

The Experience of Canadian Thrift Institutions

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Introduction

My colleague Richard Kopcke has demonstrated using current value accounting that a majority of the thrift institutions in the United States had a negative net worth at the end of last year. Furthermore, as many as 30 to 40 percent of these institutions have such a large negative net worth that there is little possibility of their surviving without substantial governmental assistance.

Rapidly accelerating inflation in the late seventies might seem to explain their financial problems. However, most of the other major industrialized countries have had more rapid inflation than the United States and mortgage-lending institutions in those countries are generally in a stronger financial position. This study was undertaken to discover what structural characteristics underlie the current strength of Canadian mortgage-lending institutions. The experience in Canada is particularly instructive because the Canadian culture, economy, and financial organizations are similar to our own.

This study is structured as follows:

Part I compares in broad outline the economies and financial structures of the United States and Canada.

Part II demonstrates that mortgage-lending institutions in Canada have uniformly maintained significantly positive book and "real" net worth ratios. In the United States, on the other hand, the financial position of thrift institutions has rapidly deteriorated.

Part III compares mortgage-lending institutions in the United States and Canada and outlines differences in the regulatory policies under which they operate.

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Part IV analyzes the differential impacts of "rollover" mortgages and fixed rate mortgages on borrowers and taxpayers in Canada and the United States.

Finally, Part V outlines policy conclusions.

I. The Economies and the Financial Structures of the United States and Canada

The United States and Canada are both high income, highly industrialized federated democracies. They share a 3,000 mile boundary and are tied by massive trade and financial flows and by a common cultural inheritance. Ideas, technology, and population move across their boundary with ease.

In recent decades both countries have suffered from similar rates of accelerating inflation (Chart 1). Furthermore, individual, governmental, and corporate borrowers have all been burdened by rapidly rising interest rates. As the result of a common North American capital market, short- and long-term interest rates in the two countries have moved up and down together. As shown in Chart 2, short-term government rates tend to be similar, but because of a shortage of long-term capital, long-term rates tend to be higher in Canada. In general, then, financial institutions in the two countries operate in the same interest rate environment.

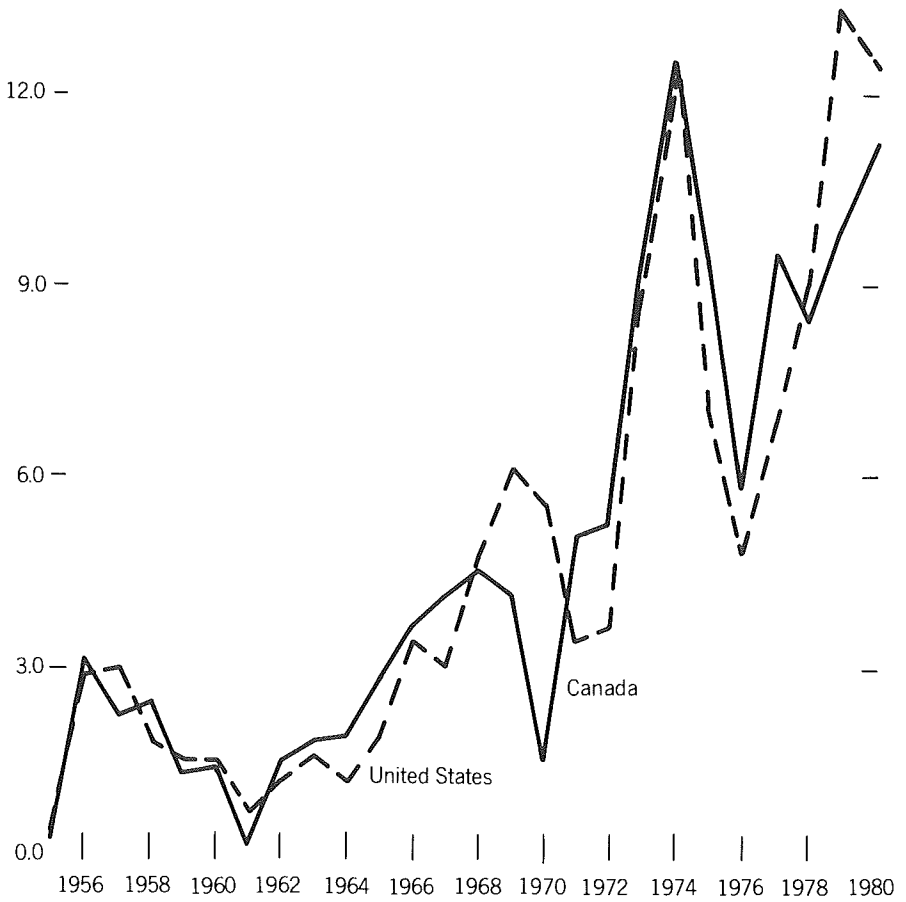
In each country depository institutions can be classified into two groups offering similar clusters of financial services. Commercial banks in the United States and their counterparts, the chartered banks in Canada, are responsible for most commercial lending. They also handle most of the consumer lending. Also, many commercial banks and chartered banks play a role in the mortgage markets.¹ On the other hand, thrift institutions in the United States (savings and loan associations and mutual savings banks) and mortgage-lending institutions in Canada (trust companies and mortgage loan companies) specialize in mortgage lending. As shown in Table 1, this is particularly true of savings and loans and mortgage companies. In both countries, legislation, guidelines, and/or tax laws encourage thrift institutions and mortgage-lending institutions to invest primarily in mortgages. Thrift institutions and mortgage-lending companies have another common characteristic: they both offer family financial services including consumer loans and checking accounts. (In Canada, however, trust companies are the exclusive providers of trust services.) Moreover, in recent years both have started to move into commercial lending. In both countries mortgage-lending companies can operate across state or provincial boundaries, through holding companies in the United States, by license in Canada.

Despite the obvious similarities, some differences in financial structure have been crucial in helping Canadian mortgage-lending institutions and hurting U.S. thrift institutions. These industry structure and governmental

¹Mortgage companies that are subsidiaries of trust companies or chartered banks hold a large proportion of total mortgage company assets.

Chart 1 Inflation Rate: Canada and United States

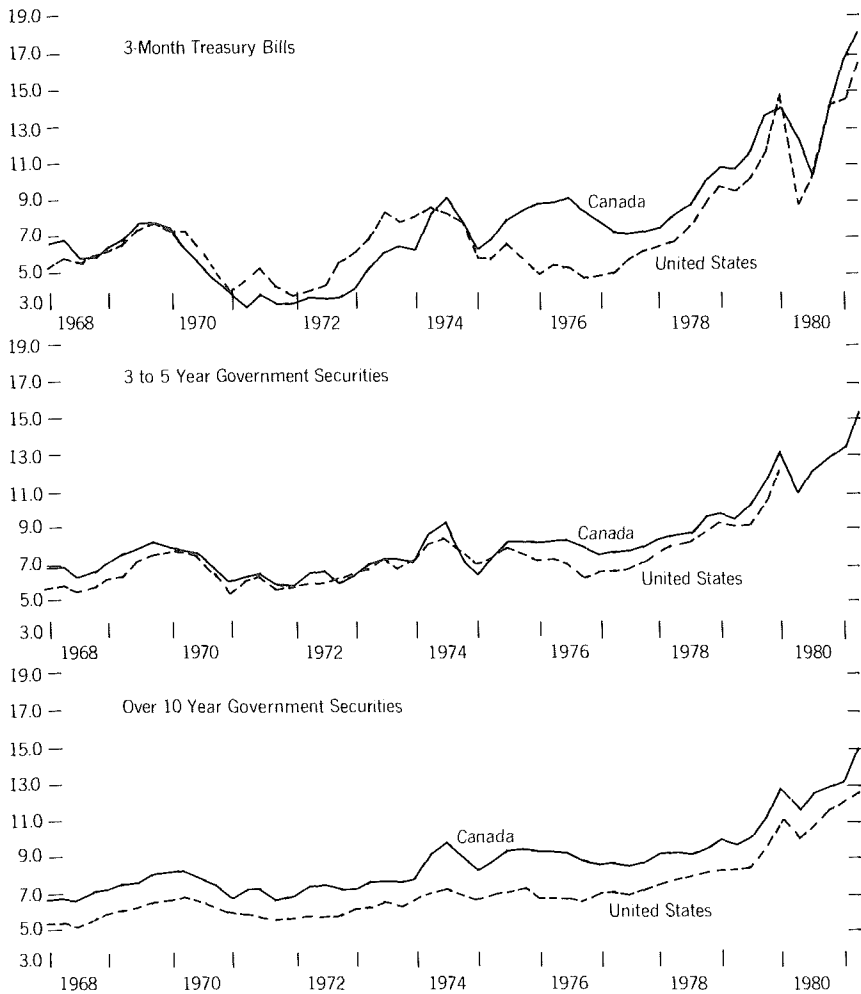
CPI,
percent change
Dec/Dec
15.0 —



Consumer Price Index. Percentage change, calculated from December to December.
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Business Conditions Digest*, various issues.

Chart 2 Selected Canadian and United States Interest Rates

Percent per annum



3-month Treasury Bills. For comparability with Canadian rates, U.S. Treasury bill rate has been adjusted to a 365-day true yield basis from a 360-day discount basis. Source: *Federal Reserve Bulletin*, various issues and *Bank of Canada Review*, various issues.

3 to 5-year Government Securities, and Over 10-year Government Securities. Source: *Federal Reserve Bulletin*, various issues, and *Bank of Canada Review*, various issues.

Table 1
Comparison of Balance Sheets of Canadian and U.S. Thrift Institutions
 (As a Percentage of Total Assets) End of Year, 1971 and 1980

	Canadian Trust Cos.		U.S. Mutual Savings Banks		Canadian Mortgage Loan Cos.		U.S. Savings & Loan Associations	
	1971	1980	1971	1980	1971	1980	1971	1980
Assets								
Cash and due from	3.4	1.1	1.6	2.5	1.1	0.7	1.3	0.9
Short-term assets	9.9	7.9	0.7	5.0	2.8	4.2	1.7	6.8
Govt. & corp. bonds	18.7	8.8	19.6	13.9	7.0	3.3	6.8	5.8
Mortgages: total	59.9	68.8	69.1	66.3	75.8	80.6	84.6	80.0
Government-insured	12.4	10.9	31.6	22.2	9.7	14.4	12.0	4.5
Conventional	47.5	57.9	37.5	44.1	66.1	66.2	72.6	75.5
Collateral loans	2.5	0.8	—	—	0.8	1.5	—	—
Consumer loans	—	3.8	1.7	3.3	—	0.4	0.8	3.0
Stocks, foreign securities & investment in								
affiliates	2.9	5.3	3.3	2.5	9.2	7.2	0.8	0.8
Other assets	2.7	3.5	4.0	6.5	3.3	2.1	4.0	2.7

Liabilities									
Deposits—total	91.1	89.3	90.9	89.5	75.7	62.7	84.6	81.0	
Checking accounts									
Interest-bearing	6.1	3.8	—	1.0	3.8	0.5	—	0.1	
Noninterest-bearing	—	—	0.9	0.7	—	—	—	—	
Savings deposits	16.4	17.2	70.9	31.0	9.3	3.1	46.2	17.4	
Term deposits	68.6	68.3	19.1	56.8	62.6	59.1	38.4	63.5	
Up to 1 year	13.4	10.4	13.0	29.5	1.5	2.1	13.1	40.5	
1–5 years	54.9	57.6	6.1	27.3	44.7	51.7	25.3	23.0	
Over 5 years	0.3	0.3	—	—	16.4	5.3	—	—	
Borrowing & other liabilities	2.5	6.4	2.0	3.9	12.2	29.7	9.0	13.6	
Net worth	6.4	4.3	7.1	6.6	12.1	7.6	6.4	5.4	

Note: The percentages of short-term assets and term deposits for U.S. thrift institutions are partly estimated.

Sources: Bank of Canada, *Statistical Summary*; Statistics Canada, *Financial Institutions*; *Federal Reserve Bulletin*; and data from the Federal Home Loan Bank Board, the Federal Deposit Insurance Corporation, and the National Association of Mutual Savings Banks.

policy differences are summarized below and explained in more detail in parts II and III of this paper.

Matching Maturities of Assets and Liabilities

In Canada, industry practice and government policies have discouraged institutions from borrowing short and lending long. In the United States, both industry practice and government policies have encouraged individual institutions to speculate by using short-term funds to invest in long-term assets.

Market Intervention to Benefit Mortgage Borrowers and/or to Stabilize the Housing Industry

The Canadian legislative and regulatory bodies generally have been reluctant to intervene in financial markets to favor mortgage borrowers or the housing industry. During the last 15 years, for example, neither the federal government nor any provincial government has imposed any mortgage usury ceiling. Similarly, no governmental entity has bought mortgages or extended credit to mortgage lenders during periods of escalating rates. Also, no deposit rate ceilings have been imposed in Canada since 1967.

In the United States, on the other hand, many states have imposed usury ceilings. Furthermore, the Congress has passed legislation and encouraged government entities to help borrowers and the housing industry. As a result, the Federal National Mortgage Association and the Federal Home Loan Bank Board have supported the mortgage market substantially in periods of restraint. Similarly, Regulation Q placed ceilings on interest rates payable by all depository institutions, in order to protect weak thrift institutions and to stabilize the housing industry.

Industry Structure and Competition

Canada has 6 large chartered banks (out of a total of 11) that have about 95 percent of total chartered bank deposits and operate in most provinces. Similarly, 15 Canadian trust and mortgage loan companies (out of a total of 117) hold about 75 percent of their total deposits. These large institutions also operate across provincial boundaries.

In contrast, the United States has 13,000 independent commercial banks and about 5,000 thrift institutions. For deposit purposes, they do not operate across state lines. Nevertheless, most banking markets in the United States usually have a large number of independent competing mortgage lenders. Comparisons are difficult, but it is probably true that mortgage markets in the United States are somewhat more competitive than in Canada.² This may partially explain the relatively higher yields for mortgages than corporate bonds in Canada as compared to the United States.

²Michael L. Unger, "The Canadian Mortgage Market and the Renegotiable Term Mortgage" (November 1979) in *"Renegotiable Rate" Mortgage Proposals of the Federal Home Loan Bank Board*. Hearings before a Subcommittee of the Committee on Government Operations, House of Representatives, 96th Cong., 2d sess., March 26 and 27, 1980, pp. 361-387.

Other Differences between U.S. and Canadian Institutions

The following differences, although interesting, probably do *not* help to explain the health of mortgage-lending institutions in Canada.

Deductibility of Mortgage Interest and Property Taxes

In Canada, interest on mortgages and property tax payments are not deductible for federal income tax purposes. However, owner-occupied housing is excluded from all capital gains taxation. Also, individuals who have never owned a home may deduct from their earned income for tax purposes up to \$1,000 per year to a maximum of \$10,000 over 20 years, and place the proceeds in a special fund in a depository institution. If the fund is actually used to buy a home, both contributions and earnings from the fund are not taxed.

Despite some Canadian tax advantages, the tax laws in the United States generally provide mortgage borrowers with substantially lower after-tax mortgage interest costs and lower after-tax housing costs. This is particularly true for high earning individuals and families who borrow large sums to buy a home.

Provision of Deposit Insurance

Except for provincially chartered institutions in Quebec, the Canada Deposit Insurance Corporation insures deposits for chartered banks, trust companies, and mortgage loan companies. (The Quebec Deposit Insurance Board insures trust and mortgage loan institutions that are chartered and operate in that province.) The United States, on the other hand, has one agency for commercial banks and mutual savings banks, the Federal Deposit Insurance Corporation, and another for savings and loan associations, the Federal Savings and Loan Insurance Corporation. In addition, Massachusetts, Ohio, Maryland, North Carolina and Pennsylvania have independent state insurance funds for certain state-chartered thrift institutions.

Regulation of Financial Institutions

Canada has a single supervisor for all chartered banks—the Inspector General of Banks. Similarly it has one supervisor, the Superintendent of Insurance, for all federally chartered trust and loan companies and those chartered in Manitoba, Nova Scotia, and Prince Edward Island. The provinces of Quebec and Ontario supervise independently all companies incorporated under their jurisdictions. For most other provincially incorporated companies the Superintendent of Insurance performs the examination function on behalf of the Canada Deposit Insurance Corporation. In the United States the regulatory function for commercial banks and thrift institutions is divided among the Federal Reserve System, the Federal Deposit Insurance Corporation, the Comptroller of the Currency, the Federal Home Loan Bank Board, and regulatory bodies in the 50 states.

II. Estimating Book and "Real" Net Worth for Mortgage-Lending Institutions in Canada

For many years the capital ratios (the ratio of book net worth, i.e., total shareholder equity inclusive of valuation reserves, to gross assets) have been remarkably similar for U.S. commercial banks, U.S. mutual savings banks, U.S. savings and loan associations, Canadian chartered banks, Canadian trust companies, and Canadian mortgage loan companies. Canadian chartered banks have had lower ratios but the trend has been similar. As shown in Chart 3 these ratios have declined only slightly even though inflation accelerated and additions to capital slowed. On paper as of 1980 most institutions had a substantial positive net worth.

In fact, the competitive strength of many institutions was being sapped by the low yields on their old long-term fixed rate mortgages. Although the "market" value of these assets was far below their book value, neither the accounting profession nor the regulatory authorities in either country required mortgages to be valued at "market." Similarly there has been no requirement that in this period of accelerating inflation the reduced burden of old low rate long-term deposits be shown on the liability side of the balance sheet. In his paper, my colleague Richard Kopcke has estimated the "real" net worth ratio for over 300 thrift institutions in Massachusetts and California for fiscal years 1974 through 1980. In my paper, I have made similar estimates for the years 1977 through 1980, using current value accounting, for nearly all trust and mortgage loan companies in Canada. (See the appendix tables.)

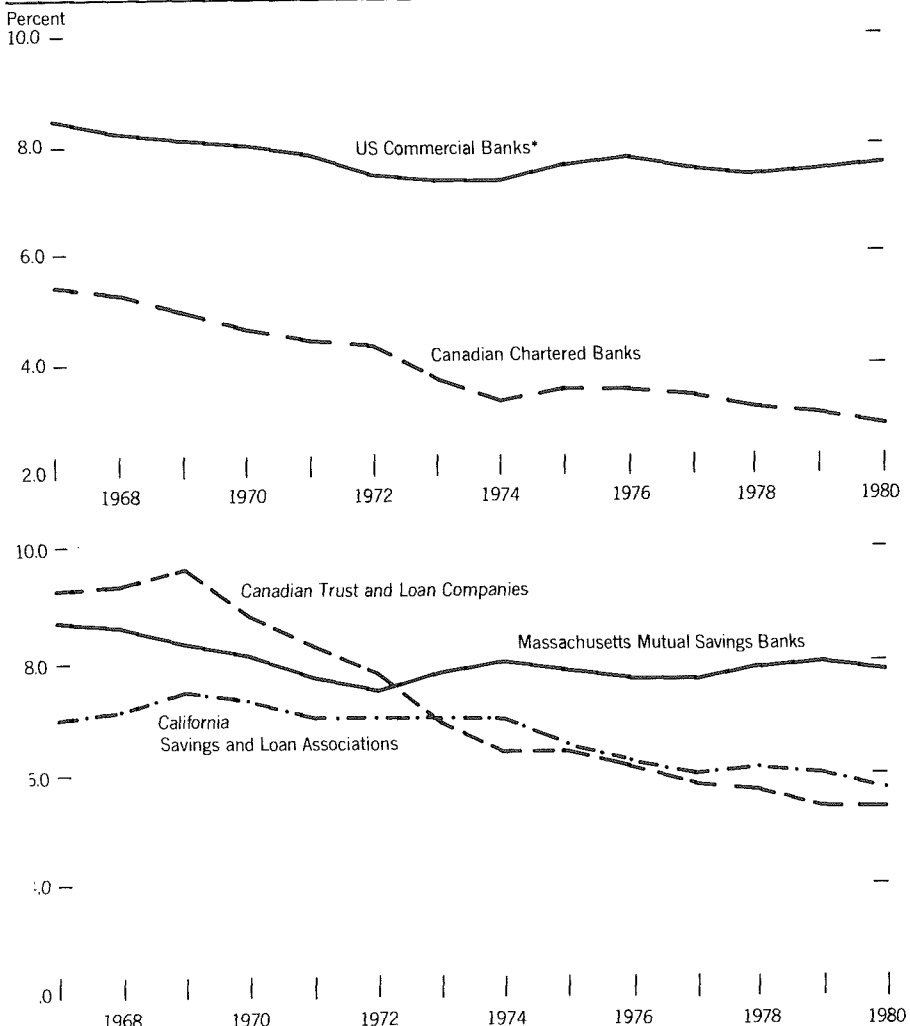
In so far as possible, I have used the same estimating techniques as Kopcke. In general, my work was easier than Kopcke's because of the useful data kept by the Department of Insurance in Canada and by the relatively short maturities of mortgages. As a result, I have had to make fewer assumptions.

Mortgage-lending institutions in Canada have generally avoided borrowing short and lending long. Nevertheless the maturities of their assets and liabilities have rarely been perfectly matched; typically the liabilities have been somewhat shorter term than the assets. As a result, any escalation of interest rates has hurt their profitability and a decline has enhanced their position. The objective of this part of the paper is to measure the impact of recent interest rate fluctuations on the "real" net worth of Canadian institutions. To estimate the "real" net worth with current value accounting, separate adjustments were first performed on each asset category and each liability category.

Estimating the Market Value of Assets

The book value of cash, collateral loans, and other short-term assets were considered equivalent to market value. In addition the Canadian Department of Insurance requires all trust companies and mortgage loan companies to report to the Department the market value of all securities. Thus for the purposes of this study the only book value data that needed to be deflated were those for mortgages and consumer loans.

Chart 3 Capital Ratios for Selected Canadian and United States Financial Institutions



*FDIC Insured

U.S. Commercial Banks. Source: Federal Deposit Insurance Corporation, *Report of Income*, to 1978. Federal Reserve Board, unpublished data, 1979-1980.

Canadian Chartered Banks. For comparability with U.S. reporting requirements, shareholders' equity figure has been adjusted to include accumulated appropriations for losses. Source: *Bank of Canada Review*, various issues.

Canadian Trust and Loan Companies. Source: *Bank of Canada Review*, various issues.

Massachusetts Mutual Savings Banks. Source: Federal Deposit Insurance Corporation, *Report of Income*, 1965-1978, for insured banks. Uninsured bank data from Federal Reserve Board. National Association of Mutual Savings Banks data, 1976-1980.

California Savings and Loan Associations. Includes all members of Federal Home Loan Bank System that are FSLIC insured. Source: Federal Home Loan Bank Board, *Combined Financial Statements*, various issues.

These calculations were made using Canadian government data. The Department of Insurance requires each trust and mortgage loan company to report each year the average yield on its mortgage and consumer loan portfolios. When these portfolio yields were below (above) the average market yields as reported by the Bank of Canada, book value data were deflated (inflated) using a standard formula to obtain estimates of market value.³ Obviously, those with the lowest portfolio yields and the longest portfolio durations have the lowest market values. The results are shown in Chart 4. In 1977 interest rates declined, and the ratios of market values to book values were nearly all positive. Subsequently, rapidly rising inflation and interest rates caused market values to drop, and by 1980 the portfolios of nearly all institutions had a ratio of less than one.

The 1980 results indicate that the assets of a large number of trust and loan companies had aggregate market values that were 2 to 5 percentage points less than their book value. In many cases, this adjustment by itself would have eliminated the entire shareholder equity that the individual institution publicly reported. Fortunately, current value adjustments on liabilities brought a deflating adjustment on the liability side of the balance sheet.

Estimating the Market Value of Liabilities.

The book value of checking accounts and savings deposits were considered the same as market value. Longer-term liabilities, however, were deflated (inflated) in periods of rising (falling) interest rates to estimate market value. Once again the data from the Department of Insurance proved invaluable. In the case of these liabilities, the Department collects remain-

³The standard formula is:

$$\text{Market value} = \left[1 - \left(D \text{ average} \left(\frac{R \text{ market} - R \text{ portfolio}}{1 + R \text{ portfolio}} \right) \right) \right] * \text{Book value}$$

where D average = average duration. Average duration, in turn, was estimated according to the following table, which adjusts for the shortening of mortgages in 1979 and 1980 when most new Canadian mortgages were 1- or 2-year rollovers.

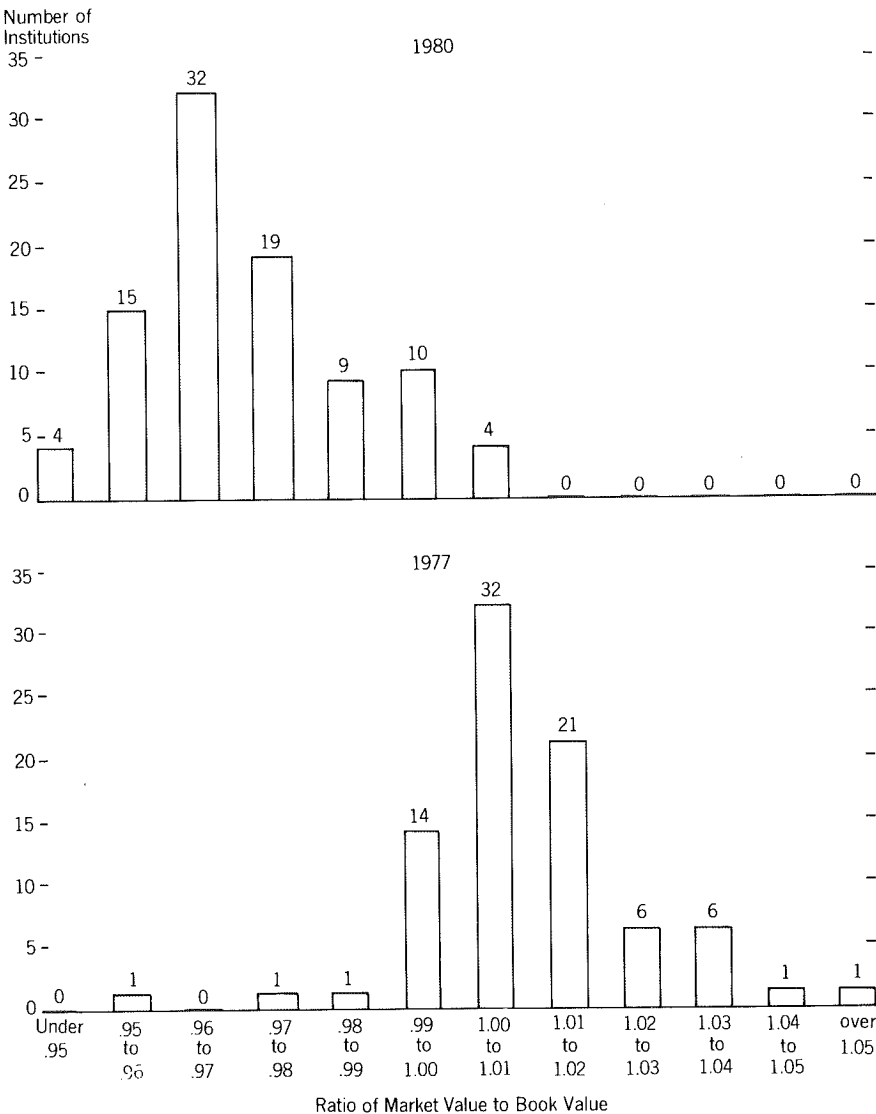
Assumed Average Mortgage Duration (in years)			
	Institutions growing < 10%/year	Institutions growing > 10%/year	New Institutions
1977	2½	2¼	2¼
1978	2½	2¼	2¼
1979	2¼	2	2
1980	1¾	1½	1½

Assumed average consumer loan duration 1½ years

R market = average market yield for a year by using Bank of Canada monthly rate data on new conventional mortgages. Annual average calculated by weighting each month in the year by the percentage of total annual approvals in that month. Monthly data are lagged two months to adjust for the time lag between approvals and takedowns.

R portfolio = average portfolio yield for the year as reported by each institution to the Department of Insurance.

Chart 4 Revaluation of Total Assets
Selected Trust Companies and Mortgage Loan Companies



Revaluation of Total Assets

ing maturity information by year. By examining the maturity distribution of deposits and debentures over time, the book value of each maturity class of each institution was deflated separately for each year.⁴ The results are shown in Chart 5.

The 1980 results indicate that liabilities are generally deflated by 1 to 4 percent, and are thus a significantly smaller burden than shown on publicly reported balance sheets.

Comparing Book and "Market" Net Worth Data

The final results of the current value adjustment for both assets and liabilities are shown in Chart 6. In 1977 all trust and mortgage loan companies had a significant cushion of "real" net worth. By 1980, the situation had not changed dramatically. One institution with a negative figure for real net worth was merged with a stronger institution in 1981. Only one other institution was found to have a marginally negative ratio (00.24). Given the lack of great precision in my current value estimating technique, this institution may or may not have had a negative "real" net worth. The strength of Canadian institutions is especially remarkable when they are compared with U.S. institutions. In recent years, the "real" net worth ratios of the U.S. thrift institutions have deteriorated dramatically.

⁴This method provides more accurate results than the formula used to estimate the market value of mortgages. The standard formula applied by remaining maturity classes (i.e., < 1 year, 1 to 2 years, 2 to 3 years, 3 to 4 years, 4 to 5 years, and over 5 years) is:

$$\left(\left(\frac{1 + R_{\text{market}_p}}{1 + R_{\text{market}_t}} \right)^{** YR} \right) * \text{Book value}$$

where YR = the remaining maturity of the deposit, as reported to the Department of Insurance.

R market_p = average market yield paid on the original year of deposit.

R market_t = average market yield for current year on five-year Government Investment Certificates.

Chart 5 Revaluation of Total Liabilities
Selected Trust Companies and Mortgage Loan Companies

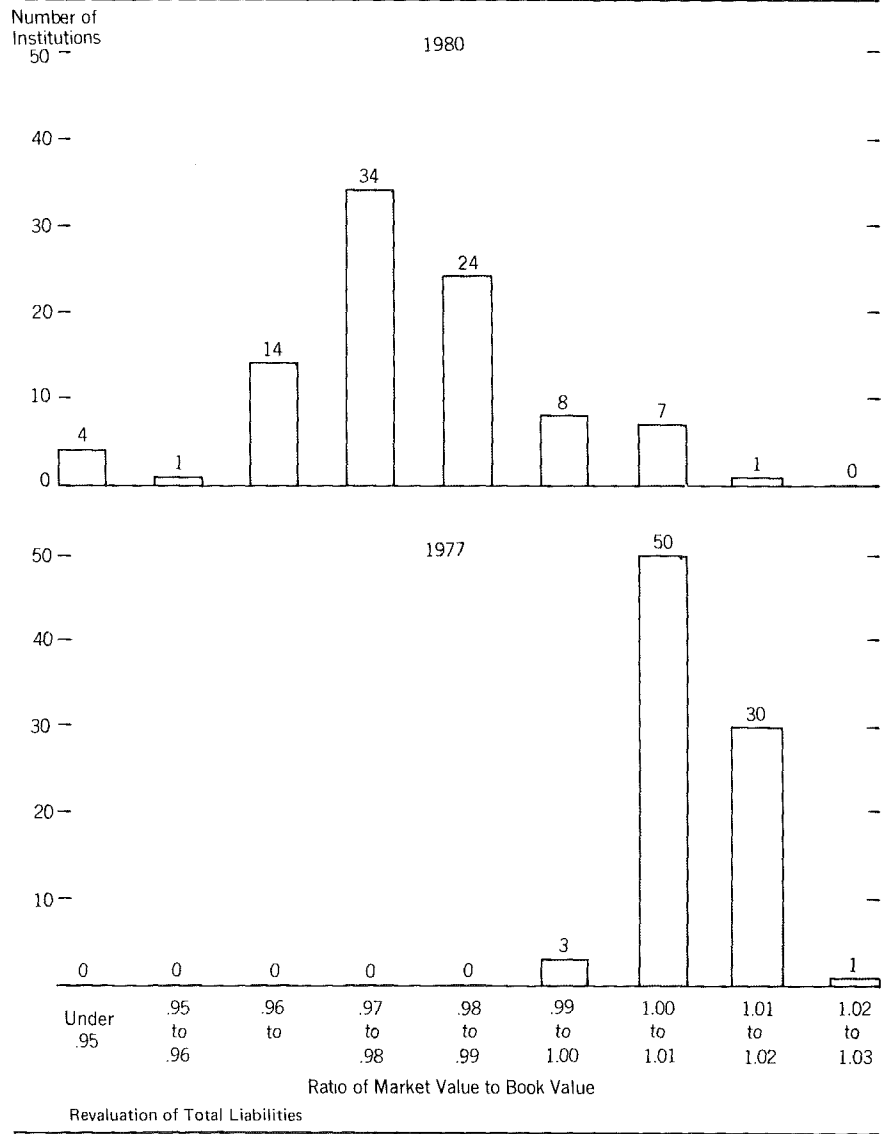
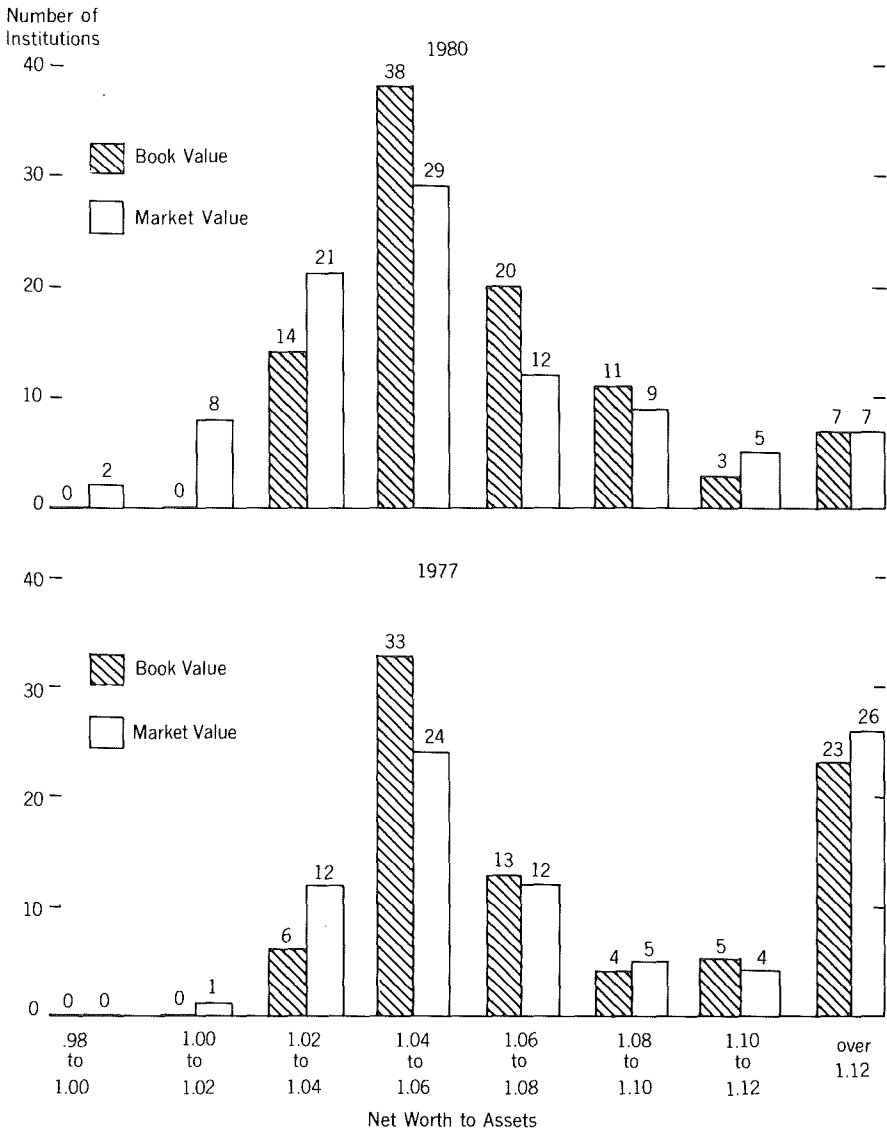


Chart 6 Capital Ratios of Selected Trust Companies and Mortgage Loan Companies



Data include all Trust Companies and Mortgage Loan Companies operating in Canada, excluding Mortgage Investment Companies and those institutions with less than \$7 million in assets in 1980. Source: Canadian Department of Insurance.

III. Crucial Differences Between Thrift Institutions in the United States and Mortgage-Lending Institutions in Canada

Part II has shown that mortgage-lending institutions in Canada are, as a rule, in reasonable economic health. In any event, their "real" net worth, as measured with current value accounting, is almost without exception better than that of their counterparts in the United States. The following factors have helped Canadian institutions and hurt those in the United States.

Longer-Term Deposits

Until 1979 most deposits of trust and loan companies in Canada had an original maturity of five years. Starting in 1979 customer preference for shorter-term deposit liabilities increased and most institutions started issuing one-, two- or three-year certificates as well. Even at the end of 1980, however, the average remaining maturity of time deposits of Canadian institutions was close to two years. This compares with the typical remaining maturity of one year or less for time deposits (inclusive of six-month certificates) in U.S. thrift institutions. Obviously the short-term nature of their deposits has hurt U.S. institutions in recent years.

Shorter-Term Mortgages

Until 1978 almost all home mortgages in Canada were amortized over a 20- to 30-year period but were repriced or "rolled over" every five years. These Canadian rollovers were, in effect, variable rate mortgages with a five-year rate adjustment. Thus, five-year mortgages matched deposits with the same maturity. When Canadian institutions started issuing shorter-term deposits in 1978, they also started issuing one- or two-year rollover mortgages. The effective average remaining duration of the typical mortgage portfolio in Canada declined from 2½ years in 1978 to about 1¾ to 2 years in 1980. This compares with a remaining average duration of seven years for the typical mortgage portfolio in the United States. In retrospect, given the short-term nature of their deposits and the run-up in interest rates of the 1970s, it is obvious that long-term fixed rate mortgages have had a disastrous impact on the financial position of U.S. thrift institutions.

Matching Maturities of Assets and Liabilities

Since the 1960s Canadian mortgage lending institutions have attempted to match the maturity of their assets (mortgages, securities, and consumer loans) with the maturity of their liabilities (deposits and subordinated notes). In recent years most Canadian financial institutions have not considered the still-continuing U.S. practice of borrowing short and lending long. In the late sixties, however, a few Canadian institutions did invest substantial sums in higher yielding long-term bonds or long-term (15 to 25 years) fixed rate mortgages. When long-term rates rose, those organizations

had substantial losses and were later merged into stronger institutions. As a result of this experience, the Department of Insurance subsequently encouraged all institutions to maintain a reasonable match between the maturities of their assets and their liabilities. This policy has been vigorously promoted and, in retrospect, has greatly benefited all mortgage-lending institutions in Canada.

Regulatory authorities in the United States were unsuccessful during the seventies in promoting variable rate mortgages. The Federal Reserve Bank of Boston in 1970 and 1972⁵ and the Board of Governors of the Federal Reserve System in 1972⁶ produced studies that outlined the dangers of long-term fixed rate mortgages and strongly recommended a variable rate regime. More importantly, in 1969 and 1975⁷ the Federal Home Loan Bank Board vigorously advocated regulations that would permit federally chartered institutions to offer variable rate mortgages. On both occasions public and Congressional opposition caused the Federal Home Loan Bank Board to withdraw these proposals. Not until 1979 were federally chartered institutions given authority to issue (under rather restrictive conditions) variable rate mortgages.

Most state-chartered institutions had long had the authority to issue variable rate mortgages, and in the seventies some institutions, particularly in California and Massachusetts, successfully promoted them. In general, however, in the seventies state-chartered institutions chose not to promote adjustable rate mortgages. The explanations for their behavior are numerous:

1. They were reluctant to innovate and did not comprehend the risks associated with fixed rate mortgages.
2. Some states specifically prohibited variable rate mortgages.
3. Many thrift institutions were reluctant to bear the short-run cost (i.e., the initial lower rate) of variable rate mortgages.
4. There was no standard design for variable rate mortgages, and their variety confused and frightened off many borrowers. Furthermore, consumer groups typically did not understand the need for these mortgages and stirred up opposition to them. Finally, in view of the lack of a standardized form for variable rate mortgages, there was no broad secondary market. Thus such mortgages were relatively illiquid.
5. Because there was no large volume of variable rate mortgages and because fixed rate mortgages often were priced only one half of one

⁵Paul S. Anderson and J. Philip Hinson, "Variable Rates on Mortgages: Their Impact and Use," *New England Economic Review*, March/April 1970; Paul S. Anderson and Robert W. Eisenmenger, "Structural Reform for Thrift Institutions: The Experience in the United States and Canada," *New England Economic Review*, July/August 1972.

⁶Board of Governors of the Federal Reserve System, *Federal Reserve Staff Study: Ways to Moderate Fluctuations in Housing Construction*, 1972. See esp. pp. 30-33 and 377-98.

⁷*Variable Rate Mortgage Proposal and Regulation Q*: Hearings before the Subcommittee on Financial Institutions Supervision, Regulation and Insurance of the Committee on Banking, Currency and Housing, House of Representatives, 94th Congress, 1st sess., April 8, 9, and 10, 1975.

percentage point higher, in some markets the borrowers who typically accepted variable rate instruments were short-term borrowers. For example, young executives who moved into a city for only a few years would accept the variable rate mortgage with the slightly lower rate. Since they borrowed for such a short period of time, however, rate variability for these mortgages provided little protection to the lender. This adverse selection of borrowers forced some lenders to back off from such mortgages.

6. The variable rate mortgages that were promoted typically adjusted only slowly to increasing rates, and many had caps that greatly limited the short-run increases in mortgage yields.

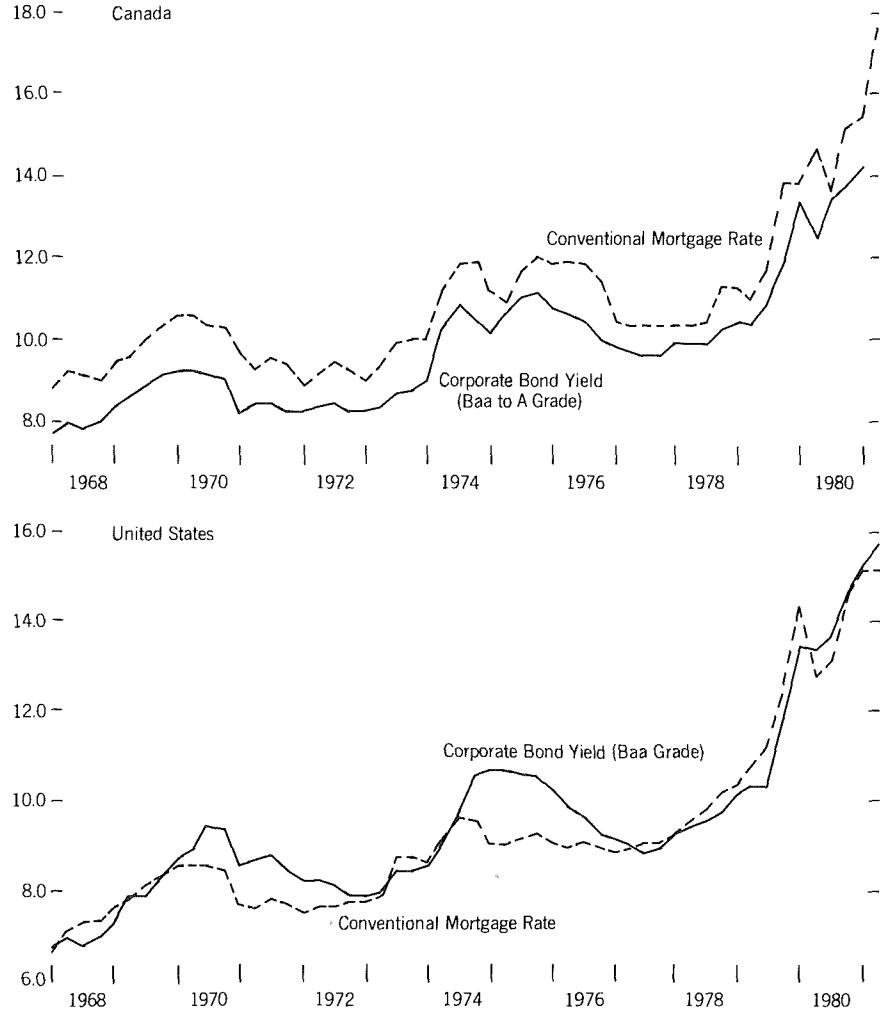
Freedom from Destructive Governmental Intervention

Since the sixties Canadian mortgage-lending institutions have not been hurt by government legislation, regulations, or agency operations designed to help mortgage borrowers and to stabilize the housing industry. In the United States, on the other hand, a plethora of such policies has harmed thrift institutions. A good example is the New York State usury ceiling, which seriously hurt all thrift institutions in that state. Similarly, mortgage acquisitions by the Federal National Mortgage Association and term lending to thrifts by the Federal Home Loan Banks during periods of rising rates were designed to depress mortgage rates vis-à-vis corporate bond rates. (For example, in the tight money periods of first quarter 1970 and third quarter 1974, federal agency financing of mortgages accounted for about 69 percent and 58 percent, respectively, of net new mortgage financing.) As shown in Chart 7, mortgage rates in the United States have until recently been about the same as, and occasionally even lower than, corporate bond rates. As explained earlier, the relatively high yields on mortgages in Canada may be partially explained by the more concentrated banking markets in Canada. On the other hand, mortgage yields should always be somewhat higher than yields on corporate bonds because of the extra cost of servicing mortgages. It is probable, therefore, that government intervention during periods of escalating rates has artificially depressed mortgage rates in the United States. Lower mortgage rates, in turn, have depressed the earnings of U.S. thrift institutions.

Lending by the Federal Home Loan Bank System hurt thrift institutions in another way: It encouraged them to continue to invest primarily in long-term mortgages. In Canada, on the other hand, there was no substantial government intervention in financial markets. As a result, mortgage yields have consistently been substantially above those for high-grade corporate bonds. These higher yields on new mortgages have contributed to the financial strength of Canadian institutions.

The most important regulation affecting U.S. thrift institutions has been Regulation Q, which placed a low ceiling on earnings on deposits starting in 1966. Congress mandated this regulation in order to stabilize the housing industry and to protect weak thrift institutions from competitive bidding by strong thrifts and strong commercial banks. Many thrift in-

Chart 7 Mortgage Rates and Bond Yields: Canada and United States

Percent
per annum

Mortgage Rates. U.S. mortgage rates are average rates on new commitments for conventional first mortgages on new homes in primary markets, unweighted and rounded to the nearest 5 basis points. Source: *Federal Reserve Bulletin*, original data from Department of Housing and Urban Development. Canadian mortgage rates are average rates at mid-month charged by a number of large institutional lenders for residential mortgage loans. Source: *Bank of Canada*, various issues.

Bond Yields. U.S. data are corporate bond rates, averages of daily figures from Moody's Investors Services. Source: *Federal Reserve Bulletin*, various issues. Canadian data are averages of 10 industrials from McLeod, Young, Weir and Company, Limited. Source: *Bank of Canada Review*, various issues.

stitutions had been hurt by the low returns on their old, low rate long-term mortgages, and Regulation Q offered them protected access to low-cost deposits. During the late sixties and early seventies, Regulation Q enabled many of these weak institutions to recoup some of their losses. Unfortunately they also became accustomed to living in a hothouse environment, and most of them continued to borrow short and lend long. Then, starting in the late seventies, inflation accelerated and money market mutual funds flourished. U.S. thrifts were then burdened by their portfolios of relatively low yielding fixed rate mortgages at a time when Regulation Q no longer offered them protected access to low-cost funds.

The Net Result

In Canada in the seventies most mortgage-lending institutions invested largely in short-term assets. Thus the average yield on assets of Canadian institutions increased rapidly in the late seventies, and most mortgage-lending institutions in Canada now earn a yield on their assets which enables them to currently pay about 18.25 percent on savings deposits. As a result, no competing money market mutual funds have been organized in Canada. In financial markets without deposit ceilings, depository institutions play the role that money market mutual funds now play in the United States. In fact depository institutions are generally much more effective competitors than money market mutual funds, since they can simultaneously offer high rates, government insurance, and geographic convenience.

The most serious long-term consequence of Regulation Q in the United States has been that it has discouraged thrift institutions from adapting, thereby placing them at a competitive disadvantage vis-à-vis money market mutual funds and commercial banks. The Canadian experience suggests that with no deposit rate regulation there would be no reason for money market mutual funds to exist. The Canadian experience further suggests that specialized mortgage-lending institutions with properly structured portfolios can effectively compete with diversified institutions such as chartered banks. As explained in the concluding section (Part V), however, it does not follow that U.S. thrift institutions should continue to specialize in mortgage lending.

IV. The Impact of "Rollover" and Fixed Rate Mortgages on Borrowers and Taxpayers

The Canadian Experience

Parts II and III of this paper have shown that industry practice and governmental policies have enabled mortgage-lending institutions in Canada to remain financially healthy in a period of escalating interest rates. Moreover, the health of these institutions can be largely attributed to the adjustable rate provisions in Canadian "rollover" mortgages.

The obvious question then follows: Are borrowers placed in an extraordinary financial squeeze when their mortgages are "rolled over"? The answer to that question is: Usually no.

Most individuals and families buy homes during their years of rapidly increasing earnings. As a rule, therefore, their nominal earnings during much of the mortgage amortization period rise faster than the inflation rate. This was true of most families in Canada in the sixties and seventies. In that period interest rate rises were modest, generally 2 percent or less between five-year "rollovers." As a result, the typical Canadian family paid out a slightly lower percentage of family income for interest and amortization in the immediately subsequent five-year term.⁸

In two instances, however, "rollover" mortgages have imposed a severe burden on Canadian borrowers.

1. "Rollover" mortgages are not well suited for individuals who expect to have a fixed nominal income or those whose income only partially adjusts to inflation. Fortunately, this is not the case for most mortgage borrowers.
2. If a borrower has a one-year "rollover" and mortgage interest rates rise rapidly, say 2 percentage points in a single year, interest and amortization as a percentage of income can increase by up to 15 percent in one year. This has been true in tight money periods (such as 1980-81) when interest rates rose much faster than incomes or the inflation rate. In such periods all borrowers whose mortgages "rolled over" had a large increase in mortgage payments relative to personal income. This has been true even when family income kept up with inflation.⁹

The U.S. Experience

The Canadian experience outlined above has not been entirely successful because of the burden on borrowers in 1980 and 1981. The U.S. experience, however, has quite clearly been a disaster. Thrift institutions in the United States have depended almost entirely on long-term fixed rate mortgages. The result, as shown in Kopcke's paper, is that these institutions now have a negative net worth. It is likely that 30 to 40 percent of them cannot survive without governmental assistance, and such assistance must be forthcoming because deposits of thrift institutions are federally insured. Federal financial assistance over the next 10 years could amount to many tens of billions of dollars. From the point of view of mortgage lenders and taxpayers the fixed rate regime has been a fiasco.

Of course for holders of old low rate mortgages, fixed rate mortgages have been a great success. During the last 20 years fixed rate mortgages have been extremely popular in the United States. In fact, my data suggest

⁸Michael L. Unger, "The Canadian Mortgage Market," pp. 379-80.

Michael L. Unger, "Memorandum on 'Canadian Rollover'" (March 25, 1980) in "Renegotiable Rate" *Mortgage Proposals of the Federal Home Loan Bank Board*. Hearings before a Subcommittee of the Committee on Government Operations, House of Representatives, 96th Cong., 2d sess., March 26 and 27, 1980, pp. 388-89.

⁹This has been a matter of concern to the banking industry and to the government. Banks on their own initiative have avoided foreclosures and permitted gradual increases in payments, where appropriate. The government is considering possible measures to assist hardship cases.

that the ratio of the aggregate value of residential mortgages outstanding to aggregate value of residential dwellings may be higher by as much as 80 percent in the United States than in Canada.¹⁰ It is not difficult to explain this popularity. Mortgage borrowing in the United States has always been a good bet. If interest rates declined, the borrower always had the option of refinancing. If interest rates rose, the borrower had a windfall gain. It was a "heads I win, tails you lose" proposition. As a result, holders of old mortgages in the United States are now purchasing their homes at a small fraction of the cost that new buyers of similar houses must bear. To a large extent, these windfall gains by the holders of old low rate mortgages explain the huge losses experienced by thrift institutions.

Thus the evidence suggests that, imperfect as Canadian "rollover" mortgages may be, they are preferable to the fixed rate mortgages offered by U.S. thrift institutions. It does not follow, of course, that Canadian rollover mortgages cannot be improved. With a well-designed graduated payment arrangement (for the term of the rollover), or a constant payment modification, Canadian mortgages could continue to provide protection for the lender and simultaneously protect the borrower from any large increase in the real burden of mortgage payments at the end of the rollover term.

The Need for Standardized Designs for Adjustable Rate Mortgages

As mentioned previously, one of the major reasons that state-chartered thrift institutions were unable to market adjustable rate mortgages was the lack of a standardized design. Over the years, a great many designs have been advocated and/or introduced. Unfortunately, no one or two designs have been universally accepted by borrowers, lenders, regulatory bodies, the Congress and participants in the secondary market for mortgages.

¹⁰Comparable figures for the two countries are not compiled but the following table suggests that there is considerable difference in the ratios for the two countries.

Ratio of Mortgages Outstanding to Housing Stock

	Canada*	United States**
1970	.1717	.4877
1971	.1861	.4930
1972	.2081	.5007
1973	.2185	.4820
1974	.2176	.4619
1975	.2291	.4608
1976	.2400	.4574
1977	.2611	.4595
1978	.2753	.4425
1979	.2814	.4509
1980	.2752	.4449

*Canada: Mortgage debt outstanding for all financial institutions excluding life insurance companies. Source: *Bank of Canada Review*. Value of residential structures (excluding land) estimated by the Bank of Canada.

**United States: Residential mortgage debt outstanding from Federal Reserve Board, *Annual Statistical Digest*. Value of residential structures (excluding land) from Federal Reserve Board Flow of Funds data, based on data from the U.S. Department of Commerce.

Poole identified this problem in 1971 when he pointed out that in an inflationary period a high rate, fixed monthly payment mortgage requires higher "real" payments in the early years of the contract and lower "real" payments in the later years.¹¹ In Figure 1 Tucker clearly demonstrates the tilting effect of a rising rate of inflation on the stream of annual payments expressed in constant purchasing power.

In 1975 Tucker proposed the "variable-rate graduated-payment mortgage" as a flexible alternative better adapted to inflationary conditions than the fixed rate level payment mortgage.¹² He proposed pegging the interest rate to some broad market rate, and increasing monthly payments gradually over the term of the mortgage according to a schedule negotiated between the borrower and the lender. The rate at which the payments increased would be subject to change whenever the interest rate was changed. In the same year Lessard and Modigliani carried the analysis further when they advocated the introduction of a "constant-payment-factor variable rate mortgage."¹³ Unfortunately the complexity of this proposal appears to have discouraged its adoption. If actually implemented, this sophisticated type of mortgage would stabilize "real" interest and amortization payments over the entire term of an amortized mortgage. This would be the case even if interest rates rose dramatically after a mortgage was first made.

In Canada in the seventies the government introduced a graduated payment rollover mortgage for moderate income families.¹⁴ This subsidized program offered a 10 percent downpayment plus low monthly payments which permitted negative amortization during the early years. Subsequently, when the prices of the subsidized housing stabilized and the payments (after the rollover) increased, a large number of families defaulted. In retrospect, it is obvious that any mortgage plan that permits negative amortization cannot be combined with unusually low downpayments.

More recently the Federal Home Loan Bank Board has authorized variable rate mortgages (in 1979) and renegotiable rate mortgages (in 1980). Unfortunately, for a variety of reasons these mortgage designs have often frightened consumers (e.g., the truth-in-lending restriction for variable rate designs) or failed to adequately protect the lenders (e.g., the limited variability of the rate movement).

Many other reasonable design options exist. For example, the Wachovia Bank and Trust Company of North Carolina is now successfully marketing a renegotiable rate mortgage in which the interest rate is adjusted quarterly but the monthly payments are fixed for five years. Monthly payments may not be increased by more than 25 percent at each five-year re-

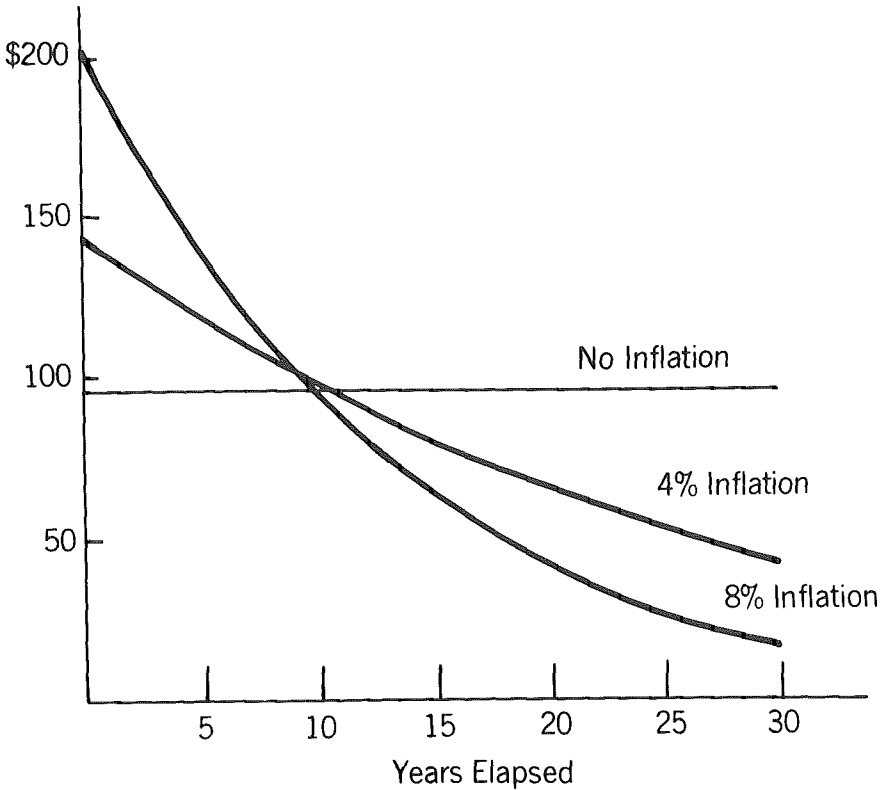
¹¹William Poole, "Housing Finance Under Inflationary Conditions," in Board of Governors of the Federal Reserve System, *Federal Reserve Staff Study: Ways to Moderate Fluctuations in Housing Construction*, 1972, pp. 355-376.

¹²Donald P. Tucker, "The Variable-Rate Graduated-Payment Mortgage," *Real Estate Review*, Volume 5 (1), Spring 1975, pp. 71-80.

¹³Donald Lessard and Franco Modigliani, "Inflation and the Housing Market: Problems and Potential Solutions," in *New Mortgage Designs for Stable Housing in an Inflationary Environment*, Federal Reserve Bank of Boston Conference Series No. 14, January 1975, p. 37.

¹⁴Michael L. Unger, "Memorandum on 'Canadian Rollover,'" pp. 388-39.

Figure 1
Real Value of Monthly Payments
on Level-Payment Mortgage



Source: Donald Tucker, "The Variable Rate Graduated Payment Mortgage" *Real Estate Review*, Spring 1975, p. 73.

adjustment. These mortgages may be prepaid in part or in full without penalty and may be assumed by another qualified borrower. These mortgages do permit negative amortization (during any five-year period) if interest rates rise. However, if the initial downpayment is large enough, they provide substantial protection to the lender. This specialized mortgage form with the rate adjusted every three months is particularly well suited for commercial banks that have very short-term assets.

More recently Lessard has advocated a graduated payment arrangement to be linked with a rollover or renegotiable rate mortgage.¹⁵ He points out that in a high interest rate environment such a design would greatly reduce the "real" mortgage payments during the first five or ten years of the amortization period. Thus it should enable many more families to purchase housing in an inflationary period. Further, since one graduated payment rollover could be followed by another, it would be possible to avoid a jump in payments at rollover even if inflation and interest rates had increased substantially over the initial term. However, the potential for negative amortization in the early years requires a substantial initial downpayment.

In summary, both Canada and the United States need a standardized form for variable rate and rollover mortgages that would protect lenders and simultaneously reduce the initial real mortgage payments for borrowers. Also, the optimum design should substantially stabilize the real mortgage payments over the life of the mortgage. Such a standard mortgage might help the housing industry in both countries. In any event it would prevent a repeat of the debacle that now confronts the thrift industry in the United States.

V. Conclusion

Mortgage-lending institutions in the United States and Canada perform the same functions and operate in similar interest rate environments. However, during the last 20 years of rising interest rates, Canadian institutions have remained healthy and most U.S. institutions have developed negative "real" net worth.

The two reasons for this differential performance are:

1. In Canada industry practice and government policy have encouraged mortgage-lending institutions to match the maturities of their assets and liabilities. In the United States, industry practice and governmental regulation tend to encourage borrowing short and lending long.
2. In Canada there has been little government intervention in financial markets to help mortgage borrowers, to stabilize the housing market, or to maintain the health of weak mortgage-lending institutions. In the United States, there has been a plethora of such federal and state programs and laws. The unintended byproduct of this intervention has been severe financial harm to U.S. thrift institutions.

¹⁵Donald R. Lessard, Statement and Testimony before the Commerce, Consumer, and Monetary Affairs Subcommittee of the Committee on Government Operations, in "Renegotiable Rate" Mortgage Proposals of the Federal Home Loan Bank Board. Hearings before a Subcommittee of the Committee on Government Operations, House of Representatives, 96th Cong., 2d sess., March 26 and 27, 1980, pp. 2-20.

Kent W. Colton, Donald R. Lessard, and Arthur P. Solomon, "Borrower Attitudes Toward Alternative Mortgage Instruments," American Real Estate and Urban Economics Association, *Journal*, Volume 7 (1979), pp. 581-609.

In the United States holders of old low fixed rate, long-term mortgages have enjoyed massive windfall gains. Equivalent losses have been imposed on federally insured mortgage lenders. Thus, taxpayers in the United States ultimately will carry most of the burden of the windfall losses.

Rollover mortgages have been primarily responsible for maintaining the health of mortgage-lending institutions in Canada. However, one- and two-year rollover mortgages have recently placed a severe burden on many Canadian borrowers. New mortgage designs could eliminate much of this problem in Canada. New standardized designs are even more critical for U.S. institutions. In the United States there is great need for a cooperative effort among lenders, borrowers, regulators, and participants in the secondary market to devise generally accepted forms for adjustable rate mortgages.

The Canadian experience demonstrates that specialized mortgage lenders can perform most of the functions of U.S. money market funds, and can compete effectively with diversified financial institutions such as Canadian chartered banks. However, this Canadian experience probably should not be interpreted to mean that U.S. thrift institutions should continue to specialize in mortgage lending. History suggests that during periods of rising interest rates, social and political pressures in the United States force the federal and state governments to intervene to help mortgage borrowers, the housing industry, and weak mortgage-lending institutions. In the past, the final result has been severe financial damage to those institutions that specialized in mortgage lending. It may well be that thrift institutions in the United States should diversify to protect themselves from this political risk.

Appendix Table 1
Revaluation of Total Assets: Canadian Trust and Loan Companies

Market- to-Book Ratio	1977-1980			1980
	1977	Number of Institutions 1978	1979	
Below .95	0	1	0	4
.95 to .96	1	0	0	15
.96 to .97	0	0	3	32
.97 to .98	1	2	8	19
.98 to .99	1	4	32	9
.99 to 1.00	14	21	28	10
1.00 to 1.01	32	37	17	4
1.01 to 1.02	21	14	4	0
1.02 to 1.03	6	6	1	0
1.03 to 1.04	6	4	0	0
1.04 to 1.05	1	1	0	0
Over 1.05	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
	84	90	93	93

Source: Canadian Department of Insurance.

Data include all Trust Companies and Mortgage Loan Companies operating in Canada, excluding Mortgage Investment Companies and those institutions with less than \$7 million in assets in 1980.

Appendix Table 2
Revaluation of Total Liabilities: Canadian Trust and Loan Companies

Market- to-Book Ratio	1977-1980			1980
	1977	Number of Institutions 1978	1979	
Below .95	0	0	0	4
.95 to .96	0	0	0	1
.96 to .97	0	0	1	14
.97 to .98	0	0	3	34
.98 to .99	0	0	45	24
.99 to 1.00	3	15	42	8
1.00 to 1.01	50	75	2	7
1.01 to 1.02	30	0	0	1
Over 1.02	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
	84	90	93	93

Source: See Appendix Table 1.

Appendix Table 3
Capital Ratios for Selected Canadian Trust and Loan Companies

	1977		Number of Institutions				1980	
	Book	Market	1978 Book	1978 Market	1979 Book	1979 Market	Book	Market
.99 to 1.00	0	0	0	0	0	1	0	2
1.00 to 1.01	0	0	0	0	0	0	0	0
1.01 to 1.02	0	1	0	0	1	1	0	8
1.02 to 1.03	0	3	1	5	1	9	3	13
1.03 to 1.04	6	9	9	8	11	5	11	8
1.04 to 1.05	22	12	22	13	25	14	17	10
1.05 to 1.06	11	12	13	13	10	13	21	19
1.06 to 1.07	8	5	5	9	12	11	11	7
1.07 to 1.08	5	7	9	5	5	9	9	5
1.08 to 1.09	2	3	3	8	5	3	7	6
1.09 to 1.10	2	2	3	3	2	4	4	3
1.10 to 1.11	1	2	3	3	5	5	1	5
1.11 to 1.12	4	2	2	3	0	2	2	0
Over 1.12	23	26	20	20	16	16	7	7

Source: See Appendix Table 1.

Discussion

Gordon G. Thiessen*

This paper provides a good assessment of the success of the trust and mortgage loan industry in Canada in coping with the difficult recent period of high and fluctuating interest rates. The conclusion that the industry has coped reasonably well is one with which I am in complete agreement. It may be, however, that the paper has left a somewhat misleading impression that, because of their tradition of matching five-year deposits and five-year roll-over mortgages, trust and mortgage loan companies sailed rather smoothly through this period. Most companies have not in fact been fully matched and the increasing preference of savers for shorter-term deposits beginning about 1978 had left some of these institutions less well-matched than they had been earlier. The sharp rises in interest rates beginning in the autumn of 1979 squeezed or even eliminated the interest spreads on those existing mortgage assets financed by shorter-term deposits and, at the same time, encouraged a still larger shift of depositors to savings accounts and to deposits with a term of less than one year. Thus, as the companies were seeking to improve their mismatched positions to protect themselves against a further squeeze from interest spreads in the future, the term of their deposit inflows was shortening further. Term deposits of less than one year to maturity increased from about 8 percent of total deposit liabilities in mid-1979 to almost 16 percent in August 1981. Despite the typical term of new mortgages being shortened to one year and even six months, trust and loan companies found themselves having to seek nonmortgage assets with still shorter terms or with floating rates. The intermediation spread between average interest earnings and interest costs narrowed significantly in 1979 and 1980 but never became negative. Since then the companies have had some success in moving to more fully matched positions but the further rise of short-term interest rates to record levels in Canada during 1981 has impeded the recovery of profit margins.

I am not disagreeing with the conclusion in Eisenmenger's paper that the trust and loan industry has fared reasonably well, and apparently much better than the thrift industry in the United States, I just wanted to make the point that the trust and loan companies still encountered some severe problems in the recent period. They have been inclined as a result to work toward matching the terms of their assets and liabilities still more closely than before but at the same time the terms to maturity of both assets and liabilities have on average shortened considerably.

I think it might be helpful to your understanding of the Canadian mortgage market and its relevance to U.S. problems if I added to the de-

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scription in Eisenmenger's paper some additional background on how the roll-over mortgage came to be the normal form of mortgage loan in Canada. The five-year maturity that became typical for both mortgage loans and personal term deposits in the postwar period is an outgrowth of a piece of federal legislation called the Interest Act that dates back to before the beginning of this century. That Act gave individual mortgage borrowers the right to repay their loans after five years subject to a maximum penalty of three months' interest. This provision became important with the dramatic growth of mortgage financing of residential properties after World War II. Because of this stipulation, trust and loan companies were unwilling to lock themselves in to deposits with a term of more than five years even to finance a long-term mortgage because of the possibility that the mortgage might be paid off early if interest rates fell. It soon became obvious in the postwar period that interest rates were equally likely to rise and financing a 25-year mortgage with a five-year deposit also exposed the lender to some interest rate risk. The tradition therefore arose of attracting five-year deposits and making conventional mortgage loans with amortization periods of 15 to 30 years but a term of 5 years.

There was, however, some shift towards longer-term mortgages when a program of government-insured mortgage loans was introduced in 1954. These loans, made under the National Housing Act, had a provision that the lender could not require repayment in less than 25 years but the borrower had repayment privileges after 3 years. The potential problems of a mismatched balance sheet became apparent when, under competition from a generally rising interest rate structure, trust company savings deposit rates were pushed up from 4 percent in 1967 to 6½ percent in 1969–70 and the portfolios of long-term N.H.A. mortgages taken on earlier at rates of between 6 and 6¾ percent subjected a number of mortgage lenders to a rather severe squeeze. In 1969 the minimum term of mortgage loans insured under the National Housing Act was reduced to five years. The largest part of mortgage loans made by institutional lenders have since then been of a roll-over variety with terms much shorter than amortization periods. More recently, the minimum term for N.H.A. mortgages has been shortened to one year.

I might also add a comment about the evolution of the regulatory environment for financial institutions in Canada. The period from the mid-1950s to the mid-1960s provided a rather effective demonstration of the problems caused by interest rate ceilings. At this time the banks were subject to a maximum lending rate ceiling of 6 percent which also effectively placed a cap on their deposit rates. At the same time the maximum rate chargeable on mortgages insured under the National Housing Act was set administratively and varied only infrequently. Whenever this mortgage rate got out of step with other interest rates, there would be large fluctuations in the availability of mortgage funds. Moreover, any increase in the mortgage rate to a level above 6 percent would drive the banks out of the mortgage market, contributing further to fluctuations in the supply of mortgage funds. These fluctuations were in turn translated into inefficient cycles in housebuilding activity.

With the Bank Act revision of 1967, the ceiling on bank lending rates was removed. A varied and flexible market in deposit instruments for small savers has grown up since then. At the same time the administrative constraints on the mortgage rate were removed, leaving this rate to be determined by market forces and eliminating the nonprice allocation of mortgage funds.

The one part of Eisenmenger's paper where I have some reservations is the section that deals with the differences in the impact on borrowers of roll-over mortgages, traditional fixed rate mortgages and some of the new mortgage designs. I feel somewhat uncomfortable with the view that seems implicit in this section that fixed rate mortgages are in the best interests of borrowers and one would opt to retain them if it were not for the problems they have caused for mortgage lenders. These days in Canada most borrowers (both new ones and those rolling over existing mortgages) are unwilling to lock themselves in to a mortgage rate for much more than one year at a time. Borrowers have become increasingly aware that there have been large swings in ex post real interest rates and that the recent differential between the mortgage rate and the rate of inflation, as measured by the CPI, of 7 to 9 percentage points is at an historically high level. There is, moreover, a substantial degree of uncertainty about future rates of inflation. If there is a chance that inflation is not going to get any worse and may get better, borrowers do not want to commit themselves to a long-term mortgage at a rate that incorporates a high expected rate of inflation. One can, of course, argue that the rates on longer-term mortgages would reflect the market's judgments about the expected future course of inflation and real interest rates but the market was not very successful in making those predictions when mortgage rates were trending upward. It seems to me to be quite reasonable for borrowers, as well as lenders, to prefer short-term mortgages given the uncertainty of the current inflationary period.

I conclude, therefore, that the need these days is for a mortgage instrument with a high degree of flexibility. Short-term roll-over mortgages suit this environment. What is lacking in our present mortgage design in Canada is some flexible means of adjusting for the real payment tilt that occurs in a level payment mortgage in an inflationary environment. While it is the case that with high interest rates and no tax deductibility of mortgage interest payments Canadian borrowers have a strong incentive to repay their mortgages as rapidly as possible, in inflationary times movements in the real incomes of individuals can be rather variable and a rapid rate of repayment is not always possible. It seems to me to be sensible in our present circumstances for the borrower who is renewing his mortgage to be able to negotiate with the lender to defer a certain amount of the inflation premium in interest rates, which is then added to the principal, if he finds himself in a cash flow squeeze. As long as payments are adjusted each year in line with the higher principal to ensure that the mortgage will be paid off over the amortization period and care is taken to ensure that interest deferral does not lead to principal increases which absorb all of the borrower's equity in the house, such mortgage arrangements should not cause prob-

lems for lenders. If only a portion of the inflation premium is deferred, the chances are that the increases in principal and in monthly payments will not be far out of line with the likely rises in the borrower's income and in the market value of his house. This type of flexible mortgage arrangement is more suitable in our present circumstances than the mortgage design with stable real payments over the life of the mortgage that Eisenmenger advocates.

Finally, let me say a word about Eisenmenger's closing comment favoring diversification for thrift institutions. There has been some discussion in Canada about diversification into commercial lending as the way of the future for trust and loan companies. It seems to me, however, that the success of these companies in their competition with banks is to an important extent a result of their specialization in the retail side of financial intermediation. That specialization has led to a number of innovations by trust and loan companies in both the mortgage and deposit business. While some flexibility to acquire nonmortgage assets is needed from time to time to enable companies to match their assets with the terms of their deposit inflows, it is not clear that a more fundamental diversification is needed. It seems to me that trust and loan companies are likely to be much more successful in competing with banks in the mortgage market and in providing other loan and deposit services to individuals than in the commercial lending business. I would have thought that the same arguments would apply to the American thrift institutions.