Impact of Changing Economic Conditions on Life Insurance Companies

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IMPACT OF CHANGING ECONOMIC CONDITIONS ON LIFE INSURANCE COMPANIES

As a financial institution whose total assets rank second only to commercial banks, life insurance companies have always been somewhat neglected by most economists. It has generally been assumed that their regular inflows and outflows of funds proceed normally without regard to changing economic conditions. Recent developments, however, indicate that life insurance companies are susceptible to economic fluctuations and their composite responses can disturb the stability of other sectors of the economy. In order to determine those factors which link life insurance companies and the economy, it is useful to examine the nature of the life insurance portfolio.

General Portfolio Considerations

A general lack of volatility of the flow of funds into life insurance companies may be traced directly to their primary function in the financial system, which is to provide family financial protection in the event of untimely death. The life insurance function could be adequately achieved through the sale to individuals of "term" insurance which entails no saving on the part of the purchaser. Protection is purchased for a specified period and if the individual dies within that period, his beneficiary receives a specified payment. The charge for this primary service of life insurance companies is low relative to the cost

of premiums for plans under which the policyholder acquires a cash reserve. The latter type of plan is often termed a "whole life" plan. The cash reserve mounts in proportion to the premiums paid. Since the policyholder can at any time surrender his policy to obtain the cash value of the policy at a fixed rate of interest, life insurance companies may assume some characteristics of savings or lending institutions.

Policyholders normally do not buy insurance with the intent of saving or borrowing from a life insurance company; the options serve as additional inducement to purchase whole life rather than term insurance. Both parties to the transaction regard a term or whole life policy as being of a long-term contractural nature guaranteeing a highly stable flow of funds to and from the company. The whole life policy, by providing alternatives to the policyholder unavailable under the term plan, carries a sufficiently higher premium to more than offset the additional services offered, and is favored by the insurance companies over term insurance. Although the return to the policyholder on his saving under a whole life plan is less than he might obtain from most savings institutions, the interest rate charged him for borrowing against his policy is similarly less than would be levied by most lending institutions.

The policy premium and interest rate charged for borrowing against the policy are set for the life of the policy. Factors beyond the control of the life insurance companies, such as changing

propensities to save, varying market interest rates, or changes in disposable income, could encourage policy cancellation or policy borrowing and disrupt the companies' well-planned flow of funds. Because the companies consider their liabilities to be long-term obligations, they channel most of their funds into long-term, high-yield loans and investments. If, however, economic conditions arise such that a substantial portion of their fund inflow is disrupted, they might encounter serious difficulties in meeting their long-term commitments. To avoid such discomfortures, life insurance company executives must analyze the present condition and future direction of not only their company and their competitors, but the general economy as well. If the companies set premium and policy loan rates too high, they may lose potential customers, but if they set rates too low in relation to future economic developments, they may encounter seriously de-stabilizing policy cancellations.

During periods of non-economic stress, liquidity may not be as important a consideration in structuring the portfolio as at other times. Since knowledge of future economic developments is not perfect, life insurance companies, like all financial entities, must hedge against the time when circumstances elevate the importance of being liquid. Life insurance companies maintain liquidity by holding cash and Federal Government securities. Although these securities provide the companies some return on their investment, they are held less for yield purposes than liquidity. That segment of the life insurance asset portfolio held primarily for yield

consists of mortgages, stocks, and a wide variety of bonds including industrial, public utility, railroad, state and local, and foreign government bonds (see Table 1).

Table I

DISTRIBUTION OF ASSETS
OF U.S. LIFE INSURANCE COMPANIES, 1967

	Amount (in millions)	Per Cent of Total Assets
Mortgages	$67,516	38.1%
Stocks	10,787	6.1
Real Estate	5,186	2.9
Policy Loans	10,059	5.7
Miscellaneous Assets	8,388	4.7
Bonds		
U.S. Government	4,587	2.6
Foreign Government	648	.4
State and Local	5,055	2.8
Railroad	3,433	1.9
Public Utility	17,081	9.6
Industrial and Miscellaneous	44,621	25.2

Source: Life Insurance Fact Book, 1968

As the dominant supplier of funds to the corporate bond market (they now hold about one-half of all corporate long-term debt outstanding), life insurance companies have moved into private

placements, an arrangement by which an institution or group of institutions make a loan in security form. Because terms agreed on between borrower and lender are more flexible than if the transaction were registered with the Securities and Exchange Commission, life insurance companies have found such arrangements increasingly profitable. This sort of financial technique is also quite well suited to the companies' future commitment practices since they are able to match their stable inflows with investment outflows often on a staggered schedule of "takedowns." By minimizing the length of time their inflows remain idle or in low-yield, highly-liquid assets, the companies maximize return. The borrowers, correspondingly, appreciate the fact that they are guaranteed funds at a specified interest rate regardless of changes in the capital market between the time the loan is closed and the period when the funds are extended.

Life insurance companies compete primarily with the large private and state and local pension funds for such investment outlets as well as competing with them and other financial intermediaries (the usual savings institutions in addition to commercial bank trust departments and independent trustees) for fund inflows. Although increased life expectancy has contributed to the demand for services provided by life insurance companies, other financial institutions have been organized to meet the rising demand and have flourished to the extent that they have slowed the once rapid growth rate of life insurance companies. As Goldsmith observed of the postwar era, "there seems . . . little doubt that the introduction and expansion

of the various retirement and pension fund schemes adversely affected the position of life insurance companies as users of funds, and hence also their importance as suppliers of funds, although not to a decisive degree." 1/

Forward Commitments

Despite considerable legal and traditional constraints, life insurance companies maintain one of the most diversified portfolios of the financial institutions. Compared with most of the other institutions, variations in the portfolio have been due to secular rather than cyclical factors. Recently, however, life insurance companies have exhibited increased vulnerability to cyclical influences. Due to their unusual forward commitment of funds process, life insurance companies are probably not as well equipped to cope with large economic fluctuations as some of the other financial institutions.

Relying on normal stability of their flow of funds, life insurance companies make commitments to borrowers up to three years in advance of the actual loan extension. The duration of the forward commitment generally varies directly with the size of the borrower (and lender). A mortgage commitment on a home varies from three to twelve months depending on whether the home exists or is to be constructed. Apartment house commitments may be made up to

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1/ Raymond W. Goldsmith, Financial Institutions (Random House, New York, 1968), pp. 102, 104.

three years in advance and large corporations may desire commitments on bonds from large life insurance companies for approximately the same length of time. Since the forward commitment binds the life insurance company to lend a certain amount of money at a set interest rate for a specified number of years, the company makes commitment decisions on the basis of interest rates and the state of economic activity prevailing up to three years before funds actually flow from the company's portfolio.

Were it not for the diverse opinions of the life insurance fund managers about the future direction of the economy, the aggregate of life insurance portfolios would probably change more frequently. Institutions which do not utilize forward commitments react more to changes in the present state of economic activity than expected future states. Although knowledge of the present direction of economic activity is not perfect, such knowledge should be more accurate than knowledge of economic activity two or three years hence. Thus, managers of most financial institutions might be expected to analyze the present situation in somewhat the same manner, then, reacting independently, effect substantial changes in the same direction of a particular asset. Life insurance fund managers, however, through different expectations of future developments, alter their portfolios in a nonconcurring fashion to achieve the appearance of a slowly responding aggregate. To some extent, it could be said that life insurance companies' transactions in "futures" (principally mortgages and corporate bonds) help smooth the fluctua-

tions in total life insurance assets as well as in the individual asset markets themselves.

Response of Life Insurance Companies to Cyclical Factors

In examining the response of life insurance companies by portfolio manipulation to changes in economic activity, it is necessary to determine to which changes they respond. An obvious candidate is changes in income. Monetary policy, fiscal policy, or other factors such as strikes or wars can evoke increases or decreases in income. With a general increase or decrease in income, regardless of the source, it should be expected that life insurance company liabilities would not change as much as liabilities at predominantly savings institutions because at present levels of income in this country, the marginal propensity to save is probably higher than the marginal propensity to secure insurance.

Many families obtain a satisfactory position in their life insurance holdings before they reach the same goal in "pure" savings, (e.g. savings and loan shares or time deposits at commercial banks). Life insurance premiums become fixed payments for the policyholder while funds placed in or taken from savings institutions generally remain more flexible, dependent, to a large extent, on the changes in income of the policyholder. Savings and loan shares, for example, may be postulated to be more income elastic than life insurance company policy reserves. Similarly, expenditures on

consumer durables and most goods and services would be expected to respond more to income changes than payments of insurance premiums. Consequently, income variations are not a good indicator of the effect of changing economic conditions on life insurance companies.

Certain interest rates are probably the best indicator of impacts of changing economic conditions on life insurance companies. As with income, the cause of the change in interest rates is not of major concern here--just the fact that a change has transpired. On the liability side, interest rate variations, particularly in bank loan rates to individuals, create disturbances in the flow of premiums to life insurance companies. Variations occur on the asset side of life insurance company balances due to changes in interest rates of competing assets.

Within the framework of legal, traditional, and supply restraints, the response of most life insurance companies to yield differentials is not much different than would be expected of any economic entity. The companies examine present and expected future yields, relative risks, marketability, and tax factors before making commitments. The differential in nominal interest rates among the various assets has not changed much over the years, but a secular shift among assets due to factors other than nominal rates has occurred. 2/ For example, Table 2 indicates that interest rate

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2/ It is assumed that life insurance companies can obtain all they want of an asset at the "going" rate; that is, the elasticity of supply is assumed to be infinite.

differentials among industrial, public utility, and railroad bonds did not change substantially between 1950 and 1967, but a sizeable redistribution of asset shares toward industrial and away from public utility and railroad bonds occurred.

Table 2

Interest Rates and Asset Shares of Selected Bond Holdings of Life Insurance Companies, 1950, 1955, 1960, 1967

Interest Rate on Bonds *

Year	Railroad	Industrial	Public Utility
1950	3.10%	2.67%	2.82%
1955	3.34	3.19	3.22
1960	4.92	4.59	4.69
1967	5.89	5.74	5.81

Share of All Assets in Bonds

Year	Railroad	Industrial	Public Utility
1950	5.0 %	14.9 %	16.5 %
1955	4.3	20.1	15.5
1960	3.1	22.4	14.0
1967	1.9	25.2	9.6

Source: Moody's Industrials, Public Utilities, Transportation Manual, and Life Insurance Fact Book, 1968.

* Interest rates are a composite average of all bonds of each category.

The decline in life insurance holdings of railroad bonds may be attributed to risk and marketability factors while the increased attractiveness of industrial bonds relative to public utility bonds is somewhat more complex. Many industrial bonds have convertible features not found with the public utility bonds as well as tax benefits accruing to holders of certain preferred industrials. The industrials generally retain good marketability and are not so likely to be "called" as are the public utilities.

Apparently, the tax benefits concomitant to state and local bonds have not changed much relative to their yield in recent years since 2.4 per cent of the aggregate life insurance portfolio was held in such bonds in 1950 and 2.8 per cent in 1967. 3/ Mortgage holdings have risen from 25.1 per cent of the entire portfolio in 1950 to 38.1 per cent in 1967 due in large measure to improved marketability and government guarantees of some types of mortgages, thereby palliating their riskiness.

Of the methods by which life insurance companies might best meet their expanding competition, investment in stocks of private corporations appears to be one of the most promising. Since yields on certain stocks are potentially much higher than alternative uses of funds, it is not surprising that the companies have recently decided to organize their own mutual funds for stock investment purposes. Although legal constraints to stock holdings were relaxed by New York State law in 1957 and 1962, most companies, apparently feeling that traditional life insurance portfolio procedures opposed incurring the risks inherent

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3/ Holdings of state and local bonds did trend upward to 4 per cent of all assets in 1961 and 1962 before declining to the 1967 value.

in stock trading, have been slow to maximize stock investment opportunities. There is little indication that life insurance stock investments follow cyclical patterns except in so far as the stock market itself responds to capital market movements. Between 1952 and 1967 the correlation coefficient between changes in life insurance stock holdings and changes in the Standard and Poor's 500 stock index is a positive .38.

Table 3 shows that one effect of restrictive stabilization policies on life insurance portfolio management has been the rapid run off of holdings of Federal Government securities to obtain increased liquidity. 4/

Table 3

Annual Rates of Change
of Life Insurance Company Assets
During Selected Periods

	Federal Government Securities	Mortgages	Corporate Bonds	Total Assets
IV 1952 - III 1954	- 6.3	10.1	8.7	7.3
IV 1954 - I 1955	4.5	12.9	6.0	7.8
II 1955 - IV 1957	- 9.0	10.4	6.2	6.2
I 1958 - II 1958	0.0	4.6	4.9	5.6
III 1958 - II 1960	- 4.8	6.1	4.8	5.7
III 1960 - III 1965	- 4.4	7.3	4.6	5.8
IV 1965 - I 1967	- 4.7	7.8	5.2	5.7
II 1967 - IV 1967	0.0	4.0	6.8	6.5

Shaded periods are those of generally rising interest rates (with exception of first quarter, 1967 when rates, although not rising, remained at high levels) based on commercial bank interest rates on short-term business loans.

Source: Federal Reserve Bank of St. Louis

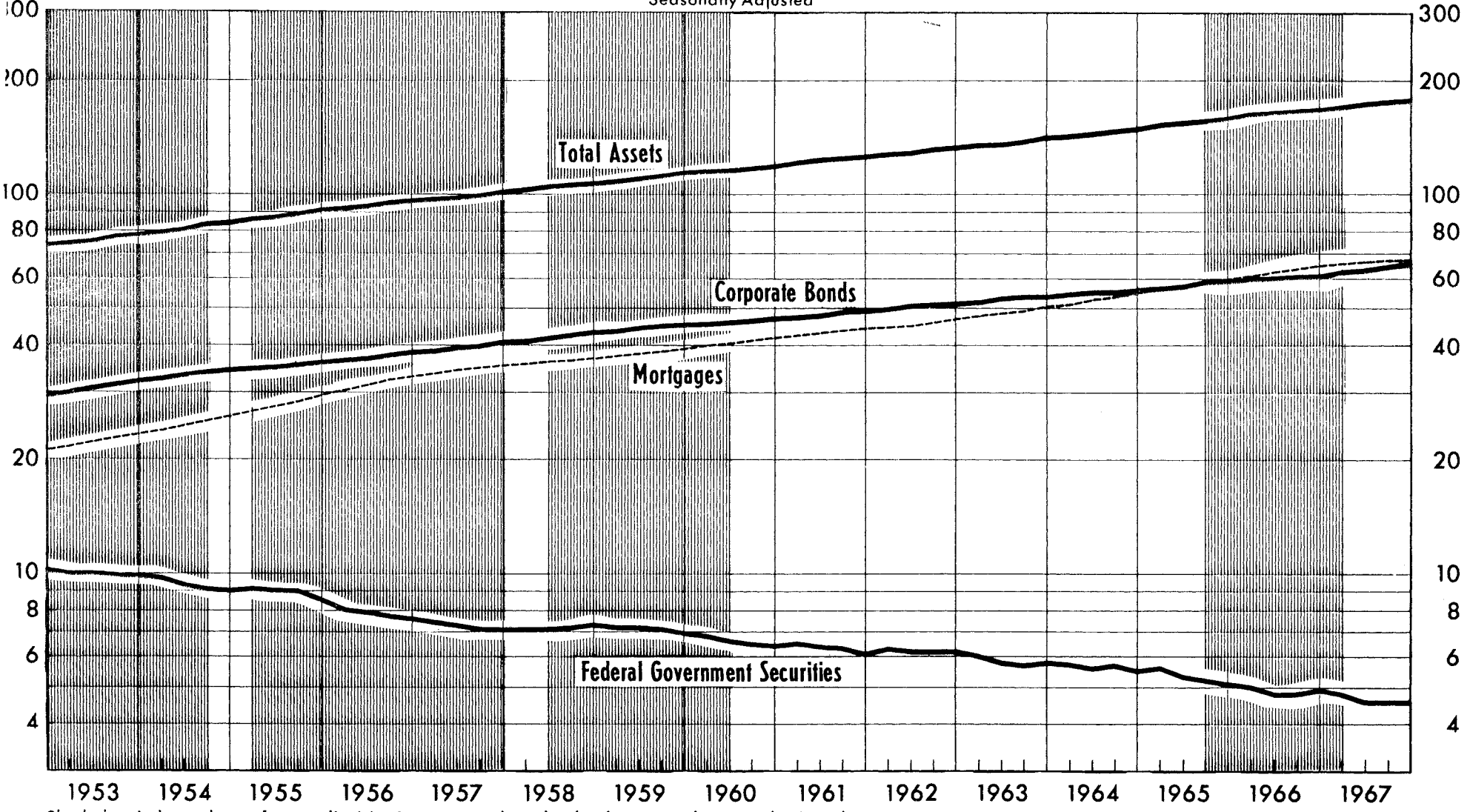
4/ According to Wehrle, "It may be that the pressure from the borrowing side of the market forces the life companies to try to meet the loan

Selected Life Insurance Company Assets

atio Scale
illions of Dollars

End of Quarter Data
Seasonally Adjusted

Ratio Scale
Billions of Dollars



Shaded periods are those of generally rising interest rates based on bank rates on short-term business loans.

Prepared by Federal Reserve Bank of St. Louis

Neither total assets, mortgages, nor corporate bonds demonstrate any significant cyclical movements in response to generally rising or falling interest rates. 5/ All three have exhibited steady secular rises over the past fifteen years. Holdings of Treasury securities, although declining as a percentage of all assets in nearly every year since World War II, have diminished more rapidly in all of the four periods of rising interest rates (indicative, to some extent, of economic stress) than any of the four periods of falling rates.

Treasury obligations constitute one of the reserve sources of funds to the basic cash flow of life insurance companies. Outflows, which occur when commitments are "taken down," must be met through mortgages, normal security inflows, etc. If fund inflow falls short of expectations because mortgage repayments, for example, slacken, or if fund outflow exceeds expectations due to an increase in some factor such as policy loans, new funds must be generated by sales of securities (e.g. easily marketable Treasury obligations)

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4 / (continued)
demands in periods of tight money so that when the companies are in need of placements they can count on developed outlets for their funds. This 'residual' theory of demand for Governments is similar to the 'availability doctrine' whereby banks take care of their regular loan customers first and purchase Governments only when they have 'residual' demand." See Leroy S. Wehrle, "Life Insurance Investment: The Experience of Four Companies," Studies of Portfolio Behavior, ed. by Donald D. Hester and James Tobin (New York: John Wiley and Sons, Inc., 1967), p. 274.

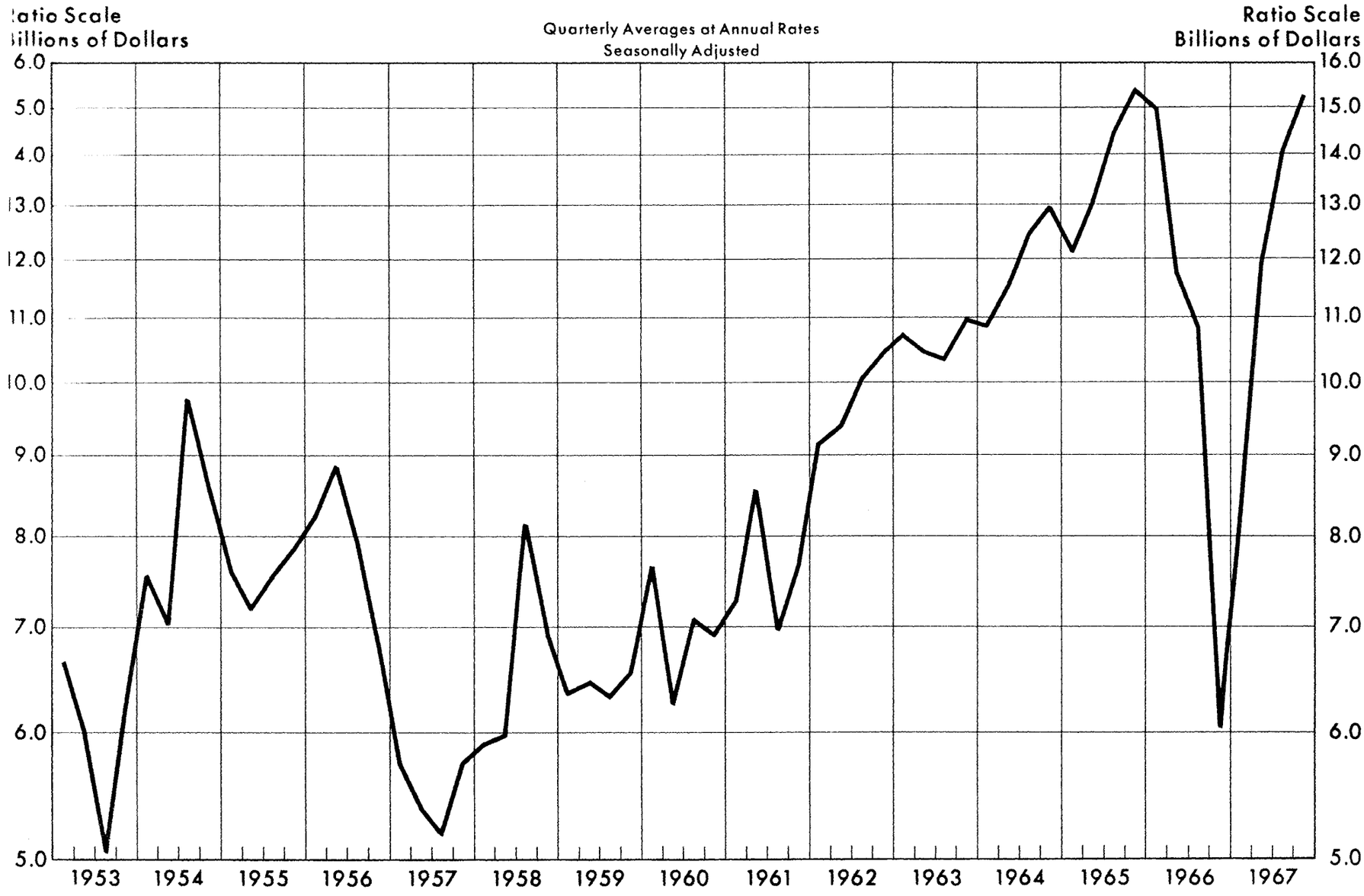
5 / Wehrle suggests (p. 196) that if insurance companies were to follow cyclical policies, they would "(a) Go short in low interest periods, possibly sell currently high priced long maturities. (b) Go long in high interest periods, possibly sell short maturities." Assuming that most of the Treasury securities held have a shorter maturity than bonds or mortgages, life insurance activity in Federal

or bank borrowing. Declining amounts of Treasury securities in the portfolio for the past twenty years reflect the reduced liquidity positions (or narrower margins) on which life insurance companies have come to operate. In this respect, they have followed a trend common to other financial institutions who have become increasingly vulnerable to liquidity crises. Such institutions must cut back their commitments to borrowers until their cash positions ameliorate. The borrowers, in turn, seek alternative sources of funds or curtail their activities. A chain reaction working through financial intermediaries such as life insurance companies or savings and loan associations to such credit sensitive industries as commercial construction or home building occurs.

The impact of a liquidity crunch on life insurance companies can be seen by examining their schedule of new commitments. In 1966 new commitments were more than halved, falling from an annual rate of over $15 billion to approximately $6 billion, an unprecedented decline in the postwar era (see accompanying chart). A small (relative to total assets) but unanticipated change in policy loans from 4.8 per cent of all assets in 1965 to 5.5 per cent in 1966 was responsible for much of the cash flow disruption.

5/ (continued)
Government bonds is consistent with Wehrle's cyclical policy criteria for the 1952-1967 period. Wehrle (p. 241) found a lack of evidence to substantiate the existence of cyclical policy behavior on the part of life companies. His data, however, reflect the activities of only four life insurance companies for the 1947-1958 period. Federal Government bond holdings reflect some cyclical behavior on the part of life companies in that period (as well as in the 1960's) and policy loans, in particular, have brought about an increased awareness of the effects of high interest rates on life insurance companies in the 1960's.

Total New Commitments of Life Insurance Companies



Prepared by Federal Reserve Bank of St. Louis

As a percentage of basic cash flow, the net change in policy loans was an increase from 3.7 per cent in the fourth quarter of 1965 to 20.2 per cent in the third quarter of 1966.

Policy Loans

Insurance codes of most states require a rate of interest on policy loans which is guaranteed fixed for the entire duration of the contract. New York State law permitted the rate to be dropped from 6 to 5 per cent in 1939 and most companies continue to grant loans at this rate thirty years later. If insurance companies did not make policy loans, a loan could be secured elsewhere by using the cash value of the policy as collateral. Since an individual taking out a policy loan assumes no real obligation to repay, a large proportion of such loans leads to policy lapses.

Normally, the loans have not been of any substantial magnitude, but there is some indication of a trend toward large loans to either individuals or others holding large policies. One survey of a group of life insurance companies revealed that the average loan in 1965 was made for $746, and in 1966 the average was $866, with a significant number of the 1966 loans ranging from $20,000 to $100,000. It appears that a number of the 5 per cent policy loans were requested by policyholders in order to repay other loans bearing higher interest rates.

Orson H. Hart analyzes the impact of recent high interest rates in the following manner:

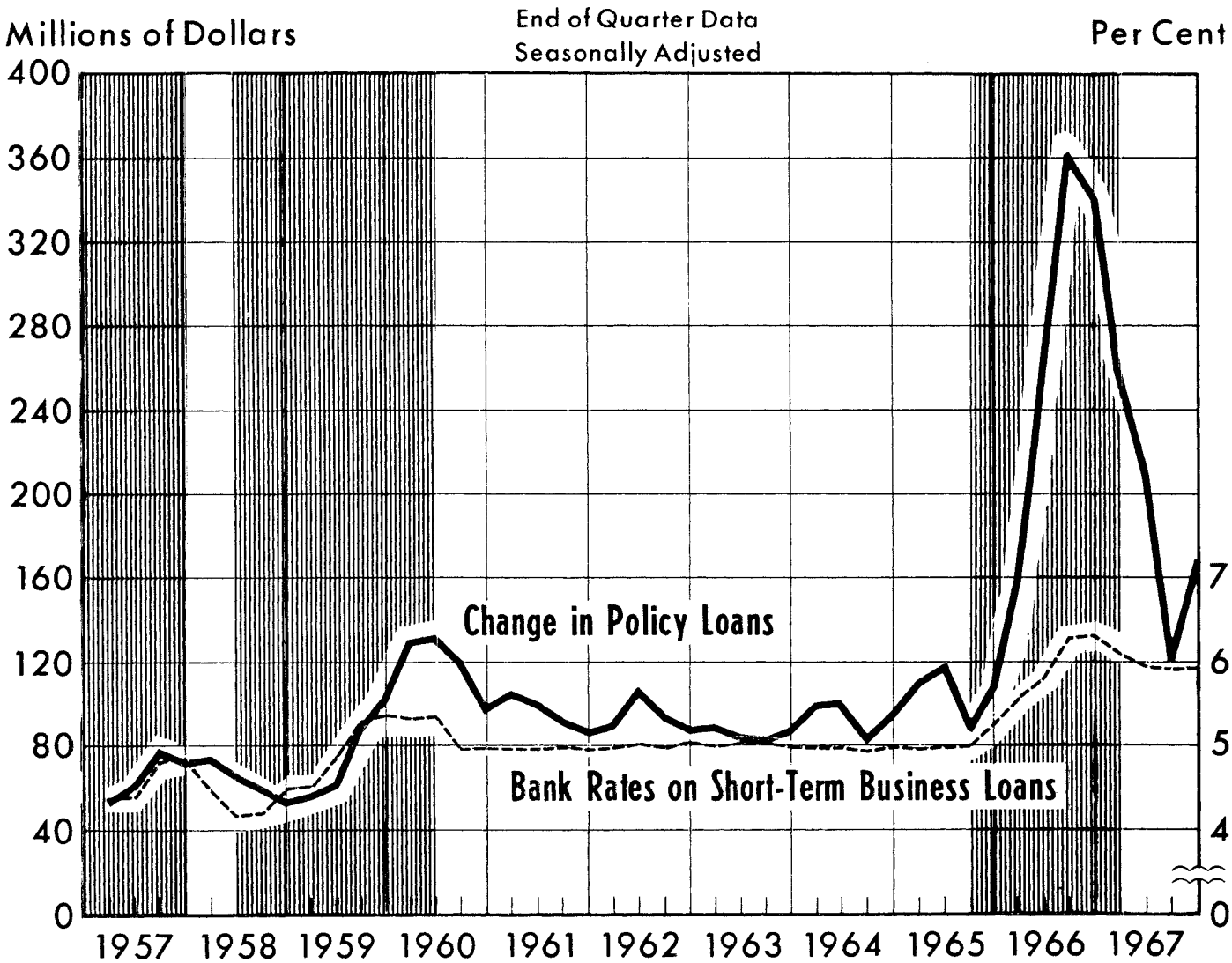
> There is an obvious explanation for this growing response of policy loans to monetary conditions. Although interest rates today are much higher than they were 10 years ago, the right of most policyholders to borrow from the companies is pegged by contract at not more than 5 per cent. This of course is a valuable right available from no other financial institution, and its value rises the higher interest rates go. The result is that when funds become sufficiently tight in normal channels, a natural consequence of monetary restraint, policyholders resort to borrowing from the companies on an increasing scale. Apparently the funds are used mostly for business purposes and hence are diverted from the companies but not from the capital market itself--a form of direct investment that has the effect of disintermediating the life insurance business.
>
> Because of these developments, little in evidence 20 years ago, the investment operations of the life insurance companies are becoming increasingly responsive to the influence of monetary policy. Changes in cash flow very soon are reflected in commitment policy. Most of the larger companies commit ahead and rely on their cash flow to meet the eventual takedowns. If the flow falls short of expectations, additional sums can usually be generated from sales of securities or from bank loans, but these are temporary havens of limited resources. Unless an early recovery in cash generated is confidently expected, commitments must be curtailed. 6/

Even the 5 per cent rate charged by the insurance companies is effectively diminished by the costs of administration of the loan. Moreover, the companies, in extending the 5 per cent loans, must forego opportunities to obtain 6 per cent or more (in recent periods) on investments, in addition to the loss incurred by liquidating 6 per cent securities already owned to make the policy advances.

6/ Orson H. Hart, a statement before the Joint Economic Committee, Standards for Guiding Monetary Action (Washington: U.S. Government Printing Office, 1968), pp. 176-177.

The close relation between policy loans and market interest rates can be seen in the accompanying graph displaying changes in policy loans against interest rates charged by banks on short-term business loans between 1957 and 1967. It can be observed that a close positive relationship exists between the two variables (correlation coefficient = .89) although the bank loan rates for the earlier years on the chart are substantially less than 5 per cent. It must be remembered, however, that the rates displayed are close to "prime rates" to good business customers, and rates to individuals would be at least 1 to 2 per cent higher. For life insurance companies, the level of market interest rates, when near or above 5 per cent is probably as significant a factor as changes in market rates. This explains why policy loans, as a per cent of all life insurance assets, made sizeable increases to 4.1 and 4.4 per cent in the predominantly rising interest rate years 1959-1960, and continued to climb steadily throughout the 1960's until the exceptional increase in 1966 (See Table 3). That policy loans as a percentage of all assets increased again in 1967 is indicative of the very high level of rates in 1967, rather than rising interest rates. Because of the concern generated throughout the life insurance field over cash flows in 1966, they had anticipated and were better prepared to handle the larger number of policy loans in 1967.

Bank Loan Interest Rates and Changes in Life Insurance Company Policy Loans



Shaded periods are those of generally rising interest rates.

Prepared by Federal Reserve Bank of St. Louis

Policy Loans of U.S. Life Insurance Companies

End of	Per Cent Of All Assets	End of	Per Cent Of All Assets
1950	3.8 %	1959	4.1 %
1951	3.8	1960	4.4
1952	3.7	1961	4.5
1953	3.7	1962	4.7
1954	3.7	1963	4.7
1955	3.6	1964	4.8
1956	3.7	1965	4.8
1957	3.8	1966	5.5
1958	3.9	1967	5.7

Source: Life Insurance Fact Book, 1955, 1968.

Although policy loans involve no risk (in the usual sense) for insurance companies since failure to repay a loan merely signifies cancellation of an equal liability, insurance officials discourage such loans because of their disruptive influence on basic cash flow. Insurance agents, however, often utilize the policy loan as a selling point to obtain new customers. Recent developments in the insurance field give the policy loan feature, perhaps unintentionally, the appearance of a "loss leader."

In periods when the economy is booming such as 1955-1957, 1959-1960, and 1966, there is generally greater demand for loans

from all lending institutions. Rising demand, however, is met with a reduced supply of loanable funds as stabilization policies force most institutions to curtail their supply of loanable funds. The "spillover" of excess demand appears to fall heavily on life insurance companies, who, like most credit unions, maintain moderate, fixed rates of interest.

Effects on the Policyholder

In the case of life insurance, 5 per cent does not necessarily represent the true rate of interest to persons obtaining policy loans. Because individuals must consider that if they desire to repurchase similar life insurance policies at a later date, and they permit their present policy to lapse by not repaying the loan, premium charges will be higher due to the advancing age of the policyholder. In addition, life insurance companies' loss of potential and actual profits due to foregone investment opportunities and the maintenance of non-interest bearing cash on hand to offset policy loans is probably made up elsewhere. Quite possibly the price of insurance to new policyholders is raised; that is, the costs of servicing policy loans will be passed on in some measure to new customers who do not borrow against their policies as well as those who do.

Rising interest rates do not, in the long run, adversely affect the insurance companies vis á vis the policyholders. Rising interest rates are usually accompanied by rising prices and overall

inflation. Inflation often manifests its most deleterious effects on those who are saving at low rates of interest. Whole life policies do represent saving on the part of the policyholders, but at very low rates. Thus, if saving is accomplished at a rate of, say, 2 per cent a year, while prices are rising at any rate exceeding 2 per cent, the saver realizes no real gains in his financial position.

Conclusion

Because of high and/or rising interest rates, life insurance companies have found themselves no longer insulated from changing economic conditions. Apparently, the relevant chain of causality runs from high interest rates to policy loans to cash flow to a curtailment of new commitments. Consequently, policy loans exercise influence far beyond their magnitude on life insurance company commitments to credit-seeking industries. New commitments were curtailed slightly in 1960, but more than halved in 1966, thereby augmenting the credit crisis of 1966 and the near-recession of early 1967. Some reform of life insurance liquidity in general and policy loans in particular appears necessary to avert detrimental effects on the sectors which obtain credit from life insurance companies, policyholders, and the companies themselves.