



# The Measure of Rates of Return in Canadian Banking



Jack M. Mintz



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## Preface

This study was originally written in the year 1974-75 and the summer of 1976. The purpose of this work was to provide a background analysis of rates of return to capital earned by Canadian chartered banks, some of the data having been incorporated in the Economic Council of Canada's 1976 report, *Efficiency and Regulation: A Study of Deposit Institutions*.

The main objective of this study is to measure and analyse banking profit rates earned before and after the Bank Act was amended in 1967. While we consider here certain factors that influence profitability, our study is not concerned with measuring the actual cost of financial intermediation undertaken by the Canadian chartered banks, that is, the cost of using resources, labour, capital, and land to provide services for customers.

The author is grateful to the Economic Council of Canada for financially supporting this project. Helpful comments were received from the Financial Markets Group. I wish to thank, in particular, J. Chant and G. Lerner who both provided invaluable advice during the time that I spent working on this study. I also wish to thank several other people who, at times, assisted me in completing this work: F. Roseman, W. Clendenning, J. Babin, G. Post, and J. Martin. Lillian Hughes and my wife Eleanor improved considerably, with editorial suggestions, the style of this report. My thanks are extended also to three anonymous referees who provided useful comments as well as considerable encouragement to publish this work. The author is responsible for all remaining errors in this study.

**The Measure of Rates of Return  
in Canadian Banking**

# 1 The Concept of Measuring Rates of Return in Banking

The purpose of this study is to investigate the profitability of Canadian chartered banks after the 1967 Bank Act amendments became effective. The prime objective is to determine whether Canadian chartered banks earned excess profits after 1967, excess profits being apparent when one compares the before- and after-tax rates of return to shareholders' capital earned by the Canadian chartered banks with the profit rates earned in other industries.

This introductory chapter is divided into three parts. In the first section, we suggest a theoretical justification for the comparison of rates of return to shareholders' capital earned by banks with those earned by other industries. In the second section, we discuss the measurement of rates of return to shareholders' capital that we adopt in this study. And in the third section, we outline the structure of this report.

## The Role of Profits

To understand the role of profits as a guide for a firm in choosing alternative investments, it is perhaps useful to distinguish first between (a) the return earned on equity, and (b) the cost of equity financing to the firm. The profit earned by a firm is income paid to equity holders as a return for their investment of equity capital in a firm. Profit in this sense is measured as revenue less (i) wages and salaries paid for hiring labour, (ii) depreciation of property, (iii) the expense of materials, and (iv) the cost of borrowed funds (debt). The cost of equity financing to the firm, however, is the "imputed" interest cost paid to equity holders who, by investing equity in a firm, forgo the opportunity of investing funds in the best alternative use. With efficient capital markets, this "imputed" interest (or alternatively, the opportunity cost of equity investment) is compensation paid to equity holders for (i) the postponement of present-day consumption to the future, (ii) the cost of risk, and (iii) the rate of inflation.

The rate of return to shareholders' equity (profits divided by equity capital) is an indicator of whether a firm should enter or leave an industry. A firm, when making its decision, considers the expected rate of

#### 4 Measuring Rates of Return in Banking

return to shareholders' capital, which is the rate of return earned on an incremental increase of equity capital investment made in an industry. If the expected rate of return to shareholders' equity is greater than the cost of acquiring equity funds, then a firm may choose to enter the industry, the converse holding for a firm leaving an industry. The cost of equity financing is, as we suggest above, the "imputed" interest rate paid per dollar of equity, which is the same, adjusted for risk, for equity holders in all industries as long as capital markets are efficient and firms can enter and leave industries freely. In equilibrium, the expected rate of return on equity for new firms entering all industries is equal to the "imputed" risk-adjusted interest cost of equity financing, meaning that no firm wishes to enter or leave the industry. Thus it is expected that equity capital raised by new firms flows into an industry with a higher expected risk-adjusted rate of return to shareholders' capital than that experienced in other industries.

On the other hand, should a risk-adjusted expected rate of return to shareholders' capital in an industry remain persistently higher (or lower) than that earned in other industries, then it may be suggested that entry (or exit) of equity capital is impaired by barriers that may be erected by the firms operating within the industry or by government regulation. While barriers erected by government regulation may permanently obstruct the free flow of equity capital, barriers created by established firms in an industry may only be temporary in that, eventually, new entrants may enter an industry after a certain length of time once new firms are able to acquire the resources needed to establish themselves.

It is important to consider how the expected rate of return to shareholders' equity for new entrants can be calculated. It is not difficult to observe rates of return earned by existing firms in an industry since one needs only to compute total profits and shareholders' equity from available data. On the other hand, expected rates of return are less easy to measure if one must calculate the extra profit to be earned on an incremental increase in shareholders' equity invested by the new entrant. However, when a firm chooses to enter an industry, it considers the rate of return earned by existing firms in an industry. If the new entrant can acquire, at the same cost, all the factors of production necessary to replicate the operations of existing firms in an industry, then the expected rate of return is the same as the rate of return earned by existing firms. However, if new entrants must incur higher costs to replicate the operations of existing firms in an industry, then the expected rate of return is lower than the observed rate of return earned by existing firms. In the latter case, there are particular factors of production that are not easily acquired by new entrants and these entrants may be prevented from entering an industry by certain economic factors that serve as barriers to entry. Thus we may conclude that, if observed rates of return to shareholders' equity in an industry remain persistently higher over a long period of time than those of other industries and that few or no new

firms are entering the industry, then the expected rate of return of new entrants is lower than the observed rate of return as a result of barriers to entry.

With respect to the banking industry — our primary concern in this study — we examine several economic factors that may contribute to entry barriers and thereby impede competition, besides government regulation.

First, market-oriented industries such as banking may be able to attain market power through a physical location that excludes the possibility of competition from new entrants. The rent from the acquisition of a specific retail market is then reflected in the profit rates of established firms, because the expected profits of new entrants are zero or negative. To study this potential entry barrier, we compare banks with trust and loan corporations and market-oriented industrial sectors, because profit rates earned by banks and other types of firms that locate in a particular area 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 order to analyse the effect of managerial specialization, we make comparisons between Canadian bank profit rates and 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, U.S. banks have relatively similar functions as Canadian banks and, hence, conditions of specialization also affect the profit rates of U.S. banks. In turn, we compare U.S. bank profit rates with U.S. all-manufacturing rates of return to capital in order to analyse the comparable premium for specialization of banking over manufacturing.

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 faces a lower probability of becoming bankrupt. 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. In Chapter 2, we consider whether there is any important

## 6 Measuring Rates of Return in Banking

relationship between the actual size of a bank as measured by financial assets and the profit rate earned by the shareholders of the bank.

After describing the role of the rate of return to capital as an indicator of profitable opportunities available in an industry,<sup>1</sup> we 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;
- $\phi_R$  = other revenue (charges for servicing of deposits, safety deposit boxes, foreign exchange commissions, and profit and loss on swaps); and
- $\phi_C$  = other costs (wages, rent, depreciation, and raw material expense).

The rate of return to capital may then be expressed as:

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

and profit to asset margins as:

$$(1-2) \quad \frac{\pi}{A} = \left( r_L \frac{L}{A} + r_S \frac{S}{A} - r_D \frac{D}{A} \right) + \left( \frac{\phi_R - \phi_C}{A} \right).$$

The second equation may be converted to yield spreads:

$$(1-3) \quad \frac{\pi}{A} = (r_L - r_D) \frac{L}{A} + (r_S - r_D) \frac{S}{A} + \frac{\phi_R - \phi_C}{A} - \left( \frac{D-L-S}{A} \right) r_D$$

The above expressions point to several factors contributing to profitability that we investigate 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

<sup>1</sup> See A.W. Throop, "Capital Investment and Entry in Commercial Banking," *Journal of Money, Credit, and Banking*, vol. 7 (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.



reflect the minimum payment necessary to attract the resources for financial intermediation: labour, capital, and management. Depositors are paid a return on funds that are available on other alternative investments. The borrowers are charged the lowest rate of interest to attract the demand for bank assets from other competing sources of funds. In addition, other important components of profitability are suggested in the above expressions: volume (asset/capital ratios), portfolio composition, costs of factors of production, and earnings from other services provided by financial firms such as those related to trust activity.

### **The Measurement of Rates of Return to Capital**

Our measurement of rates of return to shareholders' capital is based on accounting data available from shareholders' reports. It is not expected that any important problems are introduced by using accounting data to measure the rate of return earned by shareholders. Although some difficulties, such as risk and the effects of inflation, may be encountered in the use of accounting data, we suggest that the bias created by these difficulties does not overturn our conclusions regarding the relative profitability of Canadian banks in comparison to other industries after the 1967 Bank Act became effective.

There are two methods one may use to compute a rate of return to shareholders' capital based on accounting data: 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 in 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 profits 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.

In this report, we use the realized definition to calculate profit rates of trust and loan corporations, Canadian industrial sectors, and banks in the United States. The reason for not computing accrued profits and capital is the lack of available data that involves assets and liabilities at market prices. In the case of the Canadian banks, however, we use both accrued and realized definitions of profits, although accrued profits do not include the market value changes in Government of Canada securities, held as assets, and debentures, held as liabilities. Moreover, realized profits of Canadian banks are only \$800,000 a year lower than accrued profits, and the realized rate of return to capital is only four-tenths of a percentage point a year less than the accrued profit rate for the period 1968-73. Thus there seems to be little difference, on average, between accrued and realized profit rates for Canadian banks for our period of investigation.

## 8 Measuring Rates of Return in Banking

Another distinction to be made is between before-tax and after-tax profit rates earned by firms. The after-tax rate of return signifies profits earned by the shareholders; the before-tax rate of return measures the profits that the government, imposing a corporate income tax, and the shareholders share.

There are two specific problems 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 (see 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 are 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 may 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 those borne 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 is 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.

### **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 with individual trust and loan corporations, which 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 1963-73. Finally, the fourth appendix discusses the measure of rates of return under inflation accounting and the effect of inflation accounting on the profit rates of Canadian banks vis-à-vis other sectors in Canada.

## **2 Canadian Chartered Banks and Trust and Loan Corporations**

In this chapter, we wish to compare the profitability of chartered banks with trust and loan corporations operating in Canada. While both sectors are involved in financial intermediation, the trust and loan corporations and the chartered banks conduct their affairs under different regulatory environments. In order to examine these differences, we first survey some of these government regulations that affect the profitability of the two sectors. Then, continuing our discussion of the theoretical reasons why we have chosen to measure the rate of return to shareholders' capital, we outline the specific methodology used to measure rates of return for Canadian banks and trust and loan corporations. Third, we compare the profit rates of individual banks and large trust and loan corporations and also discuss various factors that influence profitability: yield margins, foreign business, noninterest expenses, portfolio mix of assets and liabilities and asset/capital ratios. Finally, we suggest that shareholders of Canadian chartered banks earned higher before- and after-tax rates of return to shareholders' capital than those earned by trust and loan corporations after 1967, when the Bank Act was amended.

### **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 during the 1963-73 decade. These differences are reviewed according to the way in which they affect the comparison of the profitability of banks with that of trust and loan corporations.

#### **A. Domestic Activity**

Both before and after the Bank Act revisions of 1967, trust and loan corporations were confined to particular areas of financial intermediation compared with the chartered banks. With reference to the holding of

assets, the trust and loan companies engaged primarily in lending mortgage funds<sup>1</sup> (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.<sup>2</sup> Because of the above, trust and loan investments were effectively limited to holding secured mortgages, collateral loans, bonds, debentures and stocks of corporations. On the other hand, banks were less restricted to lend funds to consumers, corporations, and small businesses, except for legislative constraints with regard to residential mortgages.<sup>3</sup> Before 1967, however, the chartered banks were limited to charging not more than 6 per cent interest on loans. The effect of this provision was to force the banks to either (i) use other means to raise revenue such as service charges on personal loans to avoid the interest rate ceiling or (ii) refuse riskier loan business. If the latter occurred, then the chartered banks would lose profits and the profit rate earned by chartered banks would then be lower.

The holding of liabilities was less restricted by regulation in comparison with the holding of assets for trust and loan corporations. Under provincial legislation, trust and loan companies accepted funds from depositors "in trust".<sup>4</sup> A minimum of 30 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, but they were allowed to borrow money on 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.<sup>5</sup> Another

- 1 Section 60(2) of the Federal Loan Companies Act and Section 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.
- 3 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 percentage point each year thereafter to a maximum of 10 per cent (Section 75(4) of the Bank Act of 1967).
- 4 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".
- 5 In Section 77, debentures issued in Canadian currency were redeemable only after five years. The total issue could not exceed one-half of the paid-up capital and rest account.

constraint was that arising from agreements sometimes made between the chartered banks and the Government of Canada after 1967 (such as the Winnipeg Agreement). 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 in international business. Trust and loan corporations were limited in their dealings with 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 of foreign depositors on trust and loan deposits in comparison with those of Canadian chartered banks. Second, trust and loan firms were regulated to retain assets in Canada equal to liabilities in Canada plus a significant portion of net worth.<sup>6</sup> With the above two regulations, the overall profit rate might have been higher for banks than that of 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. Although profit earned from nonfinancial intermediary business may have altered the rate of return to capital earned by firms, no data are available to isolate the impact on profitability of such activity.

### **D. Reserve Requirements and Asset/Capital Ratio Limitations**

Another major difference between the banking and the 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

<sup>6</sup> Section 68.1(2) of the Trust Companies Act and Section 60.1(2) of the Loan Companies Act.

companies were limited by government by-law to a multiple of unimpaired capital and reserves.<sup>7</sup> No similar restriction on asset/capital ratios applied to the chartered banks. Also, trust and loan corporations were required to hold liquid assets equal to 20 per cent of all debentures and securities issued by the firm with a maturity of less than 100 days. The reserve was composed of cash, bank deposits, and Government of Canada securities having 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 having 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.<sup>8</sup> 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 non-interest-earning assets: cash, and deposits and notes of the Bank of Canada. The amount of primary reserves held were to be 8.0 per cent of Canadian dollar deposits before 1967 and, after 1967, 12.0 per cent of Canadian dollar demand deposits and 4.0 per cent of noncurrent account Canadian dollar deposits. The effective reserve ratio fell from 8.0 per cent in 1966 to 6.1 per cent in 1973. Second, secondary reserves, ranging from zero 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.

### Methodology

In Chapter 1, it is suggested that one can 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.

7 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 times.

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

Two alternative methods can be used to calculate accrued rates of return for individual Canadian banks and trust and loan corporations.<sup>9</sup> First, profits can be derived in the following manners:

#### 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 losses 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) is arrived at by considering changes in net worth:

#### Method II

- After-tax profits = Shareholders' equity<sup>10</sup> (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).

<sup>9</sup> Guy Mercier, "Bénéfices déclarés et bénéfices réels des banques à charte canadiennes," *Chartered Accountant*, vol. 102, no. 6 (1973).

<sup>10</sup> Shareholders' equity is comprised of the following (terms in brackets were employed in trust and loan company accounting data): Shareholders' Capital; Rest Account (General Reserve); Undivided Profits (Retained Earnings); and Appropriation for Losses (Investment Reserves).



Reconciliation is required when the changes in net worth calculated by Method II do not equal the profit computed by Method I. In those cases, detailed examination of the accounts can determine the source of the discrepancy and appropriate adjustments can be made.

There are two ways to compute rates of return to capital for banks and trust and loan companies: simple and compound. The simple rate of return to capital is annual profits divided by shareholders' capital at the beginning of the year. The compound rate of return to capital is annual profits divided by shareholders' capital averaged for each point of time during the year. The former profit rate implies that firms do not have the means to reinvest profits until the end of the year. Financial firms, however, have the freedom to reinvest earned income immediately. The compound rate of return to capital is a more appropriate measure of profitability than a simple profit rate.

Similarly, we can calculate two compound rates of return to capital for Canadian banks: one by the "discrete" method and the other by the "continuous" method.<sup>11</sup> Generally, the "continuous" rates of return are .3 to .5 of a percentage point 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 amalgamation in trust company data);
- $ANA$  = assets not admitted (trust company data);
- $A$  = 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).

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

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

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

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

This "discrete" rate of return to capital is an approximation of continuous rates of return to capital: annual profits divided by an average of capital at the beginning and end of the period.

The appropriate formula with which to calculate the capital figure by the "discrete" method is:

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

In cases involving amalgamation and new issues, we make provision for excess cost over book value, where applicable. We assume that excess cost and new issues occurred at the midpoint of the year ( $B = \frac{1}{2}$ ) if no other sources (such as Financial Post summary sheets or bank reports) pinpoint 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 with that stated in the 1969 report, results 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,  $B$  is 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 is 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 is simply  $r_A = \frac{\pi A}{K_{t+1}}$  where  $\pi A$  is accrued profits (after tax). For the realized rate of return, the adjustment made is the following:

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

where  $\pi \text{sec}$  = profits (loss) accrued on holding securities.

For the realized rate of return to capital, data for individual firms are available from two sources: annual bank reports (for the years 1963-73) and the *Report of the Registrar of Loan and Trust Corporations for the Province of Ontario* (1963-73). The problem associated with data from annual bank reports is that realized profits or losses on the sale of securities are not shown separately from accrued profits (the difference between book value and maximum statutory value of securities).<sup>12</sup> Furthermore, the measure of accrued profits of banks is deficient since federal and provincial bonds held as assets are amortized rather than

<sup>12</sup> Maximum statutory value is the amortized book value of federal and provincial bonds and market value of all other securities.

reduced to market value. Similarly, the deficiency in trust and loan corporate data is twofold. First, the detailed statement of securities (indicating accrued changes in profits) is not available for the period before 1967; therefore, a comparison of trust and loan corporations on an accrued basis is limited to the post-1967 period. Second, the difference between book and market values of mortgages is not available for the computation of accrued rates of return.

To measure an industry rate of return to capital, we can use an arithmetic weighted mean where

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

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

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

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

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

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

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

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

Industry effective tax rates can be 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 can be 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 is selected for each industry. All ten banks are included in the rates of return calculations although, for industry averages, three banks are excluded (Unity Bank of Canada and the Bank of

British Columbia are relatively young in operation, and The Mercantile Bank of Canada's equity is subject 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 are calculated for the four largest loan corporations, by asset size, which operate 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 largest trust corporations, 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-sized companies are 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 helps 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 represents 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 contributing factors to profitability are discussed below, after we consider profitability of individual firms.

### **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 of both financial industries. The implications of the after-tax profit rates earned by individual firms are discussed with regard to the size of firms as measured by assets 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 point.

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, union 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, net 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.

Include service charges on personal loans for Canadian loans prior to 1966. For 1963, estimated \$29.5 million as service charge.

5. Loan Yield Annual revenue earned from loans divided by average loans.

6. Security Yield Annual revenue earned from securities divided by average securities. Included all realized profits or losses on sale of securities.

7. Deposit Rate 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.

Source: See text.

## 22 Banks and Trust and Loan Corporations

Table 2-2  
Average After-Tax Realized Rates of Return for Individual Chartered Banks  
and Loan Corporations, 1963-66 and 1968-73

Chartered Banks	Geometric Rate of Return			Average Asset Size  (Millions of dollars)
	1963-66	1968-73	Difference	
		(Per cent)		
The Toronto-Dominion Bank	7.2	14.2	7.0	5,715
Canadian Imperial Bank of Commerce <sup>1</sup>	8.1	12.0	3.9	10,546
Bank Canadian National	6.5	11.5	5.0	1,986
Bank of Montreal <sup>2</sup>	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 <sup>2</sup>	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 <sup>3</sup>	7.4	12.8	5.4	-
<i>Trust and Loan Corporations</i>				
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 <sup>4</sup>	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.

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

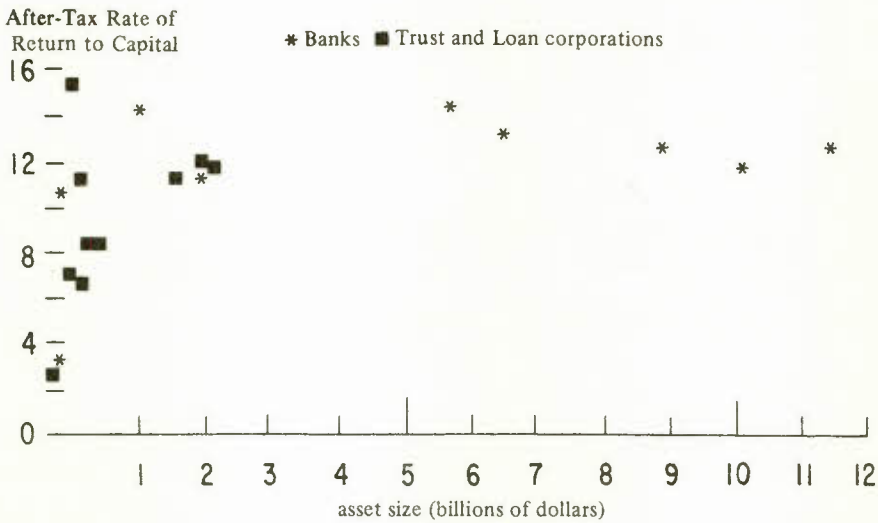
Nonetheless, not all firms' profit margins moved in harmony. While five banks and two trust companies increased their rates of return to capital by over 5 percentage points, two firms experienced a decline in profitability since 1967. During the 1968-73 period, six of the ten banks and three of the eleven 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 Chart 2-1, the relationship between after-tax rates of return to capital and asset size is depicted. It is difficult to infer higher profitability in financial intermediation with greater size as measured by total assets. As warned in Chapter 1, asset mix varies across firms such that the service provided by financial intermediaries are not the same. Certainly, the functional and structural differences between chartered banks and trust and loan corporations are so important that asset size is 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 may be assumed that profit rates rise with asset size throughout the range displayed in Chart 2-1. On the other hand, it may 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 do not permit one to confirm the hypothesis that firms of large asset size earn higher profit margins than firms of small size (especially for the chartered banks).

Chart 2-1  
Average After-Tax Rates of Return to Capital and Asset Size Relationship  
for Chartered Banks and Trust and Loan Corporations, 1968-73



Source: See Table 2-2.



An examination of the individual firms shows that the outstanding performers in the banking industry during the period of our survey 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 divestiture of control to the Canadian residents was completed.<sup>13</sup>

After-tax profit rates indicate the profitability opportunities awaiting new entrants. From the data provided thus far, one would expect, for the 1963-66 period, that relatively fewer new firms would have entered into banking than into the trust and loan sector, while the converse would have been true for the period after 1967. As shown in Table 2-3, the total number of firms entering the trust and loan industry was seventeen — twelve prior to 1967 and five after 1968. Despite the relatively higher profit margins earned by banks after 1967, fewer new firms entered the banking industry compared with the number that entered the trust and loan industry. Only two new banking firms began operation during the years 1968-73: one in 1968 and one in 1973.<sup>14</sup>

Table 2-3  
Net Entry of New Firms, 1963-73

	Trust and Loan Corporations <sup>1</sup>	Chartered Banks
1963	3	—
1964	5	—
1965	4	—
1966	1	—
1967	-1	—
1968	0	2
1969	0	-1
1970	0	—
1971	0	—
1972	2	—
1973	3	1
Total	17	2

<sup>1</sup> Operating in Ontario. In 1973 there was a total of 60 in operation in Ontario. Mortgage loan companies controlled by or controlling trust companies are only included as new entrants.

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

<sup>13</sup> The Mercantile Bank of Canada was limited to a ratio of total liability to authorized capital of twenty, until the company's foreign ownership of voting shares was reduced to no more than 25 per cent. See Section 75(2)(g) of the Bank Act.

<sup>14</sup> Northland Bank and Canadian Commercial and Industrial Bank were chartered in 1975, and are both now operating. Both banks intend to specialize in the wholesale business lending market.

One may also note that there is no apparent relationship between after-tax rates of return to capital and size of trust business. For example, Victoria and Grey Trust Company, which earned an after-tax rate of return of 15.2 per cent, raised only 1.0 per cent of its total income from trust business in 1973, compared with 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 Ltd, Guaranty Trust Company of Canada, and Montreal Trust Company earned after-tax rates of return of 11.1, 9.3, and 8.2 per cent, respectively, but the trust business share of total income was 20.8, 10.2, and 36.2 per cent, respectively, for the year 1973.

### **Factors Contributing to Profitability**

The factors that 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 performances of the trust and loan corporations and the Canadian banks, one ought to distinguish between domestic and foreign business of Canadian banks. Two analyses are provided. First, loan yield spreads (described in Chapter 1) of overall consolidated banking data are compared with trust and loan corporation data. Next, foreign and domestic business (using the currency definition) is separated for Canadian banks.

Table 2-4 shows that the loan yield spread for trust and loan companies fell 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 have been due to a variety of reasons which are outlined below.

The reduction in the loan yield spread of trust and loan corporations may have been a result of the improved matching of term structures of asset and liability portfolios. Since mortgages are longer in term than trust deposits, rising interest rates due to unexpected inflation may have 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 experienced by trust and loan corporations was substantially reduced in the post-1967 period as a result of improved matching between deposits and adjustable interest rate NHA (National Housing

Table 2-4  
 Loan and Security Yield Spreads of Canadian Banks and Trust and Loan Corporations, 1963-73

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

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

Act) mortgages).<sup>15</sup> 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 the liability side, however, there was no shift in term deposits from those of less than one year to those of more than one year.<sup>16</sup>

Another possible reason for reduced loan yield spreads for trust and loan corporations may have been the increased competition promoted by the entry of banks into conventional residential mortgage lending after the 1967 Bank Act amendments. Consumers of housing may have benefited from lower lending rates to the extent that competition by banks reduced mortgage yield spreads for trust and loan corporations. It is difficult to assess how much of the above proposition is true. First, entry into the trust and loan industry by firms was little restricted, 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 (see 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 is 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 one-tenth of a percentage point reflects the increased activity of U.S. banks in the international market.

Moreover, the data demonstrate that the average loan yield spread on foreign business was much smaller (approximately 1 percentage point) than on domestic currency business during the 1963-73 period. This

15 Interest rates were permitted to be charged every five years on mortgages in 1969 with a minimum of a 25-year term, under the National Housing Act. See Central Mortgage and Housing Corporation, *Canadian Housing Statistics, 1969* (Ottawa: CMHC, 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.

16 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.

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.

Table 2-5  
Mortgage and Personal Loan Yield Spreads  
for Trust and Loan Corporations, 1963-73

	Mortgage Yield	Personal Loans	Mortgage Yield Spread	Personal Loan Yield Spread
	(Per cent)			
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*, annual.

On the other hand, the domestic loan yield spread rose on the average one-half of a percentage point from the pre- to post-1967 period. There were a number of factors that could have caused the increase in the margin. First, the loan rate ceiling was removed so that profit rates improved compared with the pre-1967 Bank Act period. However, prior to 1967, the banks were able 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 may have contributed to the 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 from new entrants, however, may have eroded the ability of banks to increase their yield margins above the amount required to earn a market rate of return to shareholders' capital.

One additional comment can be made with regard to the security yield spreads shown in Tables 2-4 and 2-6. There are two reasons for lower security yield spreads than loan yield spreads earned by the banks and trust and loan companies (security yield spreads earned in some years were actually negative). First, it is profitable at the margin for the

institutions to hold securities as assets since the cost per dollar of servicing securities is lower than that for loans. Loans are generally more expensive per dollar to handle because each transaction between a borrower and a bank requires individual evaluation by the managers whereas securities are less likely to default, particularly government bonds. Second, liquid asset requirements, reviewed in the first section, force institutions to hold government securities with low yields. As shown in Tables 2-9 and 2-10, the banks and trust and loan corporations shifted away from holding securities so that fewer securities were held as a percentage of total assets during the 1963-73 period.

### **B. Foreign Business Activity**

One of the arguments suggested by chartered banks in support of increased profit rates since 1967 is that there was an improvement in foreign business profitability.<sup>17</sup> To argue this point, one would need to notice either an increase in the yield spread earned on foreign loans and securities, or a significant increase in volume of foreign business, or a high rate of return to capital earned on foreign business.

Table 2-6 shows that the yield spread earned on foreign loans remained stable and that the yield spread earned on foreign securities was, in general, negative. However, because Canadian chartered banks experienced a considerable increase in the volume of foreign currency assets (loans only) and liabilities held, they were likely to earn an increased amount of total profits (assuming that the average cost per dollar of assets did not increase significantly). Thus we cannot immediately infer whether foreign business contributed to higher overall rates of return to shareholders' capital since we need to ascertain how much equity capital was required to finance foreign business. If rates of return to shareholders' capital earned on foreign business were high, then, perhaps, the rate of return on domestic business was as low, or lower, than those earned by other industries. If the rate of return to shareholders' capital for foreign business earned by Canadian banks was infinitely high (by dividing foreign profits by zero amount of equity capital) then, the domestic before-tax rate of return to shareholders' capital for chartered banks would still be higher than that earned by all manufacturing industries in Canada. This statement is true despite the fact that the amount of domestic shareholders' capital is overestimated and, for data reasons to be explained below, the amount of domestic profits is underestimated.

17 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.

Table 2-6  
Yield Spreads on Canadian and Foreign Currency Assets for  
Canadian Chartered Banks, 1963-73

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

Source: See Table 2-4.

It is difficult to derive an exact measure of profits from the data that are available to us. Foreign data are deficient in not including (i) head office costs in handling foreign business, (ii) realized 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 cent of realized before-tax profits from 1967 to 1973). Hence, any foreign profit figures that are used may overstate the actual profit earned.

Table 2-6 suggests that yield spreads earned on foreign currency loans and securities did not contribute to 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 of a percentage point in the pre- and post-1967 periods (until 1973). The foreign security yield spread was actually negative (-.20 and -.95 of a percentage point in each period, respectively). Nevertheless, from the volume growth of assets shown in Table 2-7, one can see that foreign assets (due to growth in loans, not security assets) tripled in growth rate from 7.0 to 20.0 per cent on average after 1967, compared with the previous period. Domestic assets almost doubled in growth rate (6.9 to 12.7 per cent).

Table 2-7  
Bank Asset Growth (Natural Logarithms), 1963-73

	Canadian Assets	Foreign Assets	Total Assets
	(Per cent)		
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 Averages			
1963-66	6.9	7.0	7.0
1968-73	12.7	20.0	14.8

Source: See Table 2-4.

In order to determine the contribution of foreign business to total profitability, we can compute a before-tax rate of return to capital for domestic business (see Table 2-8). As stated above, foreign profits may



be overestimated because expenses related to the foreign loss on loans and head office operation costs are not included in total costs. Similarly, equity capital for domestic business may be exaggerated because the total equity capital figure is assumed to be total domestic capital even though some equity financing may have been required to finance 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 the underestimation of domestic profits and the overestimation of domestic equity capital figures. 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 was a major source of high domestic profit rates earned by chartered banks since 1967 can be questioned by the above data. Moreover, if we compare Canadian chartered banks' rates of return with those earned by New York City banks (Chapter 4), then one may conclude that foreign business does not seem to be an important factor in contributing to high profit rates.

### C. Portfolio Composition

The portfolio composition of assets and liabilities helps one to note the difference in term structure 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 because of 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.

From Table 2-9, one may deduce that Canadian banks and trust and loan corporations increased the share of loans to total assets.<sup>18</sup> 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.

<sup>18</sup> 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).

Table 2-8  
The Impact of Foreign Activity on Profitability, 1967-73

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Foreign Profit <sup>1</sup>	Total Before-Tax Realized Profit <sup>2</sup>	Foreign Profit as A Share of Total Profit	Total Average Capital <sup>3</sup>	Overall Before-Tax Rate of Return	Domestic Profit Over Total Average Capital	Manufacturing Before-Tax Rate of Return	Difference Between (6) and (7)
(Millions of \$)	(Millions of \$)	(Per cent)	(Millions of \$)	(Per cent)	(Per cent)	(Per cent)	
1967	35.6	12.2	1,686.1	17.4	15.3	15.5	-2
1968	52.6	13.6	1,835.0	21.0	18.1	16.7	1.4
1969	54.0	11.5	1,990.5	23.7	20.9	17.4	3.5
1970	49.8	10.1	2,151.6	23.0	20.7	12.6	8.1
1971	105.3	19.6	2,316.4	23.2	18.7	16.0	2.7
1972	104.3	15.6	2,554.5	26.3	22.2	18.1	4.1
1973	55.1	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, and (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* (Ottawa: Supply and Services Canada, 1976), 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.

Sources: Report submitted to the Inspector General of Banks under Schedule Q; *The Canada Gazette*; and Statistics Canada, *Industrial Corporations*, cat. no. 61-003.

Table 2-9  
Portfolio Breakdown of Canadian and Foreign Currency Assets for Canadian  
Chartered Banks and Trust and Loan Corporations, 1963-73

	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	Assets			
	(Per cent)												
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	

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

Unfortunately, no published data are available on the term structure of assets and liabilities. Data from the Inspector General of Banks indicate that the chartered banks' foreign currency assets were somewhat longer in term than liabilities.<sup>19</sup> As for domestic currency business of chartered banks and trust and loan corporations' portfolios, no information on the term structure can be acquired.

One can derive some information about the term structure by examining the yield margins. In Chart 2-2, the Canadian prime loan rate is compared with yield margins for bank domestic loans, domestic securities, and deposits and also for trust and loan company mortgages and deposits. The variation in the prime loan rate serves as a proxy for the variation in the transacted interest rates payable on newly issued assets and deposits. If the prime loan rate rises, and the yield margin rises, then assets are shorter in term than deposits. The data indicates that assets were shorter in term than deposits for Canadian bank domestic loans<sup>20</sup> as yield margins generally increased 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. According to the evidence provided here, the Canadian bank profitability was somewhat protected from rising interest rates over time. It should be noted, moreover, 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

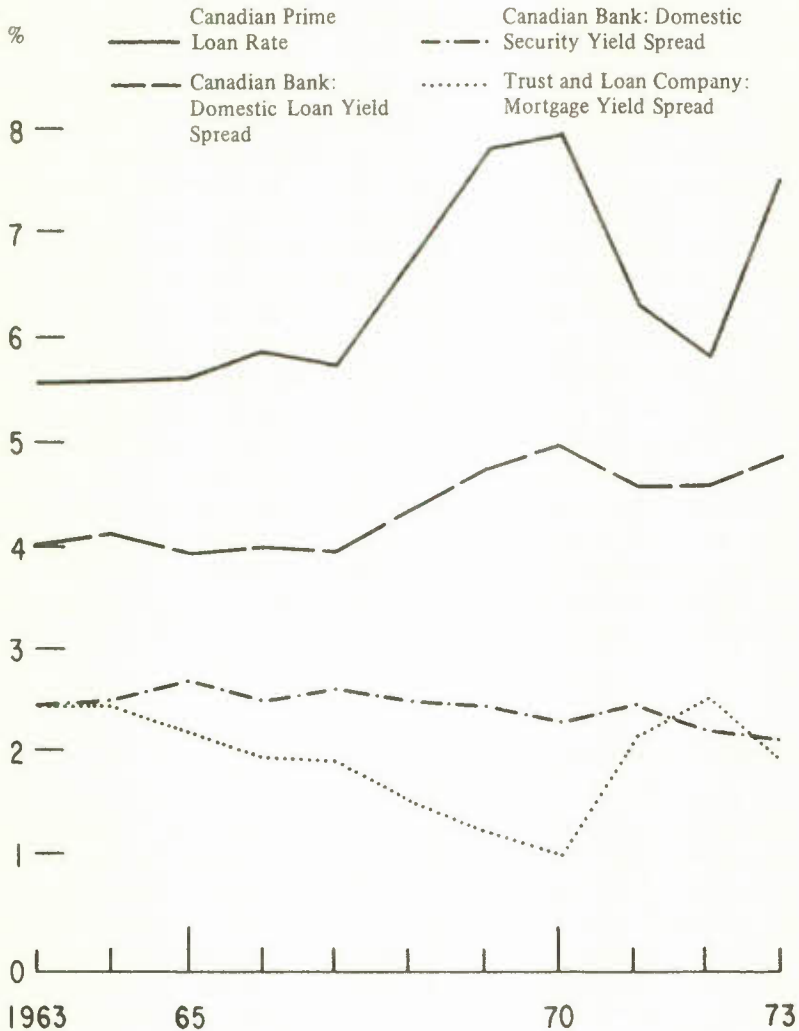
Higher yield spreads may be associated with an increase in noninterest expenses per dollar of assets for a financial industry. If the cost of attracting factors of production to conduct financial services rises per dollar of output, then one may expect the price of financial intermediation, the yield spread, to rise. Financial assets, however, are not a good measure of output, and inflation causes both assets and expenses to increase in value. Nevertheless, noninterest expense per dollar of assets helps somewhat to understand the size of the yield spreads.

19 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.

20 One problem with yield spreads as an indicator of the term structure of assets and liabilities is that any interest rate 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 non-interest-bearing except for federal, provincial and large corporate demand deposits. This point is discussed in greater detail in Chapter 4.

Chart 2-2

Canadian Prime Rate and Yield Spreads for Canadian Bank Domestic Loans, and Securities and Trust and Loan Company Mortgages, 1963-73



Source: See Tables 2-5 and 2-6.

As shown in Table 2-10, Canadian chartered banks seem to have encountered 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 conducted. Trust and loan corporations, with trust and real estate business, experienced higher labour cost per dollar of financial assets. Chartered banks may have had smaller branches since personal and small business lending may have required geographical dispersion of

Table 2-10  
 Noninterest Operating Expenses<sup>1</sup> Per Dollar of Assets, 1963-73

	Canadian Chartered Banks — Overall				Trust and Loan Corporations			
	Total Non-interest Expense	Property Expense	Salary and Wages	Other	Total Non-interest Expense	Property Expense	Salary and Wages	Other
	(Cents)							
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

<sup>1</sup> Excludes provisions for loan losses.

Source: See Table 2-4.

offices, unlike mortgage lending. Unfortunately, no data are available on employment in the trust and loan companies. However, according to 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 for the banks increased significantly, primarily in the categories of advertising and communications costs. This reflected somewhat the induced rivalry of Canadian chartered banks for loans after the lifting of the ceiling applied to loan rates in 1967. Over all, the Canadian chartered banks experienced a rise in total noninterest expense by seven-hundredths of a cent 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.

Contrary to the chartered banks, total noninterest expense per dollar of assets of trust and loan companies improved particularly in the other expense category. Over all, 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.

#### **E. Asset/Capital Ratios**

As noted above, trust and loan corporations were restricted to holding assets per dollar of working (unimpaired) capital while chartered banks were not regulated in size. The effect of limits on asset/capital ratios is to reduce the volume of assets accepted, thereby possibly lowering profitability as measured by the rate of return to shareholders' 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 increases the asset/capital ratio to the level of the chartered banks and allows for a rise in the deposit cost with no adjustment for additional expenditure (including the cost of risk) to service new deposits (to be subtracted from before-tax profits), and if one retains the same amount of assets, the average 1968-73 before-tax profit rate of trust and loan companies is augmented by 3.5 percentage points.<sup>21</sup> The new before-tax rate of return to capital for trust and loan corporations of 22.2 per cent is still 2.0 percentage points lower than that earned by the Canadian chartered banks.

21 Note that no corrections have been made to before-tax profits earned by chartered banks for the holding of low-yielding or non-yielding assets as reserves. In Chapter 4, we estimate the reduction in the before-tax profit rate for chartered banks for the years 1969-73 to be the order of 3.8 percentage points.

Table 2-11  
 Asset/Capital Ratios for Canadian Banks and Trust  
 and Loan Corporations, 1963-73

	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

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

## Conclusion

The chartered banks earned higher after-tax rates of return to shareholders' capital than the trust and loan corporations after 1967. There were five major reasons for this difference in profitability between the two industries. There was no particular relationship between asset size and the after-tax rates of return to capital earned by individual firms in both industries. More new firms entered into the trust and loan industry than into the banking industry despite the fact that the latter experienced higher after-tax profit rates. 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 on average since 1967 was that earned on domestic currency loans held by the chartered banks. Profits from foreign activity did not contribute greatly to the overall profit rates earned by the chartered banks. Furthermore, banks experienced a small increase in noninterest expense per dollar of assets while trust and loan noninterest expense per dollar of assets declined.



### 3 A Comparison of Banking and Trust and Loan Corporations With Other Industries in the Canadian Economy

Chapter 2 suggests that Canadian chartered banks were more profitable than trust and loan corporations during the 1963-73 period. However, the data are not sufficient to determine excess profits in Canadian banking unless it can be demonstrated that the chartered banks earned higher rates of return to shareholders' capital than did other Canadian industries. After all, no excess profits are earned if capital flows freely from one sector to another, causing risk-adjusted rates of return to banking shareholders' capital to be equal to those of other industries.

The present 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.

#### Methodology

The calculation of the nonfinancial sectors' rates of return to capital is based upon quarterly data presented in Statistics Canada's *Industrial Corporations*. This source provides a consistent series of figures from 1962 to 1971. In the 1972 issue of this source, the 1971 data are amended to incorporate changes in industrial structure. Since rates of return to capital are estimated by averaging the fourth-quarter shareholders' equity of two consecutive years, the 1972 and 1973 rates of return to capital are derived from the new data compiled by Statistics Canada. However, it is expected that, in the aggregate, the rate of return to capital does not diverge significantly from that calculated in the old series.

The other source of data for corporate financial statements of assets, liabilities, income, and expenses is *Corporate Financial Statistics*, also published by Statistics Canada. Although this publication provides data taken from annual accounting statements of corporations and entails a

more detailed classification of industries, *Corporate Financial Statistics* is reliable only for the short period from 1966 to 1971. The companion to *Corporate Financial Statistics*, *Corporate Taxation Statistics*, reports taxable income, not book profit, for the years prior to 1966. In definition, taxable income differs from book profit in that (i) the deduction of book depletion and depreciation is lower in magnitude from that allowed for tax purposes; (ii) capital gains and losses, and nontaxable dividends, are excluded from taxable income; and (iii) prior years' losses are deductible from profit for tax purposes. Other serious limitations in the scope of *Corporate Financial Statistics* are the expansion of the sample in 1970, which affects principally the consistency of the shareholders' equity series; the double counting of some of the dividends between firms through the use of unconsolidated reports, leading to an upward bias in rates of return to capital; and the unavailability of data after 1971.

Many of the above problems are avoided in *Industrial Corporations*, which has quarterly corporate financial statistics. The series is based on a survey of 800 corporations on a consolidated basis. The sample size includes 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, are available: three mining, fifteen manufacturing and seven other industries.

The sectors selected for a comparison of their profit rates with those of the banks and trust and loan corporations are all-manufacturing, textile, food and beverage, transportation, wholesale trade, and retail trade. The objective is to investigate market-oriented industries but each is individually characterized by different market conditions with respect to structural barriers to entry. Textile industries are protected by tariff policy, although some reduction of tariffs occurred during the late 1960s. The food and beverage industry is primarily composed of oligopolistic firms. All-manufacturing is a pot pourri of large, small, vertically integrated, single, competitive, and monopolistic establishments. Transportation includes government-regulated firms (pipelines, airlines, ships, railways, trucks, buses, and taxicabs) that are able to assume less risk where, in some cases, rates of return are "guaranteed" by public agencies. Wholesale trade and retail trade are composed of many small firms. 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 excludes 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 has advantages. Neglecting foreign subsidiaries and branches owned by Canadian corporations, however, is inconsistent with the methodology employed to calculate rates of return to capital for those banks that have international operations. In Chapter 2, it is suggested that the overall rate of return to

banking shareholders' capital was somewhat higher than the domestic profit rate when the profit rate on foreign activity was much higher than the profit rate earned on domestic capital. However, the implicit assumption involved in this chapter for all sectors is that the rate of return to capital is the same wherever capital is invested.

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

The realized rates of return to capital in each of the sectors can be 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 are defined as the difference between revenue and expenses, and the 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 are averaged. Shareholders' equity is defined as equity, reserves, and retained earnings. It is not possible to adjust capital figures for items like goodwill, mergers, reorganizations, and special dividends to parent companies, since *Industrial Corporations* is not able to provide the detail found in company reports. For new issues of equity stock, it is 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 is:

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

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

## 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 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, which was 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 1968-73 period. 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 can be attributed to a number of factors listed in Chapters 1 and 2. These factors are: (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 the 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 the 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 point lower than that earned by the chartered banks. However, the trust and loan corporations' after-tax profit rate was 0.3 of a percentage point above the average after-tax rate of return earned by all 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, which was undertaken by the Economic Council of Canada, there is evidence that bank shareholders faced no more risk than did shareholders of all industries.<sup>1</sup> 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 because banking was riskier than all other sectors.

<sup>1</sup> Economic Council of Canada, *Efficiency and Regulation: A Study of Deposit Institutions* (Ottawa: Supply and Services Canada, 1976), Appendix A.

Table 3-1  
After-Tax Realized Rates of Return to Average Shareholders' Equity by Selected Sectors, 1963-73

	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 Corporations	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

Sources: Annual Reports of seven largest banks; Report of the Registrar of Trust and Loan Corporations for the Province of Ontario; Statistics Canada, *Industrial Corporations*, cat no. 61-003.

Table 3-2  
Average Geometric Rates of Return to Shareholders' Equity,  
Selected Sectors, 1963-66 and 1968-73

	Average After-Tax Rate of Return	
	1963-66	1968-73
	(Per cent)	
Chartered Banks	7.4	12.8
Trust and Loan Corporations	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

Sources: 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.

### B. Before-Tax Rates of Return to Capital

The before-tax rates of return to capital earned by the chartered banks presented in Tables 3-3 and 3-4 indicate 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 1963-66 period but that was 6.6 percentage points higher than the average for all market-oriented sectors after 1967. After the 1967 Bank Act became effective, the before-tax rates of return for chartered banks were, 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 corporate income tax rates (see Table 3-4), as applied to book profits of each sector. Canadian banks paid taxes at a rate that was 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 to deduct transfers to a contingency reserve that was no more than 3 per cent of eligible assets.

Table 3-3  
 Before-Tax Realized Rates of Return to Average Shareholders' Equity, Selected Sectors, 1963-73

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
						(Per cent)					
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 Corporations	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 Beverage	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	18.8
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

Sources: 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.

Table 3-4  
Average Geometric Before-Tax Rates of Return to  
Shareholders' Equity and the Effective Tax Rates on Book Profits,  
Selected Sectors, 1963-66 and 1968-73

	1963-66		1968-73	
	Average Before- Tax Rate of Return to Capital	Average Effective Tax Rate	Average Before- Tax Rate of Return to Capital	Average Effective Tax Rate
	(Per cent)			
Chartered Banks	13.3	43.8	24.4	47.6
Trust and Loan Corporations	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

Sources: 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.

After 1968, the contingency reserve was reduced to 1.5 per cent of eligible assets with a ten-year transition period in order to enable the contingency reserve to be reduced by .15 of 1 per cent of eligible assets in 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 one-third 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 formulas applied to different types of property and machinery. In 1972, capital cost allowances were increased by permitting a two-year write-off (50 per cent allowance a 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 because of 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.<sup>2</sup> 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.

### **Conclusion**

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

Book rates of return to capital are reported in this chapter. However, book profit rates vary slightly when calculations are based on data derived from inflation accounting (see Appendix D). It is suggested that the difference between Canadian bank profit rates and those of other sectors are approximately the same under inflation accounting as under the book accounting methods used in this chapter.

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

## **4 The Profitability of the Canadian and United States Banking Systems**

In this chapter, we wish to compare the profit rates earned by Canadian chartered banks with those earned by banks in the United States. The advantage of comparing banking industries in both countries is that it enables us to determine whether any special economic barriers to entry associated with conducting banking activities are important enough such that banks in both the United States and Canada earn similar rates of return to shareholders' capital in comparison with those earned by other sectors in each country.

As stated in the first section of this chapter, any comparison of Canadian and U.S. banking industries requires very detailed analysis. This is a result of the fact that the regulatory environments in each country are so different in character that conclusions regarding the difference in profit rates and the factors that influence profitability need to be carefully considered. It may be suggested, for example, that regulation in the United States protects U.S. banking institutions from the entry of competitors in certain banking markets. Thus banking firms in the United States may earn, to some degree, higher rates of return to shareholders' capital than those experienced in other U.S. industrial sectors where entry is less restricted. However, if we were to say that Canadian banks earn higher profit rates than those earned by U.S. banks, then we would be understating the amount of excess profits earned by Canadian banks when comparing the rates of return with shareholders' equity earned by banks of each country. Should, though, regulation in the United States hinder U.S. banks from earning profit rates similar to those of other industries in the United States, then we might be overstating the amount of excess profits earned by Canadian banks when comparing U.S. and Canadian bank rates of return. For this reason, we compare the profit rates earned by banks and other industries for each country in order to determine whether we are overestimating or underestimating the difference in rates of return to capital earned by banks in Canada and in the United States.

Some other studies suggest that Canadian banks provide lower cost services to banking consumers than those provided by commercial banks

in the United States.<sup>1</sup> These studies attempt to measure the cost and efficiency of financial intermediation undertaken by banks in the U.S. and Canada. While this kind of analysis is important in assessing the overall economic efficiency of Canadian banks in minimizing the amount of resources required to undertake financial intermediation, it is not the object of this chapter to compare the overall cost of financial intermediation in the U.S. and Canada. On the other hand, we do comment on certain factors that influence profitability and we cast some doubt on the use of certain kinds of data used in earlier studies that attempt to measure the cost of financial intermediation in Canada and in the United States.

The outline of this chapter is as follows. 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 described. Third, rates of return to capital are analysed for both Canadian and U.S. banks and are compared with all-manufacturing profit rates in each country. And finally, factors affecting profitability are investigated — namely, yield spreads, noninterest expenses, the asset and liability portfolio mix, and asset/capital ratios.

### 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 is unrestricted in number and in geographical location, but the entry of new firms is restrained by regulation. The result is 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 is fundamental in banning branching across state boundaries or in confining the number of branches to a limited few. Entry of new firms seems less impeded in the United States than in Canada, although the granting of charters is dependent upon the policy of U.S. state and federal regulatory authorities.<sup>2</sup> The U.S. banking system is composed of large and small, branched and unit firms. The

1 For example, see the Canadian Banker's Association, "Government Place in Bank Ownership: The Industry View," *CBA Bulletin*, 17 February 1974; and E. Neave and D. Purvis, "A Comparison of Banking System Performance in Canada and the United States," Paper presented at the Queen's University Conference on Monetary Economics (August 1975). After I had completed much of the work for this study in 1975, G. Lerner then studied in much greater detail the cost of financial intermediation in the United States and Canada. His results may be found in "The Performance of Canadian Banks," Economic Council of Canada, Discussion Paper 104, Ottawa, 1978.

2 The growth rate of banks formed each year never exceeded 2 per cent except during the years 1962-65, when James Saxon was the Comptroller of the Currency. See A.W. Throop, "Capital Investment and Entry in Commercial Banking," *Journal of Money, Credit, and Banking*, vol. 7 (May 1975), p. 202.

larger banks, such as those found in New York City and Chicago, serve 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. Notwithstanding, the 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 is based on two principles that appear in the Glass-Steagall Act of 1933. First, state boundaries generally act as geographical limits, and, second, both state and national banks have to comply with state legislation. Also, the Bank Holding Act of 1956 specifies 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 allows the entry of nonresident holding corporations.<sup>3</sup> For example, in 1973, 15 states prohibited branching; 16 confined branching to local areas; 11 permitted the formation of multiple bank holding companies; and 12 states placed no impediments on statewide branching or multiple holding companies.<sup>4</sup> Notwithstanding, there has been a marked increase in branching in the United States in recent years. In 1960, there were 13,986 head offices and 10,969 branches, but, in 1973, head offices numbered 14,653 and branches more than doubled to 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 probably assisted in the decline in population per branch as banks compete in reducing transport and time costs to consumers rather than increasing deposit rates.<sup>5</sup> It is noteworthy that population per branch in the United States decreased 20.0 per cent but,

3 C.H. Golembe, "The Organization of Modern Banking," *Changing World of Banking*, ed. H.V. Prochnow and H.V. Prochnow, Jr. (New York: Harper & Row, 1974), p. 22.

4 D. Baker, "Chartered Banking and Concentration," *Policies for a More Competitive Financial System*, Federal Reserve Bank of Boston, Conference Series 8, 1973, pp. 25-26.

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*, vol. 8, 1976, pp. 97-105.

in Canada, only 5.6 per cent, from 1968 to 1973. In Canada, the reduction in population per branch occurred with the greater rivalry among chartered banks after the 1967 Bank Act amendments became effective and with the higher income levels of consumers. Rivalry among Canadian banks took the form of either increasing interest rates paid for deposit and lowering charges paid on loans, advertising, 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 are higher to the degree that branching restrictions in the United States are effective in restraining the 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 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 restrict the growth of bank assets unless there is a commensurate increase in shareholders' equity.<sup>6</sup> Thus U.S. banks, unable to hold additional assets and deposits that can increase profits earned by bank shareholders, experience a lower rate of return to capital due to asset/capital ratio restrictions.

Table 4-1  
Banking Density in the United States and Canada,  
1968-73

	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

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

<sup>6</sup> See American Bankers' Association, *The Commercial Banking Industry* (Englewood Cliffs, N.J.: Prentice Hall, 1962), p. 322.

### 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 are included. After 1967, the loan rate ceiling was repealed and banks were freed to 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 than Canadian banks during the 1963-73 period. Regulation *Q* deposit rate ceilings, listed in Table 4-2, were in force at this time. Small-sized deposit business was especially subject to regulation because interest rate ceilings on deposits of more than \$100,000 in size only were withdrawn after 1970. Furthermore, explicit interest paid for demand deposits was prohibited by the Bank Act of 1933. Although Canadian bank demand deposits were non-interest-bearing (except for provincial and municipal demand deposits and, recently, large corporate deposits), no legal restraint was 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.<sup>7</sup> 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. Fair and Jaffee estimate that interest rates payable on bank savings and term deposits during the 1968-70 period would have surpassed those permitted by Regulation *Q* if there had been no application of interest rate ceilings.<sup>8</sup>

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*. One source of funds available to the banks was loans advanced by Federal Reserve banks. The share of these borrowings to total liabilities had declined since the 1920s because of the

7 C.T. Arlt, "The Changing Character of Bank Deposits," *The Changing World of Banking*, ed. H.V. Prochnow and H.V. Prochnow, Jr. (New York: Harper & Row, 1974), p. 56, note 3.

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*, Federal Reserve Bank of Boston, Conference Series 8, 1973, p. 112, note 4.

Table 4-2  
Maximum Interest Rates Payable on Time and Savings Deposits in the United States,  
Various Dates, 1963-73

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
(Per cent)								
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 - 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 <sup>1</sup>
\$100,000 or more								
30-59 days	1	4	5½	5½	5½	5½	6¼ <sup>2</sup>	—
60-89 days	1	4	5½	5½	5½	5½	6½ <sup>2</sup>	—
90-179 days	4	4	5½	5½	5½	6	6¾ <sup>3</sup>	—
180 days to 1 year	4	4	5½	5½	5½	7 <sup>3</sup>	—	—
1 year or more	4	4	5½	5½	5½	7½ <sup>3</sup>	—	—

<sup>1</sup> 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 2-½-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.

<sup>2</sup> Ceiling suspended June 24, 1970.

<sup>3</sup> Ceiling suspended May 16, 1973.

Source: Federal Reserve, Board of Governors *Bulletin*.

development of new money markets and the reluctance of Federal Reserve regulators to lend longer-term funds, particularly in times of rising interest rates.<sup>9</sup> Another source of funds that evolved was the Federal Funds market, which furnished opportunities for banks to sell their excess reserves to other banks needing additional funds. The Federal Funds were short-term (often loaned only overnight), unregulated and interest-bearing, and exchangeable for securities or loans (under resale purchase agreements). A third source of funds was the Eurodollar market which was created largely as a result of efforts to minimize the impact of Regulation Q and reserve requirements. This market involved international lending and borrowing activities that earned low-yield margins. As mentioned for Canadian banks in Chapter 2, the term structure of Eurodollar assets was somewhat longer than deposits, and the loan yield spread was approximately 1 per cent from 1963 to 1973.

Other methods were used to attract deposits by U.S. banks. For example, the use of "compensating" balances<sup>10</sup> free chequing privileges, remission of service charges, and additional unpriced services packaged with demand deposits were implicit interest payments payable for demand deposits.<sup>11</sup> Branching, where possible, allowed banks to reduce transport costs of consumers as a means of attracting deposits.

#### D. Taxation

In Chapter 3, we suggest that the income taxation of Canadian chartered banks during the 1963-73 period seems to have been more burdensome compared with that of other sectors. U.S. commercial banks also seem to have been taxed at a lower effective rate than banks in

9 G.W. Woodworth, "Theories of Cyclical Liquidity Management," *Money, Banking and Monetary Policy*, ed. H.R. Williams and H.W. Woodenberg (New York: Harper & Row, 1970), pp. 141-144.

10 It is often alleged that compensating balances in the United States would affect the yield spread between the average loan yield earned and the average deposit rate paid by U.S. banks. Compensating balances are demand deposits held with a bank as a proportion of a loan borrowed by a bank's customer. To correct loan yield spreads, two adjustments are required. First, the average loan yield would be revised upwards to reflect the opportunity cost incurred by the borrower for holding nonearning demand deposits with the bank lender. Second, the average deposit rate would be revised upwards since fewer demand deposits would be held as liabilities by a bank should no compensating balances be held. To calculate a new yield spread if no compensating balances were held, we would need to have the following information: (i) the percentage of loans that would require compensating balances to be held, and (ii) the percentage of a loan required by a bank to hold on average as demand deposits over and above those demand deposits that would already be held with a bank. Unfortunately, we do not have this information and it would be difficult to infer if compensating balances would affect loan yield spreads very much.

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



Canada, because of certain tax advantages that the U.S. banking industry obtained in the calculation of tax levies. There were four main differences between the U.S. and Canadian taxation of bank income.

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

*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, 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. In 1969, the par value of reserves was lowered from 3 per cent 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 by .15 of a percentage point 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 of eligible assets in excess of \$1 billion.

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

*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 a maximum 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

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," in *Inflation, Trade and Taxes: Essays in Honour of Alice Bouneuf*, ed. D. Belsey, E. Kane, P. Samuelson, and R. Solow (Athens, Ohio: The Ohio University Press, 1974). Kane compared the yields of municipal and corporate bonds of the same quality to arrive at the marginal tax rate.

and were treated as current income.<sup>13</sup> In Canada, all capital gains from trading securities were fully taxable and deductible with a general carry-over provision of losses applied to profits.<sup>14</sup> 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 seems to have been higher tax rates for Canadian banks before 1969, while, after 1969, the net effect seems to have been about the same (realized capital gains after 1969 were low on an average for both Canadian and U.S. banks).

*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, 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.<sup>15</sup> In addition, 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 tend 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, for example, reserve ratios were applied to demand deposits net of items in transit, and to 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 the demand deposit ratio fluctuated from 12 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

13 L.S. Prussia, Jr., "Banking Investment Portfolio Management," *The Changing World of Banking*, ed. H.V. Prochnow and H.V. Prochnow, Jr. (New York: Harper & Row, 1974), p. 183, note 3.

14 Royal Commission on Taxation, *Report*, vol. 4 (Ottawa: Queen's Printer, 1966), p. 383.

15 Kane, "A Cross-Section Study," note 12. Kane found that the small business tax deduction lowered the effective tax rate by 2 percentage points.

branch loans made to U.S. citizens, plus above a specified base, net liabilities 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 non-interest-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 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) thus reducing profitability. 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 to the order of 7 per cent. The effect of reserve ratios on profitability is discussed later, after a look at methodology.

#### **F. Trust Business**

Unlike Canadian chartered banks, U.S. commercial banks were permitted to administer trust funds during the 1963-73 period. Member banks of the Federal Reserve reported that 3.2 per cent of total income in 1973 accrued from trust activity.<sup>16</sup> 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 those on the size of their trust business, it appears that 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 disbursing dividends.<sup>17</sup> Rapid development of computerization assisted the initiation of new services provided by the banks. These services included the issuance of credit cards,

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*, ed. H.V. Prochnow and H.V. Prochnow, Jr. (New York: Harper & Row, 1974), p. 226, note 3.

movement towards an automated payment system, and data processing. Canadian banks employed computerization in the late 1950s primarily for "back-office" economies, but additional expenses were incurred in the late 1960s, particularly those due to credit card operations. For 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.<sup>18</sup> Perhaps Canadian banks realized less profits because of their slower development of computerization than in U.S. banks during the 1967-73 period. Thus Canadian bank profit rates might have been higher if computerization in Canadian banks had developed with the same speed as that in U.S. banks.

### 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). Table 4-3 lists all the variables used in this chapter. In addition, it adjusts the data for Canadian chartered banks, all U.S. insured banks, and New York City banks. However, two pertinent comments are made here with regard to the data used in this chapter. First, important accounting differences between U.S. and Canadian bank profits and shareholders' equity are explained. Second, the definition of domestic business is outlined for U.S. and Canadian banks.

Calculations of rates of return to capital for U.S. banks are based on statistics for profits and shareholders' capital found in the Federal Reserve, Board of Governors *Bulletin*. Profits and reserves for retained earnings (a part of shareholders' capital) of 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.<sup>19</sup> Profits and reserves for retained earnings prior to 1969 include 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 are added to U.S. bank profits and shareholders' capital figures for years prior to 1969, then the U.S. bank profit rates can possibly be increased relative to Canadian bank rates of return to capital. However, for all years (except 1968) after the 1967 amendment to the Canadian Bank Act, U.S. and Canadian profit rates are based on the same methodology.

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 that were subtracted from total property expenses. Data were available in the report to the Inspector General of Banks under Schedule Q.

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

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 1968.	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 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.  (b) Domestic Only - All reported assets except customers' acceptances, guarantees and letters of credit.	Averaged end of years.		Averaged end of years. <sup>1</sup>

<sup>1</sup> Averaged Jan. 1, June 30 and Dec. 31 totals.

4. Loans	(a) Foreign and Domestic Total - All loans and interbank deposits.	Averaged end of years.	Averaged end of years. <sup>1</sup> 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.
5. Securities	(a) Foreign and Domestic Total Treasury bills, government bonds, corporate bonds and stocks.	Averaged end of years.	Averaged end of years. <sup>1</sup>
	(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 per cent 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. <sup>1</sup> Included Federal Funds purchased under resale purchase agreements.

Table 4-3 (Cont'd)

Variable	Description	Adjustments Made to Data		
		Canadian Chartered Banks	All U.S. Insured Banks	New York City Banks
	(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. <sup>1</sup>
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.

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.

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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.

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



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* cover 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 can be obtained for U.S. banks are from individual bank balance sheets provided in Moody's *Bank and Finance Manual*. Since accounting practices often change the basis upon which statistics are reported in Moody's publication, a consistent series of figures is available only for the years 1971-73. Thus, Canadian bank earnings on consolidated deposits are comparable with data from Moody's publication, but the years surveyed are limited in number.

It is appropriate, however, to compare Canadian bank domestic loan yields, security yields, and deposit rates with those of U.S. banks by using data from the Federal Reserve *Bulletin*. Canadian domestic asset yields and deposit rates are calculated from data appearing in two sources: *The Canadian 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 making 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 one-tenth of 1 per cent of total assets booked at U.S. domestic branches on December 31, 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 one-half of 1 per cent of total assets booked at U.S. branches as of December 31, 1973. Furthermore, domestic currency assets and liabilities booked abroad reflect 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; for example, claims on foreign branches were two-tenths of 1 per cent of total assets booked at domestic branches as of December 31, 1973.

There are also several other factors contributing to profitability (yield spreads, noninterest costs, asset and liability portfolio mixes and asset/capital ratios) which are analysed later in this chapter. Due to the aforementioned problems with data, only two comparisons can be made: consolidated data of Canadian banks with those of New York City banks, and domestic data of Canadian banks with those of all U.S. insured banks.

### **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. We assume in this section that the shareholders of U.S. and Canadian banks, operating under different regulatory systems, experience the same degree of risk relative to other sectors. We suggest, however, in later sections that perhaps Canadian banks experience less risk than U.S. banks because Canadian banks seem to better match the term structure of their asset and liability portfolios. Thus U.S. measured profit rates should perhaps be higher than those earned by Canadian banks, rather than the same, once we allow for differences in risk.

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 (for example, 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 with 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 during the 1968-73 period, but only .8 of a percentage point for all U.S. insured banks and -1.0 percentage point for New York City banks. From an examination of the profit margins of New York City banks, it is obvious that international activity was not a factor contributing to higher rates of return to capital during this period. The New York City bank profit rate was 1.9 percentage point less than that earned by all U.S. insured banks for the 1968-73 period. This confirms the conclusion of Chapter 2 that foreign business of Canadian banks is not an important reason for high overall rates of return to capital.

Table 4-4  
 After-Tax Rate of Return to Capital for  
 Canadian and U.S. Banks, 1963-73

	Canadian Chartered Banks <sup>1</sup>	All U.S. Insured Banks	U.S. New York City	U.S. All Manufacturing
	(Per cent)			
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

<sup>1</sup> Accrued rates of return to capital.

Sources: 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 and 10.9 per cent, respectively). On the other hand, as found in Chapter 3, the Canadian chartered banks earned after-tax profit rates well above Canadian all-manufacturing corporations. This point is emphasized in Table 4-5, where the difference in after-tax profit rates of banks and manufacturing companies in Canada was greater than in the United States after 1967.

The before-tax rates of return to capital permit us to measure the excess profits that are shared by both bank shareholders and the government. Table 4-6 illustrates before-tax rates of return for Canadian chartered banks, all U.S. insured banks, New York City banks, and U.S. manufacturing. It shows a substantial rise of 10.6 percentage points in the before-tax profit rate for Canadian banks, but only .8 of a percentage point for all U.S. insured banks, and only -.3 of a percentage point 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 between 1963 and 1973.

Table 4-5

Difference Between After-Tax Rates of Return of Banks and Manufacturing Corporations for the United States and Canada, 1963-73

	(1) Canadian Chartered Banks and Canadian Manufacturing	(2) All U.S. Insured Banks and U.S. Manufacturing	(3) Difference Between (1) and (2)
	(Per cent)		
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: See Table 4-4.

Table 4-6

Before-Tax Rate of Return to Capital for Canadian and U.S. Banks, 1963-73

	Canadian Chartered Banks	All U.S. Insured Banks	U.S. New York City	U.S. All Manufacturing
	(Per cent)			
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: See Table 4-4.

One of the important differences between the U.S. and Canadian banking systems during this period was with regard to taxation of bank profits, as reviewed earlier in this chapter. 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.<sup>20</sup> One of the reasons why effective tax rates based on book profits were lower for U.S. banks than for Canadian banks was the tax exemption given on earnings from state and municipal bonds. However, an implicit tax was paid in that 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 have been the case if the U.S. banks had held taxable securities instead. Table 4-7 provides the new before-tax rates of return for U.S. banks if we assume that the difference between the yield on tax-exempt bonds and taxable corporate bonds was 30 per cent (see footnote 15). The new tax rates on U.S. bank profits for the 1969-73 period were still 10.8 per cent lower than those 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 profits on average was 39.0 per cent, which was 4.2 percentage points less than that for U.S. manufacturing firms.

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, 1969-73

	U.S. Banks			Canadian Banks			
	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
	(Per cent)						
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
Averages							
1969-73	15.2	2.7	17.9			25.0	

Source: See Table 4-4.

<sup>20</sup> The tax rate differs slightly from the previous calculation in Chapter 3. In this chapter, accrued profits of 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.

Also, reserve requirements affected earnings on securities and loan assets. For example, increases in the reserve requirements brought a greater decrease in the gross yield as more 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 (see Table 4-8). In the period before 1971, reserve ratios were greater in the United States while, after 1972, the difference between Canadian and U.S. reserve requirements was reversed. Table 4-8 shows the estimated cost to banks of holding nonyielding reserves and forgoing the holding of higher-yielding assets. We suggest that the average before-tax profit rate for Canadian banks was 28.8 per cent and that for U.S. banks, including an adjustment for holding tax-exempt securities, was 20.2 per cent for the 1969-73 period.

Table 4-8  
Actual Reserve Requirement Ratios as of December 31 for Each Year and the  
Adjusted Before-Tax Rate of Return to Shareholders' Equity, 1969-73

	Canadian Banks		All U.S. Insured Banks		
	Primary	Primary and Secondary	Adjusted Before-Tax Profit Rate	Effective Reserve Ratio	Adjusted Before-Tax Profit Rate
	(Per cent)				
1969	6.2	6.8	25.5	9.6	24.2
1970	6.1	6.1	24.5	8.9	19.6
1971	6.2	8.2	29.8	8.5	18.9
1972	6.1	9.4	31.5	7.7	18.6
1973	6.1	8.0	31.1	7.8	20.1
Averages 1969-73			28.8		20.2

Note: The secondary reserve ratio of Canadian banks was converted to a primary ratio 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. The opportunity cost of holding reserves was calculated for both U.S. and Canadian banks, by assuming that 3 percentage points of deposits would be required by the banks to be held as reserves without legislative requirement. The cost of holding excess reserves was based on the interest rate payable on 1-to-3-year Government of Canada bonds and one year U.S. government bonds. All interest rates were assumed to be unaffected by shifts in the banks' portfolio of assets in each country.

Sources: *Bank of Canada Review*; and the Federal Reserve, Board of Governors *Bulletin*.

The implications of this comparison of rates of return to capital by country are no less striking than those affirmed by the results listed in Chapter 3. A comparison of the after-tax 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 shows that Canadian banks

earned excess profits after 1967. Moreover, Canadian banks earned substantially higher after-tax rates of return to capital than did Canadian manufacturing corporations. However, there was little difference in after-tax profit rates accruing to U.S. banks and U.S. manufacturing companies, which suggests that managerial specialization in banking is not an important factor in contributing to Canadian banking profitability.

### **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 and that earned by Canadian banks, factors that contribute to profitability are surveyed. These factors are yield spreads (the yield earned on assets 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) are computed in Table 4-9. If one corrects these loan yield spreads for the loan loss ratio of Canadian and New York City banks (see Table 4-10), the yield spreads of Canadian and New York City banks become almost equivalent (3.43 and 3.48 per cent, respectively, for the years 1971-73). In addition, the security yield spread for New York City banks in 1973 is adjusted to a rate substantially lower than that earned in the two earlier years because of a significant capital loss from the selling of securities in 1973.

During the 1963-73 period, there was little difference between the U.S. and the Canadian loan yield spreads, as demonstrated in Table 4-11, which considers only domestic activity. Moreover, the Canadian banks increased the domestic loan yield spread by .51 of a percentage point a year after the 1967 Bank Act amendments, while the U.S. banks experienced a lower increase of .37 of a percentage point a year. Also, the Canadian security yield was higher than that earned by U.S. banks. This resulted from a tax exemption given in the United States to state and municipal bond holders, as noted above. 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

Table 4-9  
 Loan and Security Yield Spreads at Canadian Banks and Eight New York City Banks, 1971-73

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

(Per cent)

Sources: Schedule Q reports submitted to the Inspector General of Banks; *The Canada Gazette*; and *Moody's Bank and Finance Manual*.



lower yield on securities than that accruing to Canadian banks. The Canadian actual yield on securities was 1.17 percentage point higher a year than the U.S. yield for the 1968-73 period, although Canadian banks were forced to hold lower-yielding treasury bills, in comparison with other securities, because of secondary reserve requirements.

Table 4-10  
Loan Loss Ratio<sup>1</sup> for Canadian Banks, All U.S. Insured Banks  
and New York City Banks, 1963-73

	Canadian Banks (Domestic Only)	All U.S. Insured Banks <sup>2</sup>	New York City Banks <sup>2</sup>
	(Per cent)		
1963		.16	.18
1964		.15	.08
1965		.17	.13
1966		.20	.17
1967	.13	.20	.13
1968	.09	.17	.08
1969	.09	.17	.09
1970	.22	.33	.39
1971	.22	.33	.44
1972	.21	.24	.29
1973	.19	.25	.39
Averages			
1963-66		.17	.14
1968-73	.18	.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.

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

Domestic yield spread comparisons are influenced by a series of factors. First, are 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 experience 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 deposits 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 compared in the third part of this section.)

Second, the default risk on loans increases the yield margin needed to cover the cost of financial intermediation. If one makes a correction for default on loans, the Canadian domestic loan yield spread for the 1968-73 period is adjusted to be 4.53 per cent and that of the U.S. banks becomes 4.58 per cent. Thus it can be seen that there was little difference in the yield spreads earned by the U.S. and the Canadian banks after 1967, when one takes account of the actual losses on loans.

Table 4-11  
 Loan and Security Yield Spreads for Canadian Banks, All U.S. Insured Banks  
 and New York City Banks, Domestic Business Only, 1963-73

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

(Per cent)

<sup>1</sup> Canadian currency only.  
<sup>2</sup> Booked at U.S. branches only.

Source: See Table 4-4.

Third, the prohibition of interest payments on demand deposits and Regulation Q ceilings applicable in the United States during this period had the effect not only of limiting the growth of deposits, but also of 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 earned from service charges levied for the handling of payment services may have been forgone.

Santomero and Barro compute the remission of service charges as a proportion of demand deposits for a sample of 100 U.S. banks for the years 1950-68.<sup>21</sup> If these implicit costs are added to the interest paid on deposits, then the 1963-66 loan yield spread for U.S. domestic business would be 3.36 per cent rather than 4.46 per cent. The 1968 loan yield spread would be 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 during the 1968-73 period. According to the data available, the rate of interest paid on all demand deposits was .4 of a percentage point in 1968. If Canadian banks had remitted service charges as well, then a lower yield spread for 1968 would have been calculated. In order to have arrived at a reduction in the loan yield spread equivalent to that of all U.S. insured banks in 1968, the interest rate paid on demand deposits by Canadian banks would have had to be approximately 4.9 per cent, or twice the U.S. rate of 2.4 per cent.<sup>22</sup>

Alternatively, one can subtract charges for servicing deposits and 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 for the 1968-73 period was .4 of a percentage point, which was higher than the U.S. service charge per dollar of domestic booked deposits of .23 of a percentage point, assuming the turnover rates of demand deposits in the United States were the same as those experienced by Canadian banks. If one corrects the domestic loan yield spreads for service charge costs of depositors and the loan loss ratio, then one arrives at a new Canadian 1968-73 average of 4.96, which is greater than the 4.81 per cent spread that was earned by all U.S. insured banks.

It is suggested above that the loan yield spread earned by Canadian banks during 1968-73 was equivalent to that earned by banks in the United States. Nevertheless, if one includes the remission of service charges on demand deposits and loan loss ratios, then, the new result indicates that Canadian banks had a higher domestic loan yield spread than that earned by the U.S. banks during this time. When one investigates the term structure of assets and portfolios, there seems to be further

21 Barro and Santomero, "Householding Money Holdings," p. 400, note 11.

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).

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 with another, then two hypotheses may be proposed. First, one country may have encountered a higher level of wage, rental, and raw material costs than those experienced by another, and the noninterest expenses per dollar of assets may have reflected those higher costs. Second, banking firms in a country may have been 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 may have resulted as banks did not minimize costs in servicing all banking consumers. For example, competition may have led to quicker adoption of new innovations, such as computerization of payment services, that reduced the costs of financial intermediation.

Two comparisons can be made of noninterest expense per dollar of assets: between Canadian banks (consolidated foreign and domestic data) and New York City banks (consolidated foreign and domestic data) or between Canadian banks (Canadian currency data) and 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, compared with 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.

Table 4-12 compares the eight New York City banks with 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 of a percentage point or 16.1 per cent less than that experienced by Canadian banks. Lower expenses per dollar of assets, however, do not necessarily indicate a greater efficiency of New York City banks vis-à-vis Canadian banks. New York City banks at this time 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<sup>1</sup> Per Dollar of Assets of Canadian Banks and  
Eight New York City Banks, 1971-73

	Canadian Banks				New York City		
	Total Non- interest Expense	Property Expense	Salary and Wages	Other	Total Non- interest Expense	Salary and Wages	Other
	(Cents)						
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 4-4.

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 compared with Canadian banks (see Table 4-13). Canadian banks experienced noninterest costs of .52 of a cent 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 noninterest costs per dollar of assets (.37 of a cent change in the domestic yield spread and .37 of a cent 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 of a cent, while the loan yield spread rose .51 of a cent). The remaining portion of the increase in the Canadian domestic loan yield spread (.28 of a percentage point) was 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 and 19 per cent of total noninterest expense for each respective period for Canadian banks. Other expenses per dollar of domestic assets in the United States

Table 4-13  
 Noninterest Operating Expenses Per Dollar of Assets for All U.S. Insured Banks and Canadian Banks, 1963-73

	Canadian Chartered Banks <sup>1</sup>				All U.S. Insured Banks			
	Total Non-interest Expense	Property Expense	Salary and Wages	Other	Total Non-interest Expense	Property Expense	Salary and Wages	Other
	(Cents)							
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
Averages								
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

<sup>1</sup> Excludes foreign currency expenses or expenses of branches abroad and provision for loan losses.

Source: See Table 4-4.

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 data on expenses per dollar of assets 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.

Although wages and salary levels for the U.S. banks were higher than for Canadian banks (see 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 did Canadian banks. Nevertheless, there were a number of factors that explained some of the differences in the amount 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 due to relatively higher banking wage and salary rates in the United States. Higher banking salary and wage rates partly resulted from a higher wage level in the United States than in Canada. The higher U.S. general wage level (see Table 4-15) explains all but 8.25 per cent of the wage and salary rates for U.S. banks during the 1963-66 period and 7.50 per cent of average labour expenses of U.S. banks during the 1968-73 period. This suggests 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 that the technology that had evolved had labour-saving content, then relatively higher wage rates should have encouraged U.S. banks to substitute unskilled labour for capital equipment (computerization) and skilled labour. Thus domestic assets per employee are not a good measure of efficiency in the two banking systems, since factor price differentials encouraged banks to use 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

Table 4-14  
 Domestic Assets Per Domestic Employee and Wage Rates and Salary Per Annum, Canadian and U.S. Banks, 1963-73

	Canadian Banks		All U.S. Insured <sup>1</sup> 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

<sup>1</sup> Converted to Canadian dollars.

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

Source: See Table 4-4.



of other firms, thereby shifting costs from the "labour" to the "other expenses" category. Domestic assets per employee are 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, 1963-73

	Proportion of Canadian General Wage Rate to U.S.	Proportion of U.S. Banks' Salary Expense Per Employee not Explained by the General Wage Rate Difference Between the United States and Canada
	(Per cent)	
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

Sources: *Bank of Canada Review*; and P. Wonnacott, *Canada's Trade Options*, Economic Council of Canada (Ottawa: Information Canada, 1975), p. 175.

Domestic 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 (see Table 4-16), illustrating that Canadian bank branches were small in size compared with 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 Canadian proportion of U.S. assets per branch rose, reflecting the relaxation of branching laws in the United States, particularly in New York State. The larger size of U.S. branches, compared with those in 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 fewer domestic assets per branch in Canada was an indication that smaller bank branches serviced more widely dispersed populated areas in Canada relative to banking in the United States. Third, banks substituted computerization<sup>23</sup> and travel of employees to banking consumers for branches, as factors of production, in the United States.

23 Cooley and Overmire, "The Role of Automation," p. 237, note 3.

Table 4-16  
 Domestic Assets Per Domestic Branch and Property Expense Per Branch, Canadian and U.S. Banks, 1963-73

	Canadian Banks		All U.S. Insured Banks <sup>1</sup>		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

<sup>1</sup> Converted to Canadian dollars.

Source: See Table 4-4.

The ratio of domestic employees per branch in Canada to that in the United States (see 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.

Table 4-17  
Domestic Employees Per Domestic Branch, U.S. and Canadian Banks, 1963-73

	Canadian Banks <sup>1</sup>	All U.S. Insured Banks <sup>1</sup>	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
Averages			
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.

With reference to expense data presented in Tables 4-13 to 4-17, domestic assets and domestic wage cost per employee, domestic assets and domestic property expense per branch, and domestic employees per branch, confirms 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. Noninterest 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 were to decline, then that factor, in general, would be employed relatively more than the other inputs. Over a time period, however, technology (or a change in banking output) may be introduced such that relatively less of the input is 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 may consider the relationship between labour and working capital inputs in U.S. and Canadian banking. In the United States during the 1963-73 period, 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 when banks minimize costs. In Canada, however, 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 had 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.

### 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 compared with 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 lower 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 is 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 is 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.

Table 4-18

Average Factor Price and Input Ratios, Canadian and U.S. Banks, 1963-66 and 1968-73

	Canadian Banks	U.S. Banks
	(Index based on the U.S. 1963-66 average = 1.0)	
Wage and Salary Per Employee <sup>1</sup> /Profit Rate <sup>2</sup>		
1963-66	.90	1.00
1968-73	.84	1.21
Cost Per Branch <sup>1</sup> /Profit Rate <sup>2</sup>		
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: See Table 4-4.

Thus, it can be seen that, at that time, 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) compared with Canadian banks.<sup>24</sup>

24 J.A. Galbraith, *Canadian Banking* (Toronto: Ryerson Press, 1970), p. 206; and J.C. Archibald, "Loans and Discounts," *The Changing World of Banking*, ed. H.V. Prochnow and H.V. Prochnow, Jr. (New York: Harper & Row, 1974), pp. 131-132, note 3.

Table 4-19  
 Distribution of Assets of Canadian and U.S. Commercial  
 Banks, as of December 31, 1973

	Canadian Banks	U.S. Banks
	(Per cent)	
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

Sources: Federal Reserve, Board of Governors *Bulletin*; and *Bank of Canada Review*.

The evidence on deposits, provided in Table 4-20, implies the Canadian banks held proportionately more long-term deposits (39.0 per cent of total deposits) than did U.S. banks (34.4 per cent of total deposits) if term deposits and other borrowings (such as debentures) are considered as long-term deposits. However, since term deposits 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, some of the term deposits must be short-term in nature, and so the above figures must overestimate the amount of long-term deposits.

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 is the only one available in both countries for the aforementioned interest rates. The variation in prime loan rate serves 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 during the period was reduced by Regulation Q interest rate ceilings applied to deposits in the United States and by the non-interest-bearing demand deposits held by banks in the United States and Canada.

Table 4-20  
Distribution of Deposits for Canadian and U.S.  
Commercial Banks, as of December 31, 1973

	Canadian	United States
	(Per cent)	
Demand	20.2	40.3
Federal Government	4.8	1.3
Subtotal	25.0	41.6
Federal Funds Purchased	—	6.9
Chequable Savings	15.1	—
Subtotal	40.1	48.5
Nonchequable Savings	20.9	17.1
Deposits Accumulated for Personal Loans	—	.1
Subtotal	61.0	65.6
Term	37.6	32.8
Other Borrowings	1.4	1.6
Total	100.0	100.0

Sources: Federal Reserve, Board of Governors *Bulletin*; and *Bank of Canada Review*.

The equation to be estimated is 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;
- $U_t$  = error (which is assumed to be normally distributed with  $EU_t = 0$ ).

The above equation is derived from the Koyck transformation, where the present year prime loan rate is a function of the present year's and previous year's annual prime loan rates, based on a geometric lag. The coefficient  $B_1$  is the estimated proportion of the portfolio of less than one year in term, and  $B_2$  is the proportion of more than one year in term.<sup>25</sup> 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  $F$  ratios and adjusted coefficients of determination, as shown in Table 4-21, indicate that the econometric model is 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, it can be seen that 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 is not acceptable, since Regulation  $Q$  interest ceilings and the prohibition of interest payments on demand deposits at the time reduced the sensitivity of the variation in the deposit rate to the variation in the prime loan rate. The relaxation of interest rate ceilings 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 is of some assistance in estimating the term structure. Short-term (less than one year) deposits were an estimated 41 per cent of total deposits. However, demand

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

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

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

$$(2) \quad \frac{\partial R_1}{\partial r_1} = \frac{A_1}{A_1 + A_0} \quad \text{and} \quad (3) \quad \frac{\partial R_1}{\partial r_0} = \frac{A_0}{A_1 + A_0}$$

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 is 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.



deposits, excluding federal, provincial, and large corporate demand deposits, were non-interest-bearing. Thus the results indicate that the short-term estimate of deposits for Canadian banks have to be raised in order to include non-interest-bearing deposits.

Table 4-21  
Regression Results in Determining the Term Structure of Loan and  
Deposit Portfolios of U.S. and Canadian Banks, 1963-73

	$B_0$	$B_1$	$B_2$	$R^2$ (adjusted)	$F$
Canadian - Loan	.541 (4.69) <sup>1</sup>	.520 (5.02)	.480	.73	25.21 <sup>1</sup>
- Deposit	-1.47 (-6.75) <sup>1</sup>	.418 (7.72) <sup>1</sup>	.582	.87	59.53 <sup>1</sup>
U.S. - Loan	.483 (6.48) <sup>1</sup>	.409 (7.12) <sup>1</sup>	.591	.85	50.74 <sup>1</sup>
- Deposit	-.429 (-1.44)	.161 (2.25)		.34	5.07

1 Significant at the .995 level.

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

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

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 parentheses are values of the t-statistics. No t-statistics are shown for  $B_2$  since  $B_1$  and  $B_2$  are constrained to add to 1.

Source: See text.

One may conclude from the above analysis that loan assets held by Canadian banks were shorter in term than those held by U.S. banks. Indeed, it appears from the data for 1973 that deposits held by Canadian banks were longer in term than deposits held by U.S. banks. Therefore, it would seem that Canadian banks were better able to match the term structure of loan and deposit portfolios than were U.S. banks. Thus one would expect the loan yield spreads and profit rates of Canadian banks to be lower than those earned by U.S. banks, since Canadian bank shareholders experienced a lower degree of risk arising from interest rate fluctuations. However, the above analysis does not help us to determine whether U.S. banks in fact experienced lower noninterest expenses per dollar of assets than Canadian banks because U.S. banks held longer-term loans but shorter-term deposits than did 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 ratio of all U.S. insured banks by adding assets booked at foreign branches, the Canadian bank asset/capital ratio was 7.5 percentage points higher than all U.S. insured banks. In comparison with New York City banks, Canadian chartered bank asset/capital ratios were greater by 3.4 percentage points for the same period.

Table 4-22  
Asset/Capital Ratios for Canadian Banks, New York City Banks, and  
All U.S. Insured Banks, 1963-73

	Canadian Banks Consolidated	Eight New York City Banks	All U.S. Insured Banks <sup>1</sup>
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 those 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 reason why before-tax profit rates earned by Canadian bank shareholders were higher than those accruing to U.S. bank shareholders. It is 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 equity capital for all U.S. insured banks is first adjusted downwards to reflect the Canadian asset/capital ratio. Then the extra interest cost of holding deposits is subtracted from before-tax profits. These calculations indicate 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 that for all U.S. insured banks after correcting for asset/capital ratios and for the holding of tax-exempt bonds by U.S. banks. The adjusted before-tax profit rate of U.S. banks is overestimated, since it is assumed that U.S. banks did not increase the holding of nonyielding assets as required for reserve requirements applied to additional deposits and that the U.S. banks 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 compared with U.S. bank shareholders.

### Conclusion

Canadian banks earned higher after-tax and higher before-tax rates of return to capital than did banks in the United States. The difference in rates of return to capital earned by the two banking systems is difficult to explain because several trends were working at the time to, in effect, counteract this tendency. Canadian banks were more involved in international business. Differences in forgone profit arising from holding nonyielding reserves and tax-exempt securities do not explain Canadian banks earning higher before-tax rates of return. U.S. banks experienced lower noninterest costs per dollar of assets rather than earning less profits than Canadian banks. Canadian banks were not riskier than U.S. banks in terms of matching the term structure of asset and liability portfolios. And Canadian banks achieved higher asset/capital ratios.

Moreover, other studies that demonstrate that Canadian banks provided lower cost services (earning lower loan yield spreads) to banking consumers than U.S. banks, fail 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 did U.S. banks. This conclusion, however, requires further analysis.

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 did the Canadian manufacturing sector. Thus managerial specialization does seem to have been a cause of higher after-tax profit rates of Canadian banks compared with Canadian manufacturing companies.

## 5 The Measurement of Excess After-Tax Profits and Taxes

The before-tax and after-tax rate of return to capital calculations indicate that Canadian banks after 1967 were more profitable than were other groups of firms, including trust and loan corporations (see Chapter 2), industrial sectors in Canada (see Chapter 3), and all U.S. insured and New York City banks (see Chapter 4). According to economic theory, however, rates of return to capital earned in all industries should be the same, if there are no barriers to entry impeding the flow of equity capital to the more profitable sectors. If rates of return to capital are not the same, then, it may be concluded that excess profits are being earned by those sectors protected from competition by new entrants.

It is 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.<sup>1</sup> Excess after-tax profits are 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 after-tax rate of return to capital for other industries is first subtracted from the after-tax profit rate of Canadian chartered banks and the difference is then multiplied by the actual amount of shareholders' equity, including the accumulated appropriation of losses, invested in Canadian banks.

Excess taxes are defined as the surplus corporate income tax revenue that the Canadian government would not have received if Canadian banks had earned the same after-tax profit rate experienced by all industries. To calculate excess taxes, the before-tax rate of return to capital of other industries is adjusted to reflect the effective tax rate

<sup>1</sup> Estimates of excess taxes and after-tax profits computed in this chapter vary slightly from estimates shown in Economic Council of Canada, *Efficiency and Regulation: A Study of Deposit Institutions* (Ottawa: Supply and Services Canada, 1976), Chapter 4. In this chapter, all ten banks are included in calculations and changes in the market value of securities is subtracted from accrued 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).

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 is multiplied by Canadian bank shareholders' equity, including accumulated appropriations for losses in order to arrive at total before-tax excess profits. Excess taxes are equal to excess before-tax profits less excess after-tax profits.

No overall computed rate of return to capital for all financial and nonfinancial industries is available. In order to calculate an estimate of excess after-tax profits and excess tax, we use the profit rates of four sectors. The first sector is the trust and loan corporations, which provides an appropriate comparison of a Canadian financial industry that is primarily restricted to mortgage assets and over-one-year term deposits. Second is the manufacturing industry, which is composed of small, large, vertically integrated, and conglomerate firms, and which is representative of total industrial corporations, since manufacturing assets are a large share of total industrial assets. Third is retail trade firms which earn a rate of return to capital under a condition of potential competition from new entrants uninhibited by government regulation. Fourth is all U.S. insured banks, which have banking functions similar to the Canadian banks, except in regard to trust business.

As displayed in Table 5-1, Canadian bank shareholders between 1968 and 1973 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) (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 to 27.3 per cent of total after-tax profits of Canadian banks.

Excess taxes gained by Canadian governments 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 1968-73 (see Line 1). The annual average before-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 to 27.1 per cent of total before-tax Canadian bank profits. If no excess after-tax profits and excess taxes had been 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.

From the above, we suggest that, if no excess after-tax profits and excess taxes had been earned by the Canadian bank shareholders and Canadian governments, then the cost of banking services to consumers would have been lower than that prevailing during the 1968-73 period.

Table 5-1  
 Excess Realized After-Tax Profits Earned by Canadian Banking Shareholders  
 and Excess Realized Taxes Accruing to the Canadian Government, 1968-73

	Excess After-Tax Profits				Excess Taxes Based on Adjusted			
	Based on After-Tax Rates of Return to Capital of:				Before-Tax Rates of Return to Capital <sup>1</sup> of:			
	Trust and Loan Corporations	All Manufacturing	Retail Trade	All U.S. Insured Banks	Trust and Loan Corporations	All Manufacturing	Retail Trade	All U.S. Insured Banks
	(Millions of dollars)							
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 (Line 3)	1.6	1.9	3.5	1.9	1.5	1.9	3.1	1.4
	(Per cent)							

<sup>1</sup> Before-tax profit rates of sectors are calculated by dividing after-tax profit rates of the sector by the factor,  $1-tB$ , where  $tB$  is the effective corporate tax rate applied to realized profits earned by the Canadian banks.

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

With the excess after-tax profits earned by Canadian banks, more firms could have entered into banking activities to take advantage of profitable opportunities. 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.

## Appendices



## 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
<i>Method I</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
<i>Method II</i>	
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
<i>1. Accrued Capital</i>	
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
<i>2. Realized Profit</i>	
Accrued after-tax profits	41,896
Less profits (losses) on securities	613
Realized after-tax profit	42,509
<i>3. Realized Capital</i>	
Accrued capital	27,837
Less profits (losses) on securities divided by two	307
Realized capital	28,144

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4. <i>Tax Rates – Tax Paid</i>	37,200
(i) Accrued before-tax profit	79,097
Accrued tax rate $37,200 \div 79,097 = 47.03$ per cent	
(ii) Realized before-tax profit	79,710
Realized tax rate $37,200 \div 79,709 = 46.67$ per cent	
5. <i>Rates of Return</i> <sup>1</sup>	
Accrued – $79,097 \div 278,837 = 28.37$ per cent	
– $41,897 \div 278,837 = 15.03$ per cent	
Realized – $79,709 \div 279,144 = 28.54$ per cent	
– $42,509 \div 279,144 = 15.23$ per cent	

<sup>1</sup> Subject to rounding error.

## B Data Problems

The primary objective of this section is to provide a detailed outline of accounting deficiencies encountered and the subsequent adjustments made to either profit or capital figures for Canadian banks and trust and loan companies. Of the differences between trust and loan company and chartered bank data mentioned in the text, the most serious problem is 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 occurs because of divergent fiscal year-ends: December 31 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 with the banks.

A second significant problem with data is 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, we have included subsidiary income and capital 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, we have utilized a specialized technique to consolidate the four into two companies. We have found this to be 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. We have consolidated this data according to the following premise: we assumed that all profits in one year were distributed to the parent in accordance with the percentage of shares held in the subsidiary; then, the profit accrued to the parent would be:

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

where

$\pi$  = parent's accrued or realized profits;

$\pi_s$  = subsidiary profit;

$D_s$  = subsidiary dividends;

$\delta$  = 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:

$$K_m^c = K_m^p + \sum_{i=n}^{m-1} (\pi_{si} - D_{si}) \delta_i + \frac{(\pi_{sm} - D_{sm}) \delta_m}{2} + K_n^s \delta_n$$

$i = 1, \dots, n, \dots, m$  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. We have done this consolidation on both a realized ( $\pi_R$ ) and accrued ( $\pi_A$ ) basis. The effective tax rate can then be 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.

The before-tax rates of return can also be 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 the premium on capital, as inconsistent accounting practices were responsible for a significant deletion of information. Another case in point is 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.

Table B-1  
 Listing of Accounting Adjustments Made for Bank and Trust and Loan Company Data, 1963-73

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

	Accounting basis 11-month period only (December 1, 1964 to October 31, 1965)	Multiply rate of return by factor $\frac{12}{11}$
1965		
1963	Insufficient data – no appropriation of loss account or balance of revenue presented	
Canadian Imperial Bank of Commerce		
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 $\frac{12}{11}$
1973	The Provincial Bank of Canada	
	$B^* = \frac{1}{2}$	
1970	Amalgamation with The People's Bank. Data obtained from <i>The Canada Gazette</i>	
	$B = \frac{3}{4}$	
1973	The Mercantile Bank of Canada	
	$B = \frac{1}{12}$	

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

Table B-1 (cont'd)

Bank	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
	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		
Bank of British Columbia	1968	$B = 1$			
Unity Bank of Canada	1973	$B = 1$			
<i>Trust Company</i>					
The Royal Trust Company	1972	$B^* = \frac{1}{2}$			Transfer to deferred income tax; add \$2,900 to K1971
	1971	$B^* = \frac{1}{2}$			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	For IR, add \$3,997 to K1967
1967		Subtract loss on premises \$127	
1966		Add special tax credit \$501	For IR, add \$729 to K1965
		Add special tax credit \$652	For IR, add \$1,533 to K1966
1965	$B^* = \frac{1}{2}$	Add special tax credit \$400	
	share issue - assumed \$70 per share for premium on capital - total new issue \$4,340		
1963			GR not accounted for; add \$1,000 to K1962
1971			Transfer to deferred income tax; add \$2,529 to K1971
1968			Transfer to deferred income tax; add \$372 to K1968
1967	$B = \frac{1}{12}$	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)
			Amalgamation with Eastern and Chartered Company

Canada Permanent  
Trust Company

Table B-1 (cont'd)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
	1966			Deduction of transfer to <i>IR</i> from net profits added	
	1965				
	1964				
	1963			Deduction of transfer to <i>IR</i> from net profits added	Change in <i>IR</i> not accounted; add \$180 to <i>K</i> 1962
National Trust Company, Limited	1972	$B^* = \frac{1}{2}$			
	1971	$B^* = \frac{1}{2}$			Deferred income tax; add \$2,039 to <i>K</i> 1971
					Interest on investment of prior year; add \$2,529 to <i>K</i> 1970
					Transfer from deferred taxes; subtract \$1,624 from <i>K</i> 1971
					Amount reclassified; add \$3 to <i>K</i> 1971
	1970	$B^* = \frac{1}{2}$			Reclassified amortized mortgage discount; add \$54 to <i>K</i> 1970
	1969	$B^* = \frac{1}{2}$			Amount charged to income; add \$22 to <i>K</i> 1970
	1968	$B^* = \frac{1}{2}$			Change in investment reserves; add \$64 to <i>K</i> 1967

1967	$B^* = \frac{1}{2}$	Add transfer to <i>IR</i> \$833	<i>IR</i> of 1967 - \$10,480
1966		Add transfer to <i>IR</i> \$961	<i>IR</i> of 1966 - \$ 9,647
1965			<i>IR</i> of 1965 - \$ 8,686
			Transfer of \$2,500 from <i>IR</i> to profit and loss account. <i>IR</i> of 1964 - \$11,186
1964	$B = \frac{3}{4}$	Add transfer to <i>IR</i> \$289	<i>IR</i> of 1963 - \$10,897
1963	$B = \frac{2}{3}$	Add transfer to <i>IR</i> \$202	<i>IR</i> of 1962 - \$10,695
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; sub- tract \$229 from K1969
			- Change in provision of maximum statutory value; add \$761 to K1969
			- Other income; add \$69 to K1969

Guaranty Trust  
Company of Canada

Table B-1 (cont'd)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
	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 Change in IR; add \$80 to K1967
	1967				
	1966			Add transfer to IR deducted from profit \$40	
	1965			Add transfer to IR \$15	IR higher than indicated; subtract \$45 from K1964
	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

1970	$B^* = \frac{1}{2}$	Adjustment from amalgamation; subtract \$2,166 from K1971
		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		IR of 1966 - \$3,030
1966		IR of 1965 - \$2,210
1965	$B^* = \frac{1}{2}$	IR of 1964 - \$1,496
		Unaccounted \$2,798 in GR of 1965 - amalgamation with Executor's and Administrative Trust
1964		IR of 1963 - \$699
1963	$B^* = \frac{1}{2}$	IR of 1963 - (-\$65)
1972	$B^* = \frac{1}{2}$	Advance from subsidiary; add \$400 to K1972
1971	$B^* = \frac{1}{2}$	Advance from subsidiary; add \$400 to K1971

Montreal Trust  
Company

Table B-1 (cont'd)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
	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
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	<i>IR</i> of 1967 - \$6,210 (not amount stated in report)
1967			<i>IR</i> of 1966 - \$5,183
1966	$B^* = \frac{11}{12}$	Add transfer to <i>IR</i> \$300	<i>IR</i> of 1965 - \$3,915
1965	$B^* = \frac{1}{2}$		<i>IR</i> of 1964 - \$3,915
			Change in <i>GR</i> not ac- counted; add \$3,196 to K1964
1964	$B = \frac{11}{12}$		<i>IR</i> of 1963 - \$3,247
1963			<i>IR</i> of 1962 - \$3,247
1972			Amortization of reserves from reorganization; add \$228 to K1972
			Subsidiary profit not recorded; add \$72 to K1971

The Metropolitan  
Trust Company

Table B-1 (cont'd)

Trust Company	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
	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 Change in IR; subtract \$35 from K1967
	1967	$B^* = \frac{1}{2}$		Add transfer to IR \$35  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	
1964		Add transfer to IR \$25	IR of 1963 - \$2,459
		Subtract prepaid expenses \$35	
1963		Add transfer to IR \$2	IR of 1962 - \$2,457
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	$B^* = \frac{1}{2}$		
<i>Loan Corporation</i>			
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 \$1,014	
1968	$B = \frac{1}{2}$		IR of 1967 - \$8,442
			Adjustment of assets disallowed; add \$126 to K1968

Table B-1 (cont'd)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Loan Corporation	1967			Add transfer to IR \$1,924	IR of 1966 - \$6,518 Assets not admitted; add \$52 to K1967
	1966			Add transfer to IR \$1,736	Change in general reserve unaccounted; subtract \$750 from K1966 IR of 1965 - \$4,782
	1965	$B = \frac{11}{12}$		Add transfer to IR \$1,471	Change in general reserve unaccounted; subtract \$250 from K1966 IR of 1964 - \$3,311
	1964	$B = \frac{3}{4}$		Add transfer to IR \$1,123	Unaccounted GR of \$3,936 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 <i>IR</i> 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 <i>IR</i> \$1,145
1966		Add transfer to <i>IR</i> \$1,034
1965	$B^* = \frac{1}{2}$	Change in <i>IR</i> unaccounted; add \$534 to K1965
1964		Change in <i>IR</i> unaccounted; add \$475 to K1964
1963		Add transfer to <i>IR</i> \$940
1970	$B_g^* = \frac{1}{2}$	Add transfer to <i>IR</i> \$804
1969	$B^* = \frac{1}{2}$	Add transfer to <i>IR</i> \$210
1967		Add transfer to <i>IR</i> \$472
1966		Add transfer to <i>IR</i> \$303
1965		Add transfer to <i>IR</i> \$281
		Assets not admitted; add \$48 to K1964
		Subtract for incorpora- tion expense \$11

Kinross Mortgage  
Corporation

Table B-1 (cont'd)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
	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
	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
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

*Data Problem*

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.

Estimated premium on capital prior to 1962 was \$1.7 million K1962 multiplied by .995 was \$2,274.

<i>Consolidation</i>	<i>Year</i>
The Huron & Erie	1968
Mortgage Corporation	1967
and The Canada	1966
Trust Company	1965
	1964
	1962

Table B-1 (concl'd)

Loan Corporation	Year	New Issues	Data Problem	Adjustment to Profit	Adjustment to Capital
Canada Permanent Mortgage Corporation and Canada Permanent Trust Company	1968 1967 1966 1965 1964 1963				
	1962				

Dividends paid to parent estimated by factor of .98 (percentage of shares held by parent).

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. K 19XX refers to shareholders' capital of the year 19XX. All numbers are in thousands of dollars.

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

**C Rates of Return to Average Shareholders'  
Capital and Tax Rates for Individual  
Chartered Banks and Trust and Mortgage  
Loan Companies for the Years 1963-73**

Table C-1  
 After-Tax Realized Rates of Return to Average Shareholders' Capital for Chartered Banks, 1963-73

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
						(Per cent)					
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	4.28	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		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 <sup>1</sup>	6.25	7.35	6.51	9.51	10.60	14.21	11.84	10.35	11.42	14.06	15.08

<sup>1</sup> Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source: Annual reports of chartered banks.



Table C-2  
 Before-Tax Realized Rates of Return to Average Shareholders' Capital for Chartered Banks, 1963-73

	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	9.62	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		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 <sup>1</sup>	12.05	13.38	12.17	15.85	17.23	21.36	24.07	23.36	23.58	26.34	27.61

<sup>1</sup> Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source: Annual reports of chartered banks.

Table C-3  
Income Tax Rates on Realized Income for Chartered Banks, 1963-73

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	45.94	43.68	49.28	40.01	42.98	37.29	49.74	54.41	51.85	47.35	45.90
The Royal Bank of Canada		44.91	40.91	41.42	37.05	36.23	52.98	54.60	54.22	47.74	49.17
Canadian Imperial Bank of Commerce	55.51	48.22	51.71	38.60	31.22	30.95	49.25	52.81	52.68	46.74	48.46
The Bank of Nova Scotia				35.49	39.60	26.03	51.76	62.20	50.71	47.72	42.81
Bank of Montreal	48.31	44.04	49.68	42.78	38.61	31.74	50.02	54.13	50.14	46.67	41.20
The Toronto-Dominion Bank				50.74	38.90	36.54	44.14	62.81	42.09	41.13	39.74
The Provincial Bank of Canada	46.34	49.31	47.21	47.07	40.29	37.82	49.88	53.50	45.93	32.11	38.38
Bank Canadian National					0	0	0	5.77	46.67	39.10	39.12
The Mercantile Bank of Canada								26.61	21.40	28.13	37.09
Bank of British Columbia											-3.31
Unity Bank of Canada	48.16	45.06	46.47	39.97	38.48	33.49	50.81	55.67	51.58	46.63	45.40
Industry Average <sup>1</sup>											

<sup>1</sup> Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source: Annual reports of chartered banks.

Table C-4  
After-Tax Accrued Rates of Return to Average Shareholders' Capital for Chartered Banks, 1963-73

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
						(Per cent)					
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 <sup>1</sup>	6.70	8.38	7.82	7.41	10.00	14.38	10.19	9.24	14.47	14.41	14.04

<sup>1</sup> Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source: Annual reports of chartered banks.

Table C-5  
 Before-Tax Accrued Rates of Return to Average Shareholders' Capital for Chartered Banks, 1963-73

	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 <sup>1</sup>	12.49	14.38	13.43	13.81	16.65	21.54	22.53	22.32	26.43	26.67	26.65

<sup>1</sup> Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source: Annual reports of chartered banks.

Table C-6  
Income Tax Rates on Accrued Income for Chartered Banks, 1963-73

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
	44.36	44.95	48.72	44.91	42.58	37.66	51.03	57.54	49.90	45.10	47.27
The Royal Bank of Canada						(Per cent)					
Canadian Imperial Bank of Commerce	51.64	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		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 <sup>1</sup>	46.37	41.72	41.81	46.37	39.94	33.18	54.77	58.60	45.26	45.98	47.31

<sup>1</sup> Excludes The Mercantile Bank of Canada, Bank of British Columbia, and Unity Bank of Canada.

Source: Annual reports of chartered banks.

Table C-7  
After-Tax Realized Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, 1963-73

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
						(Per cent)					
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 <sup>1</sup>	8.17	9.65	9.70	10.00	10.09	9.57	7.96	7.57	12.35	14.07	13.57

<sup>1</sup> 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.*

Table C-8  
Before-Tax Realized Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, 1963-73

	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 <sup>1</sup>	14.30	16.53	15.48	15.28	15.59	15.32	13.71	12.88	22.52	24.69	24.50

<sup>1</sup> 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.*

Table C-9  
Income Tax Rates on Realized Income for Trust and Mortgage Loan Corporations, 1963-73

	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	30.72	38.49
United Trust Company						0	0	49.56	50.45	42.98	50.10
Industry Average <sup>1</sup>	42.84	41.58	37.36	34.58	35.26	37.55	41.91	41.20	45.16	43.02	44.62

<sup>1</sup> 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.*



Table C-10  
After-Tax Accrued Rates of Return to Average Shareholders'  
Capital for Trust and Mortgage Loan Corporations, 1967-73

	1967	1968	1969	1970	1971	1972	1973
				(Per cent)			
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
Crédit 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 <sup>1</sup>	10.29	9.37	3.90	5.28	17.97	19.11	-4.39

<sup>1</sup> 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.*

Table C-11  
 Before-Tax Accrued Rates of Return to Average Shareholders' Capital for Trust and Mortgage Loan Corporations, 1967-73

	1967	1968	1969	1970	1971	1972	1973
				(Per cent)			
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 <sup>1</sup>	15.79	15.14	9.80	10.72	27.98	29.60	7.38

<sup>1</sup> 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.*

Table C-12  
Income Tax Rates on Accrued Income for Trust and Mortgage Loan Corporations, 1967-73

	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	30.64	56.18
United Trust Company		0	0	65.59	43.66	41.20	56.69
Industry Average <sup>1</sup>	34.82	38.12	60.20	50.72	35.79	35.42	159.61

<sup>1</sup> 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.*

## 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 desires to measure the real profit earned by a firm, then the following adjustments are needed.<sup>1</sup> First, depreciation of capital equipment and property valued according to acquisition cost should be revised upwards to reflect the additional expenditure associated with the loss of real wealth. 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 is to lower reported profits. The magnitude of the adjustment depends 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.<sup>2</sup> Under these conditions, corporations that hold more financial liabilities than assets experience an increase in measured profits with inflation accounting. The term structure of financial assets and liabilities also affects 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 under inflation accounting 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 by cash 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

1 See also G.P. Jenkins, *Inflation: Its Financial Impact on Business in Canada*, Economic Council of Canada (Ottawa: Supply and Services Canada, 1977).

2 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.

inflation, to permit one to estimate inflation accounting profits. Nevertheless, it is possible to study the relative importance of assets and liabilities that are revalued and, thus, that 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 in 1973. The impact of the appropriate adjustment for inflation increases 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,<sup>3</sup> which reduces the impact of inflation on measured book profits. However, the ratio of net debt to total assets is significantly less than that for property and inventories. For example, all manufacturing industries' inventory and property assets in 1973 were 61.8 per cent of total assets 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 in 1973. Furthermore, financial assets were longer in term than liabilities, indicating that measured profits would have been lowered under inflation accounting.

Net assets for the Canadian chartered banks in 1973 were 3.3 per cent of total assets. Since no published data separating short- from long-term financial assets and liabilities are available, it is 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 during the period under study.

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", which reduces 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, was less than for all manufacturing, wholesale trade, and retail trade, but more for trust and loan companies and transportation.

3 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, 1973<sup>1</sup>

	Trust and Loan Corporations <sup>2</sup>	All Manufacturing <sup>3</sup>	Wholesale Trade <sup>3</sup>	Retail Trade <sup>3</sup>	Transportation <sup>3</sup>	Chartered Banks
(Per cent)						
<b>Assets</b>						
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	92.7
Accounts Receivable	1.1	20.6	36.9	16.0	8.1	
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
<b>Liabilities</b>						
Short-Term Loans and Deposits	27.4	6.7	17.6	16.5	3.1	95.3
Accounts Payable	2.0	16.3	25.0	18.9	8.6	
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) bank 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 Statistics Canada, *Financial Institutions Financial Statistics*, cat. no. 61-006.

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

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Other publications of the Economic Council related to Canadian banking:

Economic Council of Canada, *Efficiency and Regulation, A Study of Deposit Institutions*, 1976, Catalogue No. EC22-47/1976. Price: Canada, \$5.00; Other Countries, \$6.00.

E. Wayne Clendenning, *The Euro-Currency Markets and the International Activities of Canadian Banks*, 1977, Catalogue No. EC22-49/1977. Price: Canada, \$5.00; Other Countries, \$4.80.

H. H. Binhammer and Jane Williams, *Deposit-Taking Institutions: Innovation and the Process of Change*, 1976, Catalogue No. EC22-51/1977. Price: Canada, \$4.50; Other Countries, \$5.40.

These publications may be obtained through Supply and Services Canada or your bookseller. See back of title page (p. iv).



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### **Summary**

The purpose of this study is to compare the rates of return to shareholders' equity earned by Canadian chartered banks with those earned by trust and loan corporations, nonfinancial industries, and U.S. banks. It is found that, after the 1967 Bank Act became effective, Canadian chartered banks earned higher before- and after-tax profit rates in comparison to the other sectors studied. Several factors that contribute to profitability are considered in order to explain some of the differences between Canadian bank rates of return to capital with those of other sectors. It is suggested that during the period 1968-73, the Canadian chartered banks earned \$219.7 to \$478.5 million in excess after-tax profits and the Canadian government earned \$197.3 to \$425.7 million in excess corporate income taxes.