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# CYCLICAL CAPITAL FLOWS AND THE CYCLES OF LOSSES IN COMMERCIAL REAL ESTATE

During periods of "excess capital," lenders turn to commercial real estate, only to trigger the next cycle of losses.

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**T**he collapse of the commercial real estate (CRE) markets in the late 1980s and early 1990s reminded developers, lenders, and investors once again of the cyclical nature of the industry. Institutional investors like commercial banks and life insurance companies that hold loan commitments to CRE suffered significantly in the downturn. Historically high levels of bank failures in New England, for example, were partially related to depression in local commercial real estate.<sup>1</sup>

In the last few years, even though investors have taken steps to clean up their balance sheets (including bulk sales of troubled properties), surviving managements still do not fully understand the cyclical patterns of the markets in which the problems occurred. Furthermore, although a number of studies have suggested that commercial real estate is an attractive asset class for institutional investors, none has adequately examined the cyclical nature of these investments.

## **CYCLICAL PATTERNS IN COMMERCIAL REAL ESTATE**

As a number of studies have demonstrated, commercial real estate lending is characterized by cyclical "boom and bust" patterns.<sup>2</sup> Exhibit 1 shows the pattern of loan commitments for

mortgages on commercial buildings made by US life insurance companies. The three lending peaks in the last 25 years were 1971-1973, 1976-1980, and 1984-1989.

Similar patterns can be seen in the real estate loans of the commercial banking industry. Accentuating the pattern, Japanese banks were inactive in US real estate prior to 1986, but their investments grew rapidly thereafter, peaking in 1988, and falling rapidly after 1990.

The dramatic changes in the flows of capital to the CRE market led to "an unprecedented acceleration in domestic and international institutional investment in real estate assets" in the mid-1980s and to an equally pronounced withdrawal of capital in the early 1990s.<sup>3</sup> As Exhibit 2 indicates, the pattern of commercial real estate construction follows cycles similar to the lending cycles after a short time lag. Construction starts for commercial retail, office, industrial, hotel, and apartment properties reached peaks in 1972-1973, 1978-1979, and 1985. The current steep decline in construction starts may be dated from 1986.

Comparison of Exhibits 1 and 2 suggests a general correlation between lending activity and construction starts, a not unexpected relationship given the dependence of commercial real estate on capital availability to start and complete build-

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**EXHIBIT 1 U.S. Life Insurance Companies**



SOURCE: American Council on Life Insurance

ings. However, the correlation between the two series is not perfect because the financing provided by life insurance companies was, for the most part, permanent financing, rather than construction loans. Possibly, a comparison of construction financing commitments (typically offered by banks) with construction starts would show a stronger correlation. Unfortunately, the data for construction loan commitments is generally not available.

**Cycles of Defaults and Losses**

Exhibits 3 and 4 show similar cycles of borrower defaults and losses by institutional investors in CRE. In Exhibit 3, foreclosures on commercial mortgages held by US life insurance companies reached a peak in the period 1974–1977, declined to low levels from 1978 to 1980, and increased dramatically from 1986 through 1992. Parallel data for defaults on the CRE loans of commercial banks are not available. However, Exhibit 4 shows how similar is the pattern of losses on commercial real estate loans held by banks.

The cyclical peaks of commercial bank losses may occur later than those of other commercial

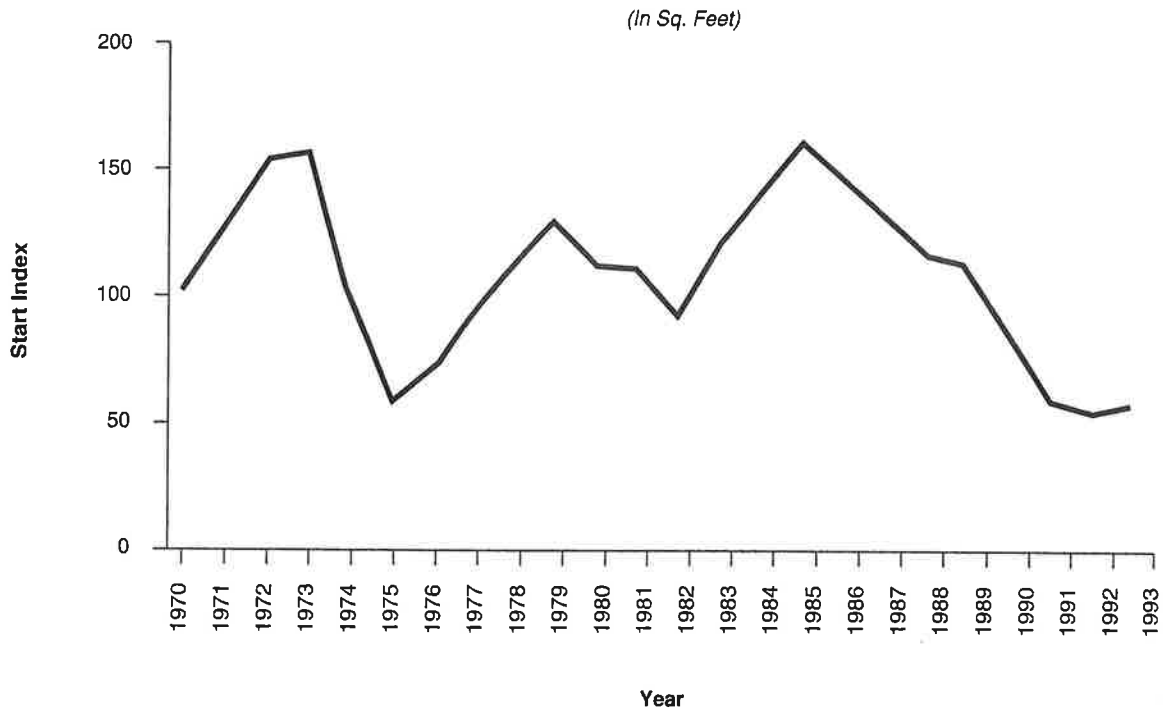
lenders because banks can provide additional funding to carry troubled construction credits through their stabilization stages. Insurance companies typically do not undertake workouts of troubled permanent financings to the same extent as the banks.

**Effects on Investment Returns**

The effect of these cyclical patterns on investment returns is shown in Exhibit 5. Both total returns and returns associated with changes in property values (“capital”) show substantial declines in the second half of the 1980s, with very significant negative capital returns in the 1990s. Income returns (net operating income divided by property values) are much more stable. Clearly, these negative returns, driven by significant defaults and losses, adversely affected the investment performance of CRE investors and lenders.

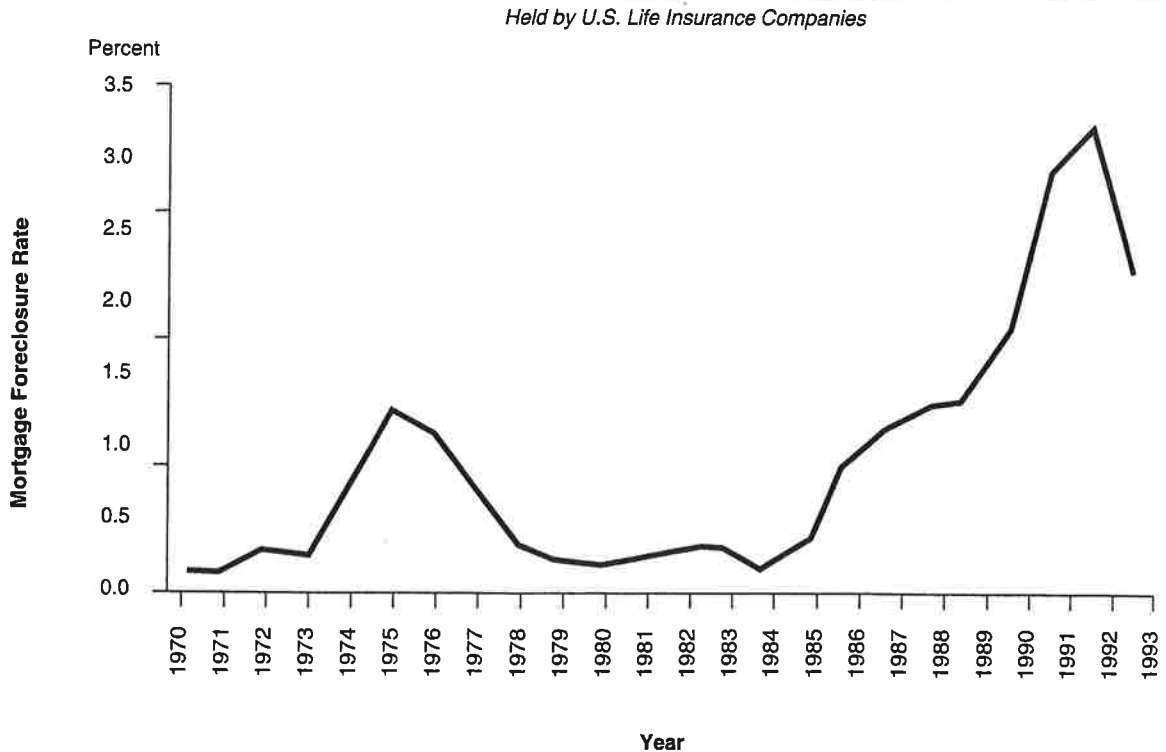
Comparison of Exhibits 1, 2, and 3 reveals the lags among the rates of mortgage commitments, construction starts, and foreclosure rates. A peak in loan commitments in 1971–1973 is followed by a surge in foreclosures between 1974 and 1976. The rapid

**EXHIBIT 2** Index of Real Estate Construction Starts



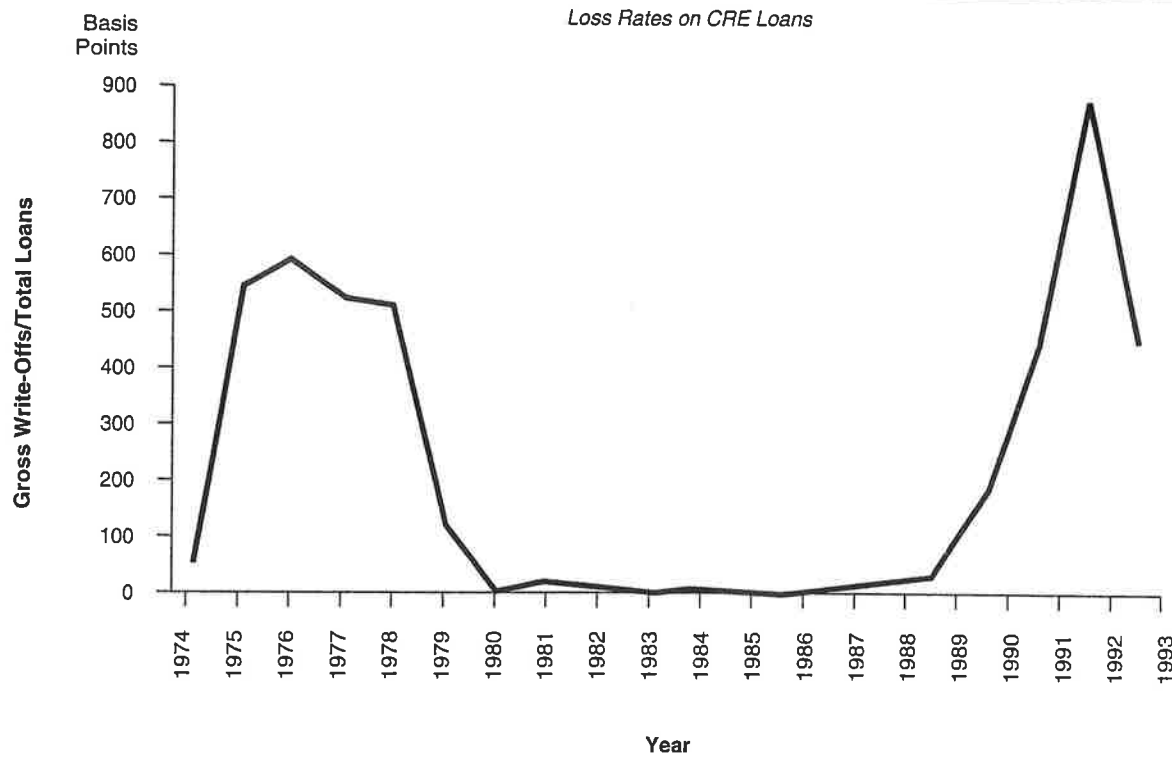
SOURCE: F.W. Dodge

**EXHIBIT 3** Foreclosure Rates on Commercial Real Estate Mortgages



SOURCE: American Council on Life Insurance

**EXHIBIT 4 N.Y.-Based Money Center Bank**



SOURCE: Bank Annual Reports

increase in commitments that began in 1983 is maintained at high levels for six years and only drops significantly in 1989 and 1990. However, foreclosures increased dramatically starting in 1985.

One interesting exception to the general pattern is the absence of significant levels of foreclosures in the period 1980–1982. One might have expected these to surge following the increase in commitments that began in 1975. As we will note later, the early 1980s were characterized by historically high interest and inflation rates.

**THE ROLE OF CAPITAL FLOWS IN THE CYCLICAL PATTERN OF CRE LOSSES**

The underlying causes for the most recent market decline are still being debated. Most commentators assert that the principal cause of the collapse was overbuilding in the 1980s, brought on by changes in the tax laws that earlier had induced speculative development and investment. Overbuilding in the 1980s led to historically high vacancy rates (Exhibit 6), consequent contraction of rental rates and property values, and the inability of individual properties to generate suf-

ficient cash flow to cover debt service. Defaults resulted from inadequate debt service coverage and vanishing equity in the properties, leading to foreclosures and loan losses.

This article presents a different view. Even though the factors discussed above did indeed lead to the collapse of the real estate market, they are only the proximate causes. The intrinsic (ultimate) cause of CRE defaults and losses was the excessive flow of capital that funded speculative 1980s development. Defaults and losses emerge when the capital flows contract.

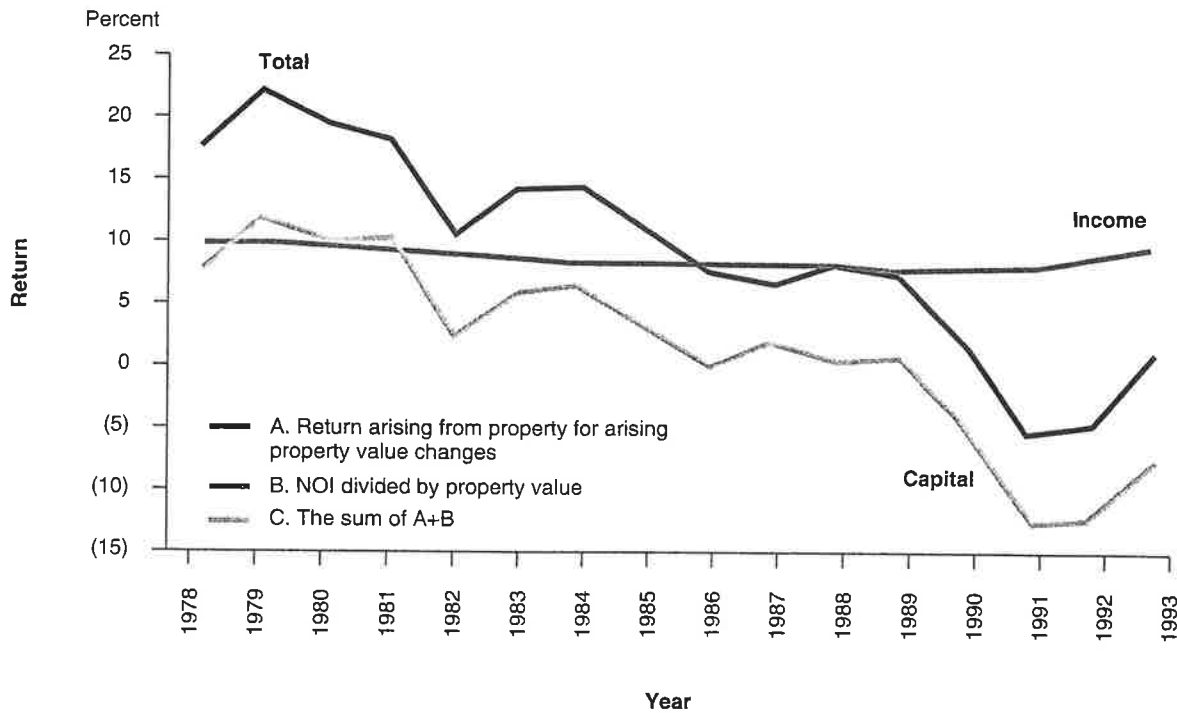
This view is based on the following assumptions:

**Finite borrowers.** In any market at any given time, there is a finite number of creditworthy borrowers.

**Preference for the most creditworthy.** In periods of normal or constrained capital flows, lenders provide capital only to the most creditworthy borrowers.

**A competition for borrowers.** As lenders compete for borrowers and markets become more liquid, capital now flows to increasingly risky borrowers. The decline of underwriting stan-

**EXHIBIT 5 Return Rates on Commercial Real Estate 1978-1993**



SOURCE: National Council of Real Estate Fiduciaries and Frank Russel Company

dards (i.e., the approval of loans for more speculative projects) is accelerated by the occasional appearance of extra-market inducements like tax law changes.

**Cancellation of the riskiest loans.** As vacancies increase and lending returns to equilibrium levels, loans to the most risky borrowers are not renewed, causing a liquidity crunch for the borrowers.

**The return of lending standards.** As capital contracts, lenders target properties or projects with identifiable cash flows from proven rents and lease-up rates. Speculative projects and properties, deprived of the supporting liquidity of excess capital, are compelled to default.

During periods of rapid inflation, otherwise uneconomic properties may forestall default by taking advantage of the appreciation in property values. Loans are bought and sold more readily and the real estate assets themselves may be sold to repay the loans. Thus, Exhibit 3 shows that there were few defaults and low losses in the early

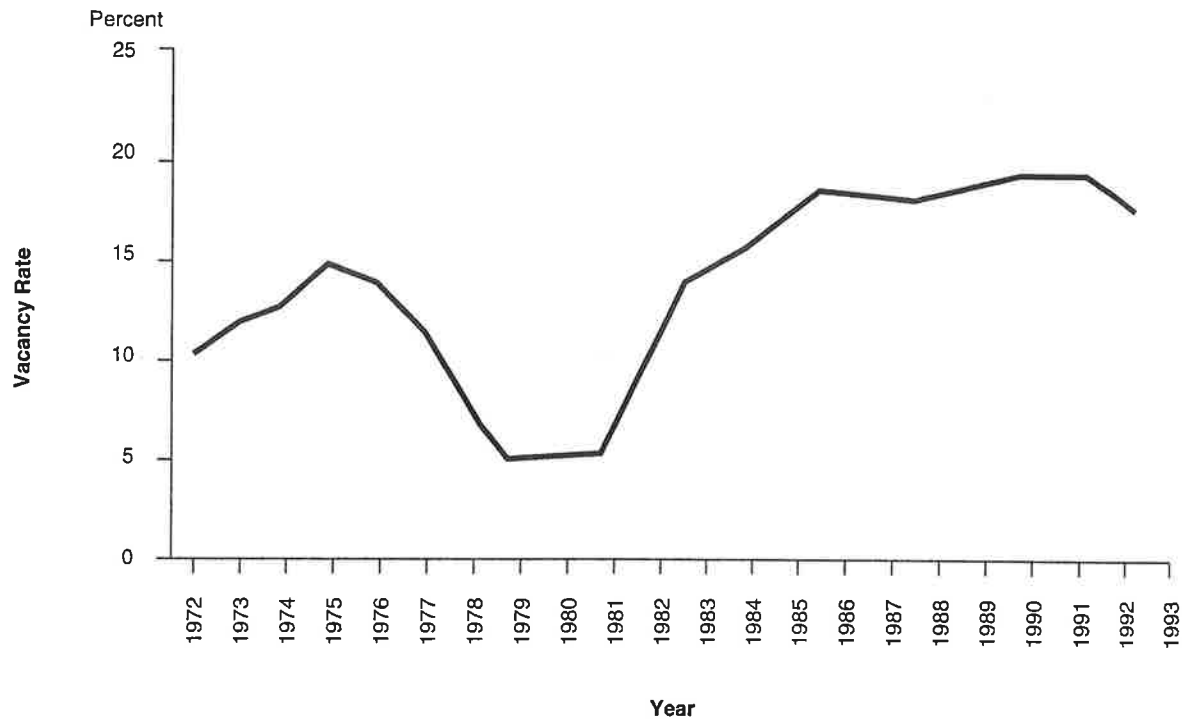
1980s, even though this was a period following rapid capital contraction (Exhibit 1).

During periods of buyout capital, strong secondary markets for CRE attract purchasers even to properties with soft fundamentals. But, as the availability of capital shrinks, purchasers increasingly look to the fundamental cash flow characteristics of individual properties, and consequently properties with insufficient cash flow default on their loan obligations. Property values decline as well, creating an incentive to default for owners and investors whose equity has disappeared.

**A Mathematical Model**

In order to test the conceptual view that fluctuations in capital flow are responsible for the boom and bust pattern of CRE development, the author modelled foreclosure rates on commercial mortgages held by US life insurance companies (Exhibit 3). A description of the modeling technique is presented to interested readers in the Appendix.

Least-squares regression techniques produced a model with the following characteristics:

**EXHIBIT 6 Vacancy Rates on Office Properties**

SOURCE: Coldwell Banker/Torto Wheaton

- Mortgage foreclosures peak within two to four years after a peak in mortgage commitments and
- This pattern is modified in periods of high inflation expectations when rising rental rates provide adequate debt service coverage even as capital leaves the market, or rising values allow properties whose cash flow is inadequate for debt service, to be sold prior to foreclosure.

To test the predictive capabilities of this model, the regression equation was fitted to data from 1970 to 1992. The equation "predicted" foreclosure rates for 1993 that were compared to the actual (Exhibit 1) foreclosure rates for that period (Exhibit 9). The comparison in Exhibit 8 suggests that the model predicts defaults on commercial mortgages accurately.

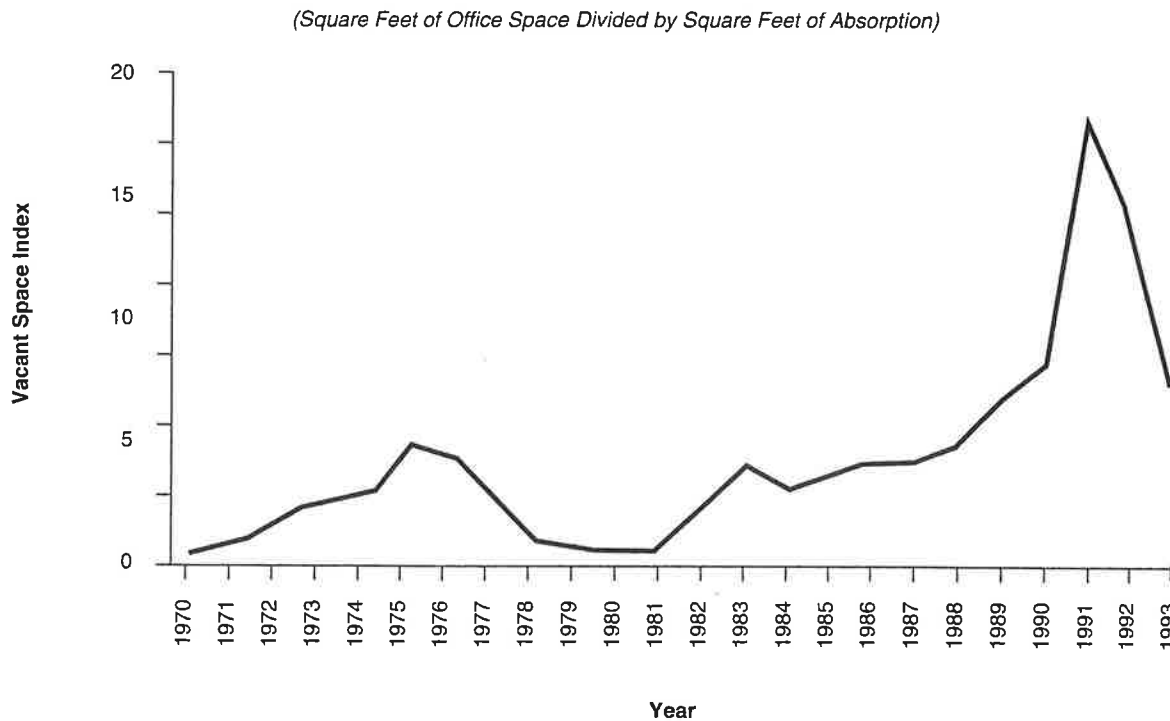
A second indication of the accuracy of the model is shown by an Index that is the ratio produced by dividing vacant space by office building absorption (Exhibit 7). This Index relates the demand for office space to the current absorption of existing vacant space. Increases in the Index

imply that vacant space is growing at a rate faster than the absorption of existing space or new construction. Declines imply that absorption more than offsets increases in office space. When vacant space is greater than absorption, Index values are greater than one, when absorption is greater than vacant space, Index values are less than one. Thus, the measure indicates the degree to which supply and demand are in balance.

The Index shows the same cyclical pattern as other CRE indicators. In fact, the pattern has a striking correlation with that of mortgage foreclosure rates.<sup>4</sup> Rapid growth of vacant office space, beginning in 1982, is primarily responsible for the growth in this Index after that period (Exhibit 7).<sup>5</sup> Absorption was unable to keep up with the growth in vacant space.

#### **CAUSES AND CONSEQUENCES OF SURGES IN CAPITAL FLOWS**

An unusually large surge of capital into the market may stem from a number of causes, including tax law changes. The tax law trigger dominated in the 1980s. Tax changes in 1981

**EXHIBIT 7 Vacant Space Index**

SOURCE: Coldwell Banker/Torto Wheaton

promoted rapid buildup in commercial lending for real estate development and investment. As a result, significant overbuilding occurred.<sup>6</sup> Tax law changes in 1986 reduced the tax benefits of real estate speculation and the flow of capital into the real estate market declined, resulting eventually in the well-documented market contraction of the early 1990s.

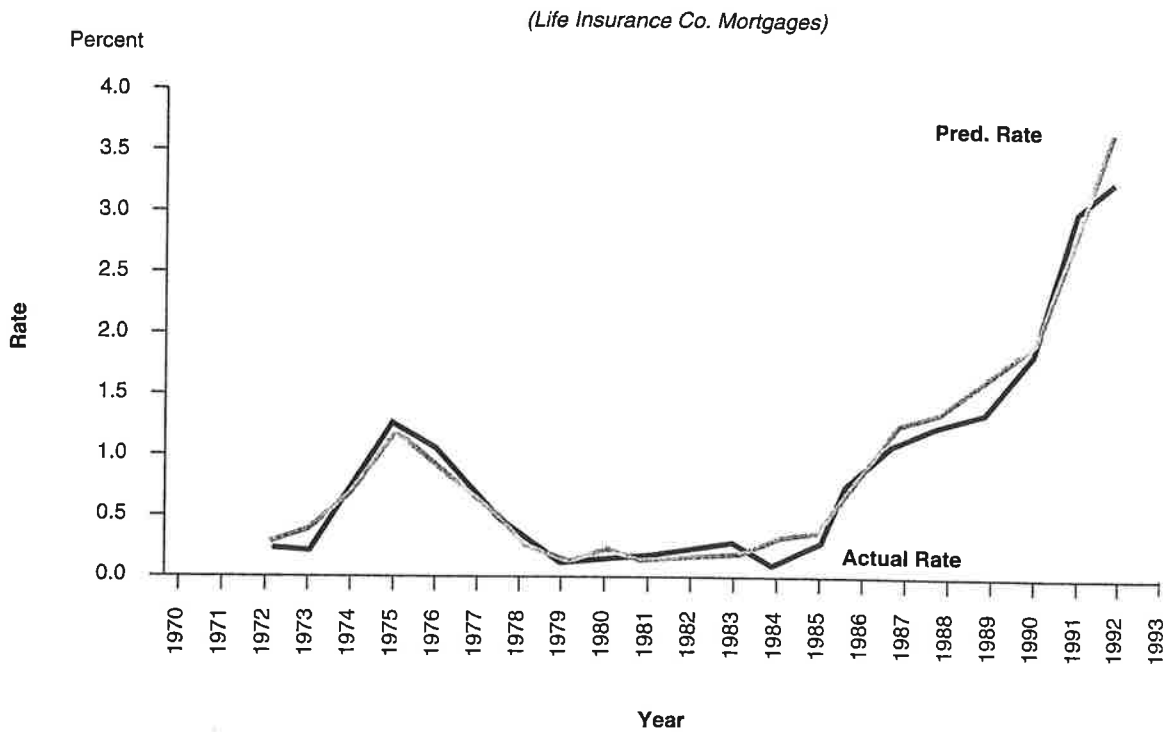
A number of studies<sup>7</sup> have demonstrated that the long-run supply of commercial real estate is more elastic than short-run supply. Increasing demand for space generates only small increases in supply in the short run; consequently, rents and property values rise in response to excess demand. Lenders react to these temporarily high rents by supplying capital, and developers undertake new construction, usually in quantities unjustified by long-run demand for space. Excess building drives rents and property values below "true" long-run equilibrium and leads ultimately to defaults on loans to many properties.

The Exhibit 7 Index confirms that throughout the period 1978 to 1981, the demand for office

space was greater than supply. (Absorption was greater than available vacant space, and Index values were less than one.) As a result, property values increased, and a temporary peak in capital returns was experienced during this period (Exhibit 5). Beginning in 1982, lending for commercial mortgages exploded (Exhibit 1), vacant space increased (Exhibit 6), and by 1982, vacancies began to exceed absorption (Exhibit 7), with the result that in 1984 property returns began a steady decline (Exhibit 5). Contraction in absorption (demand) more than offset the contraction in new construction that began in 1985 (Exhibit 2), resulting in dramatic increases in both the vacant space index and foreclosures.

As previously indicated, excess capital also causes real estate lenders to reduce their focus on the fundamentals of CRE lending (e.g., cash flow, the extent of preleasing, and tenant quality), and to consider more speculative investments based on unrealistic expectations of ever increasing property values. Such changing standards alone make it possible to predict cyclical trends in foreclosure and loss rates.

**EXHIBIT 8 A Comparison of Predicted Foreclosure Rates on CRE Mortgages Vs. Actual Rates**



SOURCE: American Council of Life Insurance and Regression Model

**CONCLUSION**

The analytical view presented above offers CRE lenders and investors a significant perspective that may enable them to anticipate future cyclical swings:

- Foreclosures and defaults (and associated losses) inevitably follow rapid buildups in lending to commercial real estate and
- They are mitigated only in periods of high inflation and increasing property values.

Losses in commercial real estate lending are directly related to the volatile cyclical patterns of lending in that business. Periodically, excess capital flows to the most risky borrowers, who default and create losses for the lenders, especially when capital flows return to equilibrium levels. Sophisticated investors should use these changes in capital flows to establish prudent portfolio management strategies.

CRE lenders and investors should originate and hold only assets that are economically sound. Lending based on speculative projects depen-

**EXHIBIT 9 Predicted and Actual Foreclosure Rates**

*Commercial Mortgages Held by U.S. Life Insurance Companies*

Period	Actual Rate	Predicted Rate
June 1990	1.62%	1.58%
December 1990	1.77	1.83
June 1991	2.48	2.12
December 1991	2.87	2.80
June 1992	3.50	3.13
December 1992	3.16	3.56
June 1993	2.96	3.21
December 1993	2.17	2.96
June 1994	2.51	2.35

dent on unrealistic expectations of increasing real estate values consistently leads to problems.

The capital flow perspective allows an aggressive investor to attempt to "time" CRE markets, originating or buying loans when market capital is scarce and selling paper or ceasing to lend when markets are most liquid.



As a final loss-avoiding strategy, CRE lenders should diversify their portfolios to mitigate losses at the bottom of the credit cycle.

#### NOTES

1. See R.E. Randall, "Lessons from New England Bank Failures," *New Engl. Econ. Rev.* (May/June 1993), pp. 13-34.
2. See, for example, Lynne E. Browne and Karl E. Case, "How the Commercial Real Estate Boom Undid the Banks," *Real Estate and the Credit Crunch*, Proceedings of a Conference Sponsored by the

Federal Reserve Bank of Boston. Boston: Federal Deposit Insurance Corporation (1992).

3. Jeffery D. Fisher, Susan Hudson-Wilson, and Charles H. Wurtzbach, "Equilibrium in Commercial Real Estate Markets: Linking Space and Capital Markets," *J. of Portfolio Mgmt.* 19 (Summer 1993), pp. 101-107.
4.  $r^2$  between Foreclosure Rates (Exhibit 3) and the Index (Exhibit 7) is 0.95.
5. Almost half of the office space ever built in the United States was built in the decade of the eighties.
6. William D. Zani, "Reducing the Cyclical Volatility of Real Estate Development," *Real Est. Rev.* 22 (Winter 1993), p. 76.
7. Browne and Case, supra note 2, and Fisher, et al., supra note 3.

#### APPENDIX

##### Modeling Foreclosures on Commercial Real Estate Mortgages

In order to forecast the foreclosure rate on commercial mortgages held by life insurance companies, the model uses Almon-lag regression equations that used current and lagged values of mortgage commitments by life insurers, current and lagged values of the 10-year Treasury bond rate, and the one-period lag of the dependent variable as predictors. In these models, the rate of commitments represented capital flows into the mortgage market, the Treasury bond proxied inflation expectations, and the lagged dependent variable represented the trend value for foreclosures.

Semi-annual values of each variable were used in the models: The best-fit model ( $R$ -squared = 0.97, Durbin-Watson statistic = 2.06) incorporated the following variables:

- Current-year through four year-lagged values for mortgage commitments;
- Current-year through five year-lagged values for the 10-year Treasury bond; and
- One-year lagged value for mortgage foreclosures.

The fit of predicted and actual values for foreclosure rates is high (Exhibit 8).