

Financial Institutions and the Collapse of Real Estate Markets

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This paper focuses on how financial institutions function in an imperfectly competitive market, one that is repeatedly shocked by financial innovations and governmental interventions and is always in disequilibrium. It does not consider whether or not financial institutions caused the collapse of real estate markets, but instead offers reasons why major lenders moved in the mortgage markets as they did.

The paper is concerned primarily with real estate lending and financial institutions in the 1980s. However, a long history preceded the recent real estate collapse and, as in a Greek tragedy, the hubris of the principals probably made the collapse inevitable. Plenty of signals were given that could have triggered actions by managers and regulators, but neither were likely to act in the political context of the 1970s and 1980s.

The first section of the paper summarizes the turbulent history of mortgage markets that led up to the most recent decade. The next section describes the actions of the three principal private sector financial intermediaries in mortgage markets. Then a number of arguments are reviewed that may account for the actions of these intermediaries. The following section considers the signals that warned of trouble in mortgage markets and suggests scenarios for resolving the current crisis. A final section offers conclusions.

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Background of the Crisis

It is useful to recall that throughout this century real estate markets have been financed by three major intermediaries, life insurance companies, commercial banks, and savings institutions. An early study by Morton (1947) documented that the home mortgage lending terms offered by commercial banks and life insurance companies were strongly affected by reforms and federal programs enacted in 1934. Maturities of new home mortgage loans doubled and loan-to-value ratios of new mortgage loans increased rapidly. Similar but less dramatic changes were evident in loans booked by savings and loan associations. These changes persisted into the post-World War II era, and indeed received further impetus from Veterans Administration (VA) and Federal Housing Administration (FHA) programs that resulted in even longer mortgage maturities and higher loan-to-value ratios.

Real estate loans on multifamily and nonresidential properties are made principally by life insurance companies and commercial banks, with insurance companies specializing in long-term loans and banks in short-term loans. A study by Fiedler (1971) reports that both loan-to-value ratios and maturities on new loans increased irregularly, beginning in about 1936, and were higher in the immediate postwar period than in the 1920s. For insurance companies, both series trended up steadily between 1951 and 1968. While no comparable data are available for commercial banks, it is likely that they too liberalized commercial mortgage lending during the prosperous postwar era, which came to a close in the early 1960s.

The competitive struggle for market shares of deposits between commercial banks and thrift institutions quickened in the early 1960s (Hester 1981). Until about 1962, commercial banks had allowed savings and loan associations to increase their share of the consumer deposit market, by not matching the interest rates that savings and loans paid. Once savings and loan associations' share in local markets passed a certain threshold, however, an optimal policy for commercial banks was to match the rates paid by savings and loan associations. This resulted in rapidly rising interest rates on deposits.

To cover the higher cost of deposits, all institutions began to shift their portfolios toward mortgage loans, which at the time had the highest net rates of return. Both commercial banks and mutual savings banks increased their mortgage lending in the early 1960s, at a time when mortgage loan interest rates were falling relative to interest rates on other available assets (Hester and Pierce 1975). Rates on mortgage loans were falling in part because of this increased demand by lenders for mortgage loans. Profits of savings and loan associations declined rapidly because of this competitive struggle and also because they had a

large negative "gap"—that is, for short and medium time horizons their fixed-rate liabilities were much smaller than their fixed-rate assets.

In 1966 the Federal Reserve intervened by driving up interest rates and regulators and Congress were forced to impose binding ceilings on the rates that banks and thrifts could pay on deposits. This intervention postponed the crisis and restored the profitability of savings institutions. However, it also spawned a wave of institutional changes and market innovations that would eventually decimate many of them: in particular, the privatizing of the Federal National Mortgage Association (FNMA) in 1968, the introduction of Government National Mortgage Association (GNMA) pass-through securities in 1968, the establishment of the Federal Home Loan Mortgage Corporation (FHLMC) in 1970, and the emergence of money market mutual funds (MMMFs) and negotiable order of withdrawal (NOW) accounts in 1972. Many other important innovations would occur in the years to follow, including the establishment of financial instrument futures markets in 1975 and the introduction of variable interest rate mortgage loan contracts.

Partly because of confusion caused by all these innovations, between 1970 and late 1978 the Federal Reserve allowed the federal funds interest rate to fall below the CPI inflation rate. A "bubble" developed in asset markets (and especially in the price of houses) that led to a situation where one could borrow at interest rates that were lower than the rate of increase in house prices, especially after account was taken of the deductibility of mortgage interest from individual income taxes.¹ So long as lenders could get funds at interest rates lower than those they could net on mortgage lending, this bubble would persist and both house owners and intermediaries could prosper. The game was obviously unsustainable, however, and the housing bubble collapsed around 1980, helped by the Federal Reserve—especially by its actions on October 6, 1979—and by the rapid growth of MMMFs.

Commercial mortgage lending was similarly expansively affected by interest rates during the 1970s, but did not suffer as much of a convulsion when interest rates rose in 1979. Superficially, it appears that commercial lenders were insulated from interest rate movements because they were relatively better immunized and because, in an infla-

¹ Between 1970 and 1980 the price of a new house rose from about \$35,300 to \$90,100; this corresponds to a continuously compounded annual rate of return of 9.8 percent. A simple arithmetic average of annual interest rates on new home mortgage loans for the same period was 9.2 percent. Between 1980 and 1991 the corresponding rates averaged 5.3 percent and 11.3 percent, respectively. The effective cost of borrowing is much lower when account is taken of the deductibility of mortgage interest. Another indicator of the instability of the housing market is the ratio of the residential construction implicit price deflator to the overall GDP deflator. With 1987 as a base, this ratio rose from 0.895 in 1970 to a peak of 1.043 in 1980 and then fell to 0.953 in 1991. Construction prices rose and fell relative to other prices, depending on whether excess demand was present.

tionary environment, borrowers could afford to pay high rates out of steadily rising nominal revenues. Multifamily residential mortgage lending was less strongly affected by the structure of interest rates and other changes, for a variety of reasons that are outside the scope of this paper.

Mortgage Markets in the Past Twelve Years

From this stormy history ensued a vast transformation of financial markets, and especially mortgage markets. Three major regulatory reform acts, the Depository Institutions Deregulation and Monetary Control Act of 1980, the Garn-St Germain Act of 1982, and the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA), transformed the ground rules. Three major tax laws, the Economic Recovery Tax Act of 1981 (ERTA), the Tax Equalization and Fiscal Responsibility Act of 1982 (TEFRA), and the Tax Reform Act of 1986, drastically altered tax formulas.

This section briefly describes how mortgage markets fared and how the three principal lenders responded to this turbulent environment. Table 1 indicates that these lenders did not maintain their market shares of one- to four-family residential mortgage loans in the 1980s.² Mortgage pools (which in this paper have been defined to include mortgages held by sponsored credit agencies) increasingly dominated the residential mortgage markets. The competition from federally sponsored intermediaries reduced the demand for the services of private intermediaries, and thus tended to reduce profits. Although savings and loan associations and savings banks had been savaged by rising interest rates at the beginning of the decade, they attempted to expand their lending rapidly during the first half of the decade, apparently believing that they could offset their enormous book losses through growth and expansion in a newly deregulated environment.³ This would prove to be a serious miscalculation.

Commercial banks steadily increased their residential mortgage lending throughout the decade, and continue to do so. Several expla-

² This table and the others in this section have been constructed from the Flow of Funds Accounts and National Balance Sheets published by the Board of Governors of the Federal Reserve System. The tables emphasize lending activities by the three principal intermediaries, banks, savings institutions (thrifts), and life insurance companies. Other suppliers of mortgage loans in the Flow of Funds Accounts include households, a number of other insurance industries, governments, nonfinancial corporations, retirement and pension funds, finance companies, and the like.

³ The response of the savings and loan business to deregulation and Reagan Administration budgetary cutbacks in regulation is described colorfully and in some detail by Strunk and Case (1988).

Table 1
Year-End Holdings of Mortgages on One- to Four-Family Housing

| Year | Total | Pools | Banks | Thriffs | Life Insurance Cos. | Pools | Banks | Thriffs | Life Insurance Cos. |
|---------------------|-------|-------|-------|---------|---------------------------|-------|-------|---------|---------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | 3/2 | 4/2 | 5/2 | 6/2 |
| Billions of Dollars | | | | | Percent of Total | | | | |
| 1966 | 232 | 5 | 33 | 132 | 30 | 2.1 | 14.2 | 57.2 | 13.0 |
| 1967 | 245 | 7 | 35 | 139 | 30 | 2.7 | 14.4 | 56.9 | 12.2 |
| 1968 | 262 | 9 | 39 | 148 | 29 | 3.3 | 14.8 | 56.5 | 11.1 |
| 1969 | 280 | 13 | 41 | 157 | 28 | 4.5 | 14.8 | 56.2 | 9.9 |
| 1970 | 294 | 19 | 42 | 165 | 27 | 6.3 | 14.4 | 56.0 | 9.1 |
| 1971 | 321 | 25 | 48 | 181 | 25 | 7.8 | 15.0 | 56.4 | 7.7 |
| 1972 | 360 | 31 | 57 | 207 | 22 | 8.6 | 15.8 | 57.6 | 6.2 |
| 1973 | 403 | 38 | 68 | 233 | 20 | 9.3 | 16.9 | 57.7 | 5.1 |
| 1974 | 441 | 46 | 75 | 249 | 19 | 10.5 | 17.0 | 56.4 | 4.3 |
| 1975 | 482 | 56 | 77 | 271 | 18 | 11.7 | 16.0 | 56.2 | 3.7 |
| 1976 | 546 | 69 | 86 | 310 | 16 | 12.6 | 15.8 | 56.7 | 2.9 |
| 1977 | 643 | 85 | 105 | 362 | 15 | 13.2 | 16.4 | 56.3 | 2.3 |
| 1978 | 754 | 106 | 129 | 412 | 14 | 14.1 | 17.1 | 54.7 | 1.9 |
| 1979 | 871 | 139 | 150 | 455 | 16 | 15.9 | 17.2 | 52.3 | 1.8 |
| 1980 | 965 | 165 | 160 | 483 | 18 | 17.1 | 16.6 | 50.1 | 1.9 |
| 1981 | 1040 | 189 | 170 | 499 | 17 | 18.2 | 16.4 | 48.0 | 1.7 |
| 1982 | 1080 | 249 | 174 | 461 | 17 | 23.0 | 16.1 | 42.7 | 1.6 |
| 1983 | 1200 | 323 | 183 | 490 | 15 | 26.9 | 15.2 | 40.9 | 1.3 |
| 1984 | 1336 | 378 | 197 | 540 | 14 | 28.3 | 14.7 | 40.4 | 1.1 |
| 1985 | 1490 | 468 | 214 | 574 | 12 | 31.4 | 14.3 | 38.5 | .8 |
| 1986 | 1721 | 623 | 240 | 588 | 13 | 36.2 | 13.9 | 34.1 | .7 |
| 1987 | 1943 | 757 | 280 | 630 | 13 | 39.0 | 14.4 | 32.4 | .7 |
| 1988 | 2174 | 836 | 317 | 717 | 15 | 38.5 | 14.6 | 33.0 | .7 |
| 1989 | 2404 | 966 | 372 | 717 | 14 | 40.2 | 15.5 | 29.8 | .6 |
| 1990 | 2765 | 1118 | 461 | 672 | 13 | 40.4 | 16.7 | 24.3 | .5 |
| 1991 | 2905 | 1271 | 492 | 614 | 12 | 43.7 | 16.9 | 21.1 | .4 |

Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Assets and Liabilities*, various issues.

nations for this activity are considered in the next section. Banks also greatly increased their holdings of agency securities, which include mortgage pools. As a percentage of net financial assets, banks had about 2 percent in agency securities at the end of 1966 and about 10 percent at the end of 1991. This discussion will be confined to considering directly held mortgage loans, and thus it will understate the involvement of commercial banks in real estate. No information was available about the fraction of banks' holdings of agency securities that are financing real estate indirectly.

Life insurance companies have been withdrawing from the one- to

four-family residential market. This withdrawal may be a response to the changing nature of life insurance company liabilities over the past quarter century. At the end of 1966, 69 percent of their liabilities were life insurance reserves and 20 percent were pension fund reserves. At the end of 1991, 28 percent were reserves for life insurance and 62 percent were reserves for pension funds. Like banks, life insurance companies have greatly increased the fraction of their portfolios invested in agency securities, even though their holdings of residential mortgage loans have decreased. At the end of 1991, about 10 percent of financial assets of life insurance companies were in agency securities. Because of data limitations, however, this discussion also will be confined to mortgage loans directly held in insurance company portfolios.

Table 2 provides comparable information for commercial mortgages. Commercial banks have come to dominate the market. The share of commercial mortgages held by life insurance companies has been relatively constant over the past 25 years, and since 1985 thrifts have been rapidly withdrawing from this market.

Table 3 reports the fraction of total financial assets that each of these three intermediaries has allocated to one- to four-family residential mortgages and to commercial mortgages. Commercial banks have steadily and increasingly shifted their portfolios toward both types of mortgage loans. Thrifts and life insurance companies have been shifting away from one- to four-family mortgages. The share of the thrifts' portfolio in commercial mortgages has been essentially trendless over the past 25 years. Life insurance companies increased the share of their portfolio going to commercial mortgages until about 1980; since then the share has drifted down slightly.

Perhaps it is fair to conclude that thrifts and life insurance companies were rather passively responding to the turbulent 1980s, whereas commercial banks were aggressively increasing both market share and the share of their portfolios going into mortgage loans.

Explanations for Changing Mortgage Lending by Intermediaries

This section reviews some hypotheses that partly explain mortgage market activity by thrifts, commercial banks, and life insurance companies. Before focusing on mortgage lending, it is important to emphasize that the 1980s were a period of gross macroeconomic disequilibrium. The ratio of total credit market debt owed by nonfinancial sectors to gross domestic product, relatively unchanging over much of the post-war period, rose sharply from 1.45 in 1980 to 1.97 in 1991. It is against the background of this borrowing binge by all sectors of the economy that the explosion in mortgage lending must be considered.

Table 2
Year-End Holdings of Commercial Mortgages

| Year (1) | Total (2) | Banks (3) | Thrifts (4) | Life Insurance Cos. (5) | Banks 3/2 | Thrifts 4/2 | Life Insurance Cos. 5/2 |
|-----------------------|--------------|--------------|----------------|----------------------------------|--------------|----------------|----------------------------------|
| (Billions of Dollars) | | | | (Percent of Total) | | | |
| 1966 | 61 | 16 | 13 | 19 | 26.8 | 21.9 | 30.7 |
| 1967 | 66 | 18 | 15 | 21 | 27.2 | 22.3 | 31.2 |
| 1968 | 73 | 21 | 17 | 22 | 28.3 | 22.9 | 30.9 |
| 1969 | 78 | 22 | 18 | 24 | 28.2 | 22.8 | 31.1 |
| 1970 | 86 | 23 | 19 | 26 | 27.2 | 22.7 | 30.4 |
| 1971 | 96 | 26 | 24 | 29 | 27.4 | 24.9 | 29.7 |
| 1972 | 113 | 32 | 29 | 32 | 28.2 | 25.8 | 28.0 |
| 1973 | 132 | 39 | 34 | 37 | 29.4 | 25.7 | 27.7 |
| 1974 | 147 | 44 | 37 | 41 | 29.7 | 25.3 | 28.1 |
| 1975 | 159 | 47 | 43 | 45 | 29.4 | 26.7 | 28.4 |
| 1976 | 171 | 50 | 48 | 49 | 29.4 | 28.1 | 28.6 |
| 1977 | 190 | 57 | 53 | 54 | 30.0 | 27.9 | 28.7 |
| 1978 | 212 | 66 | 57 | 62 | 31.2 | 26.7 | 29.4 |
| 1979 | 236 | 76 | 60 | 71 | 32.2 | 25.3 | 30.0 |
| 1980 | 256 | 81 | 62 | 81 | 31.6 | 24.1 | 31.6 |
| 1981 | 278 | 91 | 64 | 88 | 32.6 | 22.9 | 31.8 |
| 1982 | 301 | 103 | 66 | 94 | 34.1 | 22.0 | 31.1 |
| 1983 | 352 | 120 | 83 | 104 | 34.2 | 23.5 | 29.5 |
| 1984 | 418 | 153 | 104 | 111 | 36.6 | 24.8 | 26.6 |
| 1985 | 480 | 181 | 114 | 128 | 37.7 | 23.8 | 26.6 |
| 1986 | 553 | 223 | 119 | 149 | 40.3 | 21.6 | 27.0 |
| 1987 | 651 | 267 | 147 | 167 | 41.1 | 22.6 | 25.6 |
| 1988 | 699 | 305 | 139 | 184 | 43.7 | 19.8 | 26.4 |
| 1989 | 745 | 340 | 137 | 195 | 45.7 | 18.3 | 26.1 |
| 1990 | 756 | 336 | 109 | 215 | 44.5 | 14.4 | 28.4 |
| 1991 | 751 | 336 | 87 | 218 | 44.7 | 11.6 | 29.1 |

Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Assets and Liabilities*, various issues.

Thrifts

The response of thrifts was essentially dictated by the crisis precipitated by soaring market interest rates at the start of the decade. If assets were marked to market values in the early 1980s, the two largest groups of thrift intermediaries, savings and loan associations and mutual savings banks, had massively negative net worth. The only "quick fix" would have been a very substantial early reduction in nominal interest rates, followed by reforms that allowed them to eliminate their negative gap. Interest rates did not fall sufficiently and, as has been documented

Table 3
 Percentage of Total Financial Assets Held as Mortgage Loans by Commercial Banks, Thrifts, and Life Insurance Companies

| Year | Commercial Banks | | Thrifts | | Life Insurance Cos. | |
|------|------------------|------------|------------|------------|---------------------|------------|
| | 1-4 Family | Commercial | 1-4 Family | Commercial | 1-4 Family | Commercial |
| 1966 | 9.0 | 4.5 | 64.8 | 6.6 | 18.6 | 11.6 |
| 1967 | 8.8 | 4.4 | 63.5 | 6.7 | 17.3 | 11.9 |
| 1968 | 8.7 | 4.6 | 63.2 | 7.1 | 15.8 | 12.2 |
| 1969 | 8.8 | 4.7 | 63.6 | 7.2 | 14.4 | 12.8 |
| 1970 | 8.2 | 4.5 | 61.7 | 7.3 | 13.3 | 12.9 |
| 1971 | 8.3 | 4.6 | 58.6 | 7.8 | 11.4 | 13.2 |
| 1972 | 8.6 | 4.8 | 57.8 | 8.1 | 9.6 | 13.6 |
| 1973 | 8.9 | 5.1 | 58.7 | 8.6 | 8.3 | 14.9 |
| 1974 | 8.9 | 5.2 | 57.7 | 8.6 | 7.4 | 16.2 |
| 1975 | 8.7 | 5.3 | 55.2 | 8.7 | 6.3 | 16.2 |
| 1976 | 9.0 | 5.2 | 54.9 | 8.5 | 5.2 | 15.7 |
| 1977 | 9.8 | 5.3 | 55.6 | 8.1 | 4.3 | 16.0 |
| 1978 | 10.6 | 5.4 | 56.3 | 7.7 | 3.8 | 16.4 |
| 1979 | 11.0 | 5.6 | 57.2 | 7.5 | 3.8 | 16.9 |
| 1980 | 10.8 | 5.4 | 56.2 | 7.2 | 3.9 | 17.4 |
| 1981 | 10.5 | 5.6 | 55.5 | 7.1 | 3.4 | 17.4 |
| 1982 | 10.0 | 5.9 | 48.4 | 7.0 | 3.0 | 16.5 |
| 1983 | 9.6 | 6.4 | 44.3 | 7.5 | 2.4 | 16.4 |
| 1984 | 9.2 | 7.2 | 41.9 | 8.0 | 2.0 | 16.0 |
| 1985 | 9.0 | 7.6 | 40.7 | 8.1 | 1.6 | 16.0 |
| 1986 | 9.1 | 8.5 | 38.2 | 7.8 | 1.4 | 16.5 |
| 1987 | 10.1 | 9.6 | 37.4 | 8.7 | 1.3 | 16.6 |
| 1988 | 10.7 | 10.3 | 39.0 | 7.6 | 1.4 | 16.3 |
| 1989 | 11.5 | 10.5 | 41.7 | 7.9 | 1.1 | 15.6 |
| 1990 | 13.8 | 10.1 | 42.6 | 6.9 | 1.0 | 15.7 |
| 1991 | 14.2 | 9.7 | 43.6 | 6.2 | .8 | 14.6 |

Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Assets and Liabilities*, various issues.

by a very large number of banks, savings and loan institutions and savings banks responded in other ways to this crisis.⁴ A responsible review of this extensive and contentious literature is beyond the scope of this paper.

As shown in Table 1, thrifts briefly reduced their holding of mortgage loans in 1981, after net deposit inflows fell to a trickle. As inflows of deposits (often brokered) and other funds increased in

⁴ Compare Barth (1991); Brumbaugh (1988); Kane (1989); Strunk and Case (1988).

subsequent years, thrifts expanded mortgage lending relatively rapidly until 1989, when a sharp decline began.⁵

Net income was negative in 1981 and 1982 for savings institutions insured by the Federal Savings and Loan Insurance Corporation (FSLIC).⁶ It was positive between 1983 and 1986, and massively negative thereafter. Savings banks insured by the Federal Deposit Insurance Corporation (FDIC) had operating losses in 1980, 1981, 1982, and again recently. The more recent string of losses led to the passage of FIRREA in 1989.

A simple reconstruction of events shows that regulators allowed mortgage lending by the thrift intermediaries to grow, so long as profits were positive. In principle, such a policy could succeed, if profits were sufficiently high to permit net worth to quickly reach a reasonable level relative to liabilities. However, the policy was a pipe dream at best, because net income was much too low.

A more accurate, messy, and comprehensive story is available in the volumes cited in footnote 4 and in many others. A cursory reading of this literature leads to the conclusion that regulators, politicians, and many other individuals misunderstood the severity of the crisis and witlessly believed the rhetoric of the Reagan years, that deregulation and the unleashing of animal instincts would cure all. That, we can all agree now, was irresponsible, as should have been obvious at the time.

Commercial Banks

Commercial banks, like thrifts, are depository institutions. Some of the following discussion would also pertain, with the necessary changes, to a thrift institution with positive net worth. Three explanations are proposed to account for the observed rapidly rising share of mortgage loans in bank portfolios.

Explanation one. Mortgage loans have become less risky for banks to hold because the exposure of loan asset values to interest rate changes can now be controlled much better, using financial innovations such as variable rate mortgage loans, swaps, financial instrument options and futures markets, stripped securities, and the like.

Before 1975, when a bank acquired a new residential mortgage loan, it could expect to hold it for perhaps eight to twelve years. If interest rates rose, it would sustain an unrealized capital loss. If interest rates

⁵ This discussion refers to thrifts, rather than their constituent components, savings and loan associations, savings banks, and the like, because considerable shifting of institutions across intermediary types occurred as the crisis bloomed. Information about thrift deposits and earnings is taken from the 1988 *Savings Institutions Sourcebook*, published by the United States League of Savings Institutions.

⁶ Net income is defined as gross operating income less operating expenses, interest on deposits and borrowed funds, and taxes.

remained at the higher level over the life of a loan, the bank would sustain an opportunity cost loss. Since 1980, through judicious use of any of the above innovations, a bank has been able to reduce or even eliminate such risk exposure. Therefore, other things being equal, a mortgage loan is less risky and more attractive to risk-averse bankers. Because the dating of the innovations is reasonably clear, ratios of real estate loans to total assets between 1960 and 1990 can be interpreted as providing some rough empirical support for this hypothesis. Beginning in 1960, at five-year intervals, real estate loans were successively 11, 13, 13, 13, 17, 18, and 26 percent of total domestic banking system assets.

Explanation two. Changes in the tax deductibility of interest expenses created a niche for mortgage lending, so that borrowers would channel borrowing for all purposes through mortgages and thus substantially increase the demand for mortgage loans from banks and other lenders.

The Tax Reform Act of 1986 drastically reduced the extent to which individuals could deduct interest from income when preparing federal income tax documents. This reform was phased in over five years. Individuals could exploit the fungibility of loans by borrowing with a residential mortgage and using the proceeds for any activity. The incentive to borrow with mortgages rose between 1986 and 1991 as the fraction of other interest that could be deducted fell from 100 percent to zero. The amount of such fungibility is difficult to measure, because it can be effected through first mortgage loans taken out for renovation, refinancing of existing loans, second mortgage loans, and home equity lines of credit. In 1991 about 1.9 percent of banking system assets were reported to be mortgage loans that originated from home equity lines of credit, and about 16 percent of all one- to four-family mortgage loans from banks were in the form of home equity lines of credit (Brunner, Hancock, and McLaughlin 1992, p. 474). The sharp increase in one- to four-family mortgage lending by banks after 1986 (Tables 1 and 3) suggests that tax law changes were quite important. The niche created by the Tax Reform Act of 1986 is not easily exploited by providers of mortgage pools, because loan contracts that arise from home equity lines of credit or that allow flexible restructuring would be difficult to price and market.

Explanation two does not explain the growth in commercial mortgage loans made by banks. Demand for commercial mortgages by individuals should have decreased because of the Tax Reform Act's more restrictive treatment of passive investments.

Explanation three. Changes in the loan markets served by banks made it likely that banks could expect greater profits if they increased the fraction of their loan portfolios in real estate loans.

This argument is difficult to present, because bankers rarely announce what rates of return they realize and no sane investors divulge

information having value that can be appropriated by others. However, the ongoing collapse of savings and loan associations and savings banks surely enhanced the profitability of mortgage lending for commercial banks, in both the short and the long run. The number and strength of rivals have fallen sharply.

Further, as explanation two implies, the demand for conventional consumer loans must have fallen relative to the demand for real estate loans, because interest on consumer loans was becoming less deductible. Growing securitization also led to a decline in the stock of consumer loans on commercial bank balance sheets, although not necessarily to less bank activity in originating consumer credit. By securitizing credit card debt, banks can increase the ratio of their net worth to risk assets and their return on equity. The controversial proposition by Ausubel (1991) that credit card debt is very profitable, thus, does not imply that bank holdings of consumer debt should be large or rising.

Also in the 1980s, as has been forcefully argued by McCauley and Seth (1992), foreign bank commercial and industrial (C&I) loans to nonbanks in the United States have been rising rapidly. They report that a reserve requirement differential gave foreign banks a 25-basis-point advantage until the end of 1990, when the differential was removed. They estimate that between 1983 and 1990 the share of all C&I loans in the United States from foreign banks rose from 18 percent to 41 percent, and that the share had risen further to 45 percent by the end of 1991. McCauley and Seth provided a number of reasons, including low-cost capital and "regulatory arbitrage," for believing that the foreign share will continue to increase.

In addition, commercial paper, a close substitute for some C&I loans, grew very rapidly through 1990. Also, partly because of outbasing in *maquiladoras* enterprises and the adoption of "just-in-time" technologies, inventories in U.S. enterprises have been falling relative to GDP and national wealth. Because of the close relationship between inventory levels and C&I loan changes at U.S. banks, a continuing decline in the demand for C&I loans seems likely.⁷

The strong positive slope of the yield curve at present provides an additional reason for believing that banks will be expanding the fraction of their portfolios placed in mortgage loans. Banks can make either fixed-rate or adjustable-rate mortgages and, as noted above, do swaps to control their gaps.

Banks' net income as a fraction of their average outstanding assets has been trending down since the early 1960s. For all insured banks, this ratio has been much lower in the past five years than it was in the first

⁷ These arguments are developed in Hester (1992).

half of the 1980s. These trends reflect the growing competition that banks have been experiencing in various loan and deposit markets, from rivals both in the United States and abroad. Demand for conventional consumer and C&I loans from U.S. banks is likely to continue to fall. While the competition from mortgage pools has been serious and intensifying, the best and brightest hope for loans in bank portfolios in terms of rate of return may still be in real estate.

Life Insurance Companies

The restructuring of life insurance company activity, from principally providing life insurance to managing pension funds, is likely to have considerably changed how insurance companies view mortgage loans. Life insurance contracts require that payments be funded at the time of the insured's demise. If premiums are sufficient and portfolios adequately immunized against future interest rate fluctuations, a stock chartered company can be expected to allocate excess funds to maximize its surplus.⁸ Managing pension fund portfolios differs in that payouts are spread over time and the number of beneficiaries changes and cannot be fully controlled by a fund manager. Clearly, differences exist among pension funds, and they may also have restrictions on assets that can be held in the different portfolios.

Life insurance company portfolios cannot be decomposed in the Flow of Funds Accounts to reflect their life insurance and pension fund roles. The assets that have grown most in percentage terms in life insurance company portfolios over the past decade are (in descending order) mutual fund shares, money market fund shares, U.S. agency securities, U.S. Treasury securities, miscellaneous assets, open market paper, and corporate and foreign bonds.⁹ It would appear that, for prudential or regulatory reasons, life insurance companies have been shifting into highly liquid and relatively safe assets. This shift away from mortgages and equities appears to be a consequence of the changing structure of life insurance company liabilities. It also reflects shifts in the public's demand for coverage from straight-life to term insurance.

⁸ It is never clear what mutually chartered insurance firms attempt to maximize, but that question is beyond the scope of this paper.

⁹ The percentage changes were calculated from the end of 1979 through the end of 1991, using the Federal Reserve's *Flow of Funds Accounts, Financial Assets and Liabilities*, June 11, 1992. All of the assets reported in the text, except corporate and foreign bonds, had a higher percentage rate of growth than total financial assets of life insurance companies over this period.

Problems in Real Estate Markets and Scenarios for Resolution

The preceding sections have argued that thrift institutions and life insurance companies have been rather passive participants in mortgage markets while commercial banks were actively trying to expand. The explanations offered for the banks' expansion efforts are based on changing technology and market conditions; rates of return in mortgage markets looked relatively more attractive, at least in the short and medium term. The other two intermediaries are represented as guided by structural considerations that were externally imposed.

This section relies on additional information that has become increasingly accessible over the past decade. First, it briefly considers a proposition about the relation of demographic changes to housing prices and their relation to defaults. Second, it reports that commercial real estate markets have been deteriorating for many years. Third, it presents and interprets a chart suggesting a substantial deterioration in the U.S. economy, which should have alerted lenders and regulators that commercial mortgage borrowers would have trouble meeting their obligations. Finally, it suggests a few scenarios for resolving the crisis.

One- to Four-Family Mortgages

It is important to address first a proposition about housing markets that was raised in a paper by Mankiw and Weil (1989) and recently has been discussed by Garner (1992). Briefly, Mankiw and Weil argue that, with the passing of the crest of the baby boom generation beyond the ages when individuals traditionally first buy a house, it is likely that the demand for houses will decline dramatically. They project that this will culminate in a glut of housing and a sharp decline in housing prices. Garner does not question the demographic facts, but does claim that the decline in housing prices is likely to be modest because of an elastic supply of new houses, growing real incomes, and a rising incidence of single-adult households. Space does not allow a full discussion of the arguments, but the financial implications of a collapse in housing prices must be explored.

Would a decline in housing prices imply an increased rate of default and additional losses for lenders? The answer of course depends on the amount of leverage, which is a function of the ratio of the balance on a mortgage loan secured by a property to the market value of the property. In the past decade, the loan-to-price ratio for new loans on primary mortgage markets has varied procyclically between 72 and 81 percent; in April 1992, it was 76.9 percent. Most mortgages have been outstanding for some years, so some principal has been retired. In some

Table 4
Annual Rates of Return and Vacancy Rates on Commercial Properties,
Nationwide

| Year | NCREIF Property Rate of Return Indices ^a | | | Coldwell Banker Vacancy Rate Indices ^b | |
|------|--|--------|---------|--|------------|
| | Annual Rates of Return | | | Downtown Commercial Office | Industrial |
| | Total | Income | Capital | | |
| 1979 | 17.1 | 8.8 | 7.8 | 5.2 | 2.7 |
| 1980 | 22.7 | 8.9 | 13.0 | 3.4 | 3.5 |
| 1981 | 15.2 | 8.3 | 6.5 | 3.8 | 3.8 |
| 1982 | 16.3 | 8.0 | 7.9 | 5.5 | 3.8 |
| 1983 | 8.6 | 8.0 | .6 | 10.8 | 4.8 |
| 1984 | 14.8 | 7.5 | 6.9 | 13.1 | 4.8 |
| 1985 | 11.8 | 7.4 | 4.2 | 15.4 | 4.8 |
| 1986 | 9.7 | 7.5 | 2.0 | 16.5 | 5.3 |
| 1987 | 6.2 | 7.2 | -.9 | 16.3 | 5.9 |
| 1988 | 5.4 | 7.0 | -1.5 | 16.3 | 5.8 |
| 1989 | 6.9 | 7.0 | -.1 | 16.1 | 6.0 |
| 1990 | 5.5 | 6.6 | -1.0 | 16.7 | 6.5 |
| 1991 | .1 | 6.7 | -6.3 | 17.4 | 7.5 |
| 1992 | -5.8 | 7.0 | -12.1 | 18.8 | 8.6 |

^a Source: Reproduced with permission of National Council of Real Estate Investment Fiduciaries. (Copyright 1992 by NCREIF and Frank Russell Company, Tacoma, WA. All rights reserved.) Data are for years ending March 31.

^b Source: CB Commercial Real Estate Group, Inc. The values of the indices are for March in each year.

parts of the country, however, housing prices have fallen faster than loans are being amortized.

While the possibility of a collapse cannot be ruled out, it is my view that leverage has been sufficiently controlled that such an event is very unlikely. Whatever danger exists comes more from a failing U.S. economy than from demographic wiggles. And if a collapse did occur, the outcome would be strongly affected by the actions of mortgage pool managers and their regulators.

Commercial Mortgages

Table 4 provides information about the ex post rate of return from investments in commercial properties and about vacancy rates of commercial and industrial structures. The National Council of Real Estate Investment Fiduciaries (NCREIF) collects data from a group of institutional investors on the rates of return they earn from their properties. The survey began in 1977; its scope and the number of reporting investors have increased over time. The aggregate value of property underlying the series was about \$600 million in 1977 and \$22 billion in

early 1992; properties are located throughout the United States, but this is not a random sample.¹⁰

The three rates of return for commercial property reported in the table are the overall Russell-NCREIF property index (labeled "total") and two components. The "income" rate is calculated by dividing net operating income by the value of the properties. The "capital" rate of return is the percentage change in property market values. As is evident from Table 4, both component rates have been trending down. The capital rate of return has been negative for the past six years and has plunged recently. Capital rates of return in 1991 were uniformly negative across regions and types of properties. Clearly conditions in commercial real estate have been deteriorating for some time.

The last two columns in Table 4 report national vacancy rates for commercial and industrial properties, published quarterly by CB Commercial Real Estate Group, Inc.¹¹ The rates pertain to the first quarter of the year. Both vacancy rate series have positive trends and have roughly tripled between 1979 and 1991. The rise has been remarkably steady over those 13 years, although each rate had a temporary pause around 1988.

Real commercial construction spending peaked at the end of 1985. Between 1986 and 1989 it was roughly constant at \$70 billion (1987 dollars), and then it began to fall steadily. The puzzle is why it remained as high as it did and why commercial banks would increase their commercial mortgage lending in such conditions.

One possible explanation for the anomaly is that information is being lost when vacancies are aggregated from regional to national markets. Banks and contractors may have been lending and building in expanding regions of the country, while vacancies and declining returns were occurring in other regions. If this were happening, vacancy rates in different cities should not be highly positively correlated. This study developed a correlation matrix of commercial vacancy rates for the 15 cities that had been in the Coldwell Banker Series since its inception in 1978. There were 56 quarterly observations for each city. Specifically, the

¹⁰ The Russell-NCREIF Property Index is designed to describe the performance of unleveraged properties that are owned by pension funds and profit-sharing plans. Properties in the index have been operational for at least one year or have 80 percent occupancy and are held in a fiduciary setting where they are periodically revalued. Properties include offices, warehouses, hotels, retail establishments, and apartments.

¹¹ The commercial index refers to properties in downtown areas and is the percentage of vacant square feet in the total square footage of a set of "major competitive multi-tenant office buildings." The national downtown series is reported rather than the suburban or metropolitan series because it is longer. In recent quarters, vacancy rates for suburbs and metropolitan areas are higher than for downtown areas. The industrial index is generated from a survey of industrial properties that could accommodate a tenant requiring at least 100,000 square feet.

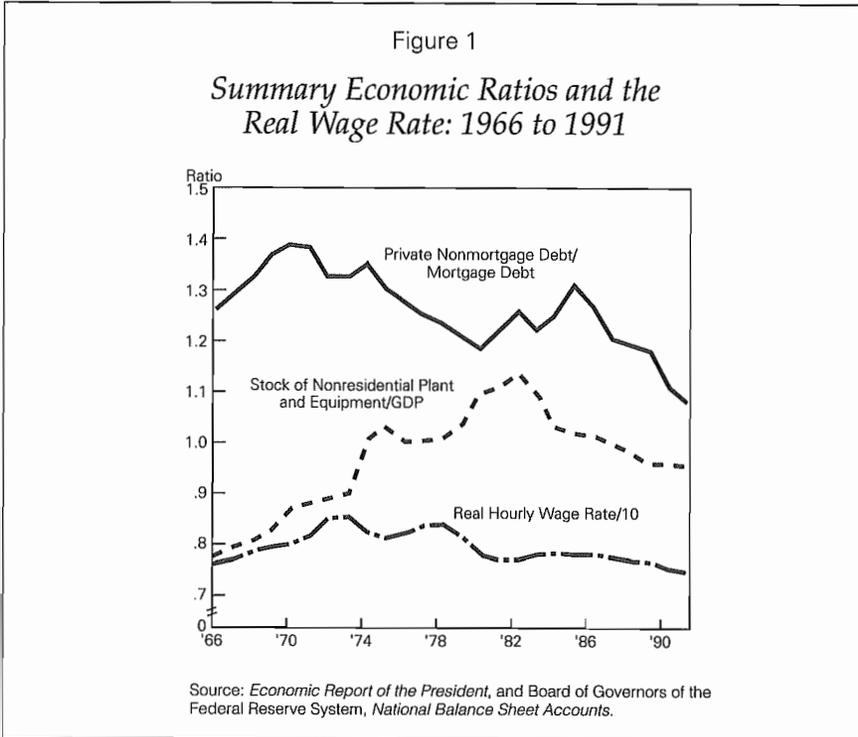
principal components were calculated for this 15×15 matrix in order to determine the extent to which vacancy rates in different cities moved together. The largest principal component accounted for 72 percent of the generalized variance and had positive loadings for all cities. All but four cities had correlations with the largest component that exceeded 0.90.¹² Percentages of the generalized variance that were accounted for by the next four largest components were 14, 7, 3, and 2 percent respectively. This suggests strongly that no serious aggregation problem is confounding the interpretation of movements in the national index of commercial vacancy rates.

Commercial real estate lending by life insurance companies was somewhat responsive to the deteriorating market conditions. The fraction of insurance company portfolios in commercial mortgages declined in the 1980s, but too slowly with the benefit of hindsight. Life insurance commitments for income property loans shot up from \$5 billion to \$21 billion between 1982 and 1985, and then remained roughly unchanged through 1989, the latest date for which information is available.¹³ The loan-to-value ratio for commercial loans fell in 1982 from 73 to 70 percent, and stayed at the lower value until 1989, so life insurance companies appeared to be a little better secured by property values in the 1980s than they were in the 1970s. Nevertheless, there can be little doubt that the profitability of life insurance companies has been declining over the past decade, in part because of losses on real estate.

The puzzle remains about why banks were increasing their commercial real estate lending. One possible explanation is that banks were looking at different information from that presented in Table 4. For example, since the fourth quarter of 1985 the National Real Estate Index has published semiannual information on price per square foot, rent per square foot, and a capitalization rate for commercial buildings, including offices, warehouses, retail buildings, and apartments. These national indexes were relatively unchanging between 1985 and 1990. Alternatively, perhaps real estate lending was simply the most promising activity for banks in a generally dour national economy.

¹² The cities are Atlanta, Chicago, Dallas, Denver, Houston, Kansas City, Los Angeles, Miami, Minneapolis, Phoenix, Sacramento, San Diego, San Francisco, Seattle, and Washington. Those that had correlations of less than 0.9 with the largest component were Atlanta, Kansas City, Sacramento, and San Diego.

¹³ The survey, conducted by the American Council of Life Insurance, is of 21 life insurance companies that control 61 percent of industry assets. The source here is the Federal Reserve Board's *Annual Statistical Digest*, various issues.



Trends in the National Economy

The U.S. economy has been performing poorly in the last decade in several dimensions. When an economy unexpectedly underperforms, perhaps it should be no surprise that real estate markets and their long-term financiers suffer. Space does not allow a thorough analysis of this unfortunate experience, but several indicators are suggestive. The poor performance of the economy can be attributed to five widely recognized phenomena: large federal government deficits, the federalizing of mortgage markets through sponsored pools, a low saving rate, a global decline in the rate of technical progress, and rapid growth in the fraction of the labor force that is inexperienced.

Figure 1 is an attempt to summarize their combined effects in three indicators, the ratio of nonmortgage debt to mortgage debt in the Flow of Funds Accounts, the ratio of the stock of nonresidential plant and equipment to gross domestic product (GDP), and the real hourly wage rate. The ratio of aggregate private nonmortgage debt to mortgage debt has trended down; it had a peak value of 1.398 in 1970, a local peak of 1.314 in 1985, and its three lowest values in the years 1989 to 1991. One

interpretation is that federal mortgage pools and government deficits were crowding out business borrowing. The ratio's decline in the late 1980s is particularly remarkable because it coincides with the leveraged-buyout mania. Crowding out is also indicated by the high real short-term interest rates throughout the 1980s, relative to other years since World War II.¹⁴ The high real rates also reflect restrictive monetary policy, the low saving rate, and an associated population bulge in the age bracket where individuals begin to work and form families, as might be predicted by a simple life-cycle model. Crowding out should reduce the rate of commercial and industrial capital formation, if the demand for such capital is relatively more interest elastic.

The ratio of the stock of nonresidential plant and equipment (at current cost) to nominal GDP rose steadily from 1966 to 1975. After a one-year hiatus, the ratio continued to rise until 1982.¹⁵ Since 1982 the ratio has declined monotonically. The rate of producer capital formation increased when short-term real interest rates were low or negative and fell when they were high. The fact that the onset of the decline in the ratio coincides with the onset of large federal deficits suggests that private nonresidential capital formation is being crowded out by large federal deficits. A declining domestic capital-output ratio in the context of very low technical progress suggests that individual borrowers' capacity to service and repay mortgage loans is decreasing. If the decline was unanticipated, commercial and household mortgage loans should experience more defaults and more building space will be vacant.

The hourly wage rate in 1982 dollars had a global peak in 1973 of \$8.55 and experienced a local peak in 1978 of \$8.40. It was essentially constant between 1980 and 1988. In the past three years it has fallen sharply and is currently below its level in 1966. With a declining capital-output ratio, a rising rate of participation by adults in the labor market, and slow technical progress, a downtrend in wage rates is hardly surprising. Since the decline in real wages was unanticipated, it might be postulated that borrowers would have increasing difficulty servicing and repaying mortgages, especially home mortgages. Two reasons why this difficulty has not become more evident are that the incidence of homeownership by families has been decreasing since about 1981 (Gabriel 1987, p. 895) and that the participation rate of adults in the labor market has been rising.

The conclusion to be drawn from this gloomy recitation is that serious macroeconomic problems have adversely affected markets that

¹⁴ The interest rate referred to is the quarterly federal funds rate minus the percentage change in the GDP deflator, measured as an arc elasticity.

¹⁵ In 1970-71, in 1974-75, in 1980-82, and presumably in 1990-92, this ratio was positively distorted, because in recessions income falls faster than the book values of physical assets.

provide capital services. Some of these problems have been long-standing, but their cumulative effects may not have been fully appreciated by lenders in mortgage markets.

Alternative Scenarios for Resolution

High vacancy rates in commercial and industrial structures, the declining rate of return on income properties, and the worsening macroeconomic situation must be addressed if the condition of mortgage lenders is to improve. Quite apart from the macroeconomic situation, recent Federal Reserve Board staff studies by Passmore (1991) and by McAllister and McManus (1992) indicate, respectively, that 1) mortgage lending by "efficient" savings and loan associations and 2) aggressive overall lending by banks are not very profitable. The good name and growing market share of government-sponsored mortgage pools argue that putting more one- to four-family mortgage loans on the balance sheets of private intermediaries is a dubious strategy. With a glut of commercial property, all lenders will be forced into painful givebacks when restructuring deals with mortgagees who fail to make payments. The net rate of return from real estate lending in the coming years cannot be large.

With the benefit of hindsight, it is easy to see that a serious misallocation of resources occurred when contractors overbuilt offices and factories. This is a deadweight loss that is and will be borne by the economy, and its sharing will be contentious. It is the same sort of loss that accompanied the savings and loan debacle, although it now appears to be an order of magnitude smaller. Much of the loss in efficiency has already occurred; its subsequent redistribution is what the various scenarios at least partly determine.

First, the basic, "non-bailout" scenario is to allow excess capacity, however misplaced, to be absorbed by a slowly growing economy. Owners of banks, insurance companies, and other lenders who are inadequately collateralized have already absorbed a large hit, and more hits will surely follow. Owners of the properties have paid a price for their wrong decisions. Individuals who made commitments based on false signals emitted by the new structures have been penalized. Government revenues share the losses in proportion to the declines in corporate or personal income multiplied by the appropriate marginal tax rates, with obvious implications for public finance.

Second, in the unlikely event that banks and other lenders are unable to absorb the losses, a bailout might occur that would broaden the base of losers to the population of taxpayers. The cost could be staggering, if the soundness of mortgage pools were threatened.

Third, a tax of a different form might be incurred if lenders manage to shift mortgages on vacant properties to the pension funds and other

trusts that they manage. This is a distinct possibility in thin markets where prices are determined through negotiation, and unavoidable for life insurance companies that already manage pension funds. It essentially would be a replay of the real estate investment trust (REIT) fiasco of the early 1970s. The loss would be absorbed through lower revenues received by beneficiaries for many years into the future.

Fourth, a dose of unanticipated inflation tends to annihilate nominal debts and would, of course, lighten the burden of all debtors. However, the steeply sloped yield curve, in the context of excess physical capacity, strongly suggests that many investors anticipate inflation. Inflation has unfortunate time-consistency implications in capital markets. The loss would be borne not only by holders of debt, but by future potential borrowers. The incidence of the loss is not easy to predict in a world of derivative securities and variable rate loans.

Finally, a restructuring of financial markets in response to bad portfolio management in real estate markets has already resulted in large, fortuitous gains and losses, based on agility and informational advantages. The ongoing reduction in the number of financial institutions may improve the profitability of the survivors, and it will continue to have effects on employment in intermediaries and on quasi-rents in myriad markets. Efficiency gains may result from this restructuring as well.

Elements from all these scenarios will be present in the final resolution.

Conclusion

Thrift institutions, commercial banks, and life insurance companies continue to hold large amounts of commercial mortgages. While it is too early for a full accounting, all providers of commercial mortgages almost surely are absorbing large losses because of the high national vacancy rates and the recent negative rates of return on real estate.

Thrifts and banks continue to hold large amounts of one- to four-family mortgage loans. Banks have been rapidly expanding their holdings, and both banks and life insurance companies have also been greatly expanding their holdings of agency securities, which are to a large but unknown extent backed by one- to four-family mortgages as well.

While the *ex ante* basis for decisions to invest in mortgage loans cannot be known, this paper has proposed separate interpretations for each intermediary. Thrifts made a desperate attempt to grow out of their dire condition in 1980, which itself was a result of mismanagement and ill-advised regulatory policies dating from the 1960s. Using brokered deposits and other funds, thrifts rapidly increased their holdings of both

one- to four-family and commercial mortgage loans. The attempt had little chance of success, but because of deregulation and staff cuts in regulatory agencies it was allowed to continue until 1989, with disastrous consequences.

Three explanations for commercial bank mortgage market activity have been proposed: 1) financial innovations have allowed banks to reconfigure mortgages to control gaps; 2) a niche was created by the 1986 Tax Reform Act, which banks were well positioned to exploit; and 3) changes in the market power of rivals drove banks into mortgages. Banks face very stiff competition from government-sponsored mortgage pools, but have an advantage in the tax avoidance business because of the flexibility of home equity lines of credit and their other mortgage loan instruments. It is not terribly edifying to rationalize banks' success in terms of their ability to reduce federal revenues, but that is where their advantage lies.

Banks' plunge into commercial mortgage lending has no such convenient justification. It seems to be another in a long series of miscalculations by large banks, in the tradition of the REIT mess and Third World and leveraged-buyout bridge loans. Of course, banks have had some big successes too, and it is through bearing risk that intermediaries serve the public. If they had more capacity to bear risk, we probably would not be having this conference. The 30-year slow erosion in the industry's ratio of net income to assets and the condition of the FDIC and the Bank Insurance Fund indicate that some major reconstructive surgery is needed.

The ongoing transformation of life insurance companies from insurance to pension providers makes them very difficult to model. A similar transformation is occurring within providers of other types of insurance. We need a much deeper understanding of all the new contracts being written, before we can evaluate performances. In my view we badly need a major national study of the provision of accident, health, and life insurance and pension services by both the public and private sectors.

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Discussion

*James R. Barth**

Real estate lending has been disastrous for thousands of financial institutions during the past decade. Savings and loans, savings banks, commercial banks, and life insurance companies, in particular, have suffered from the changing nature of real estate markets and from collapsing real estate values. Donald Hester documents many of these developments and provides some explanations for them. Since the scope of his paper is quite broad, these comments will focus on areas meriting additional emphasis.

More Competition and Declining Profits for Depositories

Major and ongoing changes have occurred in the shares of financial assets held by financial service firms in the United States. In particular, the share of assets held by all depository institutions has declined, from 65 percent in 1950 to 39 percent in March 1992. U.S.-chartered commercial banks have seen their share fall by 30 percentage points, to 21 percent. Of all the nondepository financial service firms, only the life insurance companies' share has declined since 1950, falling by 9 percentage points over the entire period to 12 percent.

Among the financial service firms that have experienced expanding market shares, money market mutual funds and issuers of securitized credit obligations did not even exist in 1970, yet now account for

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significant shares of financial assets. Mutual funds alone account for a larger share of financial assets today than savings and loans, savings banks, and credit unions combined. Substantial growth in share has also occurred among pension and retirement funds, nonlife insurance companies, and security brokers and dealers.

At the same time that competition among new and old firms to provide intermediation services has been intensifying, the growth in the commercial paper market and the expanding securitization process have left all depositories with fewer lower-risk customers and with depressed returns on many of their traditional products. These developments reflect improved informational technologies, a more volatile financial environment, and limitations on the geographic location of depositories, their ownership, and their allowed products. Not surprisingly, profits have eroded while risks have increased, as depositories have struggled to meet the competition. The struggle has been exacerbated by the ever higher insurance premiums depositories must pay, and by the destructive pricing practices of weak and even insolvent depositories that were able to grow imprudently using subsidized federally insured deposits and under inadequate regulatory supervision.

On average, access to federally insured deposits no longer provides depositories with a sufficiently low-cost source of funds to acquire assets producing the same overall risk-return combinations as in earlier years. For savings and loans, the average rate of return on assets has steadily declined throughout the post-World War II period, reaching a negative 30 basis points in the period from 1980 through 1991. Moreover, the differential between the rate of return on equity and the rate on longer-term U.S. Treasury securities has declined in every decade. At the same time, the standard deviations of both the return on assets and the return on equity of depositories have tended to increase over this 40-year period.

For commercial banks, the return on assets has fallen from 80 basis points in the 1970s to 62 basis points in the period from 1980 through 1991. The differential of the return on equity over the rate on longer-term U.S. Treasury securities has declined in each of the past four decades, turning negative in the most recent period. The standard deviations of both the return on assets and the return on equity have increased markedly in the 1980 through 1991 period, while the ratio of net charge-offs to assets has increased steadily throughout the entire post-World War II period.

The reported improvement in financial performance for depositories in the first half of this year largely reflects an extremely steep yield curve and the gains on sales of assets, and the longer-term deterioration indicates that the more fundamental problem still remains. I agree with Donald Hester's statement that "some major reconstructive surgery is needed."

Depositories' Unpleasant Expansion into Real Estate Markets

A major shift has occurred in the commitment to real estate lending among the different depositories. In particular, the share of home mortgage loans (for one- to four-family homes) accounted for by savings and loans declined dramatically, from 43 percent in 1980 to only 15 percent in March 1992. Over the same period the share accounted for by commercial banks was relatively stable at 17 percent. Savings banks' share declined by nearly 4 percentage points, while credit unions' share increased by 1 percentage point; government-sponsored enterprises now hold the same share as these two types of depositories combined—5 percent. At the same time, the share accounted for by mortgage pools increased from 11 percent to 39 percent.

The securitization of home mortgages represents a fundamental change in the economics of home finance. The process has created a much more liquid market for these mortgages and hence has allowed for a much wider ownership. The net result is that the home mortgage market has been integrated into the capital market, with correspondingly lower mortgage rates. The increasing securitization of other types of assets should produce similar results, with further mixed blessings for depositories.

Commercial banks have increased their share of mortgages on multifamily properties from 9 percent in 1980 to 12 percent in March 1992. The share accounted for by the shrinking savings and loan industry declined from 27 percent to 19 percent, while the savings banks' share declined from 11 percent to 5 percent. Credit unions are not active in this market. The share accounted for by mortgage pools increased from 4 percent to 10 percent over the same period, with government-sponsored enterprises accounting for a relatively stable 5 percent.

As regards commercial mortgages, commercial banks have increased their share throughout the post-World War II period. In 1950 the share was 18 percent; it had increased to nearly 47 percent by March 1992. Savings and loans increased their share from 18 percent in 1980 to 20 percent in 1985, but it then declined to 8 percent by March 1992. The share accounted for by savings banks has declined steadily throughout the period, reaching 3 percent in March 1992. The share for life insurance companies has remained relatively stable at about 30 percent.

Effect on Depositories' Portfolios

These changes in overall real estate lending by depositories have meant corresponding changes in the importance of real estate mortgage

lending within their portfolios. In particular, the percentage of savings and loan assets devoted to home mortgage loans decreased from 67 percent in 1980 to a low of 41 percent in 1989, and this decline was not offset fully by increases in mortgage-backed securities. Since then, a 6-percentage-point gain in home mortgages has occurred, as many of the more nontraditional institutions have failed and been turned over to the Resolution Trust Corporation (RTC). Overall, savings and loans held 77 percent of their assets in home mortgages and mortgage-backed securities in 1980; this figure declined to 68 percent in March 1992 and can be expected to decline still further with the recent loosening of the Qualifying Thrift Lender test.

Commercial real estate mortgages rose from 6 percent of total savings and loan assets in 1980 to 9 percent in 1985. The percentage commitment remained high but tapered off slightly in 1986 and 1987, then returned in 1992 to slightly below the level that had prevailed 10 years earlier. Construction and land development loans rose more significantly, from 0.9 percent of total savings and loan assets in 1980 to a high of 6 percent by 1987. By the beginning of 1990 the percentage had dropped to 5 percent and then fell sharply, reaching 0.7 percent by early 1992. Multifamily mortgages remained a relatively steady percentage of savings and loan assets throughout the period, with a slight increase in the middle of the decade and again in 1991 and early 1992.

Reasons for the Shifts in Lending

The pattern of commercial real estate mortgage lending and construction and land loans for savings and loans during the 1980s is roughly consistent with changes in the laws and regulations. Following the devastating interest-rate spread problems of the late 1970s and early 1980s, savings and loans responded to federal and state legislation permitting lending and investment in commercial real estate. The savings and loan institutions also responded to the increasing demand for commercial real estate loans stimulated by federal tax changes in 1981 that encouraged investment in real estate. Greater involvement in commercial real estate was viewed by many institutions as a way to overcome the difficulties that had been created by funding fixed-rate home mortgages with variable-rate liabilities, a situation brought about in large part because savings and loans were not given authority to offer adjustable-rate mortgages or to engage in futures transactions until after the industry was economically insolvent.

By 1986 federal regulators began increasing capital requirements, limiting direct investment in real estate (which in some cases had taken the form of commercial real estate loans), and expressing concerns about savings and loans' commercial real estate loan activities. Also, federal

tax law changes in 1986 reversed much of the stimulus for real estate investment provided in the 1981 law. The subsequent decline in savings and loans' lending for commercial real estate and construction and land reflects these regulatory and legislative changes as well as the considerable excess supply of commercial real estate.

In contrast to the savings and loans, commercial banks increased their commitment to real estate in all forms throughout the 1980s and generally even into early 1992. In addition to increased home mortgage lending, including home equity loans, the commercial banks' commercial mortgage lending grew from 3 percent of total assets in 1980 to slightly more than 7 percent in March 1992, with each percentage point of increase now being applied to an asset base of \$3.4 trillion. Construction and land loans rose from 2 percent to a high of 4 percent in 1989, falling thereafter to nearly 3 percent by early 1992. Multifamily mortgages remained a relatively small though increasing percentage of commercial bank assets throughout the period.

The massive shift of commercial bank assets in the 1980s into real estate loans went largely unnoticed until late in the decade, in comparison to the attention paid to savings and loans. Even late in the decade, as Donald Hester notes, the industrywide shift toward real estate by commercial banks continued, running counter to the negative effects on real estate values of the 1986 tax law changes and the increasing vacancy rates in most parts of the nation. Commercial banks also lengthened the maturity of their commercial real estate loans during the 1980s. Construction loans were extended into "miniperms" and some loans were made without a commitment for permanent financing. Regulatory inducements for such behavior were provided by the Garn-St Germain Depository Institutions Act of 1982, which deleted the rigid statutory limitations on the real estate lending authority of national banks in the hope of encouraging more creative and flexible financing. Life insurance companies experiencing real estate problems in recent years have had difficulty providing the permanent financing for the maturing construction loans and miniperms at commercial banks. Only as late as 1990 and 1991 did the decline in the construction and land loan percentages and the slowing growth in home mortgages indicate a tapering off in the overall real estate loan growth at commercial banks.

The share of savings banks' assets allocated to real estate lending fell from 59 percent to 52 percent between 1980 and 1983, and then rose to 60 percent by the end of the decade. In March 1992, about one-third of the \$236 billion total in savings bank assets was in commercial, multifamily, and construction and development mortgage loans. In addition to the credit unions' substantial and increasing commitment of nearly \$230 billion in assets to home mortgages, their other real estate loans rose from 5 percent of assets in 1986 to 9 percent in 1991.

The Current Situation at Depositories

Many depositories now have substantial troubled (noncurrent and foreclosed) real estate loans in their portfolios, whose weak condition has been a drag on industrywide averages for several years, to the dismay of the healthier institutions. In March 1992 commercial banks had \$68 billion, savings and loans \$36 billion, and savings banks \$13 billion in troubled real estate holdings; and in April 1992 the Resolution Trust Corporation had \$96 billion in receivership assets under its management, of which \$12 billion was in real estate owned and \$7 billion in noncurrent loan construction and land loans. The highest noncurrent rates at depositories occur in construction and land loans, multifamily mortgage loans, and commercial mortgage loans.

Weakened real estate markets, risk-based capital requirements, closer scrutiny of real estate loans by regulatory examiners, and now the proposed limits on loan-to-appraised-value ratios (not to mention overall sluggish economic growth) are inducing many depositories to restructure their asset portfolios. In particular, the risk-based guidelines require savings and loans and banks to hold twice the capital per dollar for commercial real estate loans that is required for qualifying single-family mortgage loans, and five times the capital per dollar for commercial real estate loans, relative to most mortgage-backed securities.

In the first quarter of 1992, the average spread between short-term and long-term yields on Treasury securities was 390 basis points (up from 218 basis points a year earlier) and the average spread between 30-year fixed-rate mortgages and 30-year Treasury bonds was 75 basis points (down from 139 basis points a year earlier). With 911 problem commercial banks holding \$463 billion in assets, commercial banks understandably increased their holdings of U.S. government obligations (non-mortgage) by \$57 billion and their collateralized mortgage obligations by \$37 billion, compared to the first quarter of 1991. At the same time, all real estate lending increased by \$16 billion and commercial and industrial loans fell by \$54 billion. Such portfolio changes are interpreted by many as having created a credit crunch, thereby retarding economic growth.

Where Do We Go from Here?

Most disturbing about the events of the recent financial past is the fact that 4,350 federally insured depository institutions failed from 1980 through 1991, with combined assets totaling more than \$580 billion and collective costs to resolve the failures exceeding \$150 billion. Some argue that the policies of the Federal Reserve to combat inflation in the late 1970s helped destroy the savings and loans, and that the Fed's more

recent policies to stimulate the economy helped the banks. Others argue that depository institutions gambled with federally insured deposits—the moral hazard problem. Still others argue that managers of depository institutions pursued their own interests, which included an emphasis on sheer size, even when profits suffered—the agency problem. Add fraud and mismanagement, exogenous financial innovations, tax and regulatory factors, regional and macroeconomic shocks, and greater domestic and international competition, and one has relatively little difficulty explaining what happened to depository institutions and their involvement in real estate during the past decade. But weighing the relative contribution of each factor is extremely difficult, as Hester indicates.

Despite all the difficulties and challenges confronting depository institutions, even they do not agree as to where we go from here. At year end 1991, the 87 percent of all savings and loans that were under \$500 million in size held 25 percent of total industry assets; the 95 percent of banks that were of similar size also held 25 percent of their industry's total assets. These institutions disagree over what the legally permissible banking and branching choices across state borders should be. Moreover, not only do depository institutions differ among themselves but they also differ with securities and insurance firms as to whether depositories should be permitted to offer products and services in these areas, even as inroads are increasingly being made through limited authority granted by states and the Federal Reserve. Interestingly enough, depositories in several other countries have already been granted such broader authority.

Meanwhile, telecommunications and computers continue to slash information and transaction costs. As these developments occur, one must question the tradition of viewing and therefore regulating depositories as separate and distinct financial service firms, serving narrowly circumscribed geographical areas and owned by a limited class of entities. Indeed, it is time to let healthy depositories, with the demonstrated ability to measure, manage, and price risk, compete more fully rather than continually subjecting them to the enforceable guesses of regulators as to which specific menu of products and services adequately protects taxpayers in an ever-changing global marketplace. At the same time, it is incumbent upon regulators to remove unhealthy institutions promptly and cost-effectively from an already overcrowded financial services industry. This requires careful monitoring, since the interest rate risks and credit risks for depositories are asymmetric and nonlinear, insofar as good earnings on assets typically range from 70 to 100 basis points, while losses on assets have recently averaged from 10 to 45 percent.

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Discussion

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Donald Hester has presented an incisive paper on the impact of the recent real estate collapse on financial intermediaries. He first discusses the reasons why major lenders moved so far into the mortgage markets during the 1980s. His analysis summarizes the history of the mortgage markets that led up to the most recent decade; the reasons for the involvement of the three principal private sector intermediaries—commercial banks, savings and loans (and savings banks), and life insurance companies—in the mortgage markets; and the warning signs that became evident during the 1980s. Finally, he offers solutions to the problems the intermediaries now confront. Overall, I agree with most of Hester's observations, analyses, and conclusions regarding the mortgage market and its participants. These comments will briefly summarize some key sections of his presentation, in particular the areas where I disagree with him and the areas that I believe were underemphasized.

Expanded Real Estate Lending

The essence of Hester's paper, and the reason we are gathered here today, lies within his section titled *Explanations for Changing Mortgage Lending by Intermediaries*. Here he hypothesizes as to why each type of intermediary entered the real estate mortgage market. I will focus most of my attention on the commercial banks, but will first discuss briefly the thrifts and the life insurance companies.

Hester argues that, as a result of the interest rate problems the thrift

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industry experienced in the early 1980s, many thrifts expanded aggressively into the real estate mortgage markets; I agree with this entirely. The expansion into the mortgage markets led eventually to significant losses for the industry and subsequent failures of hundreds of thrifts. Excluding failures attributed to fraud, embezzlement, and the like, it is important to note that many of the thrift failures reported in the 1980s were the direct result of aggressive growth in commercial real estate lending, particularly in the construction and development markets. Residential mortgage lending was not a significant factor in causing thrift failures, in my opinion. I should also point out that the thrift failures I refer to are those in New England.

An example to support this statement is the failure of the Maine Savings Bank. This bank was a traditional thrift, established in 1859 as the Portland Five Cents Savings Bank. It survived the Civil War, World War I, the Great Depression, and World War II, but was unable to survive the real estate boom-to-bust cycle of the 1980s. The bank failed on February 1, 1991. Its demise began in the mid 1980s as it aggressively expanded its commercial real estate lending, particularly in construction and development. From 1984 to 1988 (the peak in the company's loan portfolio), commercial mortgages grew from \$151.1 million or 13.7 percent of total assets to \$714.8 million or 27.9 percent of total assets. Construction loans expanded from \$54.9 million or 5.0 percent of total assets to \$450.9 million or 17.6 percent. Residential mortgages grew from \$351.3 million or 32 percent of total assets to \$671.1 million, but as a percentage of assets they declined to 26 percent. In 1984 commercial real estate and construction loans represented 150 percent and 54.5 percent, respectively, of shareholders' equity. In 1988 they represented 715 percent and 297 percent of shareholders' equity. By year end 1990, the company charged off close to \$175.0 million in its commercial real estate portfolio; this eliminated the company's net worth.¹

The implication of Hester's hypothesis is that all real estate lending led to the thrift crisis. I would suggest that the primary problem leading to the failure of hundreds of thrifts and banks in the 1980s was aggressive commercial real estate lending, not residential lending.

I accept Hester's hypothesis regarding the life insurance industry's change in the asset side of its balance sheet. The industry moved into more liquid assets because of the changing nature of its liabilities. I would add the following: the increased competition from the thrifts and commercial banks for commercial mortgages may also have influenced the life insurance companies' ability to attract mortgage loans. As the competition intensified, life insurance companies were unable or unwill-

¹ These financial data are taken from the company's annual reports, 1985 to 1990.

ing to compete on the terms the market was dictating and were forced to invest in other, more liquid securities.

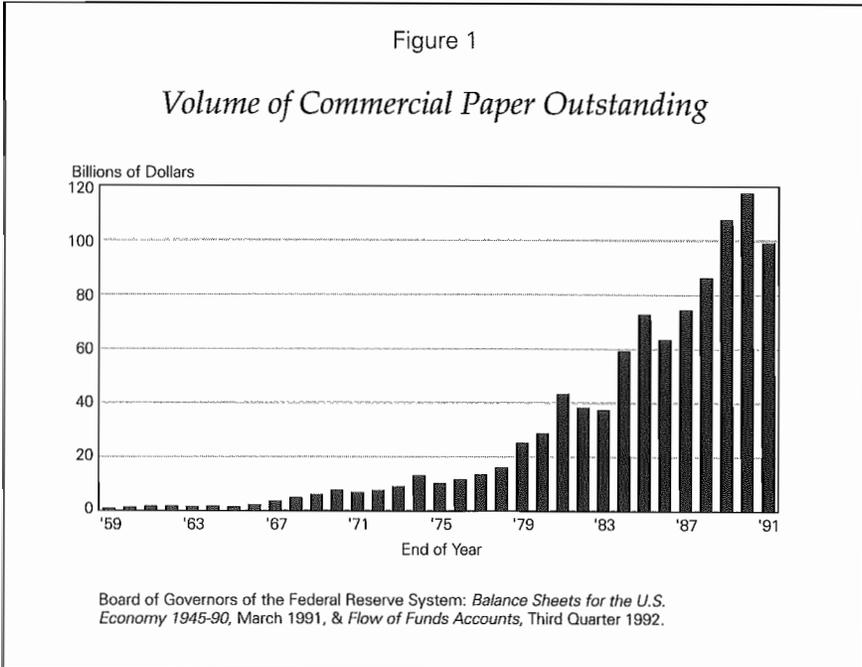
Hester offers three explanations for the aggressive increase in mortgages outstanding for the commercial banking industry. First, the capital markets have provided numerous financial derivatives such as interest rate swaps, options, and futures that banks can utilize to immunize themselves against interest rate risk. Additionally, the advent of the adjustable rate mortgage has given banks increased flexibility to hold loans in their portfolios rather than sell them in the secondary market. As a result of these changes and options, banks have been more willing to retain mortgages, which has led to the greater exposure to the real estate mortgage market.

Second, changes in the tax-deductibility of interest expense have encouraged borrowers to use mortgage financing (home equity loans) for multiple purposes. This has led to an increased demand for mortgage loans.

Third, changes in the loan markets that banks serve have made it likely that banks would have greater expected profits if they increased the percentage of their loan portfolios in real estate loans. As Hester points out, however, this argument is difficult to support because bankers rarely announce the rates of return they realize. I would suggest that the average yields on a selected group of assets, say, commercial mortgages, could be used as a method of measuring potential rate of return. Hester also argues that increased competition from foreign banks conducting business in the United States, and the growing commercial paper market, have taken away banks' lucrative commercial and industrial loan business. It is this area I will expand upon.

Nonbank Competitors of Banks

The banking industry has seen a significant increase in competition from nonbank competitors over the past 30 years. The nonbank competition has an advantage over the banking industry in two areas, cost and revenue opportunities. Nonbank competitors do not have to deal with the higher costs associated with the banking business, empirical or anecdotal. Empirically, deposit insurance premiums have steadily increased over the past two and one-half years from \$0.12 per \$100 in deposits to \$0.254 per \$100 in deposits, effective January 1993. Banks also are required to keep upwards of 10 percent of their net transaction accounts on reserve at the Federal Reserve in non-interest-bearing accounts. Finally, the Community Reinvestment Act forces banks to accept loans from borrowers that may not meet the banks' underwriting standards and may have a higher degree of potential for loss. Nonbank competitors are not restricted by any regulatory agency that determines



which businesses are acceptable. Even more important, nonbank companies are expanding aggressively into lucrative banking products such as credit cards.

Perhaps the most important financial event of the past 30 years has been the development of the commercial paper market (Figure 1). I believe the development of this market has been the primary reason for bank expansion into riskier loan areas. With the development of this market, the banking industry's primary customers—Fortune 500 companies—have been able to bypass the banking industry for their primary borrowing needs. Expansion into the commercial real estate market was needed to offset the loss of this commercial and industrial loan business.

I believe that encroachment on the banks' most profitable businesses by nonbank competitors will continue to affect banks adversely. Merrill Lynch is a good example of a nonbank competitor that operates in many traditional bank markets. Today, Merrill Lynch offers money market savings accounts that include a credit card and check writing privileges. The company also originates small business loans and home mortgages. Ranked by its money market deposits, which are estimated to be over \$60 billion, Merrill Lynch would be the fourth largest bank in the United States. Thus, nonbank competition and the development of the commercial paper markets are two primary reasons why banks have been forced to increase their exposure to commercial real estate markets.

Other Economic Factors

In his section titled *Problems in Real Estate Markets and Scenarios for Resolution*, Hester mentioned that problems in the residential and commercial real estate markets were evident throughout the 1980s, which should have alerted lenders and regulators that borrowers of commercial mortgages would have trouble meeting their obligations. I concur with many of the hypotheses presented; however, regional economic cycles also have to be considered when interpreting the growth of commercial real estate mortgages. Second, many of the financial intermediaries did not have adequate systems in place to monitor their loan portfolios. Finally, the use of interest reserves in commercial real estate lending disguised the true performance of commercial mortgage portfolios.

Hester discusses the impact that demographic shifts and falling home prices will have on residential real estate delinquencies. He cites Mankiw and Weil (1989) and Garner (1992), who hypothesize that these trends are likely to deteriorate in the future and should lead to lower residential real estate prices. Hester believes that a significant rise in home mortgage delinquencies is not likely to occur as long as the residential property is not over-leveraged. I agree, but would also add that as long as the homeowner is employed, the probability of default is low. Lower home prices would prevent the homeowner from trading up to a larger, more expensive house (assuming the current value of the home is below the amount the owner paid) rather than cause massive numbers of defaults on home mortgages.

Hester presents data supplied by the National Council of Real Estate Investment Fiduciaries (NCREIF) that measure the return on commercial real estate from 1979 to 1992. The capital rate of return has been negative from 1987 through 1992. The income rate of return has been positive every year in the time period covered. He also presents the national downtown vacancy rates, as compiled by CB Commercial Real Estate Group, Inc. from 1979 to 1992. The deterioration in vacancy rates has been dramatic, rising from 3.4 percent in March 1980 to 18.8 percent in March 1992. These two indices suggest that aggressive lending into the commercial real estate markets was misguided.

Why did the banking industry expand so aggressively into the commercial real estate markets? First, as indicated earlier, the rapid growth of the commercial paper market forced the banking industry to look for new areas of lending. Second, a generation of bankers grew up with the misperception that commercial real estate prices rarely decline. The REIT crisis in the early 1970s suggested otherwise, but most commercial loan officers either were in high school at the time or had short memories. Lending against commercial real estate was considered less risky than unsecured commercial and industrial lending because the

lender had collateral supporting the loan. Third, the high inflation rates of the late 1970s and early 1980s added tonic to the rising values of commercial real estate.

Fourth, regional economic growth encouraged increased commercial real estate lending. Two vivid examples were Texas and New England. In my discussions with bankers in both regions during the periods of rapid economic growth, bankers held the attitude that their regions were recession-proof. In Texas, the common refrain was "The economy is recession-proof because of the oil industry." In New England five years later, the refrain was "New England is not another Texas because the economy is more diversified than the Texas economy." Obviously both of these statements proved to be untrue.

Fifth, underwriting standards were eased to boost bank competi-



"Well, it sure looks like Texas, and yet..."

tiveness. Sixth, the banking industry was not equipped to handle the rapid growth in loan portfolios. The banks were unable to maintain adequate control over the loan review process, and in some cases a bank had no independent loan review function. Finally, the creation of interest reserves disguised the true performance of the commercial loan portfolio. Interest reserves typically were established at the time the commercial real estate loan was originated, to carry the developer through construction and into the first two years of lease-up. Although the loan was current the building may not have been generating cash flow adequate to cover debt service. In such cases, the cash flow shortfall was offset by the interest reserve. Furthermore, developers would divert cash flow from other properties to keep the loan current.

Conclusion

In offering solutions to problems in the commercial real estate market, Hester suggests that excess capacity will be absorbed over time by an expanding economy. In the event the financial system cannot sustain the losses created by real estate problems, a taxpayer bailout may be required. The transfer of ownership to large pension funds and other trusts would assist in the recovery. However, large losses would be incurred by the lending institution that had the original loan. Finally, a restructuring of the financial markets, together with an ongoing reduction in the number of financial institutions, may improve the profitability of the survivors.

I agree with the author's solutions, painful though they are. In fact, I agree with nearly all of his work, but I would place greater emphasis on the impact that deregulation of the capital markets had on the banking industry. I believe that the deregulation of the capital markets was the primary catalyst in forcing commercial banks to expand rapidly into commercial real estate lending.