposit rate;

r_t = average annual prime rate;

R_{t-1} = prior year loan yield or deposit rate.

The above equation was derived from the Koyck transformation, where the present year prime loan rate was a function of the present year and previous year's annual prime loan rates, based on a geometric lag. The coefficient B_1 was the estimated proportion of the portfolio, less than one year in term, and B_2,

the proportion, more than one year in term.[25] One may justify restricting the coefficients B_1 and B_2 to add to one, in order to derive estimates of the term structure.

The F ratio and adjusted coefficient of determination, as shown in Table 4-21, indicated that the econometric model was acceptable in predicting the term structure of U.S. and Canadian loan portfolios despite the relatively few years of data available. From the first and third equations in Table 4-21 the estimated demand loan share of total loan assets was 52 per cent for Canadian banks and 41 per cent for the U.S. banks.

The deposit rate equation for U.S. banks was not acceptable, since Regulation Q interest ceilings and the prohibition of interest payments on demand deposits reduced the sensitivity of the variation in the deposit rate to the variation in the prime loan rate. The relaxation of interest rate ceilings

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25 The proof of this proposition may be demonstrated as the following. Assume that the yield R_1 is determined by the interest rate r_1 earned on asset A_1 issued in time period 1, the present period, and r_0 is earned on the asset A_0 issued in the past period 0. Then

$$R_1 = \frac{r_1 A_1 + r_0 A_0}{A_1 + A_0} \qquad (1)$$

One may find the partial differentiation of (1) with respect to each rate:

$$\frac{\partial R_1}{\partial r_1} = \frac{A_1}{A_1 + A_0} \quad (2) \quad \text{and} \quad \frac{\partial R_1}{\partial r_2} = \frac{A_0}{A_1 + A_0} \qquad (3)$$

The coefficient B_1 from the equation in the text is the partial derivative of the yield to the prime loan rate in (2) and B_2 is the coefficient of the partial derivative in (3).

In order for the coefficients to be stable, the term structure of the portfolio should alter little over the 1963-73 period. The past lagged values of loan yields or deposit rates treat the interest rates as averages. The intercept B_0 is the difference between the means of the prime loan rate and the loan yield or deposit rate, if a linear restriction was made such that $B_1 + B_2 = 1$.

The proportion of less than one year in term loans or deposits are overestimated since some loans or deposits of a term more than one year mature in the present year. However, the estimate to be provided in this part still indicates whether Canadian banks hold shorter-term loans and deposits than those held by U.S. banks.

during the 1963-73 period altered the behaviour of regulated deposits, so that the predicted term structure was not stable. Nevertheless, the Canadian deposit equation was of some assistance in estimating the term structure. Short-term (less than one year) deposits were estimated to be 41 per cent of total deposits. However, demand deposits, excluding federal, provincial, and large corporate demand deposits, were noninterest-bearing. Thus the short-term estimate of deposits for Canadian banks should be raised to include noninterest-bearing deposits.

One may conclude from the above analysis that loan assets held by Canadian banks were shorter in term than those held by the U.S. banks. Based on data in 1973, deposits held by Canadian banks were longer in term than deposits held by U.S. banks. Canadian banks seem to be able to match better the term structure of loan and deposit portfolios than the U.S. banks. Thus one may expect that the loan yield spreads of Canadian banks should be lower than those experienced by U.S. banks, since Canadian bank shareholders encountered less risks from interest rate fluctuations. However, the above analysis does not assist in determining whether U.S. banks should have experienced less noninterest expense per dollar of assets than Canadian banks, since U.S. banks held longer term loans but shorter term deposits than those held by Canadian banks.

D. Asset/Capital Ratios

Asset/capital ratios of Canadian chartered banks were higher than those experienced by all U.S. insured banks as shown in Table 4-22. After correcting the 1971-73 average asset/capital

Table 4-21

Regression Results in Determining the Term Structure of Loan and Deposit Portfolios of U.S. and Canadian Banks for the Years 1963 to 1973

		B_0	B_1	B_2	R^2 (adjusted)	F
Canadian	Loan	.541 (4.69)*	.520 (5.02)	.480	.73	25.21*
	Deposit	-1.47 (-6.75)*	.418 (7.72)*	.582	.87	59.53*
U.S.	Loan	.483 (6.48)*	.409 (7.12)*	.591	.85	50.74*
	Deposit	-.429 (-1.44)	.161 (2.25)		.34	5.07

Note The estimated equation derived from a Koyck transformation was the following:

$$R_t = B_0 + B_1 r_t + B_2 R_t\text{-}1 + U_t$$

where R_t = loan yield (annual)

r_t = announced prime loan rate (annual)

R_{t-1} = loan yield lagged one period

U_t = residual error

Figures in parantheses are values of the t statistics. No t statistics are shown for B_2 since B_1 and B_2 were constrained to add to 1.

*Significant at the .995 level.

ratios of all U.S. insured banks by adding assets booked at foreign branches, the Canadian bank asset/capital ratio was 7.5 points higher than all U.S. insured banks. In comparison to the New York City banks, Canadian chartered bank asset/capital ratios were greater by 3.4 points for the same period.

Table 4-22

Asset/Capital Ratios for Canadian Banks', New York City Banks and all U.S. Insured Banks, for the Years 1963 to 1973

Year	Canadian Banks Consolidated	Eight New York City Banks	All U.S. Insured Banks[1]
1963	14.6		12.3
1964	14.9		12.9
1965	15.2		13.0
1966	16.2		13.1
1967	16.9		13.4
1968	17.8		13.9
1969	18.9		14.2
1970	19.8		11.9
1971	20.6	16.4	12.4
1972	21.4	17.9	12.8
1973	23.0	20.2	13.2
Averages			
1963-66	15.2		12.8
1968-73	20.5		13.0
1971-73	21.7	18.3	12.8

1 Assets booked at domestic branches only. The asset/capital ratio for all U.S. insured commercial banks increased 1.4 for the 1971-73 period when assets booked at foreign branches were included.

Source See Table 4-4.

Differences between the two banking systems in asset/capital ratios may be explained by two factors. First, regulators in the United States, unlike some in Canada, compelled U.S. banks to increase the amount of equity capital prior to increasing their deposit liabilities. Second, lack of entry by new firms into the Canadian banking industry enabled existing Canadian banks to

participate in banking markets, by increasing the amount of assets and deposits held rather than depending on new equity financing.

The higher asset/capital ratios experienced by Canadian banks may have been the cause of higher before tax profit rates earned by Canadian bank shareholders than those accruing to U.S. bank shareholders. It was possible to compute new before tax rates of return to capital for all U.S. insured banks for the 1971-73 period under the assumption that the Canadian asset/capital ratio existed in the U.S. banking system. The all U.S. insured bank equity capital was first adjusted downwards to reflect the Canadian asset/capital ratio. Then the extra interest cost of holding deposits was subtracted from before tax profits. It was calculated that the 1971-73 average before tax rates of return to capital for U.S. banks, including the adjustment for holding tax-exempt bonds, was 22.7 per cent. However, the Canadian bank before tax profit rate was on average 3.7 percentage points higher than the all U.S. insured banks' annual profit rate after correcting for asset/capital ratios and the holding of tax-exempt bonds. The adjusted before tax profit rate of U.S. banks was overestimated, since it was assumed that U.S. banks did not increase the holding of nonyielding assets as required for reserve requirements applied to additional deposits and the U.S. bank did not incur additional expense in servicing new deposits. Thus higher asset/capital ratios achieved by Canadian banks were not the sole source of greater profitability realized by Canadian bank shareholders as compared to U.S. bank shareholders.

V. Conclusion

Canadian banks earned higher after tax and before tax rates of return to capital than banks in the United States. The difference in rates of return to capital earned by the two banking systems cannot be explained by the following:

(a) Canadian banks were more involved in international business.

(b) U.S. banks experienced lower noninterest costs per dollar of assets rather than earning less profits than Canadian banks.

(c) Canadian banks were not riskier than the U.S. banks in terms of matching the term structure of asset and liability portfolios.

(d) Canadian banks achieved higher asset/capital ratios.

In addition, other studies that have demonstrated that Canadian banks provided lower cost services (earning lower loan yield spreads) to banking consumers than U.S. banks, failed to compare either consolidated or domestic business. When one accounts for the loan loss ratio and the remission of service charges, it appears that Canadian banks provided higher cost financial intermediary services than the U.S. banks.

Also, U.S. banks earned almost the same after tax profit rate as U.S. manufacturing corporations, while Canadian banks earned substantially higher after tax rates of return to capital than the Canadian manufacturing sector. Thus managerial specialization does seem to be a cause of higher after tax profit rates of Canadian banks in comparison to Canadian manufacturing companies.

CHAPTER 5

THE MEASUREMENT OF EXCESS AFTER TAX PROFITS AND TAXES

The before tax and after tax rate of return to capital calculations indicated that Canadian banks were more profitable than other groups of firms after 1967: trust and loan corporations (Chapter 2), industrial sectors in Canada (Chapter 3), and all U.S. insured and New York City banks (Chapter 4). According to economic theory, rates of return to capital earned in all industries should have been equalized, if there had been no barriers to entry impeding the flow of equity capital to the more profitable sectors. If rates of return to capital had not been equalized, it could be concluded that excess profits had been earned by the sectors protected from entry of new firms.

It was possible to compute the excess after tax profits earned by Canadian bank shareholders and excess taxes gained by Canadian governments by comparing Canadian banking profit rates with those profit margins earned by other groups of firms.[1] Excess after tax profits were defined as the after tax rate of return accruing to Canadian banking shareholders over and above that realized by shareholders of other financial and nonfinancial industries. The

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1 Estimates of excess taxes and after tax profits computed in this chapter varied slightly from estimates shown in Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions, Chapter 4. In this chapter all ten banks were included in calculations and changes in the market value of securities was subtracted from accured profits of banks as shown in reports submitted to the Inspector General of Banks under Schedule Q. In the Economic Council of Canada's report, the seven largest-size banks' profit rates were used as a basis for the calculation of excess profits (see Tables C-1 and C-2, of this study for data used in the Economic Council of Canada's report).

after tax rate of return to capital for other industries was first subtracted from the after tax profit rate of Canadian chartered banks and the difference was then multiplied by the actual amount of shareholders' equity, including the accumulated appropriation of losses, invested in Canadian banks.

Excess taxes were the surplus corporate income tax revenue that would not have been received by the Canadian government, if the Canadian banks had earned the after tax profit rate experienced by all industries. To calculate excess taxes, the before tax rate of return to capital of other industries was adjusted to reflect the effective tax rate imposed on Canadian bank profits. The difference between the Canadian bank before tax profit rate and the adjusted before tax profit rate for other industries was multiplied by Canadian bank shareholders' equity, including accumulated appropriations for losses in order to arrive at total before tax excess profits. Excess taxes were equal to excess before tax profits less excess after tax profits.

There was no overall computed rate of return to capital available for all financial and nonfinancial industries. To derive an estimate of excess after tax profits and excess tax, four sectors' profit rates were used for calculations. First, trust and loan corporations provided an appropriate comparison of a Canadian financial industry that was primarily restricted to mortgage assets and over-one-year term deposits. Second, the manufacturing industry, composed of small, large, vertically integrated and conglomerate firms, was representative of total industrial corporations, since manufacturing assets were a large share of total industrial assets. Third, retail trade

firms earned a rate of return to capital under a condition of potential competition from new entrants uninhibited by government regulation. Fourth, all U.S. insured banks had banking functions similar to the Canadian banks, except in regard to trust business.

As displayed in Table 5-1, Canadian bank shareholders earned total excess after tax profits of at least $219.7 million (based on the after tax profit rate of trust and loan corporations) to at most $478.5 million (based on the after tax profit rate earned by retail trade) in the 1968-73 period (see Line 1). Excess after tax profits contributed to an increase in the annual rate of return to Canadian banking capital of 1.6 to 3.5 percentage points (see Line 3) or 12.5 per cent to 27.3 per cent of total after tax profits of Canadian banks.

Excess taxes that Canadian governments had gained totalled, at least, $197.3 million (based on rates of return to capital of all U.S. insured banks) to, at most, $425.7 million (based on rates of return to capital of retail trade) for the years 1968 to 1973 (see Line 1). The annual average tax rate of return to Canadian bank capital could have been reduced by 1.4 to 3.1 percentage points (see Line 3) had there been no excess taxes gained by Canadian governments.

The total amount of excess taxes and excess after tax profits (using the figures presented in the previous two paragraphs) earned by the Canadian bank shareholders and Canadian governments was $417.0 million to $904.2 million during the 1968-73 period, or 12.5 per cent to 27.1 per cent of total before tax Canadian bank profits. If no excess after tax profits and excess taxes were earned, the before tax rate of return to capital of Canadian chartered banks would have been reduced by 3.0 to 6.6 percentage points.

Table 5-1

Excess Realized After Tax Profits Earned by Canadian Banking Shareholders and Excess Realized Taxes Accruing to the Canadian Government for the 1968-73 Period

(Millions of dollars)

Year	Excess After Tax Profits Based on After Tax Rates of Return to Capital of: Trust and Loan Corporations	All Manufacturing	Retail Trade	All U.S. Insured Banks	Excess Taxes Based on Rates of Return to Capital of: Trust and Loan Corporations	All Manufacturing	Retail Trade	All U.S. Insured Banks
1968	80.7	53.1	67.8	49.5	58.7	53.2	33.0	23.9
1969	63.7	16.0	56.1	-16.0	73.6	21.9	63.7	-11.9
1970	51.6	54.0	60.5	0.0	68.9	73.2	81.8	4.3
1971	-16.2	43.3	57.0	31.9	-25.5	34.7	51.0	23.1
1972	2.6	79.1	102.1	84.2	0.0	66.3	84.2	68.9
1973	37.3	8.6	135.0	106.3	31.6	8.6	112.0	89.0
Total Excess (Line 1)	219.7	254.1	478.5	255.9	207.3	257.0	425.7	197.3
Average Annual Excess 1968-73 (Line 2)	36.6	42.4	79.8	42.7	34.6	42.8	71.0	32.9
Average Excess to Banking Shareholders' Capital (percentages) (Line 3)	1.6	1.9	3.5	1.9	1.5	1.9	3.1	1.4

Source Based on data appearing in Table 3-1, 3-3, 4-4, and 4-6.

If no excess after tax profits and excess taxes were earned by the Canadian bank shareholders and Canadian governments, then the cost of banking services to consumers could have been lower than that prevailing during the 1968-73 period. With the excess after tax profits earned by Canadian banks, more firms could have entered into banking activities. Consumers could have had more choice by comparing the price and quality of banking services offered by various institutions. With competition among many firms, services rendered to banking consumers could have been less costly. For example, borrowers of bank funds could have been charged a lower rate of interest and lenders to the banks could have earned a higher return on deposits. By removing legislative barriers to entry, regulators might have encouraged entry of new firms into the banking industry and might have reduced the cost of banking services to consumers.

APPENDIX A

EXAMPLE OF THE CALCULATION OF PROFITS AND CAPITAL FIGURES -- TORONTO-DOMINION 1972 FOR INDIVIDUAL BANKS AND TRUST AND LOAN COMPANIES

APPENDIX A

EXAMPLE OF THE CALCULATION OF PROFITS AND CAPITAL FIGURES -- TORONTO-DOMINION 1972 -- FOR INDIVIDUAL BANKS AND TRUST AND LOAN COMPANIES

Accrued Profit	Thousands of Dollars
Method I	
Balance of revenue	78,389
Plus loss experience on loans	- 1,812
Plus profits (loss) on securities	- 613
Plus other profits (loss) -- nonrecurring items	3,132
Minus provision for income taxes	36,800
Minus provision for taxes related to accumulated appropriation of loss	400
After tax profits -- accrued	41,896
Method II	
Shareholders' equity 1972	221,611
Plus accumulated appropriation for losses 1972	71,574
Minus shareholders' equity 1971	191,222
Minus accumulated appropriation for losses 1971	73,266
Plus new issues	--
Plus dividends	13,200
After tax profits -- accrued	41,897
1. Accrued Capital	
Shareholders' equity 1972	221,611
Plus accumulated appropriation for losses 1972	71,574
Plus shareholders' equity 1971	191,222
Plus accumulated appropriation for losses 1971	73,266
Minus new issues	--
Total divided by two	278,837
Plus B new issue	--
Accrued average shareholders' capital	278,837
2. Realized Profit	
Accrued after tax profits	41,896
Less profits (losses) on securities	613
Realized after tax profit	42,509

3. Realized Capital

Accrued capital	27,837
Less profits (losses) on securities divided by two	307
Realized capital	28,144
4. Tax Rates -- Tax Paid	37,200
(i) Accrued before tax profit	79,097
Accrued tax rate 37,200 ÷ 79,097 = 47.03%	
(ii) Realized before tax profit	79,710
Realized tax rate 37,200 ÷ 79,709 = 46.67%	

5. Rates of Return*

Accrued -- 79,097 ÷ 278,837 = 28.37%
-- 41,897 ÷ 278,837 = 15.03%

Realized -- 79,709 ÷ 279,144 = 28.54%
-- 42,509 ÷ 279,144 = 15.23%

*Subject to rounding error.

APPENDIX B

DATA PROBLEMS

APPENDIX B

DATA PROBLEMS

The primary objective of this section is to provide a detailed outline of the encountered accounting deficiencies and the subsequent adjustments made to either profit or capital figures. Some reference has already been made to differences between trust and loan company and chartered bank data. The most serious problem was related to the accrued rates of return because the book and market value changes of securities failed to be reported by trust and loan corporations prior to 1966. Another difficulty occurred because fiscal year ends were divergent: December 31 was used for trust and loan companies and October 31 for banks. The effect of this difference may be important: if profits rose during the fiscal periods, trust and loan corporation statistics would be biased upwards in comparison to the banks.

A second significant problem with data was the inconsistent inclusion of subsidiaries under parent banks and trust and loan corporations. In some years, banks consolidated some of their subsidiaries in their annual report, but trust and loan corporation data only indicated income derived from subsidiaries as well as capital invested in subsidiaries for the 1968-73 period. Generally, subsidiary income and capital were included in the calculation of rates of return for consolidated companies in bank data. However, in the cases of The Huron & Erie Mortgage Corporation and its subsidiary (wholly owned), The Canada Trust Company, and of Canada Permanent Mortgage Corporation and its subsidiary, Canada Permanent Trust Company, a specialized technique was utilized to consolidate the four into two companies. This was deemed necessary because of the

significant shifting of dividends between the parent and the subsidiary. Trust and loan company data were deficient in not indicating, for all years, capital invested in a subsidiary,and in not including advances to subsidiaries when a separate category was provided in later years. The consolidation was based on the following premise: assume that all profits in one year were distributed to the parent in accordance with the percentage of shares held rather than the percentage held in general or in investment reserves. Then, the profit accrued to the parent would be:

$$\pi + (\pi_s - D_s)\delta$$

where π = parent's accrued or realized profits

π_s = subsidiary profit

D_s = subsidiary dividends

δ = proportion of shares held by parent in the subsidiary

K_m^c = consolidated capital

K_m^p = parent's actual capital

The new capital figure may be expressed as:

$$K_m^c = K_m^p + \sum_{i=n}^{m} \left[\frac{(\pi_{si} - D_{si})\delta_i}{2} \right] + K_n^s \delta_n$$

$t = 1, \ldots, n, \ldots m$ years.

K_n^s is general reserve, investment reserve, and retained earnings of the subsidiary of the year before the sample period (in this case, 1962) minus any premium on capital raised prior to the sample period. This consolidation was done on both a realized (π_R) and accrued (π_A) basis. The effective tax rate was computed in accordance with the following formula:

$$\frac{T + T_s\delta}{\pi + (\pi_s - D_s)\delta + T + T_s\delta}$$

where T = parent's taxes paid

T_s = taxes paid by subsidiary

Hence, the before tax rates of return were derived in a similar manner, as stated in the section on methodology.

Because of the large number of adjustments made, particularly to the trust and loan corporation data, a summary table is provided stating the problem encountered and the alteration made to profit and capital figures. At this point, however, it is appropriate to mention some of the inconsistency in data that appeared in the Report of the Registrar of Loan and Trust Corporations for the Province of Ontario. First, with earlier years, not all corporations accounted for investment reserves, transfers to the general reserve, and in some instances, premium on capital. The difference between, say, 1965 and 1964 general reserves, may only in part be explained by transfers from the profit and loss account, and premium on capital, but inconsistent accounting practices were responsible for a significant deletion of information. Another case in point was that accrued changes in the maximum statutory value of stocks and bonds of Canada Permanent Trust Company, as indicated in investment reserves, were consistent with the summary table of securities for the years 1972 and 1971 but not for the years, 1970, 1969, and 1968.

Listing of Accounting Adjustments Made for Bank, and Trust and Loan Company Data

Bank	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Bank of Montreal	1970	B = $\frac{11}{12}$			
	1969	B = $\frac{1}{3}$			
	1965 1964 1963		Insufficient data-- no appropriation of loss account presented	No profit figure calculated	No capital figure calculated
The Bank of Nova Scotia	1970	B = $\frac{11}{12}$			
	1964	B = $\frac{11}{12}$			
	1963	B = $\frac{2}{3}$			
The Toronto-Dominion Bank	1973	B* = $\frac{1}{2}$			
	1966			Writedown reversed on property $543	
The Royal Bank of Canada	1971			Earnings of subsidiaries, not previously recorded, included in profit -- $2,038 -- exclusion lowers rate of return by only .34 per cent	
	1965		Accounting basis eleven-month period only (December 1, 1964 to October 31, 1965)	Multiply rate of return by factor $\frac{12}{11}$	

(cont'd.)

Listing of Accounting Adjustments Made for Bank, and Trust and Loan Company Data (cont'd.)

Bank	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Canadian Imperial Bank of Commerce	1963		Insufficient data--no appropriation of loss account or balance of revenue presented		
Bank Canadian National	1972	$B = \frac{5}{6}$			
	1971	$B = \frac{1}{3}$			
	1965		Accounting year December 1, 1964 to October 31, 1965	Multiply rate of return by factor $\frac{12}{11}$	
The Provincial Bank of Canada	1973	$B^* = \frac{1}{2}$			
	1970	$B = \frac{3}{4}$	Amalgamation with The People's Bank. Data obtained from The Canada Gazette		New issue equal to The People's Bank K1968 (4735) + π1969 (157) and π1970 (150) = 5042. Or, alternatively, K1969 (4641) + advancement of rest account of The Provincial Bank of Canada (400) = 5042
The Mercantile Bank of Canada	1973	$B = \frac{1}{12}$			
	1972	$B = \frac{5}{12}$			Special $2,500 distribution to parent from rest account; add $2,500 to K1971, K1972, and K1973
	1967	$B^* = \frac{1}{2}$			
	1966		Insufficient data -- no balance of revenue or appropriation of loss account presented		

(cont'd.)

Listing of Accounting Adjustments Made for Bank, and Trust and Loan Company Data (cont'd.)

Bank	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Bank of British Columbia	1968	B = 1			
Unity Bank of Canada	1973	B = 1			
Trust Company					
The Royal Trust Company	1972	$B^* = \frac{1}{2}$			
	1971	$B^* = \frac{1}{2}$			Transfer to deferred income tax; add $2,900 to K1971
					Adjust book value of investment in subsidiary; add $20 to K1971
	1970	$B = \frac{1}{2}$			Underwriting share issue; subtract $251 from premium on capital
	1969	$B^* = \frac{1}{2}$		Add special tax credit $282	
	1968	$B = \frac{1}{3}$		Add special tax credit $615	
				Subtract loss on premises $127	For IR, add $3,997 to K1967
	1967				
	1966			Add special tax credit $501	For IR, add $729 to K1965
				Add special tax credit $652	For IR, add $1,533 to K1966

(cont'd.)

Listing of Accounting Adjustments Made for Bank, and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
The Royal Trust Company (cont'd.)	1965	$B^* = \frac{1}{2}$ -- share issue -- assumed $70 per share for premium on capital -- total new issue $4,340		Add special tax credit $400	
	1963				GR not accounted for; add $1,000 to K1962
Canada Permanent Trust Company	1971				Transfer to deferred income tax; add $2,529 to K1971
	1968				Transfer to deferred income tax; add $372 to K1968
	1967	$B = \frac{1}{12}$	Amalgamation with Eastern and Chartered Company	Used summary sheet of securities rather than provision for deficiency of maximum statutory value for accrued profits	Included $17,395 as part of K1966 (otherwise rate of return abnormally high)
	1966 1965 1964			Deduction of transfer to IR from net profits added	
	1963			Deduction of transfer to IR from net profits added	Change in IR not accounted; add $180 to K1962
National Trust Company, Limited	1972	$B^* = \frac{1}{2}$			

(cont'd.)

Listing of Accounting Adjustments Made for Bank and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
National Trust Company, Limited (cont'd.)	1971	B* = $\frac{1}{2}$			Deferred income tax; add $2,039 to K1971
					Interest on investment of prior year; add $2,529 to K1970
					Transfer from deferred taxes; subtract $1,624 from K1971
					Amount reclassified; add $3 to K1971
	1970	B* = $\frac{1}{2}$			Reclassified amortized mortgage discount; add $54 to K1970
	1969	B* = $\frac{1}{2}$			Amount charged to income; add $22 to K1970
	1968	B* = $\frac{1}{2}$			Change in investment reserves; add $64 to K1967
	1967	B* = $\frac{1}{2}$		Add transfer to IR $833	IR of 1967 -- $10,480 IR of 1966 -- $ 9,647
	1966			Add transfer to IR $961	IR of 1965 -- $8,686
	1965				Transfer of $2,500 from IR to profit and loss account. IR of 1964 -- $11,186
	1964	B = $\frac{3}{4}$		Add transfer to IR $289	IR of 1963 -- $10,897
	1963	B = $\frac{2}{3}$		Add transfer to IR $202	IR of 1962 -- $10,695

(cont'd.)

Listing of Accounting Adjustment Made for Bank, and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Guaranty Trust Company of Canada	1971	B = $\frac{1}{12}$			
	1970				Change in provision of maximum statutory value; add $761 to K1969
	1969		Restatement of profits		-- Change in tax; subtract $213 from K1969 -- Change in reserves; add $374 to K1969 -- Tax adjustment; subtract $229 from K1969 -- Change in provision of maximum statutory value; add $761 to K1969 -- Other income; add $69 to K1969
	1968	B = $\frac{1}{2}$			Special assets not admitted; add $39 to K1968 Assets not admitted; $39 included in IR of 1968 Other income; add $86 to K1968
	1967				Change in IR; add $80 to K1967
	1966			Add transfer to IR deducted from profit $40	
	1965			Add transfer to IR $15	IR higher than indicated; subtract $45 from K1964

(cont'd.)

Listing of Accounting Adjustment Made for Bank, and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Guaranty Trust Company of Canada (cont'd.)	1964	B = $\frac{3}{4}$		Add transfer to IR $1,184	
	1963				IR higher than indicated by transfers; subtract $45 from K1962
The Canada Trust Company	1971	B* = $\frac{1}{2}$	Amalgamation with subsidiary		Subtract from K1971 (of subsidiary) GR $7,527 IR $3,639 Retained earnings $30 Capital $5,503 Adjustment from amalgamation; subtract $2,166 from K1971
	1970	B* = $\frac{1}{2}$			Dividend from subsidiary; subtract $3,568 from K1970 Writedown of assets; subtract $12,519 from K1970
	1968				Assets disallowed; add $581 to IR of 1969
	1967			Add transfer to IR $950	IR of 1966--$3,030
	1966			Add transfer to IR $820	IR of 1965--$2,210
	1965	B* = $\frac{1}{2}$		Add transfer to IR $714	IR of 1964--$1,496 Unaccounted $2,798 in GR of 1965 -- amalgamation with Executor's and Administrative Trust
	1964			Add transfer to IR $797	IR of 1963 -- $699

(cont'd.)

Listing of Accounting Adjustment Made for Bank and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
The Canada Trust Company (cont'd.)	1963	$B^* = \frac{1}{2}$		Add transfer to IR $764	IR of 1963 -- (-$65)
Montreal Trust Company	1972	$B^* = \frac{1}{2}$			Advance from subsidiary; add $400 to K1972
	1971	$B^* = \frac{1}{2}$			Advance from subsidiary; add $400 to K1971
	1970	$B^* = \frac{1}{2}$			
	1969	$B^* = \frac{1}{2}$			
	1968	$B^* = \frac{1}{2}$		Add premises sold $620	Adjustment to assets not admitted; add $199 to K1969
	1967			Add transfer to IR $560	IR of 1967 -- $5,748 IR of 1966 -- $5,188 Adjustment of assets not admitted, add $46 to K1967
	1966				IR of 1965 -- $4,938
	1965	$B^* = \frac{1}{2}$ assume $16 per share		Subtract moving expenses $195	IR of 1964 -- $4,938
	1964	$B^* = \frac{1}{2}$ no stock premium -- estimate new issue at $1,503			Moving reserve; add $200 to K1964
	1963	$B^* = \frac{1}{2}$			Unaccounted general reserve; add $1,485 to K1962

(cont'd.)

Listing of Accounting Adjustment Made for Bank,and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Victoria and Grey Trust Company	1972	$B^* = \frac{1}{2}$		Add amortization of bonds not previously recorded $25	Transfer to deferred income tax; add $3,300 to K1972
	1971	$B^* = \frac{1}{2}$		Add gains on investment $2,497 Add earnings of subsidiary $116	
	1970	$B^* = \frac{1}{2}$			
	1969	$B^* = \frac{1}{2}$			
	1968	$B^* = \frac{1}{2}$		Add taxes reduced $620	IR of 1967 -- $6,210 (not amount stated in report)
	1967				IR of 1966 -- $5,183
	1966	$B = \frac{11}{12}$		Add transfer to IR $300	IR of 1965 -- $3,915
	1965	$B^* = \frac{1}{2}$			IR of 1964 -- $3,915 Change in GR not accounted; add $3,196 to K1964
	1964	$B = \frac{11}{12}$			IR of 1963 -- $3,247
	1963				IR of 1962 -- $3,247
The Metropolitan Trust Company	1972				Amortization of reserves from reorganization; add $228 to K1972 Subsidiary profit not recorded; add $72 to K1971

(cont'd.)

Listing of Accounting Adjustment Made for Bank, and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues Data Problem	Adjustment to Profit	Adjustment to Capital
The Metropolitan Trust Company (cont'd.)	1971	B = $\frac{1}{2}$ included underwriting cost $119 new issue		Amortization of reserves; add $238 to K1971
				Subsidiary profit not recorded; add $72 to K1971
	1970	B* = $\frac{1}{2}$		Amortization of reserves; add $281 to K1970
	1969	B* = $\frac{1}{2}$ included reserve and capital of York Trust		Book value of subsidiary reduced; subtract $41 from K1969
				Adjust reserve; add $7 to K1969
				Amortization of reserves; add $283 to K1969
	1968	B* = $\frac{1}{2}$		Loss of York Trust; subtract $471 from K1967
				Amortization of reserves; add $151 to K1968
				Secondary reserve transfer; subtract $89 from K1968
			Add transfer to IR $35	Change in IR; subtract $35 from K1967
	1967	B* = $\frac{1}{2}$	Add transfer to IR $35	IR of 1967 -- $2,589 IR of 1966 -- $2,554
	1966	B* = $\frac{1}{2}$	Add transfer to IR $35	IR of 1965 -- $2,519
	1965	B* = $\frac{1}{2}$	Add transfer to IR $35	IR of 1964 -- $2,484
			Subtract for prepaid expenses $25	

(cont'd.)

Listing of Accounting Adjustment Made for Bank, and Trust and Loan Company Data (cont'd.)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
The Metropolitan Trust Company (cont'd.)	1964			Add transfer to IR $25 Subtract prepaid expenses $35	IR of 1963 -- $2,459
	1963			Add transfer to IR $2	IR of 1962 -- $2,457
United Trust Company	1972	B* = $\frac{1}{2}$ included commission expenses			Revalued goodwill; add $1,374 to K1972
	1971	B* = $\frac{1}{2}$			Adjustment re prior years' tax benefit; subtract $213 from K1970
	1968	B* = $\frac{1}{2}$			
Loan Corporation					
The Huron & Erie Mortgage Corporation	1971			Add dividend from subsidiary $4,196	Transfer of unclaimed depreciation to liabilities; subtract $5 from K1972
	1970	B = $\frac{5}{12}$		Add dividends from subsidiary $11,014	
	1968	B = $\frac{1}{2}$			IR of 1967 -- $8,442 Adjustment of assets disallowed; add $126 to K1968
	1967			Add transfer to IR $1,924	IR of 1966 -- $6,518 Assets not admitted; add $52 to K1967 Change in general reserve unaccounted; subtract $750 from K1966

(cont'd.)

Listing of Accounting Adjustment Made for Bank and Trust and Loan Company Data (cont'd.)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
The Huron & Erie Mortgage Corporation (cont'd.)	1966			Add transfer to IR $1,736	IR of 1965 -- $4,782 Change in general reserve unaccounted; subtract $250 from K1966
	1965	B = $\frac{11}{12}$		Add transfer to IR $1,471	IR of 1964 -- $3,311 Unaccounted GR of $3,936
	1964	B = $\frac{3}{4}$		Add transfer to IR $1,123	IR of 1963 -- $2,188
	1963			Add transfer to IR $743	IR of 1962 -- $1,445
Canada Permanent Mortgage Corporation	1971	B* = $\frac{1}{2}$			Transfer to deferred tax; add $3,497 to K1971 Adjustment for income tax; subtract $3,159 from K1970
	1970			Subtract loss on sale at premises $148	"Other"; subtract $1 from K1970
	1969	B* = $\frac{1}{2}$			Adjustment for income tax; add $625 to K1969
	1968	B* = $\frac{1}{2}$			Change in IR unaccounted; add $2,544 to K1968 Unaccounted funds; add $800 to K1968
	1967	B = $\frac{1}{12}$ assumed stock at $12 per share		Add transfer to IR $1,145	

(cont'd.)

Listing of Accounting Adjustment Made for Bank, and Trust and Loan Company Data (cont'd.)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Canada Permanent Mortgage Corporation (cont'd.)	1966			Add transfer to IR $1,034	Change in IR unaccounted; add $534 to K1965
	1965	B* = $\frac{1}{2}$		Add transfer to IR $940	Change in IR unaccounted; add $475 to K1964
	1964			Add transfer to IR $804	
	1963			Add transfer to IR $210	
Kinross Mortgage Corporation	1970	B* = $\frac{1}{2}$			
	1969	B* = $\frac{1}{2}$			
	1967			Add transfer to IR $472	
	1966			Add transfer to IR $303	
	1965			Add transfer to IR $281 Subtract for incorporation expense $11	Assets not admitted; add $48 to K1964
	1964	B* = $\frac{1}{2}$		Add transfer to IR $83	Assets not admitted; add $48 to K1964 IR of 1963-- $16
	1963	B* = $\frac{1}{2}$		Add transfer to IR $16	IR of 1962-- 0
Credit Foncier Franco-Canadien	1972	B* = $\frac{1}{2}$			Transfer from deferred income tax; subtract $409 from K1972

(cont'd.)

Listing of Accounting Adjustment Made for Bank and Trust and Loan Company Data (cont'd.)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Credit Foncier Franco-Canadien (cont'd.)	1971	$B^* = \frac{1}{2}$		Subtract loss in foreign exchange $486	
	1970			Add gain in foreign exchange $306	
	1969	$B^* = \frac{1}{2}$		Add gain in foreign exchange $51	
	1968	$B^* = \frac{1}{2}$		Add gain in foreign exchange $26	
				Subtract income tax $1,082	IR of 1967 -- $4,272
	1967	$B^* = \frac{1}{2}$		Add transfer to IR $460	Adjustment of prior years' allowance; subtract $21 from K1967
					Change in IR; add $25 to K1966
	1966	$B^* = \frac{1}{2}$		Add transfer to IR $455	IR of 1965 -- $3,367
					Deferred expense; add $21 to K1966
					GR unaccounted; add $5,869 to K1965
	1965	$B^* = \frac{1}{2}$		Add transfer to IR $422	IR of 1964 -- $2,945
					Change in IR; add $80 to K1964
					Unaccounted funds; add $553 to K1965

(cont'd.)

Listing of Accounting Adjustment Made for Bank, and Trust and Loan Company Data (concl'd.)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Credit Foncier Franco-Canadien (cont'd.)	1964	B* = $\frac{1}{2}$		Add transfer to IR $368	IR of 1963 -- $2,577 Change in IR unaccounted; add $97 to K1963 GR unaccounted; add $420 to K1963
	1963	B* = $\frac{1}{2}$		Add transfer to IR $313	IR of 1962 -- $2,264 "Other"; add $81 to K1962 Unaccounted funds; add $888 to K1962

Consolidation	Year	Data Problem
The Huron & Erie Mortgage Corporation and The Canada Trust Company	1968 1967 1966 1965 1964	Estimate dividends paid to parent based on percentage of outstanding shares held by parent .995. For the 1966-69 period, dividends were based on the 1969 actual recorded dividend payment.
	1962	Estimated premium on capital prior to 1962 was $1.7 million K1962 multiplied by .995 was $2,274.
Canada Permanent Mortgage Corporation and Canada Permanent Trust Company	1968 1967 1966 1965 1964 1963	Dividends paid to parent estimated by factor of .98 (percentage of shares held by parent).
	1962	K1962 = $6,403 after subtraction of $1.8 million for previous premium on capital (estimated).

Note For years when issue date was unknown, B is starred. All capital and profit figures are in thousands. IR is investment reserve and GR is general reserve. K19XX refers to shareholders' capital of the year 19XX. All numbers are in thousands of dollars.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario; and annual reports of the chartered banks.

APPENDIX C

RATES OF RETURN TO AVERAGE SHAREHOLDERS' CAPITAL AND TAX RATES FOR INDIVIDUAL CHARTERED BANKS AND TRUST AND MORTGAGE LOAN COMPANIES, FOR THE YEARS 1963 TO 1973

Appendix Table C-1

After Tax Realized Rates of Return to Average Shareholders' Capital for Chartered Banks, for the years 1963 to 1973

(Per cent)

Bank	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Bank of Canada	6.94	8.16	5.51	8.88	9.24	13.03	12.32	11.60	11.32	14.10	15.35
Canadian Imperial Bank of Commerce		7.21	8.47	8.88	10.73	13.53	11.85	11.19	9.19	12.93	13.54
The Bank of Nova Scotia	4.28	6.07	5.20	9.67	14.01	15.74	12.49	9.96	13.23	15.53	13.97
Bank of Montreal				13.13	10.20	15.74	10.54	7.74	11.50	13.45	15.58
The Toronto-Dominion Bank	6.35	7.47	6.25	8.67	11.06	16.20	12.76	10.60	13.41	15.23	17.76
The Provincial Bank of Canada				6.47	10.70	12.89	12.61	9.96	17.69	16.93	17.68
Bank Canadian National	7.12	6.54	5.96	6.48	9.05	10.61	10.06	10.45	10.53	13.33	14.70
The Mercantile Bank of Canada					1.63	8.87	10.22	8.12	12.37	14.77	10.52
Bank of British Columbia						2.31	.88	2.46	4.99	4.81	4.59
Unity Bank of Canada											-6.00
Industry Average*	6.25	7.35	6.51	9.51	10.60	14.21	11.84	10.35	11.42	14.06	15.08

*Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source Annual reports of chartered banks.

Appendix Table C-2

Before Tax Realized Rates of Return to Average Shareholders' Capital for Chartered Banks, for the years 1963 to 1973

(Per cent)

Bank	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Bank of Canada	12.84	14.49	10.86	14.80	16.20	20.76	24.51	25.44	23.51	26.78	28.37
Canadian Imperial Bank of Commerce		13.09	14.33	15.18	17.05	21.22	25.20	24.65	20.07	24.74	26.64
The Bank of Nova Scotia	9.62	11.72	10.77	15.75	20.37	22.80	24.61	21.11	27.96	29.16	27.11
Bank of Montreal				20.35	16.89	21.28	21.85	20.45	23.29	25.73	27.24
The Toronto-Dominion Bank	12.28	13.35	12.42	15.13	18.02	23.73	25.51	23.11	26.88	28.54	30.20
The Provincial Bank of Canada				13.13	17.51	20.31	22.57	26.78	30.32	28.76	29.34
Bank Canadian National	13.27	12.90	11.27	12.24	15.16	17.06	20.07	22.47	19.47	19.63	23.86
The Mercantile Bank of Canada					1.63	8.87	10.22	8.62	23.18	24.25	17.28
Bank of British Columbia						2.31	.88	3.35	6.35	6.69	7.30
Unity Bank of Canada											-6.21
Industry Average*	12.05	13.38	12.17	15.85	17.23	21.36	24.07	23.36	23.58	26.34	27.61

*Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source Annual reports of chartered banks.

Appendix Table C-3

Income Tax Rates on Realized Income for Chartered Banks, for the Years 1963 to 1973

(Per cent)

Bank	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Bank of Canada	45.94	43.68	49.28	40.01	42.98	37.29	49.74	54.41	51.85	47.35	45.90
Canadian Imperial Bank of Commerce		44.91	40.91	41.42	37.05	36.23	52.98	54.60	54.22	47.74	49.17
The Bank of Nova Scotia	55.51	48.22	51.71	38.60	31.22	30.95	49.25	52.81	52.68	46.74	48.46
Bank of Montreal				35.49	39.60	26.03	51.76	62.20	50.71	47.72	42.81
The Toronto-Dominion Bank	48.31	44.04	49.68	42.78	38.61	31.74	50.02	54.13	50.14	46.67	41.20
The Provincial Bank of Canada				50.74	38.90	36.54	44.14	62.81	42.09	41.13	39.74
Bank Canadian National	46.34	49.31	47.21	47.07	40.29	37.82	49.88	53.50	45.93	32.11	38.38
The Mercantile Bank of Canada					0	0	0	5.77	46.67	39.10	39.12
Bank of British Columbia						0	0	26.61	21.40	28.13	37.09
Unity Bank of Canada											-3.31
Industry Average*	48.16	45.06	46.47	39.97	38.48	33.49	50.81	55.67	51.58	46.63	45.40

*Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source Annual reports of chartered banks.

Appendix Table C-4

After Tax Accrued Rates of Return to Average Shareholders' Capital for Chartered Banks, for the Years 1963 to 1973

(Per cent)

Bank	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Bank of Canada	7.39	7.77	6.14	7.32	9.38	12.83	11.74	10.29	12.54	15.34	14.59
Canadian Imperial Bank of Commerce		10.07	12.65	5.26	10.68	13.74	10.34	10.84	12.21	13.09	12.80
The Bank of Nova Scotia	4.99	6.50	5.21	7.80	11.55	16.99	9.50	8.17	18.18	15.37	12.08
Bank of Montreal				11.78	9.18	15.81	8.42	7.18	14.51	13.64	14.48
The Toronto-Dominion Bank	6.62	8.31	5.83	6.34	10.57	16.30	10.82	9.31	18.87	15.03	17.22
The Provincial Bank of Canada				5.69	9.91	13.28	11.86	7.10	20.70	18.34	16.60
Bank Canadian National	7.37	8.23	6.13	5.12	7.72	10.38	7.42	7.06	14.24	12.94	12.24
The Mercantile Bank of Canada					1.76	8.61	10.02	8.39	13.55	14.78	10.45
Bank of British Columbia						2.31	.88	2.46	4.92	4.99	4.55
Unity Bank of Canada											-6.00
Industry Average*	6.70	8.38	7.82	7.41	10.00	14.38	10.19	9.24	14.47	14.41	14.04

*Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source Annual reports of chartered banks.

Appendix Table C-5

Before Tax Accrued Rates of Return to Average Shareholders' Capital for Chartered Banks, for the Years 1963 to 1973

(Per cent)

Bank	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Bank of Canada	13.28	14.11	10.98	13.29	16.34	20.58	23.97	24.23	24.35	27.94	27.67
Canadian Imperial Bank of Commerce		15.86	18.38	11.65	17.00	21.21	23.80	24.32	22.92	24.89	25.95
The Bank of Nova Scotia	10.32	12.14	10.79	13.93	17.99	24.00	21.81	19.42	32.52	29.01	25.36
Bank of Montreal				19.06	15.90	21.34	19.85	19.94	26.15	25.91	26.21
The Toronto-Dominion Bank	12.55	14.17	12.01	12.89	17.56	23.44	23.73	21.92	31.96	28.37	29.69
The Provincial Bank of Canada				12.39	16.75	20.68	21.87	24.17	33.34	30.08	28.33
Bank Canadian National	13.51	14.54	10.96	10.93	13.87	16.84	17.57	19.29	23.00	19.26	21.52
The Mercantile Bank of Canada					1.76	8.61	10.02	8.89	24.30	24.27	17.21
Bank of British Columbia						2.31	.90	3.35	6.28	6.86	7.26
Unity Bank of Canada											6.21
Industry Average*	12.49	14.38	13.43	13.81	16.65	21.54	22.53	22.32	26.43	26.67	26.65

*Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source Annual reports of chartered banks.

Appendix Table C-6

Income Tax Rates on Accrued Income for Chartered Banks, for the Years 1963 to 1973

(Per cent)

Bank	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Bank of Canada	44.36	44.95	48.72	44.91	42.58	37.66	51.03	57.54	49.90	45.10	47.27
Canadian Imperial Bank of Commerce		36.52	31.19	54.86	37.17	35.21	56.56	55.42	46.73	47.41	50.67
The Bank of Nova Scotia	51.64	46.48	51.70	44.02	35.80	29.20	56.44	57.94	44.10	47.02	52.36
Bank of Montreal				38.18	42.26	25.93	57.59	63.99	44.51	47.35	44.76
The Toronto-Dominion Bank	47.25	41.35	51.47	50.82	39.80	31.61	54.40	57.52	40.96	47.03	42.01
The Provincial Bank of Canada				54.07	40.85	35.79	45.76	70.62	37.92	39.03	41.40
Bank Canadian National	45.45	43.40	48.72	53.14	44.36	38.37	57.78	63.40	38.10	32.80	43.11
The Mercantile Bank of Canada					0	0	0	5.59	44.25	39.10	39.29
Bank of British Columbia						0	0	26.61	21.63	27.38	37.33
Unity Bank of Canada											-3.31
Industry Average*	46.37	41.72	41.81	46.37	39.94	33.18	54.77	58.60	45.26	45.98	47.31

*Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source Annual reports of chartered banks.

Appendix Table C-7

After Tax Realized Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, for the Years 1963 to 1973

(Per cent)

Trust or Mortgage Loan Company	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Trust Company	8.66	10.62	12.75	11.76	13.31	12.01	9.64	9.08	11.74	14.43	14.97
Canada Permanent-Mortgage Corporation, Trust Company	8.29	10.00	10.88	9.42	9.00	10.10	7.43	10.07	14.19	14.08	13.82
The Huron & Erie Mortgage Corporation-The Canada Trust Co.	14.09	15.09	13.92	14.77	14.56	11.04	8.94	7.25	13.61	16.18	15.98
Guaranty Trust Company of Canada	9.18	13.73	9.12	9.85	9.77	9.14	8.24	6.22	12.34	12.16	8.09
National Trust Company, Limited	6.44	6.76	5.92	9.61	9.22	7.33	9.23	7.42	11.76	15.17	13.57
Montreal Trust Company	6.97	7.64	6.92	8.40	9.25	11.31	4.92	1.08	6.67	14.43	11.69
Victoria and Grey Trust Company	5.21	7.96	10.65	11.64	10.05	13.43	9.70	9.62	21.78	16.81	21.33
Credit Foncier Franco-Canadien	6.35	6.53	7.26	6.32	6.37	3.83	5.84	5.94	7.15	9.52	8.79
Kinross Mortgage Corporation	10.33	2.15	4.42	5.56	6.06	6.44	3.65	3.48	5.56	11.64	11.79
The Metropolitan Trust Company	.31	2.13	2.45	3.27	3.59	5.59	9.70	8.47	11.36	10.81	8.93
United Trust Company						-9.20	6.00	-8.21	4.98	11.57	13.42
Industry Average*	8.17	9.65	9.70	10.00	10.09	9.57	7.96	7.57	12.35	14.07	13.57

*Excludes United Trust Company, The Metropolitan Trust Company, and Kinross Mortgage Corporation.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

Appendix Table C-8

Before Tax Realized Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, for the Years 1963 to 1973

(Per cent)

Trust or Mortgage Loan Company	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Trust Company	16.03	21.24	20.53	19.06	21.49	20.67	18.18	16.70	23.13	26.57	27.58
Canada Permanent-Mortgage Corporation, Trust Company	14.67	16.02	16.30	13.80	14.60	15.10	12.19	14.35	22.83	22.64	22.60
The Huron & Erie Mortgage Corporation-The Canada Trust Co.	23.92	25.16	20.81	21.60	20.60	16.69	15.59	14.62	26.74	29.80	31.07
Guaranty Trust Company of Canada	16.80	21.62	16.84	17.49	17.23	15.66	13.07	9.53	21.66	21.01	13.85
National Trust Company, Limited	12.13	12.94	11.44	15.33	15.52	13.55	16.78	14.55	22.18	28.39	26.30
Montreal Trust Company	12.91	14.52	14.27	13.78	14.22	14.21	8.27	.25	18.96	24.99	20.95
Victoria and Grey Trust Company	9.24	13.89	13.96	15.64	13.24	18.71	16.29	16.72	31.84	29.57	38.33
Credit Foncier Franco-Canadien	9.54	9.81	10.22	8.98	9.23	10.06	9.99	9.99	12.70	15.48	15.32
Kinross Mortgage Corporation	11.40	2.80	6.20	8.41	7.98	8.21	5.59	5.38	9.17	17.90	16.99
The Metropolitan Trust Company	.17	2.26	3.77	5.50	6.12	5.59	9.70	8.47	11.36	15.60	14.52
United Trust Company						-9.20	6.00	-16.28	10.05	20.29	26.96
Industry Average*	14.30	16.53	15.48	15.28	15.59	15.32	13.71	12.88	22.52	24.69	24.50

*Excludes United Trust Company, The Metropolitan Trust Company, and Kinross Mortgage Corporation.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

Appendix Table C-9

Income Tax Rates on Realized Income for Trust and Mortgage Loan Corporations, for the Years 1963 to 1973

(Per cent)

Trust or Mortgage Loan Company	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
The Royal Trust Company	45.91	50.01	37.90	38.31	38.06	41.89	46.97	45.63	49.26	45.70	45.71
Canada Permanent-Mortgage Corporation, Trust Company	43.50	37.57	33.22	31.72	38.35	33.10	39.04	29.80	37.82	37.82	38.87
The Huron & Erie Mortgage Corporation-The Canada Trust Co.	41.10	40.03	33.10	31.62	29.35	33.82	42.63	50.42	49.09	45.70	48.56
Guaranty Trust Company of Canada	45.37	36.53	45.85	43.68	43.31	41.62	36.95	34.74	43.02	42.11	41.61
National Trust Company, Limited	46.92	47.77	48.25	37.30	40.59	45.89	44.98	49.00	49.68	46.57	48.41
Montreal Trust Company	45.99	47.39	51.51	39.02	34.93	20.39	40.51	-331.13	64.82	42.26	44.22
Victoria and Grey Trust Company	43.60	42.71	23.72	26.56	24.10	22.01	40.46	42.47	31.59	43.15	44.36
Credit Foncier Franco-Canadien	33.47	33.41	28.95	29.61	30.97	61.92	41.52	40.57	43.69	38.50	42.66
Kinross Mortgage Corporation	9.68	23.12	28.71	33.92	24.10	21.59	34.69	35.30	39.36	35.00	30.60
The Metropolitan Trust Company	-85.71	5.61	35.03	40.54	41.52	0.0	0.0	0.0	0.0	30.72	38.49
United Trust Company						0.0	0.0	49.56	50.45	42.98	50.10
Industry Average*	42.84	41.58	37.36	34.58	35.26	37.55	41.91	41.20	45.16	43.02	44.62

*Excludes United TrustCompany, The Metropolitan Trust Company, and Kinross Mortgage Corporation.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

Appendix Table C-10

After Tax Accrued Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, for the Years 1967 to 1973

(Per cent)

Trust or Mortgage Loan Company	1967	1968	1969	1970	1971	1972	1973
The Royal Trust Company	11.57	7.81	8.24	9.89	14.99	16.57	12.73
Canada Permanent-Mortgage Corporation, Trust Company	1.29	12.74	5.86	3.86	24.65	20.11	-13.18
The Huron & Erie Mortgage Corporation-The Canada Trust Co.	19.16	17.09	-4.33	7.37	11.87	21.08	-11.95
Guaranty Trust Company of Canada	10.53	10.77	2.58	8.53	19.38	10.73	-19.74
National Trust Company, Limited	12.53	-5.39	3.86	2.14	24.34	23.70	-5.26
Montreal Trust Company	12.86	-2.60	4.99	2.16	14.60	18.31	.56
Victoria and Grey Trust Company	10.73	18.61	6.39	-6.55	34.71	28.28	-16.51
Credit Foncier Franco-Canadien	6.19	5.06	4.64	6.41	8.68	11.79	8.47
Kinross Mortgage Corporation	6.56	6.74	3.65	3.48	5.56	11.64	11.79
The Metropolitan Trust Company	3.59	-8.37	4.84	10.68	14.00	10.82	4.46
United Trust Company		-9.08	-1.49	-4.15	6.49	12.38	10.56
Industry Average*	10.29	9.37	3.90	5.28	17.97	19.11	-4.39

*Excludes United Trust Company, The Metropolitan Trust Company, and Kinross Mortgage Corporation.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

Appendix Table C-11

Before Tax Accrued Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, for the Years 1963 to 1973

(Per cent)

Trust or Mortgage Loan Company	1967	1968	1969	1970	1971	1972	1973
The Royal Trust Company	18.87	13.75	16.40	17.48	26.18	28.57	25.49
Canada Permanent-Mortgage Corporation, Trust Company	7.11	17.83	10.92	8.58	33.51	28.80	-3.22
The Huron & Erie Mortgage Corporation-The Canada Trust Co.	25.06	22.52	2.64	14.66	24.98	34.32	3.87
Guaranty Trust Company of Canada	17.97	16.09	7.54	13.07	28.35	19.64	-13.14
National Trust Company, Limited	18.72	-1.24	11.62	9.47	35.18	36.31	8.76
Montreal Trust Company	17.73	-.52	8.34	1.44	26.08	28.65	10.37
Victoria and Grey Trust Company	13.91	22.30	13.10	-3.58	44.04	40.26	4.10
Credit Foncier Franco-Canadien	9.05	11.25	8.81	10.46	14.18	17.68	15.02
Kinross Mortgage Corporation	8.48	8.66	5.59	5.38	9.17	17.90	16.99
The Metropolitan Trust Company	6.13	-8.37	4.84	10.68	14.00	15.60	10.18
United Trust Company		-9.08	-1.49	12.03	11.52	21.05	24.37
Industry Average*	15.79	15.14	9.80	10.72	27.98	29.60	7.38

*Excludes United Trust Company, The Metropolitan Trust Company, and Kinross Mortgage Corporation.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

Appendix Table C-12

Income Tax Rates on Accrued Income for Trust and Mortgage Loan Corporations, for the Years 1963 to 1973

(Per cent)

Trust or Mortgage Loan Company	1967	1968	1969	1970	1971	1972	1973
The Royal Trust Company	38.67	43.21	49.77	43.43	42.75	42.01	50.06
Canada Permanent-Mortgage Corporation, Trust Company	81.92	28.51	46.30	55.05	26.43	30.18	-310.08
The Huron & Erie Mortgage Corporation-The Canada Trust Co.	23.53	24.08	264.15	49.76	52.49	38.57	408.98
Guaranty Trust Company of Canada	41.40	37.42	65.79	34.74	31.64	45.38	-50.22
National Trust Company, Limited	33.07	535.9	66.79	77.40	30.81	34.74	160.12
Montreal Trust Company	27.46	603.33	40.16	-250.00	44.02	36.08	94.64
Victoria and Grey Trust Company	22.86	16.53	51.23	-82.9	21.18	29.75	502.64
Credit Foncier Franco-Canadien	31.60	55.03	47.36	38.69	38.79	33.30	43.60
Kinross Mortgage Corporation	22.61	22.21	34.69	35.30	39.36	35.00	30.60
The Metropolitan Trust Company	41.40	0.0	0.0	0.0	0.0	30.64	56.18
United Trust Company		0.0	0.0	65.59	43.66	41.20	56.69
Industry Average*	34.82	38.12	60.20	50.72	35.79	35.42	159.61

*Excludes United Trust Company, The Metropolitan Trust Company, and Kinross Mortgage Corporation.

Source Report of the Registrar of Loan and Trust Corporations for the Province of Ontario.

APPENDIX D

INFLATION ACCOUNTING

APPENDIX D

INFLATION ACCOUNTING

Interindustry comparisons of rates of return to capital are significantly affected by the impact of inflation on book accounting profits. If one desired to measure the real profit earned by a firm, then the following adjustments would be needed. First, depreciation of capital equipment and property valued according to acquisition cost should be revised upwards to reflect the additional expenditure associated with replacement of capital. Similarly, inventories acquired by a firm should be valued at replacement cost rather than initial book value. The impact of the above revaluations under inflation accounting would be to lower reported profits. The magnitude of the adjustment would depend on the length of service of property and turnover rates of inventories.

Second, the book value of financial assets and liabilities should be preserved under conditions of expected inflation by interest payments that compensate lenders for the postponement of present-day consumption and for the expected rate of inflation. Unanticipated inflation, the difference between the actual inflation rate and the expected inflation rate, benefits borrowers but reduces the real return earned on loans by creditors.[1] Under these conditions, corporations that hold more financial liabilities than assets would experience an increase in measured profits with inflation accounting.

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1 This assumes that unanticipated inflation is positive. If expected inflation is higher than the actual inflation rate, then unanticipated inflation benefits lenders and is negative.

The term structure of financial assets and liabilities also would affect the impact of unanticipated inflation on book profits. Longer-term assets and liabilities may not include as much expected inflation in interest payments as short-term assets during periods of increasing inflation rates. To the extent that the term structure of financial assets is longer than financial liabilities, then profits measured are reduced with unanticipated inflation.

Third, cash is held by firms for transaction purposes, without a compensatory payment of interest. Since the amount of goods and services purchased is reduced by the full inflation rate, then the real value of cash is reduced.

Unfortunately, data are not easily accessible with regard to turnover rates of inventories, service lives of property assets, and expected rates of inflation, to permit one to estimate inflation accounting profits. Nevertheless, it is possible to study the relative importance of assets and liabilities that would be revalued and thus affect the measure of book profits.

As illustrated in Table D-1 property and inventories as a share of total assets were substantially higher for nonfinancial corporations than for financial firms. The impact of the appropriate adjustment for inflation would be to increase the financial sector's book profit rates relative to the nonfinancial firms.

On the other hand, nonfinancial sectors hold a substantial amount of net debt[2] that would reduce the impact of inflation on

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2 Financial liabilities include all debt and accounts payable. Financial assets include cash, financial investments, and accounts receivable. If financial liabilities are greater (less) than financial assets, the difference between the two is net financial debt (net financial assets).

Table D-1

Short- and Long-term Assets and Liabilities as a Share of Total Assets, by Selected Sector, for the Calendar Year 1973[1]

(in percentages)

Item	Trust and Loan Corporations[2]	All Manufacturing[3]	Wholesale Trade[3]	Retail Trade[3]	Transportation[3]	Chartered Banks
Assets						
Cash and Demand Deposits	1.0	1.7	3.1	3.7	1.5	5.9
Term Certificates	5.0	-	-	-	-	-
Short-term (Temporary) Investments	7.1	3.4	3.0	2.3	2.7	
Accounts Receivable	1.1	20.6	36.9	16.0	8.1	92.7
Long-term Investments	82.0	1.4	.4	6.2	1.7	
Shares and Loans to Affiliates	2.5	8.1	5.7	3.8	15.2	.4
Property and Inventories	.9	61.8	47.8	63.5	66.6	.9
Liabilities						
Short-term Loans and Deposits	27.4	6.7	17.6	16.5	3.1	
Accounts Payable	2.0	16.3	25.0	18.9	8.6	95.3
Long-term Debt	60.8	13.0	5.0	12.3	33.3	
Owing to Parent or Affiliate	2.2	6.1	6.5	5.7	5.8	-
Equity and Reserves	7.4	51.0	44.4	43.2	42.4	4.4

1 Assets and liabilities were calculated as averages of 1972 and 1973 fourth quarter data.

2 Trust and loan corporation asset and liability data were based on the following premises:
1) short-term was defined as less than one year, long-term as over one year;
2) swapped deposits were considered as short-term assets;
3) personal and collateral loans were counted as short-term assets (based on behaviour of yields);
4) all mortgages were considered as long-term assets;
5) banks loans were divided into $80 million short and $25 million long, based on the ratio of short-term to total bank loans made to all industrial corporations (.761).

3 Industrial sector data were based on the classification appearing in Statistics Canada, Industrial Corporations Financial Statistics, except long-term debt with maturity of less than one year which was included in the long-term debt liability category for the purposes of this table.

Source Statistics Canada, Industrial Corporations Financial Statistics, Cat. No. 61-003, and idem, Financial Institutions Financial Statistics, Cat. No. 61-006.

measured book profits. However, the ratio of net debt to total assets is significantly less than property and inventories. For example, all manufacturing industries' inventory and property assets are 61.8 per cent of total assets in 1973 versus 8.9 per cent for net debt.

By comparison, net financial assets for the trust and loan corporations were 6.0 per cent of total assets. Furthermore, financial assets were longer in term than liabilities, indicating that measured profits would be lowered under inflation accounting.

Net assets in 1973 for the Canadian chartered banks were 3.3 per cent of total assets. Since there were no published data available separating short- from long-term financial assets and liabilities, it was difficult to study the impact of unanticipated inflation with regard to the term structure. From the information given in Chapters 2 and 4, foreign currency assets were longer in term than foreign currency liabilities, and Canadian dollar loans and securities were longer in term than Canadian currency deposits.

Considering the overall adjustments to be made to book rates of return to capital in order to account for inflation, some qualitative evidence may be derived from Table D-1. First, one may assume that the reduction in measured profit made per dollar of financial assets, property, and inventory assets, is the same amount as the increase in measured profit per dollar of financial debt. Thus one may subtract net debt from property and inventory assets in order to derive the amount of "net inflation-adjusted assets" that would reduce book profits. The ratio of these "net inflation-adjusted assets" to

total book shareholders' capital in 1973 for all manufacturing, wholesale trade, retail trade and transportation was 1.04, .98, 1.02 and .84, respectively. For the chartered banks and trust and loan corporations, the ratio was .95 and .93 respectively. Under the above premise, the relative reduction in measured profits, when adjusted for inflation accounting for the chartered banks, would be less than for all manufacturing, wholesale trade and retail trade, but more for trust and loan companies and transportation.

Thus it is suggested that the chartered bank profit rates are relatively higher than most other sectors, if one uses inflation accounting procedures. It should be emphasized that this evidence is not conclusive and a more careful study of book profits under inflation accounting would be necessary.