Conference Series No. 35

The Financial Condition and Regulation of Insurance Companies

Proceedings of a Conference
Held in June 1991

Richard W. Kopcke
and
Richard E. Randall, Editors

Sponsored by:
Federal Reserve Bank of Boston

Belth
Brannon
Cohen
Cummins
Harrington
Hunter
Joslin
Kollias
Kopcke
Lennon
Litan
Moloney
Parker
Pinkes
Pomeroy
Randall
Schneider
Skalicky
Stewart
Stone
Townsend
Weiss
Wise
Wright

The Financial Condition and Regulation of Insurance Companies

The Financial Condition and Regulation of Insurance Companies

Proceedings of a Conference
Held at Harwich Port, Massachusetts
June 1991

Richard W. Kopcke
and
Richard E. Randall, Editors

Sponsored by:
Federal Reserve Bank of Boston

Contents

The Financial Condition and Regulation of Insurance Companies: An Overview

*Richard E. Randall and Richard W. Kopcke**

Throughout much of the twentieth century, the large insurance companies have been popular symbols of unquestioned strength and stability. The image was not much different for professionals in the financial community: the risks were perceived to be modest in large, diversified insurance companies; managements were considered conservative; and ratings generally ranged from superior to excellent.

A crack appeared in the facade in 1988 when the fourth largest life insurance company sustained well-publicized losses that ate deeply into surplus, but this was considered to be an isolated situation. However, in October 1990 questions were raised about real estate problems in the life insurance industry after the ninth largest life company sustained a major loss as a consequence of a write-down of real-estate-related assets. The value of insurance company stocks declined in late 1990 as the financial community began to take a hard look at the recent changes that had taken place.

During the spring of 1991 the press increasingly focused on the industry, once it became evident that the life subsidiaries of First Executive and First Capital were impaired as a consequence of substantial investments in junk bonds. The seizure of these relatively large life companies by regulators brought to the fore the issues of guaranty fund protection and liquidity runs.

In the summer of 1991, the Federal Reserve Bank sponsored a conference to examine the dramatic changes in risk factors that have transformed the seemingly stable and dependable insurance industries

*Vice President, and Vice President and Economist, respectively, Federal Reserve Bank of Boston.

into industries that could arouse widespread public anxieties. How pervasive are the weaknesses that have shown up in a few large insurers? Is there a danger that widespread liquidity pressures could develop? What changes should be made in regulation or in arrangements to protect customers of insurance companies? These are some of the primary questions addressed. Although the immediate concerns have been largely associated with life insurance companies, the conference also devoted considerable attention to property–liability insurance, which perhaps is inherently more risky.

Six papers were presented, each with two or three discussants. The first paper considers insurance companies as financial intermediaries, examining their role in credit markets and the risks inherent in the balance sheets of both life and property–liability companies. The next two papers analyze the structure, conduct, and regulation of domestic life and property–liability insurers. The fourth paper discusses the structure of insurance companies abroad. The final two papers evaluate public policy questions relating to domestic life and property–liability insurers.

A major issue is the quality of the assets currently held by life insurance companies. Some participants stress that the outlook for commercial real estate is negative in a number of regions and that several large companies are heavily exposed. The inadequacy of the capital cushion relative to potential losses is noted. Industry representatives argue, however, that the nature of their commercial real estate assets is distinguishable from that of assets held by commercial banks, and that problems are limited to a few institutions and not systemic to the industry, as was the case with the thrifts. It is generally agreed that no solvency threat is impending for the property–liability industry, although various areas of vulnerability are discussed, including potential exposure to environmental catastrophes. Much attention is focused on the ability of state guaranty funds to function effectively in large failures, and on the nature and degree of protection that should be provided to customers.

Industry representatives and some academics see little need for a federal role in supervision. Some participants argue for a limited federal role, with reinsurance and international activities examples of areas appropriate for federal regulation. Others argue for a more extensive federal role in solvency regulation, although no one advocates eliminating state regulation. With respect to property–liability insurers, however, some argue for phasing out state rate regulation and placing reliance on competitive forces to control prices.

A difference of opinion is apparent between those who would place more responsibility on regulators to prevent excessive risk concentrations from developing, and those who would limit guaranty fund protection in order to enhance market discipline as a constraint on

industry risk-taking. Several participants note weaknesses in accounting and the difficulty outsiders have in trying to evaluate risk in insurance companies. Some also draw attention to the risk of liquidity runs on life insurance companies thought to be insolvent, illiquid, or weaker than their competitors.

The papers are rich in the variety of matters discussed beyond the major solvency issues mentioned here. Among these are the wisdom of removing rate regulation and/or antitrust immunity in property–liability insurance, federal tax policy with respect to the savings element in various life products, the shrinking presence of U.S. insurers in world markets, mark-to-market accounting, the appropriateness of retroactive loss loading in property–liability underwriting, and the prospects for industry consolidation.

Insurance Companies as Financial Intermediaries: Risk and Return

The paper by Richard Kopcke and Richard Randall was presented as a catalyst to discussion of the evolving risk profile of the industry and the supervisory challenges recent changes entail. It focuses on the implications for risk of the increasing role of life companies in offering investment products, and the vulnerability of both life and property–liability companies to rising interest rates, declining property values, and disappointing corporate profits. It stresses the need to deal promptly with dangerous risk concentrations and to support investment and other risk with adequate capital.

The authors begin by noting the importance of insurers as holders of corporate bonds and commercial mortgages. A number of life companies recently have been funding a significant portion of such assets with relatively short-term liabilities, mostly guaranteed investment contracts (GICs), thus raising both interest sensitivity and liquidity concerns. Property–liability companies are also vulnerable to increases in interest rates, since their claims are relatively short-term and irregular. Higher interest rates lower the value of their assets, which may have to be sold to meet claims.

The capitalization of property–liability companies has fallen significantly in the past 30 years, while their risks have not diminished. Capital ratios of life companies have remained essentially constant, but many life companies have undertaken investments that are riskier with respect to both possible default and vulnerability to interest rate increases. The paper documents the extent to which life companies with weak capital ratios hold particularly risky assets. The nature of some of the riskier investments of life companies, such as commercial real estate joint ventures, commercial mortgages, and leveraged buyouts, is such

that outsiders have great difficulty in assessing the risk of individual companies.

The recent failures of a few relatively large life companies, and the widely reported vulnerability of additional companies to the depressed state of commercial real estate, warrant a review of how these dangers arose and how they could have been avoided. The authors present several case studies that show characteristics in common with the extraordinary asset quality problems experienced by large banks in recent years.

In general, risk concentrations developed over several years, during which time the institutions appeared to be in sound condition. A turning point occurred, adversely affecting the areas of risk concentration, and it soon became apparent that the institutions were severely, often fatally, damaged. With respect to both banks and insurance companies, supervisory action would have to have been directed at the risk concentration *before* the triggering economic event (disruption of the junk bond market, crash of real estate values, or the like). While the analysis by Kopcke and Randall does not equate the degree of the insurers' problems with those of banks, it does suggest that supervisory restraints on excessive risk-taking are equally appropriate in both industries.

Jeffrey Cohen sees a regulators' dilemma in the Kopcke/Randall proposal for early intervention to limit risk concentrations. He notes that the circumstances may not be clear when managements take actions that get them into trouble, and questions whether regulators should substitute their judgments for those of management or the markets. He also notes that regulators have a conflict between promoting solvency of the company and keeping insurance affordable to the consumer.

Cohen sees the fundamental industry problem as insufficient profitability, leading to greater risk-taking and weaker capital ratios. He attributes this in part to the presence of too many companies, and he would remove barriers to consolidation and not allow banks to enter the field. Cohen believes that life insurers are not profiting from the issuance of GICs because they write them at too narrow a spread between the yields they receive on their investments and the yields they pay on GICs, not allowing for an adequate risk premium.

He attributes the decline in property–liability insurers' capital ratios to a shift from property to liability lines, which permit a longer earning period before claims must be paid. He argues that the property–liability industry is not sufficiently profitable to support its present capitalization. Cohen calls for more mark-to-market disclosure and action to make the demutualization process easier.

In his comments, Thomas Maloney reviews the transformation of the larger life insurance companies over the past 20 years into multi-line financial companies. He finds that the majority of companies have

adapted well to the more competitive environment. The larger companies are generally safer because of geographic and product diversification, and failures have generally involved small companies.

While a number of life companies underpriced products in recent years and overpaid to attract funds, most have rectified their mistakes. The few large life failures involved levels of risk-taking well above that of the rest of the industry, and the likelihood of widespread failures across the industry is low because of diversification and relatively high asset quality. Insurance companies perform better in a downturn than banks, a result of their greater geographic diversification and the character of their assets.

In reviewing current "reform" proposals, Maloney predicts that the outcome of the federal versus state regulation issue will depend on how quickly the states can strengthen supervision. He notes one fault of the current guaranty system: the prudent companies are burdened with the eventual losses incurred by their overly aggressive competitors. He also foresees industry consolidation in order to meet capital requirements.

Frederick Townsend's comments focus on the asset risks of life insurers, particularly the junk bonds that forced some rapidly growing companies into conservatorship and the real-estate-related assets that are creating capital losses in some of the large, established life companies. He emphasizes the poor credit quality of the junk bonds acquired, particularly by Executive Life, and he argues that the recent failures might not have occurred if regulations had limited junk bond concentrations.

Townsend points out that analysis of insurance companies must distinguish between the operating companies and the parent. He cites instances of damaged life companies with strong parents, and others where the problem was largely in the parent.

He notes the importance of product design and duration matching in avoiding runs by policyholders. Townsend also notes that while high capital ratios increase the odds of survival, they do not guarantee it. He concurs with Kopcke and Randall that capital ratios decline in the problem realization phase, not in the earlier, risk-taking phase.

The Structure, Conduct, and Regulation of the Life Insurance Industry

Kenneth Wright presents an account of financial conditions in the life insurance industry and the changed environment and competitive pressures that have so altered the industry in recent years. He reviews prior instances of liquidity pressures, the disintermediation periods of 1966, 1969, and 1979-81. He traces the development of new instruments, particularly universal life, variable life, flexible premium variable life,

single-payment annuities, and GICs, and the corresponding shifts in investment strategies.

Wright finds the measurement of industry profitability difficult, but presents data suggesting a significant decrease in the 1979–87 period. He shows that capital ratios have declined in recent years, unless security valuation reserves are included in capital, in which case they have been virtually unchanged for the past decade.

Wright estimates that the life insurance industry holds $60 billion to $70 billion in junk bonds, but notes that the historical default record on corporate bonds has been favorable, and an important offset to the increased holding of riskier bonds has been greater holdings of Treasury and agency securities. With respect to commercial mortgages, Wright notes the rising delinquency numbers, but points out they have not yet reached the peak levels of 1976.

The industry is greatly concerned about the solvency issue even though it believes that serious problems are limited to relatively few companies. An insurance company failure exposes even healthy firms to the danger of runs, and the integrity of life insurance products may be called into question, deterring purchases.

Guaranty fund assessments are also an issue, although these payments can often be passed along to the states in the form of tax credits. The industry has supported efforts to modernize state solvency regulation and improve coordination between states through the work of the National Association of Insurance Commissioners (NAIC).

Wright concludes that the industry is not as financially sound as it was a dozen years ago, as a result of reduced profitability and greater financial risks. He sees the industry as having been forced by competitive pressures to accept higher risks, while the state regulators have had to struggle to stay abreast of marketplace developments. Wright sees the troubles of a few companies as presenting real problems for the industry and its regulators.

In his discussion of Wright's paper, Terence Lennon contrasts the environment for life insurers that existed in previous decades with the one that emerged in the late 1970s and early 1980s as a result of the destabilization of interest rates. Insurance customers were transformed from savers to investors, and life companies developed new products that met customer demands but increased interest rate risk and credit risk for the insurers.

A decline in margins—the difference between the yields earned on assets and those paid on liabilities—depressed capital ratios somewhat; more importantly, various accounting innovations such as securitization and financial reinsurance diminished the validity of book capital. The cushion that had long existed because of the industry's conservative accounting disappeared.

Lennon uses the Executive Life case to illustrate that aggregate

limits can work for insurance companies, but do little good if imposed after companies have overinvested in risky assets. Lennon believes that conditions now are right for the adoption of a risk-based capital measure. He anticipates some federal regulatory role, and suggests greater conservatism could be induced in the industry through federal tax policy. Lennon foresees a 20 percent reduction in the number of life companies during the 1990s.

Kenneth Pinkes directs his comments to the fundamental forces he sees at work in the financial services industry. His message is that business risk will continue to rise as the successful innovators become more efficient and stronger and the weak become weaker. Financial institutions, including insurance companies, will become more susceptible to shocks.

Pinkes identifies two groups of fundamental forces, the effects of information technology and changes in the regulatory and public policy environment. The first set of forces will result in product unbundling, economies of scale in a broader range of products, and managerial complexity. Among the second group of forces will be greater tolerance for concentration, greater willingness to subordinate regulatory sovereignty for common global or regional standards, greater acceptance of the blurring of boundaries between regulated and nonregulated sectors, and greater insistence on market discipline. These forces will place increased demands on managements already under severe testing.

Robert Schneider challenges Wright's conclusion that the life industry is not as financially sound as it was a dozen years ago. He notes that the introduction of interest-sensitive products permits companies to compete on the basis of volatile interest rates without providing overly risky guarantees with respect to rates in the distant future.

For mutual companies, participating whole life policies are able to compete with newer products such as universal life because the dividend paid to policyholders has always included a significant contribution from interest earned in excess of the guaranteed rate. It was primarily the stock companies that had to redesign their products to compete in the environment of the 1980s. While annuity products, both single-premium deferred annuities and GICs, generate more investment risks, they have little or no mortality risk. The use of sophisticated investment management techniques can insulate an insurer fairly well from interest rate risk. The recent shift toward greater holdings of liquid assets has mitigated the increased liquidity risks of GICs.

The level of public concern over life insurance companies' holdings of junk bonds is misplaced except with respect to a very few companies, Schneider states. Most holdings are in the least risky category of junk bonds, and much of what is classified as junk is private placements with greater security than the stereotypical junk issue. Mortgages and real estate investments represent a more significant asset in most life

companies, but even here concerns seem overstated. The character of insurance company real estate loans is quite different from the construction loans held by banks. Schneider considers the severity of the real estate problems of life companies to be comparable to those of the 1975–76 period, which did not threaten company solvency.

The Structure, Conduct, and Regulation of the Property–Liability Insurance Industry

J. David Cummins and Mary Weiss address a number of complaints, accusations, and expressions of concern with reference to property–liability insurers. For the most part they find little legitimate basis for these particular areas of dissatisfaction with the industry, but they do identify some serious problems that need to be examined.

The authors find the industry to be competitively structured in most business lines, with numerous firms, relatively easy entry, and satisfactory concentration levels. Much of the blame for premium inflation is put on factors beyond the control of the industry. They find the organizational structure of the industry, including its distribution systems, to be logical. They examine cash flow underwriting—that is, reducing prices during periods of high interest rates in order to increase cash flow and have more investable funds—and conclude that it is a natural practice in competitive markets.

The authors also discuss retroactive loss loading, where insurers price new policies to help absorb past losses. They present an argument that insurers can, and perhaps must, price in this way in situations where a number of insurers incur abnormal losses at about the same time.

Cummins and Weiss find internal rates of return and returns on equity to be reasonable, despite complaints by some that profits are excessive and protests by the industry that profits are insufficient to support an adequate surplus. However, they do see supply problems in the auto and workers' compensation lines if profitability is not improved, and they note the correlations between inadequate pricing of certain lines and intensive rate regulation.

The authors do not see any clear indication of an impending insolvency crisis among property–liability insurers. However, they express unease with the level of reinsurance receivables to surplus and with the fact that many reinsurers are virtually unregulated. They are also nervous about the quality of bond portfolios, fearing that some companies have invested a substantial portion of their assets in bonds of near-junk quality. In general, Cummins and Weiss consider solvency surveillance by regulators to be inadequate. They call for improved statutory statements both to facilitate improved surveillance and to

permit more sophisticated research on the underwriting cycle and the causes of insurance crises.

Roger Joslin reinforces the Cummins and Weiss arguments that the property–liability insurance industry is intensely competitive, and that much of the rhetoric concerning affordability, availability, insurance cycles, and profitability is unjustified. Joslin emphasizes the political demagoguery associated with much rate regulation, and clearly sees little justification for such regulation or for barriers to firms exiting a state or line of business.

He does not see the industry facing a solvency crisis, and he argues that most failures of property–liability companies are preventable, or at least containable if laws are enforced and regulatory action is timely. Joslin sees a need to improve insurance accounting, to hold reinsurance to a high standard, to be skeptical of particularly rapid growth, and to defer the booking of underwriting profit until well after the close of the accident year. Joslin would also reduce the profit opportunities and increase the risk of loss to insider manipulators through a broader definition of voidable preferences and easier reversal of detrimental transactions with financially interested parties.

James Stone applauds the Cummins/Weiss paper for the issues it raises, but wishes the authors had gone further in developing answers to the difficult questions they raised. On the subject of competition, Stone notes that direct response insurance marketing can produce the lowest distribution costs, as a result of economies of scale. Under regulatory schemes that look only at cost and ignore the level of service provided, direct writing would be favored over independent agents. This could lead to a more highly concentrated industry, to the detriment of competition.

Since the authors do not identify the cause of commercial insurance cycles, Stone offers his own theory. He attributes such cycles to market signaling, or use of competitors' price movements as a basis for a firm's price changes. This phenomenon exists because of a dearth of hard evidence on which to base pricing decisions, and will continue as long as underwriters lack the necessary information.

With respect to solvency, Stone disagrees with the authors' suggestion that, without further research, the solvency threat to the property–liability insurance industry cannot be distinguished from the savings and loan disaster. Investment returns are a sufficiently small component of price, and market shares sufficiently price inelastic in the short run, to keep the industry's risk exposure within bounds. A number of firms in the industry are likely to fail in the coming years, however, and the authors' complaints about obsolete accounting and weak reinsurance are valid.

Stone notes the authors' statement that availability and affordability of auto insurance are beyond the control of the insurance industry. He believes that it is in the industry's self interest to serve as a catalyst for

change, lessening dependence on the tort mechanism, tightening fraud control, and reexamining the notion of compulsory insurance. He favors a tempering of rate spreads between high-cost urban areas and low-cost suburban areas.

The Structure and Regulation of Insurance Markets Abroad

Sotirios Kollias describes the insurance industries and regulatory regimes of the major industrialized countries and discusses the dramatic changes taking place in conjunction with European integration. Most European insurance markets have historically been national markets separated by restrictive regulation and other obstacles to entry. An exception is reinsurance, for which an international market exists. Insurance markets have been most highly developed in the United Kingdom, the Netherlands, Japan, and the United States, somewhat less so in France and Germany, and much less developed in the southern European Community (EC) nations. Kollias estimates that rates of return on investments by insurance firms have been highest in the United Kingdom because of U.K. companies' relative freedom to invest in equities. Some measures indicate that companies in the United States and Japan are less efficient than companies in some of the EC countries.

Nonlife companies in most EC countries have been losing money on underwriting but have continued to show profits as a result of sharp increases in asset values. Life companies in Europe have generally been profitable, but Kollias did point out that the five big composite (multiline) companies in the United Kingdom lost more than $1 billion in 1990. These companies have, nonetheless, been involved in less damaging competition than their counterparts in the United States.

The separation of European insurance markets began to erode in 1988, and since then a series of changes have been underway. Kollias discusses the principal EC agreements, the Single European Act of 1987 which included a program of financial integration, and proposals for harmonization of supervision of investment services. Integration of insurance activities has followed two separate paths, with nonlife large commercial risk and individual life policies being sold abroad under home country control, but "mass risk" life and nonlife insurance being sold under host country regulations. More recent proposals are expected to permit the free supply of insurance under home country rules.

The lowering of international barriers and deregulation are rapidly producing a much more competitive environment for insurance activities in Europe. Important structural changes are also taking place through mergers, joint ventures, cross-sector subsidiaries, bank/insurance conglomerates, and network distribution alliances.

In most European countries banks have not been able to underwrite insurance, and life and nonlife companies have been segregated. This separation is likely to be ended soon. Banks have been allowed to distribute insurance products, although insurance companies have generally not been allowed to distribute non-insurance products.

The European integration of banking and insurance in the form of mergers, establishment of subsidiaries, and cross-participation contrasts with the strict limitations on such operations in the United States and the prohibitions in Japan. EC draft directives call for the close cooperation of insurance and bank regulators if a bank or holding company controls an insurance company, however.

Henry Parker points out that the insurance market in the United States, while still the world's largest, is slipping rapidly in its share of world premium volume. He criticizes the domestic industry because so few companies participate aggressively in the expanding overseas markets. While substantial impediments to entry exist in some national markets, it can be done and it is getting easier as a result of federal efforts toward freer international trade.

Parker sees 1995 as the earliest date for real insurance market uniformity in the EC. He anticipates some very substantial reductions in insurance prices in several countries, citing Italy, France, and Luxembourg as examples of the wide variations in premiums for indentical exposures. He also sees advantages in terms of expense reduction, product innovation, and achievement of critical mass. Distribution systems will be altered, with more insurance sold through branches of affiliated banks and other financial service providers. An important stumbling block to rapid completion of the insurance directive is agreement on uniform accounting practices.

One concern for U.S. companies expanding into Europe is the possible reemergence of protectionism, particularly if transition problems severely damage long-protected European companies. There is some risk that a reciprocity standard might replace national treatment, to the detriment of U.S. companies.

Parker notes the importance and potential of the insurance market along the Pacific rim. He also calls attention to the acquisitions of U.S. insurance companies by foreign insurers.

Steven Skalicky reviews insurance market structure in Asia, Latin America, and Eastern Europe to complement Kollias's analysis, which focused primarily on the EC. He makes it clear that barriers that preserve fragmented national markets are under attack around the world.

Asia has the potential to be the fastest-growing market in the 1990s. Japan, the dominant market in Asia, is characterized by a relatively few large companies, including most of the top 10 insurance companies in the world. Japanese companies have been strictly supervised and

limited as to their range of investments. Proposals would liberalize the asset restrictions, and greater flexibility in premium rates was permitted recently.

While the Japanese market is technically open to foreign competition, entry has been difficult. Japanese insurers have not been aggressive in overseas operations, but have the potential for being so. The attraction of Asian countries is not current premium volume, but the potential for growth as they become more industrialized.

In Latin America, Skalicky is most optimistic about Mexico, where the insurance industry is growing rapidly and restrictions on outside ownership have been liberalized. The transition from state control in Eastern Europe eventually will also provide opportunities, as reforms permit foreign participation and ownership and economic changes produce growth.

Skalicky sees unprecedented challenges to the insurance companies, consumers, and regulators. Large insurers that have the capital and resources to penetrate rapidly growing insurance markets may, if successful, survive the global consolidation of the industry. Consumers should benefit from less expensive insurance, but will face increasing risks of insurer insolvency. Insurers' reliance on growth in the value of real estate and securities to offset underwriting losses eventually leads to problems. The challenge to insurance regulators to anticipate and deal with problems in foreign markets is formidable.

Public Policy and Life Insurance

Gerard Brannon proposes a framework for evaluating regulatory and tax policies in the life insurance market. He begins by distinguishing between the risk coverage and the savings elements in the products of life companies, noting the significant tax benefits of the savings component. He presents historical data to show that since 1955, life company reserves have shifted from life insurance to pension and annuity products and life insurance reserves have declined as a percentage of household financial assets. Life insurance in force as a percentage of personal income has increased, however, as consumers shifted from whole life policies, which have a large savings element and require greater reserves, to term insurance. Despite this trend, evidence suggests that consumers still buy too little life insurance.

State regulation of life companies requires the maintenance of adequate reserves and limits the investment risk that can be assumed. In the late 1980s, the historic redundancy in reserves appears to have eroded and investment restrictions failed to protect policyholders from the risk of new financial innovations or the danger of disintermediation. The recent development of variable and universal life policies has been

accompanied by higher-risk investments, but also the opportunity for the investors to make risk choices.

State regulators provide limited solvency guarantees for policyholders, funded by levies on competing companies. In some states insurance companies may apply such levies as credits against premium taxes, effectively transferring losses from the industry to the states. Brannon notes the relatively small volume of guaranty fund assessments in the period from 1975 to 1989 and expresses the view that solvency problems currently facing life insurers are clearly not in the same league as the solvency problems of banks and thrifts.

Brannon points out that the Pension Benefit Guaranty Corporation (PBGC) and state guaranty funds are competitors. When a company purchases an irrevocable contract for an annuity to cover pension liabilities, the guarantee shifts from the PBGC to a state fund. This may work to the benefit of the employer but to the detriment of workers, who have no say in the choice of an insurer. Nonetheless, Brannon argues against federal support of such annuity obligations, using the First Executive case to illustrate his point.

If it is in the public interest to encourage life insurance purchases for the protection of dependents of breadwinners, Brannon would support a guarantee of the ability of insurance companies to fulfill term life insurance contracts, and he would expect such a guaranty program to be successful. However, he would not support the protection of savers and he deplores the current tax advantages that encourage the intermingling of insurance and investment features, complicating the development of an appropriate guaranty scheme for insurance.

Joseph Belth confines his discussion to the issue of federal income taxation of the inside interest in cash-value life insurance and life annuities. Individuals tend to postpone the distressing subject of life insurance, and therefore a major expense for insurance companies is the commission paid to agents to perform the "anti-procrastination" function. Because natural premiums for life insurance are very low for young purchasers, companies do not receive sufficient revenue to compensate agents. Furthermore, the very high premiums in later years tend to produce adverse selection as healthier members drop insurance. Both of these problems can be mitigated by level-premium, cash-value insurance, which creates a savings component. The federal income tax on the inside interest is generally deferred. Life annuities, which provide regular payments over an individual's lifetime, make sense only in periods of low interest rates, because one can obtain almost as high a return investing principal directly during high-rate periods without destroying the principal, as happens with an annuity. A life annuity may have a lengthy accumulation period before the beginning of the liquidation period, and here again federal income taxation on inside interest is generally deferred.

A theoretical argument can be made that deferred tax treatment of inside interest in these two situations can no longer be justified. Cash-value life insurance is of increasing benefit to high-income individuals, and life annuities are increasingly used solely because of tax considerations. Nevertheless, Belth argues that current taxation of the inside interest would have a "devastating impact on the life insurance industry and would threaten its very survival." He also believes the industry has sufficient political clout to discourage any legislative attempt to impose current taxation.

Earl Pomeroy brings a regulator's perspective to the issues raised by Brannon. He contends that the sophistication of regulatory oversight has been improved in response to the lower capitalization levels, slimmer profit margins, and higher risks found in the life insurance industry today. Pomeroy cites the improved system for bond evaluation, a model law covering bond concentrations, limits on junk bonds, and progress toward reserve requirements and limitations on other higher-risk investments. While such regulatory activity has the necessary effect of lowering investment returns and restricting capital flows to particular activities, it is wholly appropriate because solvency protection is the regulator's first priority.

Pomeroy discusses such consumer protection regulations as required disclosures of product characteristics and minimum product quality standards. He chides Congress for attempting to achieve social goals through the imposition of costly market restrictions.

With respect to guaranty funds, Pomeroy agrees with Brannon that they can dull consumer sensitivity to insurer risk exposure, but finds that they serve a critical role. Despite assessment limitations, Pomeroy is reasonably hopeful that the guaranty fund mechanism has sufficient capacity, on a state-by-state basis, to handle a major life insurance failure.

After briefly reviewing the history of state insurance regulation, including recent activities of the National Association of Insurance Commissioners (NAIC), Pomeroy lists several concerns state regulators have with federal regulation of insurance. He maintains that federal officials tend to overstate the solvency problem, because of their sensitivity to the thrift failures and because they view the Executive Life case as a harbinger of trouble for the life industry generally. Newly implemented state reforms should be given time to work. Pomeroy argues that political pressures could lead to a situation where federal solvency regulation is imposed alongside state regulation of rates with the two sets of regulators pursuing conflicting objectives. Pomeroy does not expect a specific federal regulatory proposal to have much political appeal, even though the general concept might.

Warren Wise challenges Brannon's characterization of the cash value in permanent life insurance as being equivalent to a savings account. He argues that it arises from the leveling of premiums and is an

integral part of providing lifetime protection at an acceptable price. The tax-free inside buildup is a subsidy to encourage life insurance protection, not savings.

Wise acknowledges that the industry is more vulnerable to failure than it once was, although his proposals for dealing with the problem are at odds with Brannon's. Rather than limit protection to death benefits, as Brannon would do, Wise would cover all policyholders. However, he would want all interested parties to share in losses when an insurer fails, including insurance sales representatives, policyholders, and state governments.

Guaranty fund assessments should be risk-based and collected on a regular basis so that the heaviest impact will fall on those insurers most likely to fail. Sales representatives should have an incentive to recommend safe companies, and states should have an incentive to devote adequate resources to solvency regulation. State contributions could be in the form of the tax offset for guaranty fund assessments that already exists in several states. Insurance consumers should share the burden by recovering less than the full amount due them.

Wise would improve regulation by linking capital requirements to risk, strengthening investment restrictions, improving accounting practices, and better controlling reinsurance transactions. Regulators must be provided sufficient resources to carry out their responsibilities.

The question remains of who should administer solvency regulation, and Wise would prefer that it be done without federal involvement if the states can adopt and enforce strong, uniform solvency standards. However, if a federal role proves to be necessary, he would prefer that federal involvement be limited to the setting of minimal standards, oversight, and the ensuring of compliance.

Public Policy and Property–Liability Insurance

Scott Harrington makes some very specific recommendations as to what changes should, and should not, be made to property–liability insurance regulation. He would like to reduce guaranty fund coverage in order to increase market discipline. He does not think a case has been made for a federal regulatory role, and believes that federal supervision could actually increase total insolvency costs. Harrington would like to see the abandonment of state rate-setting, but would not alter the industry's antitrust exemption.

With respect to guaranty funds, Harrington argues that guarantees result in policyholders having reduced incentives to buy coverage from safe insurers; the market collectively has more information and knowledge than the regulators, and the spreading of insolvency losses through guaranty funds can reduce pressure on government to commit adequate resources to solvency monitoring. It would be desirable to

require a large co-payment from the policyholders, especially those who are best able to monitor insolvency. Harrington also makes a case for post-insolvency assessments being superior to an accumulated fund. The arguments presented against federal regulation of property–liability insurers draw heavily on the thrift experience, and particularly the role of Congress in condoning forbearance for insolvent institutions.

Harrington argues that rate regulation of property–liability insurance has little or no justification, and he would limit the regulatory role to requiring appropriate information disclosure. The industry is highly competitive, with ease of entry, and market forces can most efficiently determine rates. Harrington contrasts the industry to public utilities, where rate regulation is necessary. Rate regulation can result in insurers exiting certain lines or states, reducing net worth and thereby increasing insolvency risk; it can also result in insurers being less innovative. Regulation can directly increase expenses and distract management as a result of the rate hearing process.

Harrington sees the cooperative development of policy forms and sharing of loss data as entirely constructive, lowering costs, easing entry, and increasing forecast accuracy. He sees the forecasting of future losses by advisory organizations as serving a useful function to the extent that they improve individual insurer forecasts. He is concerned that a substantial change in the industry's antitrust exemption could lead to higher prices and less stability, and result in a surge of costly litigation.

J. Robert Hunter vigorously challenges Harrington's characterization of the property–liability insurance market as highly competitive, as well as his proposal to remove rate regulation while preserving the industry's exemption from antitrust laws. Hunter presents evidence that the public does not have sufficient information to select insurance companies on the basis of cost or service quality. He also cites findings that collusion on rates has been the norm, not the exception, in the industry. Hunter reviews the mechanism by which the Insurance Services Office, an industry service organization, provides insurers with advisory rates. He argues that, even with plans to exclude expense factors from the rate data, some critical components of the rate formula will still be provided that instead should be calculated independently by individual insurers, if collusion is to be prevented.

Hunter could agree to easing or even phasing out rate regulation, but only if all anticompetitive forces were eliminated. Specifically, he mentions the antitrust exemption, the anti-rebate laws, the anti-group laws, the barriers to entry by banks, the information gap, and the underwriting selection problem.

With respect to solvency, Hunter challenges Harrington's proposal to decrease guaranty fund coverage in order to improve market discipline. He would expand coverage for personal lines and small busi-

nesses. Even with respect to large commercial customers, he notes that loss of insurance protection could have secondary effects on the public when the business, as well as the insurance company, fails. Hunter calls for federal minimum standards for solvency regulation, and direct federal regulation of alien reinsurance and alien surplus lines markets.

Robert Litan agrees with most of Harrington's points, but he would not reject a federal solvency role and would draw different lessons from the thrift crisis. Litan faults the state regulators for their performance in connection with the larger failures of property–liability insurance companies in recent years. He attributes recent efforts by the NAIC to improve state regulation to the threat of federal regulation. Litan proposes creating a federal regulatory program and a national guaranty fund system as an alternative to state regulation and guaranty funds. Insurers that chose the federal system would no longer be subject to rate regulation. While Litan acknowledges some adverse selection problems with his proposal, he sees it as a way of forcing reform of the state systems, or having property–liability insurance regulation gravitate to the federal level.

Litan draws on his interpretation of the thrift crisis to support the idea that a pre-funded guaranty system would be superior to the usual post-insolvency assessment procedure. He points out that thrift regulators engaged in forbearance largely because of insufficient funds to resolve failed institutions.

Litan is concerned that major exogenous events pose a substantial threat to the industry, citing specifically a potential major earthquake and possible court rulings making insurance companies responsible for the cost of cleaning up hazardous waste sites. He suggests steps that could be taken in advance to protect the industry from being overwhelmed by such calamities.

Richard Stewart briefly outlines what he sees as the major issues in rate regulation and in dealing with the underwriting cycle. He then turns to the issue of solvency and argues that insolvency is a natural outcome for a property–liability insurer.

It is the liabilities of the insurer, not the assets, that are of most concern, and these liabilities extend far into the future. In Stewart's view, the future is not going to be like the past, and therefore it is nearly impossible to estimate the extent of these liabilities for pricing or reserving purposes. In the general liability line the threats are systemic, further adding to the industry's susceptibility to catastrophes on the liability side. Moreover, the industry is intensely competitive, and the incentives and rewards are concentrated on the front end of a transaction, with willingness and ability to pay claims coming much later.

If it is the duty of the regulator to prevent insolvencies, it is very hard to accomplish this by early detection and swift action because of the uncertainty about the extent of the liabilities. However, it is easy to

forbear and avoid recognition of insolvency for several years, thereby escaping responsibility. In Stewart's view, this perverse incentive for the regulator increases the risk of even greater losses.

Our system of compensation for accidents functions through an insured civil liability procedure. In the event of insurance company insolvency, the victims include not only direct policyholders but large groups of individuals, whose only link may be the use of a common product or exposure to a form of pollution, and who are terribly hurt by the insurance company insolvency. We should not think only of corporate America in considering guaranty fund protection surrounding the property–liability insurance system.

Stewart believes that state regulation, with improvements such as those currently in process, can do a satisfactory job of detecting and acting against emerging insolvencies. However, liquidation and guarantees for large-scale general liability insolvencies should be managed at the national level.

Conclusions

The ability of domestic insurance companies to meet their obligations is vital not only to the welfare of their customers but also to the economy and social fabric of the country. In recent years the structure of the life insurance industry has changed in a way that has increased the risk of major insurers becoming insolvent or illiquid. Capital ratios have not increased in response. At the same time the property–liability insurance industry has become more leveraged and perhaps more vulnerable to large-scale losses.

Opinions differ widely as to the extent and duration of the current weaknesses in the asset quality of life insurers, but it is generally agreed that state regulation and the system of guaranty funds are being materially strengthened by various initiatives. Experts disagree, however, about the ability of even strengthened state systems to avert solvency problems or to safeguard policyholders and others in the event of failures of major insurers. Agreement on the desirability and extent of protection to be provided for policyholders, pensioners, and savers dependent on an insurance company's ability to pay, would facilitate determination of what, if any, federal role is desirable in regulation or in administering guaranty funds.

Congressional interest in examining the insurance industry, continuing downgrades in ratings of individual companies, and the prospects for a prolonged period of depressed commercial real estate values, all suggest that insurance industry solvency issues will be with us for some time.

Insurance Companies as Financial Intermediaries: Risk and Return

*Richard W. Kopcke and Richard E. Randall**

Insurance companies, by their nature, bear risks. These risks partly depend on insurers' ability to anticipate the frequency and magnitude of the losses that they promise to cover. Because insurers manage portfolios of assets to pay these obligations, they also bear risks similar to those of other financial intermediaries, risks that depend on changes in the value of their assets compared to that of their contractual liabilities.

Because the capacity of insurance companies to absorb losses is limited, their customers also bear some risk. In order to limit this risk, a variety of public agencies examine and regulate insurers. Often contracts also are covered by guaranty funds, which essentially allow the customers of failing insurance companies to transfer a portion of their unsatisfied claims to the other participating insurers. But, this safety network can fail if too many insurance companies have assumed similar risks.

Recently, some highly publicized failures of insurers, following the difficulties of the thrift and banking industries, have drawn attention to the financial condition of the insurance industries.[1] Because the insurance business differs substantially from that of depository institutions, most of the specific problems of these industries are not comparable.

In one general respect, however, the same challenge confronts

*Vice President and Economist, and Vice President, respectively, Federal Reserve Bank of Boston. The authors would like to thank Betsy L. Morgan, Inge Schaefer-Schmidbauer, and David Zanger of the Boston Fed for research assistance, and James Bugenhagen and Robert Klein of the National Association of Insurance Commissioners for providing data and information.

[1] See, for example, IDS (1990); U.S. Congress (1990); Stevenson (1990); Laing (1990); American Council of Life Insurance (1990); and Kramer (1990).

insurers, thrift institutions, banks, and most other intermediaries. The financial strategies of intermediaries in the United States presumed a stability of interest rates that began to break down in the late 1960s. These intermediaries assumed a bet that yields and differences among yields would not change greatly for prolonged intervals of time. Consequently, the rising interest rates of the past two decades are taking their toll. From the point of view of many financial institutions, a principal "failed promise" during these years has been the bout of persistent inflation responsible for increasing rates of interest.

In order to cope, many financial institutions assumed new bets by reaching for riskier assets offering higher yields or by operating with less capital per dollar of assets. To varying degrees, many insurance companies have adopted these strategies. Life insurance companies holding one-sixth of their industry's assets have relatively low capitalization, and companies holding as much as three-quarters of industry assets have substantial investments in assets that currently are considered risky. Property–liability companies representing approximately one-fifth of that industry's assets have comparatively little capital by historical standards, and companies representing three-fifths of industry assets would have low capital if interest rates were to rise substantially in the near future.

Of all the remedies inspired by the recent investigations of the insurance industries, none appears to be more important than raising more capital. With the increasing volatility of interest rates and the increasing competition among financial intermediaries during the last three decades, insurers need to carry more capital per dollar of assets if insurance contracts are to be as secure as they were supposed to be prior to the late 1960s. Because guaranty funds inherently are no stronger than the capital of participating insurers, these funds, alone, cannot compensate for insurers' lack of capital unless these funds commit the government to indemnifying customers of insurance companies.

Regulatory reforms could do much to limit the risks borne by insurers and those holding insurance contracts, but the potential efficacy of these reforms is limited. As financial intermediaries, insurers invest in some assets whose risks and returns are difficult for "outsiders" to assess. Furthermore, much of the risk borne by an insurance company arises from the blends of both assets and liabilities that constitute the company's balance sheet. Successful regulation could foster an "adequate" diversification of assets or the "proper" matching of assets and liabilities; yet, after a point, assessing "adequacy" and "propriety" requires the oversight and skills of a resident shadow management.

The analysis in this paper proceeds from the general to the specific. The first section discusses the risks inherent in financial intermediation. The second section describes the roles of life and property–liability insurance industries in credit markets, discussing some of the changes

in their aggregate balance sheets during the last three decades. The third section, using reports submitted to the National Association of Insurance Commissioners for 1989, examines the distribution of assets, capital, and liabilities among life insurance companies and among property–liability insurance companies. The fourth section, using public information, discusses the risks entailed by the asset concentrations of insurance companies and the similarities between the recent experiences of insurers and banking institutions. This paper concludes that many insurers must increase their capital to cope safely with the consequences of a significant slump in the value of commercial real estate, a substantial decline in corporate profits, or a significant rise in credit market yields.

Financial Intermediation and Risk

Economic development and capital formation depend on the efficient transfer of resources from those who would save to those who would invest. In the United States, more than three-quarters of the funds transferred to investors in the form of credit market instruments or loans flow through financial intermediaries. On one hand, insurance companies, depository institutions, pension funds, and other intermediaries issue financial claims with features that appeal to savers; on the other hand, these intermediaries accept financial obligations from borrowers on terms that appeal to borrowers. Without this intermediation, each financial contract must accommodate at once the frequently disparate motives of savers and investors. Intermediaries also serve savers and investors by evaluating investors' prospects, monitoring their performance, and providing both savers and investors a dependable access to funds on terms commensurate with their risks and returns.[2]

By design, intermediaries, which transform primary securities issued by investors into assets valued by savers, manage an unmatched book. To compensate for this risk, these intermediaries expect to receive a sufficiently large margin between the effective yields they offer savers and the effective yields they earn on their assets. Savers may be willing to earn a yield below that prevailing in financial markets or to sacrifice liquidity in order to receive services not offered by primary securities or by mutual funds. Investors who are not recognized in public credit markets may be willing to pay greater yields or to accept terms more stringent than those prevailing in financial markets in order to cultivate

[2] See Gurley and Shaw (1955, 1956, 1960); Navin and Sears (1955); Baskin (1988); Jensen and Meckling (1976); Leland and Pyle (1977); Smith and Warner (1979); Diamond and Dybvig (1983); Diamond (1984); Fama (1985); Bernanke and Gertler (1987); Gertler (1988); and Hoshi, Kashyap, and Scharfstein (1989).

a reliable source of funds. The more savers value competitive yields and the more investors can avail themselves of competitive yields, the more intermediaries' expected profit and capacity for bearing risk shrink.

The capacity of intermediaries to bear risk also depends on their leverage. With more equity capital and surplus per dollar of assets, intermediaries can honor their contracts despite deeper or more prolonged financial setbacks. In principle, more capital could increase the odds of survival when expected profit margins are low compared to the volatility of profits. Yet, with lower profit margins, intermediaries ordinarily require greater leverage to maintain a competitive return on capital. From the viewpoint of their customers, increasing leverage under these circumstances would compromise safety and soundness.

Extraordinary losses or competitive pressures encourage insurance companies, like other intermediaries, to acquire assets promising greater yields and risks or to increase the volume of their underwriting relative to their surplus. These strategies increase both the odds that the contracts of weak insurers will not be honored in full and the odds that failing insurers will not recover. These risky strategies often are the most appealing for imperiled intermediaries, because the price of obtaining new capital can appear to be too expensive for the existing owners.

Regulation and Guaranty Funds

Because the interests of those who own and manage financial institutions do not necessarily coincide with the interests of their customers, intermediaries typically are regulated by public agencies. But this reliance on oversight by outsiders also can pose risks. Assessing the specific values of insurers' assets and liabilities or their inherent risks and returns is difficult for both customers and regulators.[3]

Many insurance contracts are covered to some degree by guaranty funds in most states. Like the guaranty funds for depository institutions, the strength of these funds depends on the ability of their members to pay the necessary assessments. And, like the guaranty funds for depository institutions, the failure of these funds may uncover an implicit "put" written on state or federal governments. In cases when the federal government provides disaster relief or catastrophic insurance coverage, insurers, their customers, and their guaranty funds possess an explicit put option. Sometimes this put is less obvious: insurers may be able to claim tax deductions or tax credit for assessments paid to guaranty funds. Because of the ambivalent status of guaranty funds, governments that bear the potential burden of this put option attempt to

[3] See Randall (1989). Assessing these risks also may be difficult for insiders; see Simons (1991).

design regulations that limit the inevitable failure of insurers to isolated, manageable cases.

This put option on the government also has deeper consequences for regulation and economic policy. Even if intermediaries hold well-diversified portfolios of assets, their financial condition is contingent on the stability of the prices of capital assets. For example, if economic policy does not ratify the expectations of investors who install an "excessive" number of factories or develop an "excessive" amount of real estate, then the subsequent collapse in the prices of capital assets could entail extraordinary losses among financial intermediaries. Accordingly, the success of "deposit insurance" ultimately depends on the ability of economic policy and financial regulation to avoid binges and purges, to foster a flow of investments generally consistent with the potential growth of the economy.

Neither regulation nor guaranty funds necessarily promote safety and soundness. At times, regulations limit either the assets intermediaries hold or the variety of liabilities they issue in a fashion that diminishes their efficiency, perhaps reducing their expected returns more than the potential variability of their returns.[4] At other times, intermediaries reporting substantial current returns (by undertaking a risky investment strategy) may appeal strongly to customers and may not be examined closely by regulators; these institutions also may be allowed to carry less capital or surplus than their competitors.[5] To the degree customers believe that regulated intermediaries bear an "underwriters' laboratory seal of approval," and to the degree that intermediaries are covered by explicit guarantees or by an implicit put option onto the government, financial institutions can become less sound, unless regulators can assess accurately their financial strategies.

Insurance Companies as Financial Intermediaries

Insurance companies manage approximately 16 percent of all the financial assets held by intermediaries in the United States (Table 1). The share of assets under their control is nearly as great as the share of assets held by the thrift institutions; only the share of commercial banks is significantly higher.

Since the 1950s, property–liability insurers' share of all financial assets held by intermediaries has remained constant, while the share

[4] Regulations designed to make intermediaries more secure by limiting the liabilities they may issue and the assets they may hold might instead make both the economy and intermediaries less stable; see Kopcke and Rosengren (1989).

[5] See, for example, U.S. Department of the Treasury (1991).

Table 1
Assets of Financial Intermediaries
Percent of Total

Financial Intermediary	1900	1912	1922	1929	1952–1955	1956–1960	1961–1965	1966–1970	1971–1975	1976–1980	1981–1985	1986–1990
Life Insurance Companies	10.1	13.0	12.2	14.4	21.1	20.2	18.0	16.0	13.4	12.1	11.4	11.6
Property–Liability Insurance Companies	2.9	3.2	4.1	6.2	4.4	4.4	4.3	3.8	3.7	4.1	4.1	4.5
Commercial Banks	64.1	65.5	64.7	52.7	47.2	40.8	37.1	37.5	39.2	37.9	34.8	30.9
Thrift Institutions	19.1	15.2	13.6	14.8	15.4	18.4	20.9	20.5	21.0	22.3	20.3	17.9
Pension Funds	*	*	.1	.4	5.6	8.4	10.8	12.4	13.5	15.3	17.1	17.6
Private	n.a.	n.a.	n.a.	n.a.	3.4	5.4	7.2	8.3	8.9	10.4	11.6	11.3
State & Local Government	n.a.	n.a.	n.a.	n.a.	2.2	3.0	3.6	4.1	4.6	4.8	5.5	6.3
Investment Trusts	*	*	.2	2.6	1.4	2.3	3.3	4.0	3.4	1.8	2.1	6.6
Mutual Funds	n.a.	n.a.	n.a.	n.a.	1.4	2.3	3.3	3.9	2.8	1.6	2.0	5.2
Finance Companies	*	*	*	2.2	3.7	4.3	4.6	4.7	4.7	4.8	4.9	5.1
Securities Brokers and Dealers	3.8	3.1	5.1	6.7	1.2	1.1	1.1	1.2	1.0	1.1	1.5	1.9
Money Market Mutual Funds	n.a.	n.a.	n.a.	n.a.	0	0	0	0	*	.7	3.8	3.8

* = less than 0.05%

n.a. = not applicable

Source: All data 1900 to 1929 from Goldsmith (1955) and Goldsmith (1958).

All data 1952 to 1990 from the Board of Governors, Federal Reserve System, *Flow of Funds.*

Table 2
Insurance Companies' Holdings of Selected Financial Assets
Percent of Total Value Outstanding of Each Security

Asset	1960–1964	1965–1969	1970–1974	1975–1979	1980–1984	1985–1989
Tax-Exempt Bonds						
Life Companies	4.8	2.9	2.0	2.2	2.0	1.3
Property–Liability Cos.	11.9	11.7	13.9	19.4	21.0	18.0
Corporate Bonds						
Life Companies	51.4	45.1	35.8	34.4	34.1	32.0
Property–Liability Cos.	1.8	2.8	3.4	4.4	4.0	4.4
Corporate Equities						
Life Companies	1.2	1.2	1.6	2.2	2.0	1.5
Property–Liability Cos.	2.3	1.9	2.4	2.5	2.4	1.4
Commercial Mortgages						
Life Companies	30.5	31.2	29.4	29.6	30.4	26.8
Property–Liability Cos.	.3	.3	.2	.2	.6	.8
Multifamily Mortgages						
Life Companies	19.0	25.4	23.0	17.5	12.8	8.9
Home Mortgages						
Life Companies	16.6	12.6	7.0	2.8	1.6	.8

Source: Board of Governors, Federal Reserve System, *Flow of Funds*; A.M. Best Company, *Best's Aggregates and Averages—Life/Health*, various years; and A.M. Best Company, *Best's Aggregates and Averages—Property/Casualty*, various years.

managed by life companies has fallen by almost one-half. During the early 1950s, life companies alone managed about 21 percent of intermediaries' assets. Currently, their share is under 12 percent. About two-thirds of this decline occurred in the late 1960s and in the 1970s; since then, the share of life insurers has changed little.

The presence of insurance companies traditionally has been greatest in the bond and mortgage markets (Table 2). During the 1960s life insurers held about one-half of the outstanding corporate bonds. Although this share has fallen with the advent of mutual funds and the growth of pension plans, life companies still hold approximately one-third of corporate bonds. During the past thirty years, life insurers consistently have held approximately 30 percent of commercial mortgages, while their shares of residential mortgages have declined because of the growth of the thrift industry. Property–liability insurers hold approximately one-fifth of the outstanding municipal bonds.

Both life and property–liability insurers invest more than one-half of their assets in longer-term securities bearing fixed yields (Table 3). Bonds account for almost 50 percent of life insurers' assets, and mortgage loans, four-fifths of which were commercial mortgages in 1989, account for another 20 percent. Together, real estate holdings and corporate equities, mostly the common stock of affiliates, represent less

Table 3
Balance Sheet of Life and Property–Liability Companies
Percent of Total Assets

	1960–1964	1965–1969	1970–1974	1975–1979	1980–1984	1985–1989
Life Insurance Companies						
Assets						
Bonds	47.4	42.6	40.2	43.4	40.7	46.5
Government Bonds	9.2	6.4	4.8	6.2	8.6	12.9
US	n.a.	n.a.	n.a.	n.a.	5.0	8.4
Special Revenue	n.a.	n.a.	n.a.	n.a.	1.9	3.1
Corporate Bonds	38.2	36.2	35.5	37.2	32.1	33.7
Utility	n.a.	n.a.	n.a.	n.a.	9.2	7.8
Industrial	n.a.	n.a.	n.a.	n.a.	21.7	25.0
Corporate Stock	4.8	5.6	6.5	6.4	6.0	4.9
Preferred Stock	n.a.	n.a.	n.a.	n.a.	2.1	.9
Common Stock	n.a.	n.a.	n.a.	n.a.	3.9	4.0
Industrial	n.a.	n.a.	n.a.	n.a.	1.6	1.2
Affiliates	n.a.	n.a.	n.a.	n.a.	1.7	2.4
Mortgage Loans	35.5	37.5	33.3	28.2	23.9	19.8
Commercial Mortgages	9.2	11.3	13.3	15.4	15.6	15.2
Real Estate	3.1	2.9	3.0	2.9	2.5	2.4
Policy Loans	4.6	5.8	7.9	8.0	8.5	5.3
Separate Account Assets	n.a.	1.2	3.5	5.1	9.0	10.4
Other Assets	4.5	4.8	5.5	6.0	9.4	10.7
Liabilities						
Reserves	81.4	80.2	81.0	81.6	79.0	82.4
Other Liabilities	10.2	11.0	11.0	11.4	12.9	9.7
Capital and Surplus	8.4	8.8	7.8	6.9	8.2	8.0
Property–Liability Companies						
Assets						
Bonds	50.3	50.0	51.4	62.2	58.0	57.8
US Government	16.9	12.2	7.1	9.8	10.7	15.3
State and Municipal	16.0	14.0	15.2	13.8	11.2	9.2
Special Revenue	11.5	14.3	17.2	24.5	25.7	21.0
Industrial	5.2	8.8	11.1	13.1	9.7	11.6
Common Stocks	32.0	31.7	28.2	17.2	14.0	9.4
Preferred Stocks	2.6	2.7	3.4	3.2	3.9	2.1
Other Invested Assets	*	*	.1	.3	.6	.6
Mortgage Loans	.4	.4	.3	.3	.7	1.1
Real Estate	1.5	1.6	1.6	1.4	.8	.2
Other Assets	13.1	13.6	15.0	15.4	22.0	28.7
Liabilities						
Losses	25.9	30.7	36.5	44.4	46.0	43.0
Loss Adjustment Expense	n.a.	n.a.	n.a.	n.a.	6.6	7.2
Unearned Premiums	25.9	25.4	23.9	21.4	17.5	16.9
Reinsurance Funds	1.1	1.4	1.3	1.2	1.4	1.4
Other Liabilities	5.3	5.8	6.7	7.7	6.8	6.3
Capital and Surplus	41.8	36.7	31.6	25.2	25.7	24.9

* = less than 0.05%.

n.a. = not available.

For 1960 to 1976, data for the property and casualty companies are on a nonconsolidated basis.

Source: For life insurance companies from 1960 to 1979, American Council of Life Insurance, *Life Insurance Fact Book*, various years. For life insurance companies from 1980 to 1989, A.M. Best Company, *Best's Aggregates and Averages—Life/Health*, various years. For property and casualty insurance companies, A.M. Best Company, *Best's Aggregates and Averages—Property/Casualty*, various years.

than 8 percent of life insurance assets. Property–liability or casualty insurers invest almost 60 percent of their assets in bonds and another 10 percent in equities, while their holdings of mortgage loans and real estate are minimal. The average maturity of bonds in both life and property–liability insurers' portfolios exceeds 10 years, and the average maturity of mortgages is approximately one-half that of bonds.

The Correspondence between Assets and Liabilities

The invested assets of insurance companies are financed principally by the premiums they have collected for writing their contracts and by capital or surplus, which represents the contribution of those who own the companies. Most of the assets of insurance companies are held in reserves to pay the claims of those holding their contracts.

Although life insurers anticipate paying most of their claims only after their contracts have been in force for many years, those who own these contracts often possess the option to borrow against their reserves (frequently at favorable rates of interest) or to cancel their contracts for cash. Recently, some life insurers have aggressively sold guaranteed investment contracts (GICs) in addition to their more traditional insurance and annuity products. Because GICs are comparatively short-term liabilities, which appeal to buyers mainly by offering a competitive rate of interest, insurers relying on these contracts reduce the average "maturity" of their liabilities.

The reserves of property–liability companies are held mainly against homeowner, automobile, and commercial policies. Casualty insurers ordinarily expect to pay most of their claims within a few years of writing their contracts. Yet, when casualty companies can replace expiring contracts with new contracts and cover their claims by their flow of premium receipts, they may manage a relatively stable portfolio of assets over many years.

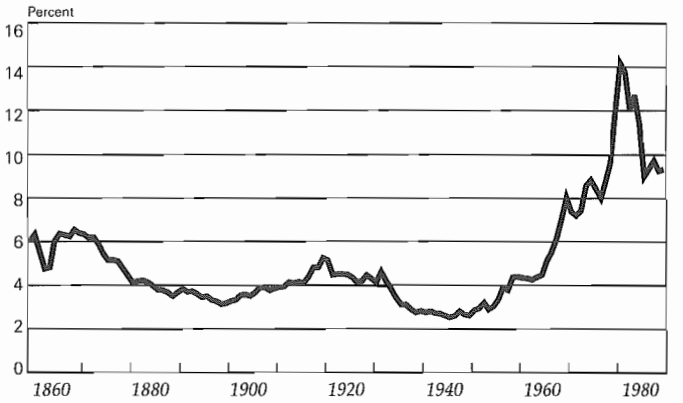
If yields on securities are relatively stable, insurers can comfortably regard their liabilities as being of long duration and invest them in long-term assets. Indeed, when the yields on longer-term securities exceed those on shorter-term securities, insurers can price their contracts most attractively by investing their assets in longer-term securities.

Should all yields rise significantly and remain high, however, established insurers cannot continue to offer competitive terms on existing contracts without diminishing their return on surplus. Property–liability insurers, especially, may depend on the flow of premiums to pay claims should the values of their assets fall at the same time that the magnitude of their losses unexpectedly rises. Under these circumstances, insurers could find themselves relying on comparatively short-term liabilities to finance long-term assets.

Although the history of interest rates during the century ending

Figure 1

Interest Rate on Corporate Bonds



Note: For 1860 to 1900, the interest rate is for high-grade railroad bonds.
For 1901 to 1940, the interest rate is for prime corporate bonds.
For 1941 to 1990, the interest rate is for Moody's Aaa corporate bonds.
Source: Homer (1963) and *Economic Report of the President, 1990, p. 368.*

with the 1960s encouraged insurance companies to invest their reserves in long-term assets, their experience during the subsequent two decades undermined their confidence in this strategy. Between 1860 and 1960, interest rates on bonds were relatively stable (Figure 1). During the past three decades, however, a doubling of yields brought many changes to the insurance industries.

The Performance of the Life Insurance Industry

Since the 1950s, the capitalization of life insurance companies as a whole has varied little, remaining near 8 percent of the value of their assets as reported on their books. But at times during the 1970s and 1980s, the yields on their bonds and mortgages were sufficiently below yields prevailing in credit markets that their capitalization would have been below zero had their assets alone been marked to market.

Although policy lapse rates and loans to policyholders increased during this interval, the vast majority of policyholders left their funds on deposit with life insurers through 1985, when the returns on insurers' assets once again compared favorably with the yields prevailing in credit markets. Nonetheless, life insurance companies' share of the flow of funds into intermediaries fell significantly beginning in the late 1960s.

Established insurers coped by promoting new liabilities or new lines

of business, while new companies, unburdened by investments bearing low yields, expanded their share of the life insurance, annuity, and pension businesses. Life insurers also acquired new assets promising greater or more flexible returns, often accompanied by more risk. As a result of this experience of the past two decades, life insurers increasingly are promoting their liabilities as investment contracts, and those purchasing these liabilities increasingly value them mainly as financial investments. These innovations may diminish life insurers' ability to bear risk in the future.

The Performance of the Property–Liability Insurance Industry

During the past three decades, the capitalization of property–liability or casualty insurance companies fell more than two-fifths. In the early 1960s, the capital and surplus of these insurers averaged more than 40 percent of assets. After earning a low rate of return on surplus in both the mid 1960s and the mid 1970s, their capital and surplus fell below one-fourth of assets.

Though the average capitalization of property–liability companies as reported on their books has not changed greatly since the 1970s, at times during the 1980s their capital would not have exceeded one-sixth of assets, had their assets alone been marked to market. Customers of property–liability insurers cannot cash in their policies, so marking only the assets of these insurers to market understates their capital and surplus. Nevertheless, during the 1980s persistent underwriting losses substantially depressed the return on surplus for casualty insurers as a whole. Since 1980, for example, the average return on surplus for casualty insurers has been less than that of banks (10 percent versus 13 percent), even though the return on surplus for casualty insurers has been more volatile. This performance may be attributed partly to established insurers' pricing existing and new contracts attractively in order to maintain their flow of premium receipts.

Financial Characteristics of Insurance Companies in 1989

Within the life and property–liability insurance industries, the financial characteristics of the individual companies can differ considerably from those for their industry. Though the aggregate statistics for life insurers show that the industry as a whole has not assumed great risks, companies holding one-sixth of the industry's assets have relatively low capitalization, and companies holding as much as three-quarters of assets have substantial investments in risky assets. Property–liability companies holding one-fifth of that industry's assets have relatively little capital by historical standards. If interest rates were to rise

substantially in the near future, the capitalization of property–liability companies holding more than three-fifths of the industry's assets would be less than one-half of recent industry averages.

In retrospect, many insurance companies carried too little capital in the 1970s to cover adequately the risks inherent in their balance sheets. The capitalization of these insurers is now less than that of the 1970s, while their risks have not diminished. By this standard, rather than any minimum acceptable ratio of capital to assets, the capital of many life and casualty insurers appears to be too low given the risks they are bearing.

Life Insurance Companies

Table 4 describes the distribution of assets in 1989 for the 62 largest life insurance groups, representing about 80 percent of the industry's assets. One-sixth of the sample's assets were held by companies with capital less than 5 percent of assets (column 1). Approximately three-quarters of the sample's assets are held by companies for which capital and surplus is no more than 6 percent of assets.

The table subdivides this sample further, according to each company's investments in real estate, equity, low-grade bonds, and mortgages. For example, companies with capital to asset ratios below 5 percent hold 16.2 percent of the sample's assets. The entries in the first row of columns 2, 3, and 4 (which sum to 16.2 percent) partition this share according to investments in risky assets: 13.6 percent of assets are held by companies for which capitalization is less than 5 percent *and* for which investments in real estate, equity, low-grade bonds, and mortgages are greater than three times capital and surplus. Similarly, the entries in the first row of columns 5, 6, and 7, columns 8, 9, and 10, or columns 11, 12, and 13 (each group of three columns summing to 16.2 percent) partition the share of assets held by the companies with low capitalization according to their investments in specific assets: 10.4 percent of assets are held by companies for which capitalization is less than 5 percent *and* for which investments in real estate and equity are less than one-half of capital and surplus.

Most of the assets of life insurers are held by companies for which capital and surplus is between 5 and 6 percent of assets (Table 4, row 2). Although these companies have assets invested in real estate, equities, and low-grade bonds, these investments generally are not as great as their investments in mortgages, four-fifths of which are commercial loans. Whereas together these companies hold 58.5 percent of the industry's assets, 43.0 percent of assets are held by insurers for which mortgages are at least three times capital and surplus (row 2, last column); only 6.7 percent of assets are held by insurers for which holdings of low-grade bonds exceed capital and surplus (column 10);

Table 4
Allocation of Assets among Life Insurance Companies, 1989
Percent of Total Assets

Life Insurance Companies, Grouped by Capital and Surplus as a Percentage of Assets		Total	Total Risk Assets (percent of capital and surplus)			Risk Assets: Real Estate and Equity (percent of capital and surplus)			Risk Assets: Bonds below Investment Grade (percent of capital and surplus)			Risk Assets: Mortgages (percent of capital and surplus)		
			<100	100–300	>300	<50	50–100	>100	<50	50–100	>100	<100	100–300	>300
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	<5	16.2	.5	2.1	13.6	10.4	1.6	4.2	6.5	6.5	3.3	2.0	1.4	12.8
(2)	5–6	58.5	.4	2.1	55.9	5.9	26.3	26.2	19.0	32.8	6.7	1.8	13.7	43.0
(3)	7–10	17.2	1.4	3.1	11.9	7.7	5.9	2.7	13.7	1.2	2.4	5.3	11.9	0
(4)	>10	8.1	1.9	7.1	0	3.5	5.5	0	8.1	0	0	4.5	3.7	0
	Total	100	4.3	14.4	81.4	27.6	39.3	33.2	47.3	40.5	12.4	13.5	30.6	55.8

Note: Risk assets include: real estate, common equity, bonds below investment grade and mortgages.

The real estate, equity, low-grade bonds, and mortgages shown are assets explicitly reported in general accounts and schedule D. No "miscellaneous assets" are included in risk assets.

Short-term assets include: cash, bonds with a maturity of less than one year and short-term investments.

Separate accounts are not included in either total assets or total liabilities.

Data are for the 62 largest life insurance groups, representing about 80 percent of industry assets.

Numbers may not add to totals because of rounding.

Source: National Association of Insurance Commissioners (NAIC) Database of Annual Statements.

and 26.2 percent of assets are held by insurers for which real estate and equity exceed capital and surplus (column 7).

Whereas the value of high-grade bonds held by life insurers varies mainly with basic rates of interest, the value of real estate, equities, low-grade bonds, and commercial mortgages depends largely on business risks. If the maturity of insurers' contracts matched that of their assets, then changes in the market values of insurers' assets due to changes in rates of interest would not alter their capitalization very greatly. But if the value of insurers' assets were to fall for reasons other than rising interest rates alone, then the capitalization of insurers would decline.

Four-fifths of the assets of the sample of life insurers are held by companies placing more than three times their capital in investments that are currently considered risky: real estate, equities, low-grade bonds, and mortgages (Table 4, column 4). Among these companies, risky assets are more than six times capital and surplus. Should the value of these assets fall by one-tenth, for instance, the capital of these companies would fall more than 60 percent. In this case, more than two-thirds of the sample's assets would be held by companies for which capital would be less than 4 percent of assets.

Life insurers also assume risk by financing their assets with short-term guaranteed investment contracts (GICs). Even if a company were to invest only in high-grade bonds, by relying on GICs for financing, it risks losing capital should interest rates rise. Should the company invest in riskier assets, those holding its GICs might not renew their contracts should the value of these assets be questioned. While GICs are the most visible source of short-term financing for life insurers, their permanent life and annuity contracts also grant their customers options to withdraw funds from the company should these contracts become sufficiently unattractive.

As much as three-tenths of the assets of life insurers were held by companies for which outstanding GICs were at least three times their capital in 1989 (Table 5, column 5). If these funds were invested in short-term, high-grade securities, this reliance on GICs would not be an issue. Yet, as much as one-third of the assets of the industry was held by insurers whose GICs were twice as great as their short-term assets (Table 6, row 4, columns 4, 7, 10). Of these companies, insurers representing two-tenths of the industry's assets not only issued GICs exceeding three times their capital and surplus, but also invested three times their capital in real estate, equities, low-grade bonds, and mortgages (row 3, last column).[6]

---

[6] Commercial mortgages, constituting four-fifths of total mortgages, represent most of these risky investments. Some analysts contend that the funds raised by selling GICs were

Table 5
Allocation of Assets among Life Insurance Companies Relying on Guaranteed Investment Contracts (GICs), 1989
Percent of Total Assets

Life Insurance Companies, Grouped by Capital and Surplus as a Percentage of Assets		Total	GICs Relative to Capital and Surplus			
			>50	50–100	100–300	>300
		(1)	(2)	(3)	(4)	(5)
(1)	<5	16.2	6.1	1.0	1.8	7.3
(2)	5–6	58.5	30.0	.4	7.4	20.6
(3)	7–10	17.2	5.9	1.8	8.4	1.1
(4)	>10	8.1	5.6	.8	.5	1.1
	Total	100	47.6	4.0	18.1	30.1

Note and Source: See Table 4.

Property–Liability Insurance Companies

Table 7 describes the distribution of assets, according to capitalization and return on surplus, for the 60 largest property–liability insurance groups, representing about 90 percent of the industry's assets in 1989. Only about 48 percent of the industry's assets in 1989 were held by companies for which capital and surplus exceeded 20 percent of assets (column 4, rows 4 to 7). Only one-half of these, in turn, reported a return on surplus exceeding 9 percent. One-sixth of the industry's assets was represented by companies for which surplus was less than 20 percent of assets while, at the same time, returns on surplus were less than 9 percent (column 1, rows 1 to 3).

In comparison with the standards that prevailed before the late 1970s, much of the property–liability insurance business is undercapitalized. Those insurers with capital amounting to less than 20 percent of assets may be vulnerable either to unexpectedly large underwriting losses or to a substantial increase in interest rates.

For example, if bond yields were to rise 3 percentage points and dividend-price ratios on equity were to rise 1 percentage point, the average ratio of capital to assets for property–liability insurers could fall from almost 25 percent to approximately 12 percent. Under these circumstances, about one-third of the industry's assets would be held by

invested in commercial mortgages. Although the maturities of the GICs and these mortgages are similar, the value of commercial mortgages is questionable, because of high vacancy rates and low rents. See Shulman (1990) and Borman (1991).

Table 6
Allocation of Assets among Life Insurance Companies that Issue Guaranteed Investment Contracts (GICs) and Hold Risk Assets, 1989
Percent of Total Assets

Life Insurance Companies, Grouped by Risk Assets as a Percentage of Capital and Surplus		Total	GICs Relative to Capital & Surplus								
			50–100			100–300			>300		
			GICs Relative to Short-Term Assets			GICs Relative to Short-Term Assets			GICs Relative to Short-Term Assets		
			<50	50–200	>200	<50	50–200	>200	<50	50–200	>200
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	<100	1.4	.4	0	0	0	0	1.0	0	0	0
(2)	100–300	2.9	0	0	.8	0	0	.9	0	0	1.1
(3)	>300	48.0	0	2.8	0	0	3.4	11.0	0	9.8	21.1
(4)	Total	52.4	.4	2.8	.8	0	3.4	12.9	0	9.8	22.2

Note and Source: See Table 4.

Table 7
Distribution of Assets Among Property–Liability Insurance Companies, 1989
Percent of Total Assets

Casualty Insurance Companies, Grouped by Capital and Surplus as a Percentage of Assets		Actual for 1989				Higher Interest Rate Alternative
		Return on Capital and Surplus				
		<9	9–15	>15	Total	
		(1)	(2)	(3)	(4)	(5)
(1)	1–10	0	11.0	0	11.0	33.7
(2)	11–15	7.3	2.3	1.3	10.9	31.6
(3)	16–20	10.3	12.4	7.0	29.8	13.2
(4)	21–25	7.3	11.4	3.8	22.4	5.6
(5)	26–30	2.3	.8	5.4	8.5	2.3
(6)	31–35	1.0	1.0	0	2.1	11.8
(7)	>35	13.1	2.2	0	15.3	1.8
	Total	41.5	41.1	17.4	100.0	100.0

Note: For the calculation of the higher interest rate alternative, see Appendix 1.
Data are for the 60 largest casualty insurance groups, representing about 90 percent of industry assets.
Source: National Association of Insurance Commissioners (NAIC) Database of Annual Statements.

companies with capital less than 10 percent of assets (Table 7, last column).

The capital of these insurers is sensitive to changes in yields because the average maturity of their bonds exceeds 10 years and the average "maturity" of their loss payments is approximately 2.5 years. In essence, with rising interest rates, established insurers sell their bonds at a loss to pay current claims. If these insurers retain their bonds and avoid reporting their capital loss after yields rise, then they will report a substandard rate of return on investments over the next decade. If they also price their new policies very attractively in order to increase their cash flow, they may also report substandard underwriting income. Whether or not established insurers sell their bonds after interest rates rise, the consequences ultimately are the same for their ratios of capital and surplus to assets.

Risk Overconcentrations in Large Insurance Companies—Similarities to Recent Experience with Banks

When this conference was conceived in the fall of 1990, solvency risk in large insurance companies was only just becoming an area of concern outside the industry, primarily as a result of well-publicized

losses at two of the largest firms and worries about the real estate exposure of these and other widely recognized companies. The general public had at most only vague awareness of the rapid growth of a number of life insurance companies, almost unknown a few years before but now major players in the issuance of interest-sensitive products invested in high-yield assets. In 1991, the general public has awakened to the fact that large insurance companies can go from seemingly good health and strong ratings to disastrous failures in a few months—a point particularly clear to the many people whose retirement funds are in a First Executive GIC or a First Capital annuity.

These two relatively large insurers have now officially failed. Several other life insurance companies have shown similar patterns of very rapid growth and concentrations in high-yield (junk) bonds and risky commercial real estate equity investments or mortgages. Some of the large multi-line companies also have developed unusually high concentrations in such assets. The widespread overbuilding problems in commercial real estate in some markets and the collapse of the junk bond market raise concern that many companies with concentrations in such assets could take substantial losses.

One important question is the degree to which the insurance industry will experience additional failures over the next few years as a consequence of current junk bond and real estate exposures. Whatever the answer, current asset quality problems already present sufficient danger to the industry to warrant an examination of how they occurred and how they might have been prevented. Such an analysis is essential in evaluating the current regulatory and supervisory structure and proposed improvements.

In order to examine the consequences of recent and current asset quality exposures, several relatively large insurance companies that show very rapid growth, unusual concentrations in the riskier asset categories, or well-publicized solvency problems were identified. Individual case studies of these companies were developed from annual reports, NAIC data, press reports, and other published material. The intent was to support some generalizations as to any common dimensions in risk-taking.

In analyzing these cases a striking and consistent pattern of risk-taking was found among a number of insurance companies, along with certain strong similarities to the major credit problems experienced by many of the larger banks in the past dozen years. Characteristics common to the bank and insurance cases are:

(1) Several years of rapid growth in one or a few types of assets with high inherent risk characteristics, leading to abnormal risk concentrations.
(2) Profitable operations, maintenance of satisfactory capital ratios,

and high regard from the markets and public during this period of rapid growth.

(3) A turning point in economic circumstances, adversely affecting the areas of risk concentration.

(4) An accelerating loss of value in the risk asset categories, showing up in nonperformance, default, or falling market values, and eventually as charge-offs and falling capital ratios.

(5) Liquidity pressures as customers belatedly rush to withdraw funds and rapid disposition of assets becomes impossible without incurring unacceptable losses.

The next part of this section describes how these characteristics manifested themselves in various banking crises. The third summarizes the insurance case studies, showing how these same elements are present. (Excerpts from the studies themselves are included in Appendix 2 of this paper.) The final part discusses the implications of this analysis for the regulation and supervision of both banks and insurance companies.

Recent Threats to the Solvency of the Banking Industry

Failures and near failures of large commercial banks have so damaged the bank insurance fund and weakened the industry that some are questioning the ability of the industry to absorb future losses and rebuild the fund without government assistance. The bulk of the losses to the bank insurance fund can be attributed to a few relatively large banks, and the limited capacity of the banking system to quickly restore the fund is largely a function of the negative impact of unusual credit losses on the profitability of the larger banks.

The bulk of these unusual credit losses in banks has been associated with three major events: the overlending to less developed countries in the 1970s, the Southwestern energy and real estate boom and bust cycle of the early 1980s, and the commercial real estate overbuilding cycle in New England and other portions of the Atlantic seaboard in the mid to late 1980s.

Loans to less developed countries (LDCs). The money center banks (and many large foreign banks) extended a very large volume of credit to LDCs in the 1970s. In the early 1980s, it became apparent that the local economies could not support the servicing and eventual repayment of the large volume of bank credit. As of year end 1990, the combination of cumulative charge-offs by the money center banks and their current special reserves against such loans exceeded their total year-end 1982 capital. Nearly all of the LDC loans that gave rise to these losses were already on the books by 1982. Accordingly, it could be argued that the money center banks as a group were essentially insolvent by that time,

had the full loss potential in the LDC loans been recognized. Fortunately, these banks were able to earn their way out of this problem over a number of years.

The example of the LDC lending demonstrates the first four characteristics listed above, even though the resolution of the problem was drawn out over a number of years and no major liquidity problems or failures resulted. The main point to be made is that the risk was built in before the end of 1982, and uncontrollable events turned that risk into losses sufficient to exhaust the capital of our largest banks. After 1982, the best that supervisors could do was to attempt to manage the problem, but it was far too late for them to influence materially the dimensions of the problem. This would have required action to limit the risk concentration in the late 1970s.

Southwestern energy and real estate crisis. The larger banks in the Southwest, as well as some large banks from outside the region, financed an oil boom in the 1978–83 period. The resulting concentration in energy credits in Texas and Oklahoma banks contributed to the eventual demise of nearly all of the larger banks in these states as well as the failure of Continental Illinois and the forced sale of Seafirst in Seattle. These banks were well regarded during the period of heavy energy lending, and only became of concern to supervisors and market forces after the boom collapsed.

The risk exposure of Texas banks was compounded by their financing of a real estate construction boom that not only coincided with the energy boom, but continued for a time after the energy cycle turned sour. The recognition of problems in the form of nonperforming mortgage loans came only after much of the exposure had been built in. Eventually seven of the eight largest commercial banking institutions in Texas effectively failed, as a result of losses on a combination of energy and real estate loans.[7] Capital ratios declined only after the cycle turned and substantial losses were inevitable.

New England overbuilding boom. New England banks engaged in a rapid increase in construction and commercial real estate lending in the 1985 to 1988 period. The increase in nonperforming real estate loans (predominantly commercial and construction-type loans), however, did not become of concern until after the bulk of the risk exposure had been built in and overbuilding became a drag on the market.

In the past year and one-half, most of the large New England banks have become troubled, Bank of New England has failed, and some large savings banks have become insolvent, all largely due to losses on

[7] Three of the eight banks were acquired without federal assistance but experienced subsequent losses sufficient to make it clear that they were effectively insolvent when acquired.

mortgage loans made during the period of rapid growth. As with the Texas banks, capital ratios fell only after losses developed, and well after the risk exposure had been built in.

Similarities in the Pattern of Risk Concentrations in Large Insurance Companies

Case studies of 11 insurance companies will be used to demonstrate the developing patterns of risk concentrations in insurance companies and compare them to corresponding patterns in banks. The cases were not selected by rigid criteria, but they do cover some of the most risk-concentrated among the larger firms in the industry. The smallest company studied was Monarch Life, which had assets of $4.5 billion in 1990; some of the largest U.S. companies are also included.

First Executive, First Capital, and a few others were selected because of their extremely rapid growth by issuing interest-sensitive products that demanded investment in high-yielding assets. Baldwin-United and Monarch Life are examples of firms that originally got into trouble because of particular features of their interest-sensitive products. Additional companies were included because of unusually heavy concentrations in particular categories of high-risk assets, less directly tied to liability concentrations.

The case studies do not go into great detail but are intended to identify the fundamental problems or areas of exposure. Five of the cases represent companies that failed or have been seized by regulators while at the other extreme are companies whose risk concentrations may never develop into solvency-threatening problems. Only the companies that failed or have been seized will be identified.

First Executive (assets $19 billion) and *First Capital* (assets $10 billion), which failed shortly before this was written, represent cases of excessive concentrations in junk bonds, built up over the 1980s. Both companies were generally well regarded until after the junk bond market collapsed in late 1989 and 1990.[8] Thereafter, these companies experienced 12 to 15 months of increasingly evident depreciation of their portfolios as well as declines in their bond ratings and the market value of their stock.[9] Eventually, heavy charge-offs produced declines in their capital ratios. As the end approached, the two companies became subject to increasing regulatory pressures and both experienced accelerating runs in the form

[8] See Hector (1984).

[9] See Kerwin (1990); Crosson (1991); Stein (1991); and Rundle (1991).

of policy lapses and surrenders, which eventually forced regulators to seize the operating companies.[10]

These events fit precisely the list of common characteristics identified earlier and demonstrated in the previous section for selected groupings of banks. Of course the particular circumstances differ from the bank experiences—banks themselves cannot hold junk bonds and the nature of their liabilities is still quite different, although not so different for these GIC and annuity issuers as for more traditional life insurance companies.

The bankruptcy of *Baldwin-United* (assets $9 billion) in September 1983 was the largest insurance failure in the country until First Executive failed this year. In essence, it involved a concentration risk stemming from an interest rate mismatch on its principal product, single-payment deferred annuities, although the full story is much more complex.

The NAIC in February 1985 published a study of the case in which it stated (p. 14) that "the efforts of insurance regulators should be aimed primarily at the prevention of insolvencies. . . ." It also emphasized diversification and regulatory vigilance. Unfortunately, it appears that the lessons learned in the Baldwin-United case have not been effectively implemented, as evidenced by the various excessive concentrations that have developed recently.

Monarch (assets $4.5 billion) was a leader in sales of variable life in the 1980s. Its best-selling product was vulnerable to stock market movements and relied on a particular tax provision. The market crash in 1987 and tax law changes at about the same time eliminated the advantages of these features and a resulting decline in volume left Monarch somewhat overextended in bank debt.

The parent company invested heavily in New England commercial real estate development financed by bank debt. In November 1990 serious problems with the parent's holdings became apparent, and in May 1991, the life company was seized by the authorities to protect it from the parent's bankruptcy proceedings.[11] This case involves two successive risk concentrations, either of which might have been considered excessive even prior to an adverse change in the economic environment.

Mutual Benefit Life (assets $14 billion) became a heavy issuer of GICs and holder of commercial real estate assets in the mid 1980s. The announcement of a high volume of foreclosures and other troubled real estate assets earlier this year triggered a policyholder run that led to the seizure of the company by the state authorities.

---

[10] See Rose and Hilder (1991); Shapiro (1991); Rose (1991a); Stevenson (1991); and Rose (1991b).

[11] See Pulliam (1990, 1991a, and 1991c).

Of the remaining six cases, two were primarily life companies, three were multi-line, and one was predominantly a property–casualty company. Looking at the 11 cases together, all but one had a heavy concentration in either junk bonds/leveraged buyouts or assets related to commercial real estate, and three had concentrations in both categories. With respect to junk bonds/LBOs, First Executive and First Capital had concentrations in the range of 40 to 50 percent of invested assets, while four others were in the 14 to 20 percent range. Five companies had real-estate-related assets, mostly commercial mortgages and joint venture real estate, in the 38 to 55 percent range (not including the parent of Monarch Life). All but two of the companies with heavy concentrations in the riskiest assets have shown some significant decline in asset quality following adverse changes in the market forces affecting those particular assets. Nine of the 11 companies studied had specialized in single-payment deferred annuities, GICs, or some form of universal or variable life, leading to some degree of interest sensitivity concentration. In four cases, interest rate risk has resulted in significant losses.

Each of the cases described involves several years of buildup of one or more risk concentrations, accompanied by high market regard and acceptable capital ratios. Eventually, each area of concentration was adversely affected by some economic event that, in nearly every case, quickly transformed risk into some degree of actual difficulty. In several of the cases studied, the resulting problems were serious enough to at least raise questions about the survivability of the institution.

The cases demonstrate what one might expect with regard to the timing of capital ratio deterioration. Capital ratios can generally be maintained in rapid growth situations either by high profitability or by capital issuance. Capital ratios deteriorate only after a problem develops to the point where losses are taken. Some of the institutions studied had capital deterioration before the effects of junk bond or real estate write-downs, but in nearly every case this was the result of other concentration problems, such as interest rate mismatches. As in the case of banks, capital ratios generally drop only after problems mature and long after risk concentrations are allowed to develop.

Finally, the First Executive, First Capital, and Mutual Benefit cases have demonstrated dramatically how runs on insurance companies can develop, once concerns about solvency become widespread. The resolution of these cases will also be instructive as to the effectiveness of state guaranty funds and the priorities that should be given to various creditor classes in the liquidation of insurance companies.[12]

[12] See Durgin (1991); Haggerty and Connolly (1991); and Rose (1991c).

Implications for the Regulation of Insurance Companies

The principal conclusion to be drawn from this analysis is that insurance companies, like banks, appear prone to develop major risk concentrations that can imperil the solvency of a significant portion of the industry, under certain economic conditions. If such risk concentrations are allowed to develop, and conditions transform these risk exposures into actual problems, supervisory authorities can do little except to manage the resolution of the damaged institutions. At that point, supervisors have little opportunity to materially decrease the magnitude of losses to individual companies.

This implies that the supervisors should be expected to have the analytical tools and to exercise the responsibility to intervene forcefully when risk concentrations are becoming excessive. Based on the cases studied, this would appear to be a radical departure from the current practice. In recent years, banks' risk concentrations have not always received the attention they should have, and vigorous action has been taken only after the cycle turned and actual problems became apparent. It appears that the same can be said for insurance company supervisors.

The evaluation of risk concentrations is not a highly developed art form, and can sometimes be complex. Risk concentrations have many dimensions and sometimes covariances exist that can either mitigate or aggravate risks. Furthermore, it usually is not enough merely to apply static risk criteria to concentrations in particular types of assets, because the economic environment that will influence the behavior of these assets may be critical. Thus, new techniques and standards are needed in order to enable supervisors to take appropriately timed action against risk concentrations that are becoming excessive.

Some prefer to rely on regulation rather than supervision because it does not require the exercise of judgment. For example, some proposals would limit insurance companies' investment in junk bonds to a fixed percentage of invested assets. It is probably impossible to set a simple cut-off point low enough to prevent dangerous concentrations in most situations, without unduly restricting appropriate actions in other situations. Even imperfect supervisory judgment will generally do a better job than simple limitations, if the supervisory standards are thoughtfully constructed.

Once again, consideration of developments in banking is instructive. Among the proposals to "reform" bank supervision is the concept of "early" or "progressive" intervention based on capital ratios. The theory is that strongly capitalized banks would be generally free of supervisory constraints, but as capital ratios fell, progressively severe supervisory actions would be taken. This concept does not square with the recent experiences of the large banks or the insurance company cases summarized above. As we have seen, capital ratios generally do

not decline in the risk-taking phase, and by the time they do, late in the problem realization phase, it is too late for even harsh supervisory action to avoid the consequences of the built-in problems.

Progressive intervention may be a desirable end-game supervisory tool, but it should not be represented as a means of avoiding costly failures, and certainly should not be linked to a policy of relaxed supervision of well-capitalized companies. Neither banks nor insurance companies should be allowed to develop dangerous risk concentrations merely because they have above-average capital ratios.

Conclusion

Traditionally, both life and property–liability insurance companies have invested their policyholders' reserves in long-term securities. This strategy provided businesses with a substantial flow of long-term financing at attractive prices. Furthermore, this strategy allowed insurers to offer their customers relatively attractive returns on their contracts, because the yields on long-term securities exceeded those of shorter-term securities.

Though this strategy is attractive, it also is risky. The increase in yields during the 1970s and 1980s left insurance companies and their policyholders holding assets offering below-market rates of return. Insurers that no longer offered their customers a competitive rate of return lost business, whereas insurers that continued to offer their policyholders competitive returns, absorbing the losses themselves, diminished both their return on capital and subsequently their capital relative to their assets. Some insurers attempted to increase their return on surplus by acquiring a riskier portfolio of assets or by writing a substantial volume of new contracts in order to invest the proceeds in new long-term securities. Any of these steps increases the odds of insurers' failing to honor their contracts fully because of unexpected underwriting losses or unexpected increases in rates of interest.

In retrospect, 20 years ago insurers carried too little capital to adequately cover their bets against rising interest rates. Today, the capitalization of most insurers is less than that of the 1970s, while the risks inherent in their assets and liabilities have not diminished.

The problems that have already emerged in the insurance industries are similar in certain respects to those that have emerged in the banking industry. These common experiences demonstrate that supervisory authorities can avert problems only if they have the ability and the authority to prevent insurers from assuming excessive risk at an early stage, well before economic events entail future losses.

Appendix 1: Calculations for Table 7

Using the NAIC reports for each of the 60 largest property–liability groups for 1989, the change in capital and surplus equals the change in the value of the groups' bonds, plus the change in the value of common stock, less the change in the value of the groups' expected loss payments.

The change in the value of the bond portfolio when interest rates increase 3 percentage points equals

$$\Delta B = \left\{ \sum_{t=1}^{m} (C + X(1-X)^{t-1})/(1 + C + .03)^t + (1-X)^{m-1}/(1 + C + .03)^m \right.$$
$$\left. - \sum_{t=1}^{m} (C + X(1-X)^{t-1})/(1 + C)^t - (1-X)^{m-1}/(1 + C)^m \right\} * B.$$

B is the value of bonds held by the group,
M is the average maturity of bonds (from Schedule D of the NAIC Annual Statement),
C is the average coupon payment on bonds (interest income on bonds divided by B), and
X is the rate at which bonds are prepaid (.05).

The change in the value of common stock when dividend-price ratios rise 1 percentage point equals

$$\Delta S/S = -((D/P)^{-1} - (D/P) + .01)^{-1}) * (D/P).$$

S is the value of common stocks held by the group, and
D/P is the dividend-price ratio for those stocks.

The change in the value of loss payments when interest rates increase 3 percentage points equals

$$\Delta R/R = -((1.09)^{-D} - (1.12)^{-D}) * (1.09)^D.$$

R is losses and loss adjustment expenses, and
D is the average maturity of loss payments (from Schedule P of the NAIC Annual Statement).

The "typical profile" of payments for a given year's losses is the average of the profiles of reported payments, beginning with 1980. Then, taking into account the vintages of reserves and the profiles of their remaining payments (calculated from the "typical profile"), D is the weighted mean of the timing of expected future payments. Because D estimates the average maturity of payments, the foregoing formula (a duration equation using an initial return of 9 percent) tends to overstate the change in the value of these liabilities. This bias, which is small because D is near 2.5, tends to reduce the estimated loss of capital.

Appendix 2: Case Studies

First Executive Corporation

History

The company, established in the early 1960s, was small and unprofitable when Fred Carr became CEO in 1974. Growth started in 1975 and accelerated by 1980, with emphasis on single-payment deferred annuities invested primarily in junk bonds. Carr involved the company in numerous junk bond deals with Drexel Burnham Lambert's Michael Milken.

When annuity sales plummeted in 1983 following the failure of Baldwin-United, First Executive was already expanding in life insurance products similar to universal life. Nonetheless, with the failure of Baldwin-United and Charter Corp., First Executive became the largest seller of annuities in the country. By 1983, First Executive was one of the 10 largest underwriters of new life insurance policies.

In 1986, much of First Executive's growth was in issuing GICs for pensions and substituting annuities for terminated pensions, sometimes in conjunction with leveraged buyouts. An innovation was the issuance of GICs to municipalities, which invested in junk-backed GICs instead of using the proceeds of municipal bonds for projects. Capital ratios, unadjusted for risk, declined sharply in the mid 1980s to a low in 1987, then began to recover. However, the company was considered to be weakly capitalized relative to its peers.

First Executive was generally well-regarded in the mid 1980s and achieved an AAA rating from Standard & Poor's Corp. in 1985. Despite periodic articles raising questions about Carr's relationship to Drexel Burnham Lambert and his infatuation with junk bonds, as well as recurring problems with allegedly invalid reinsurance and allegedly misleading financial statements (in 1987), First Executive appears to have been much admired for its innovative products and growth.[13] Concerns about the concentration in junk bonds were apparently raised by supervisors in New York as early as 1985. However, it was not until the junk bond market collapsed in late 1989 and 1990 that widespread concerns emerged.

Problems

(1) *Asset quality.* The essential problem was the extremely high concentration of invested assets in junk bonds, 42 percent as early as 1985 and somewhat higher later. As the junk bond market unraveled, First Executive was downgraded by the rating agencies. In January 1990, it was reduced to Baa2 by Moody's following an announcement that First Executive would write down bonds by as much as $515 million. Reportedly this would still leave a depreciation of $1.4 billion on junk. Moody's dropped First Executive's rating to a junk level, Ba2, in February 1990.

As troubles continued to mount, First Executive was forced to withdraw from New Jersey in December 1990 and from Massachusetts in March 1991 because of pressure from supervisors. Moody's dropped its rating to B1 in March. Following the release in April of year-end financials that showed a 44 percent drop in capital, supervisory action was stepped up. New York required a capital injection of $125 million into the subsidiary in that state and ordered a suspension of new business. Shortly thereafter California seized the unit in that state and a few days later New York seized its unit in order to halt massive withdrawals.

(2) *Liquidity.* With changes in tax laws, some of First Executive's products became unattractive. Surrenders and policy loans increased sharply in 1989, and management sought to increase cash to meet growing liquidity needs. Following announcement of a major write-off of junk bonds in January 1990, concerns were widespread about a run on First Executive's liabilities, but the rating agencies considered liquidity sufficient to

[13] See Sloan and Rudnitsky (1984); Belth (1987a & b).

handle lapses. In the first half of 1990 more than $2.6 billion in policies and GICs were surrendered.

By late 1990 First Executive was faced with insufficient cash to continue its preferred dividend or to service its debt, and there was concern that the parent company would be forced into bankruptcy. As the crisis worsened in the spring of 1991, regulators were forced to seize the two life insurance units as outflows accelerated, as noted above.

Analysis

First Executive grew extremely rapidly and was highly concentrated in risky activity, but was generally well-regarded until its fortunes suddenly turned in 1990 as a result of economic events beyond its control. By early 1991 it had failed, with a potential for major losses to pension plans and other holders of GICs and annuities. Despite a number of assertions that insurance companies are not subject to bank-style runs, the two First Executive units were subject to prolonged runs as worries grew, and a final hemorrhage forced their closure by supervisors.

This case fits the model depicted earlier for banks very well. However, the signs of extreme overconcentration and potential mismanagement were apparent at a particularly early stage.

Current Status

Since the seizure of both of the principal units of First Executive, much speculation has occurred as to the amount of the loss that must be absorbed and who will absorb it. The issue was further complicated by an Internal Revenue Service demand on April 22, 1991 for $643 million in unpaid taxes. The First Executive failure has sparked much debate as to the adequacy of the system of guaranty funds, the duty and practical ability of customer firms to protect their retired employees in such circumstances, and the priorities for the disbursement of limited funds to various classes of claimants.

First Capital Holdings Corporation

History

Established in 1983, the company grew rapidly through acquisitions and aggressive marketing. In November 1988, Shearson Lehman bought a 28.6 percent interest.

Problems

First Capital specialized in universal life and interest-sensitive annuities, and invested heavily in junk bonds. Such bonds equaled 39.0 percent of total investments as of 12/31/90. Tangible equity capital equaled only 9.2 percent of junk bonds, while depreciation equaled 23.7 percent of junk. Nonperforming junk was 7.8 percent of total junk bonds after heavy charge-offs in the final quarter of 1990.

It was not clear from the 1990 annual report whether lapse rates had become a problem, or whether liquidity was adequate to avoid forced liquidation of junk bonds, but it soon became clear that a liquidity problem existed. (See Current Status, below.)

Tangible equity capital has been about 3 percent of total assets at year-end 1988, 1989, and 1990. However, if securities depreciation is netted, this measure declines from 1.6 percent to 1 percent for 1989 and to negative 4.2 percent at the end of 1990.

Assets relating to deferred sales costs and the present value of future earnings on insurance policies in force were very large relative to tangible capital, 2.4 times tangible equity in 1990.[14] In view of the increase in lapse rates above assumptions, these assets have presumably shrunk rapidly in real value.

[14] Reflected in published financial statements, but not in regulatory accounting.

Analysis

Until late in 1990 or early 1991 the financial data suggested, at least superficially, a successful, rapidly growing, and profitable company (ROA 0.74 percent and ROE 18.2 percent in 1989). However, the concentration in junk bonds that had been a feature of the company's structure for several years was so large that significant credit loss, or a need to sell bonds into a distressed market due to unexpected lapses, was sufficient to easily wipe out capital and cause major losses to policyholders. The junk bond crash of the 1989–90 period and the current recession caused both events, and failure became inevitable. Holding company debt was rated Ba2 by Moody's from the time when Shearson acquired an interest until January 28, 1991, when the rating dropped to B1. The rating was dropped three more times in May.

No degree of vigorous supervisory action in 1990 or 1991 could have changed the basic outcome. That would have required action to force diversification well before the junk market collapsed. Because the costs of the interest-sensitive annuities could only be covered by high-yield assets, it would have been necessary to constrain the basic business of this company at an early stage in its development, either through judgmental application of supervisory pressure or through regulation (or perhaps a combination of the two).

Current Status

Staff was reduced 18.1 percent in 1990. The CEO resigned in March 1991. The California Insurance Commissioner is talking to American Express, seeking a rescue. About 75 percent of the business has been generated through Shearson Lehman Brothers in recent years. Apparently American Express will seek to protect only Shearson customers.

The stock of First Capital traded as high as $14.125 in late 1989, but fell throughout 1990. It dropped to $.9375 on May 8, 1991.

On May 8, the California Commissioner declared the First Capital Life unit to be in hazardous condition and issued a cease and desist order suspending redemptions, loans, and sales of new business. Redemption requests had surged from $10 million a day two weeks earlier to $100 million on May 7. Concern was being expressed about a 12 percent delinquency rate on mortgage loans in addition to the junk bonds.

On May 8, American Express charged off its entire $144 million investment in First Capital, and the junk bond market was hurt by fears that regulators would require dumping of junk bonds by First Capital.

On May 13, the Virginia Commissioner of Insurance seized the other principal subsidiary, Fidelity Bankers Life, based in Richmond, and on May 15, the California Commissioner seized First Capital Life following a bankruptcy petition by creditors.

Baldwin-United Corp.

History

From 1977 through 1982 this company grew rapidly, both through internal expansion and numerous acquisitions. The principal product was single-payment deferred annuities (SPDAs), and the company was so successful with these that it was the envy of Wall Street in the early 1980s (NAIC 1985, pg. 9). In March 1982, Baldwin acquired MGIC Investment Corp for $1.2 billion after receiving various regulatory approvals.

By late 1982 problems began to surface, and by September 1983 the company was bankrupt.

Problems

(1) A fatal flaw in the SPDAs allowed holders to surrender the annuities without penalty if the interest crediting rate was reduced more than 75 basis points. When rates fell, Baldwin was forced to operate with a negative spread to avoid surrenders.

(2) The company had evolved into a very complex structure of subsidiaries, and

various intercompany transactions, including reinsurance within the family, made analysis very difficult. Losses were transferred among subsidiaries with different tax rates allowing the booking of a large volume of tax credits, which in the end proved worthless.

Analysis

The actual problem was not publicly recognized until late 1982, but the regulators appear to have been concerned that the consolidated company might be insolvent in the summer of 1982 (NAIC 1985, p. 10). The risk was built in the previous few years while interest rates were soaring, and quickly showed up as rates plummeted in 1982. Baldwin was a classic interest mismatch case with a number of complicating factors that made it difficult to sort out.

Resolution

Until recently, Baldwin was the largest insurance company failure in this country. Its resolution, like its problem, was complex. The loss was met in part by retail stock brokers who had sold its annuities, by lending banks, and by state guaranty funds.

Monarch Life

History

Monarch, located in Springfield, Massachusetts, had total assets of $4.5 billion as recently as the fall of 1990 when it sold its variable life business. It currently has assets of only $1.5 billion. Monarch expanded rapidly in the 1980s with innovative variable life and disability products. It sold variable life, where the customer directed funds into the stock investments to obtain a tax advantage. Such advantages were wiped out in 1987 by the stock market crash and tax law changes. Sales volume fell and the insurance company was overextended with bank debt.

In an effort to recover, the parent company, Monarch Capital, invested heavily in real estate development and venture capital deals, primarily in New England, financed by bank debt.

Problem

In November 1990, the parent reported a significant loss due to real estate problems, triggering a default on bank debt, replacement of the CEO, and efforts to sell the life company. In early May 1991, the Massachusetts authorities seized the life company to protect it from the bankruptcy proceedings involving the parent. The insurance company is reported to be in satisfactory condition with $100 million in capital, but few details are available. Reports circulated of heavy surrenders by policyholders.

Analysis

The original concentration in a particular variable life product was vulnerable to an economic event that suddenly triggered a problem. The parent's subsequent concentration in high-risk real estate deals endangered the subsidiary when the collapse of real estate values in New England forced it into bankruptcy.

Current Status

The authorities and the bank creditors of the parent are in discussion with potential acquirers of Monarch Life.

Mutual Benefit Life

History

One of the 20 largest U.S. life insurers, with assets of nearly $14 billion, this company had a concentration in real estate assets at year-end 1987 of 52 percent of total assets. This ratio had declined to 39 percent by year-end 1990 as a result of growth in other investments.

Problems

(1) While complete 1990 data have not been seen, newspaper accounts indicate a sharp rise in real estate problems. Nonperforming mortgages jumped from 2.4 percent to 5.4 percent in 1990, and foreclosed property apparently amounts to $225 million.

(2) Surplus reportedly has been weakened by charge-offs as overall growth continued, and the ratio of surplus to assets, other than separate accounts, was about 4.3 percent at year-end 1990. Furthermore, press reports indicate that reported surplus was inflated by surplus relief reinsurance transactions, which may have added $90 million to surplus in 1990. Adjusting for this would reduce the surplus ratio to 3.6 percent.

(3) Retired GICs were replaced with $100 million in commercial paper borrowing, increasing liquidity vulnerability.

Analysis

While the history of this company's real estate concentration was not investigated, the company was apparently well-regarded despite its high concentration level until the deterioration in commercial real estate markets became of concern. Once an actual problem became apparent, the company became very vulnerable to liquidity pressures.

Current Status

An attempt to obtain a $100 million injection of capital from a major insurance company collapsed in May and Standard & Poor's lowered the debt rating four categories to A. In the ensuing weeks, policyholders withdrew over $1 billion and the company was forced to request that the New Jersey authorities take it over, which they did on July 15, 1991.[15]

[15] See Pulliam (1991b, d, and e).

References

A.M. Best Company. 1990. *Best's Agents Guide to Life Insurance Companies 1990*, 17th Annual Edition. Oldwick, NJ: A.M. Best Company.

———. *Best's Aggregates and Averages—Life/Health*, various years.

———. *Best's Aggregates and Averages—Property/Casualty*, various years.

American Council of Life Insurance. 1990. *Report of the ACLI Task Force on Solvency Concerns*. Washington, D.C., September.

———. Various years. *Life Insurance Fact Book*. Washington, D.C.

Baskin, Jonathan Barron. 1988. "The Development of Corporate Financial Markets in Britain and the United States, 1600–1914: Overcoming Asymmetric Information." *Business History Review*, vol. 62, Summer, pp. 199–237.

Belth, Joseph M., ed. 1987a. "The Reinsurance Disaster at Executive Life." *The Insurance Forum*, May, pp. 161–64.

———. 1987b. "More on the Reinsurance Disaster at Executive Life." *The Insurance Forum*, June 1987, pp. 165–68.

Bernanke, Ben S. and Mark Gertler. 1987. "Banking and Macroeconomic Equilibrium." In William A. Barnet and Kenneth Singleton, eds., *New Approaches to Monetary Economics*, pp. 89–111. New York: Cambridge University Press.

Board of Governors of the Federal Reserve System. 1990. *Flow of Funds Accounts. Financial Assets and Liabilities, Year-End 1966–1989*. December.

Borman, Thomas H. 1991. "Hitting the Mark on Real Estate Values." *Best's Review*, April, pp. 18–20, 92–93.

Council of Economic Advisers. 1991. *Economic Report of the President*. Washington, D.C.: Government Printing Office.

Crosson, Cynthia. 1991. "Executive Life Unit's Capital Fell 44% in 1990." *National Underwriter Life & Health/Financial Services Edition*, March 18, pp. 1, 21, 24.

Diamond, Douglas W. 1984. "Financial Intermediation and Delegated Monitoring." *Review of Economic Studies*, vol. 51, pp. 393–414.

Diamond, Douglas W. and Philip H. Dybvig. 1983. "Bank Runs, Deposit Insurance Liquidity." *Journal of Political Economy*, vol. 91, no. 3, pp. 401–419.

Durgin, Hillary. 1991. "Participants May Sue Over GICs, Annuities." *Pensions & Investments*, April 29, pp. 1, 33.

Fama, Eugene F. 1985. "What's Different About Banks?" *Journal of Monetary Economics*, vol. 15, January, pp. 29–39.

First Capital Holdings Company. 1988, 1989, 1990. *Annual Report*.

Gertler, Mark. 1988. "Financial Structure and Economic Activity: An Overview." National Bureau of Economic Research, working paper no. 2559, April.

Goldsmith, Raymond W. 1955. *A Study of Saving in the United States*. Princeton, NJ: Princeton University Press.

———. 1958. *Financial Intermediaries in the American Economy Since 1900*. Princeton, NJ: Princeton University Press.

Gurley, John G. and Edward S. Shaw. 1955. "Financial Aspects of Economic Development." *The American Economic Review*, vol. 45, September, pp. 515–38.

———. 1956. "Financial Intermediaries in the Saving-Investment Process." *Journal of Finance*, vol. 11, March, pp. 257–76.

———. 1960. *Money in a Theory of Finance*. Washington, D.C.: The Brookings Institution.

Haggerty, Alfred G. and Jim Connolly. 1991. "Garamendi: First Capital Is Shearson's Responsibility." *National Underwriter Life & Health/Financial Services Edition*, May 13, pp. 1, 31.

Hector, Gary. 1984. "A Go-Go Insurer Adds Zest to Life." *Fortune*, March 5, pp. 51–56.

Homer, Sidney. 1963. *A History of Interest Rates*. New Brunswick, NJ: Rutgers University Press.

Hoshi, Takeo, Anil Kashyap, and David Scharfstein. 1989. "Bank Monitoring and Investment: Evidence from the Changing Structure of Japanese Corporate Banking Relations." Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series, no. 110, August.

IDS Financial Services. 1990. *Will the U.S. Life Insurance Industry Keep Its Promises?* Minneapolis, MN, March.

Insurance Information Institute. Various years. *Property/Casualty Insurance Fact Book.* New York.

Jensen, Michael C. and William H. Meckling. 1976. "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." *Journal of Financial Economics*, vol. 3, pp. 305–360.

Kerwin, Kathleen. 1990. "The Avalanche of Junk Burying First Executive." *Business Week*, February 26, p. 41.

Kopcke, Richard W. and Eric S. Rosengren. 1989. "Regulation of Debt and Equity." In Kopcke, Richard W. and Eric S. Rosengren, eds., *Are the Distinctions between Debt and Equity Disappearing?* Federal Reserve Bank of Boston, Conference Series No. 33, October.

Kramer, Orin. 1990. *Rating the Risks: Assessing the Solvency Threat in the Financial Services Industry*, December 31. New York, NY: Insurance Information Institute.

Laing, Jonathan R. 1990. "Flawed Policies." *Barron's*, October 1.

Leland, Hayne E. and David H. Pyle. 1977. "Information Asymmetries, Financial Structure, and Financial Intermediation." *Journal of Finance*, vol. 32, May, pp. 371–87.

National Association of Insurance Commissioners. 1984 to 1989. NAIC Database Tapes of the annual statements, Life/Health data for all companies, 1984 to 1989. Property/Casualty data for all companies, 1984 to 1989.

———. 1985. "The Baldwin-United Bankruptcy: Its Significance for Insurance Regulation." February.

Navin, Thomas R. and Marian V. Sears. 1955. "The Rise of a Market for Industrial Securities, 1887–1902." *Business History Review*, vol. 30, pp. 105–38.

Pulliam, Susan. 1990. "Monarch Capital May Find Itself Forced to Liquidate or File Bankruptcy Petition." *Wall Street Journal*, December 10.

———. 1991a. "Monarch Capital Posts 4th-Period Loss, Plans to Turn Over the Life Insurance Unit." *Wall Street Journal*, April 3.

———. 1991b. "Metropolitan Life Rejects a Proposal From Mutual Benefit for Cash Infusion." *Wall Street Journal*, May 17.

———. 1991c. "Regulators Take Over Monarch Life, Keeping Creditors From Seizing Assets." *Wall Street Journal*, May 31.

———. 1991d. "Mutual Benefit Life Is Expected to Ask State to Take Over as Early as Today." *Wall Street Journal*, July 15.

———. 1991e. "New Jersey Takes Over Mutual Benefit Amid Surrender of $1 Billion in Policies." *Wall Street Journal*, July 16.

Randall, Richard E. 1989. "Can the Market Evaluate Asset Quality Exposure in Banks?" *New England Economic Review*, July/August, pp. 3–24.

Rose, Frederick. 1991a. "First Capital Unit's Payouts Are Prohibited." *Wall Street Journal*, May 13.

———. 1991b. "California Takes Control of Unit of First Capital." *Wall Street Journal*. May 15.

———. 1991c. "Executive Life Restructuring Plan Is Proposed." *Wall Street Journal*, May 22.

———. 1991d. "Executive Life Had Year-End Deficit, Witness Testifies." *Wall Street Journal*, June 7.

Rose, Frederick and David B. Hilder. 1991. "Junk Bond Deals Trip Insurer as State Seizes Unit of First Executive." *Wall Street Journal*, April 12.

Rundle, Rhonda R. 1991. "First Capital Boosts Its Loss Reserves, Weighs Asset Sale; Chairman Resigns." *Wall Street Journal*, March 18.

Shapiro, Eben. 1991. "New York Takes Over Big Insurer." *The New York Times*, April 17.

Shulman, David. 1990. "Yesterday, Today, and Tomorrow: The Coming Default Crisis in Commercial Mortgages." *Salomon Brothers Bond Market Research, Real Estate*, June 14.

Simons, Katerina. 1991. "Do Capital Markets Predict Problems in Large Commercial Banks?" *New England Economic Review*, May/June.

Sloan, Alan and Howard Rudnitsky. 1984. "Taking in Each Other's Laundry." *Forbes*, November 19, pp. 207–22.

Smith, Clifford W. and Jerold B. Warner. 1979. "On Financial Contracting." *Journal of Financial Economics*, vol. 7, June, pp. 117–161.

Stein, Benjamin J. 1991. "Sunk by Junk: First Executive's Woes Put Policyholders at Risk." *Barron's*, April 1, pp. 8, 9, 23–25.

Stevenson, Merril. 1990. "A Question of Balance: A Survey of American Insurance." *The Economist*, October 27, pp. S5–S20.

Stevenson, Richard W. 1991. "Virginia Seizes Insurer, A Unit of First Capital." *The New York Times*, May 14.

U.S. Congress, House of Representatives, Committee on Energy and Commerce. 1990. *Failed Promises—Insurance Company Insolvencies*. Washington, D.C.: Government Printing Office, February.

U.S. Department of the Treasury. 1991. *Modernizing the Financial System*. Washington, D.C., February.

Discussion

*Jeffrey Cohen**

Richard Kopcke and Richard Randall have written an interesting paper, which makes a number of important points. I would highlight three in particular:

(1) Successful regulation could improve insurers' diversification and asset/liability matching but might require a resident shadow management. I will refer to this as the regulator's dilemma, and come back to it later.
(2) Customers believe that regulated financial intermediaries are less risky because of government guarantees. This in turn may allow intermediaries to become riskier. The situation is very similar to the one we have seen with the banks and S&Ls. I will not discuss this point further.
(3) Kopcke and Randall outline a pattern of failure that applies to both bank and insurance company insolvencies. This pattern involves rapid growth, leading to concentration of risk, followed by a change in economic circumstances that reduces asset values. The final step is liquidity pressure. The pattern described is a useful structure within which to examine troubled insurance companies, in order to see where it does and does not apply.

I will examine these issues from a different angle. Kopcke and Randall focus mostly on the balance sheet; I will focus on the income statement as well. I will also draw some contrasts between property–liability and life insurance companies.

*Vice President, Goldman, Sachs & Company.

First, the income statement versus the balance sheet: It is important to remember that one key factor driving the increase in risk in the insurance business is the decline in the industry's profitability. It has simply become harder for insurers to make money in many of their traditional businesses. The industry's return on equity has fallen. Declining profitability is one of the things that leads company management to take on more risk. In addition, we should remember that it will be difficult for the industry to raise new capital if investors do not believe they can make an adequate return on that capital.

My second topic is the differences between property–liability and life insurers. Kopcke and Randall draw a number of parallels among insurers, banks, and thrifts. However, property–liability insurers are much less like depositories than are life companies. For example, the decrease in property–liability companies' capital-to-asset ratios is the result of the industry's shift from writing mostly property to writing liability lines. Liability claims take longer to be paid and therefore build up more assets. This does not necessarily mean companies are riskier, provided loss reserves are adequate. Also, property–liability companies do not hold many risky assets. A run on a property–liability company is unlikely—claimants cannot accelerate payments. Insolvencies in this industry are most likely to result from fraud, uncollectible reinsurance, a major disaster such as a California earthquake, enormous company payments for Superfund cleanups, or the slow erosion of companies' financial strength during the industry's down cycles, rather than from asset–liability mismatching. This industry's biggest problem is that it is just not profitable enough. And that is because the industry has too much structural capacity (too many companies) and too much capital, not too little. Property–liability companies raise prices aggressively and earn an adequate return only when their capital is declining and company managements perceive themselves as being in financial trouble.

Life insurers, as I mentioned, are more like banks. Nevertheless, their liabilities are longer than banks' and it is harder to have a run on a life company. This should allow more time for companies to solve their problems, which are principally due to a change in product mix. Selling single-premium deferred annuities (SPDAs), guaranteed investment contracts (GICs), and universal life is fundamentally different—and less profitable—than selling whole life policies with conservative mortality assumptions that pay low, fixed-interest rates. Company managements did not fully understand the risks inherent in these new products when they began to sell them. To give an example, in 1984 or 1985 I called on a medium-size life insurer that had recently hired a new chief investment officer from the mutual fund industry. I asked him a number of questions about what interest rates they were crediting on universal life policies and what they were investing policyholders' funds in. It was obvious that their rate spread was too narrow for the company to earn

a reasonable return. When I pointed this out, the investment officer said they would make up for it by trading the portfolio. And it was difficult to argue with him because interest rates had fallen in the past few months, so the company had earned large capital gains. Nevertheless, it is pretty risky to try to run a company like that forever. In fact, I think that if the true economics of GICs were understood—all the options granted on both sides of the balance sheet were properly priced and the line was adequately capitalized—insurers would find that they cannot make a reasonable amount of money in the business.

Finally, although I will not discuss this in detail, I think we should distinguish between the mismatch risk and the asset concentration risk on life insurers' balance sheets. Asset concentration is probably much more dangerous, and more likely to put a company under.

In their conclusion, Kopcke and Randall seem to be calling for regulatory intervention to occur earlier, before insurers can develop excessive risk concentrations. They indicate that regulators must have the proper analytical tools to assess risk, however, and they recognize that this is a difficult task. This recommendation brings us back to the regulator's dilemma I referred to earlier. Many of the things companies do that get them in trouble are not adequately understood at the time they are done. Should regulators substitute their judgment for the judgments of insurance company managements, the competitive market, or the financial markets? Furthermore, regulators may have conflicting agendas—for example, to promote solvency yet keep insurance affordable. Workers' compensation is a highly regulated line, yet if a Workers' Compensation Insurance Company of America existed, it might be bankrupt. Look at the auto insurance situation in California: How can regulators reduce the price of auto insurance, satisfying consumers, and still allow companies to make a reasonable return on capital, as required by law?

Obviously, regulation can be improved. I would start with some smaller, more concrete changes, however, before putting in a new regulatory structure or expanding the current one.

- First, I would move to mark-to-market accounting for all assets and liabilities. Insurance companies' assets and liabilities are worth what they are carried for only by accident. Perhaps marking bonds, mortgages, real estate, and loss reserves to market will inject some discipline into the industry. It may not be necessary for the GAAP (generally accepted accounting principles) or statutory balance sheets to show market values. But if not, the information should be prominently displayed in the footnotes.
- Second, I would remove some of the artificial barriers to consolidation. Why do state insurance departments think it is part of

their mission to protect existing managements as well as the policyholders? Takeovers are very difficult to do in this industry, yet the industry needs to consolidate in order to become more efficient.

- Third, the de-mutualization process should be made easier. This would allow mutuals to raise capital and, as public companies, they might be more disciplined and profit-oriented.
- Fourth, banks should not be allowed into the insurance business. Too many insurance companies are in business already. What makes anyone think that we can solve the banks' problems by allowing their managements, who have already shown that they are unable to manage their own business, into another over-crowded, highly leveraged, narrow margin business?

Discussion

*Thomas E. Moloney**

I commend Richard Kopcke and Richard Randall on the breadth of their analysis of insurers as financial intermediaries. Their paper reminds us all of the great stake that the entire economic community has in the efficiency of operation and continued solvency of the insurance industry. As they note, U.S. insurers manage over $1.3 trillion in assets, including 36 percent of all corporate bonds and 28 percent of all commercial mortgages. The insurance industry acts as a major financial intermediary whose actions and policies influence the national and international financial markets. My discussion will focus on the life insurance industry.

Two Decades of Transition

As alluded to by Kopcke and Randall, the life insurance industry has experienced significant change over the past 20 years. Customers' conception of a life insurance policy has fundamentally shifted from primarily a "widows-and-orphans" or long-term savings vehicle toward a potentially short-term investment vehicle. Where in 1970 the typical life insurance policy had a fixed premium and a fixed payment upon maturity, today's panoply of products ranges from strict, low-cost term policies to flexible-premium variable life policies whose cash values are tied to actual investment experience.

This fundamental change in both customer preferences and indus-

*Senior Vice President and Controller, John Hancock Mutual Life Insurance Company.

try product offerings was brought about by the periods of high inflation and concomitant interest rate volatility during the 1970s and early 1980s, as well as by increased competition for customers' savings from interest-rate-sensitive investment vehicles like mutual funds and CDs offered by other financial services companies. During these two decades, the insurance industry continuously evolved in order to keep pace with the yield expectations and liquidity demands of its customers. Competition was intense between insurance companies and other financial intermediaries like banks, mutual funds, and securities firms. In fact, by 1985 insurance companies managed 11.4 percent of total U.S. financial assets, whereas in 1960 they managed 20.2 percent—almost twice the percentage.

As the barriers between products were reduced and as insurance companies witnessed financial services companies capturing a significant share of their customers' savings, they took action. To retain the customer loyalty and franchise enjoyed by insurers, they undertook a strategy to become full-service companies offering a broad range of financial products and services. The industry push toward product diversification began, and the recasting of companies from single-product "insurance companies" into multi-line full-service "financial services" companies was pursued with vigor.

During the same period, the explosive growth in tax-exempt pension funds fueled insurer growth in this direction also. From 1982 to 1988, the size of the U.S. pension market grew from $1.2 trillion in assets to $2.6 trillion, and the projections are for assets to reach $4.6 trillion or more by 1995. To capture the lucrative management contracts for these pension funds, insurers established a variety of separate accounts, tailored specifically toward managing these assets. Separate accounts ranged in investment type from bond funds to real estate and timber funds. In addition to separate accounts, in the late 1970s insurers began to offer guaranteed investment contracts (GICs) designed to provide secure fixed-income vehicles for purchase by pension plans. Approximately $30 billion in GICs were sold industrywide in 1990. The level of total tax-exempt assets (including GICs) managed by the top 25 money managers has grown steadily and stood at $789 billion in 1989.

With diversification came complexity, which the insurance industry had also to address and manage. The economic environment, the insurers' markets, and the nature of insurers' book of liabilities had all changed. With long-standing footings in the disciplines of underwriting and investment/portfolio management, insurers were well-equipped to meet their new risk management challenges. In general, insurers were now holding a book of shorter-term liabilities, and they were forced to deliver higher yields to customers in order to remain competitive. Drawing upon their investment skills and experience in financial management, the majority of life insurance companies adapted well to

increased competition and risk complexity by developing expertise in asset–liability matching, underwriting, investment, and portfolio management. The management of assets in any major life insurer today, for example, entails sophisticated strategies of diversification of assets among many asset classes, and immunization and interest rate hedging to assure that the durations of assets and liabilities are accurately matched. Internal systems to monitor accounts on an ongoing basis are also employed, making use of advanced computer and investment research technology.

Track Record Good to Date

Diversification and increased competition brought with it commensurate opportunities for both increased success and failure. Margins in the industry shrank as some competitors underpriced products in order to gain market share and promised higher yields backed by investments in riskier assets, including junk bonds. As the markets became more complex and volatile, the margin for error narrowed. Because many new financial products were essentially commodities, market share could be captured simply by underpricing products and crediting overly aggressive interest rates. A number of our brethren in the industry succumbed to this temptation and are now paying dearly for it, while the majority of companies rectified their mistakes earlier and reinstilled discipline and prudence in their investment and product strategies.

Despite the current focus on insurer solvency, the track record of the insurance industry, though not perfect, speaks for itself. According to a Conning and Company report issued in May of this year, over the past three years 55 out of approximately 2,300 insurers domiciled in the United States have failed, or about 2 percent. By contrast, over one-fourth of the 3,000 federally insured thrifts are insolvent or in deep financial trouble, with a projected ultimate cost to the taxpayer of between $325 billion and $500 billion. Over the past 10 years, assessments of life insurers to bail out insolvent fellow insurers have totaled about $800 million—paid by the industry itself with a subsidy via a premium tax credit, not from general tax revenues. These assessments amounted to 1.25 percent of earnings for the same period. Some of the questions that have to be raised are how high such assessments could get in the future, how adequate the current capital reserves of the solvent insurers are, and why the erosion of asset value experienced by insurers will not be as serious as that experienced by the banks.

Solvency in the Insurance Industry

The topic of solvency in the insurance industry has been the focus of many recent studies by various federal and state committees, the National Association of Insurance Commissioners (NAIC), and industry task forces. The evaluation of solvency in the insurance industry is difficult because of the broad range in size and product mix of companies. A true evaluation of solvency must include not only the amount of capital and surplus, but also asset quality, business mix, company size, stock versus mutual organizational mix, underwriting exposure, reserve analysis, reinsurance agreements, management expertise, corporate strategy, amount of participating versus non-participating business, and so on. No one measure or handful of ratios can adequately measure industry solvency.

One trend in insolvencies that has become apparent over the past five or ten years is the fact that smaller companies seem much more prone to bankruptcy than larger, better diversified companies. (Well-publicized exceptions, however, include the failure of Baldwin United in 1983 and the recent failures of Executive Life and First Capital.) A 1990 study by IDS Financial noted that most of the insolvent companies were regional, licensed to operate in 10 or fewer states, and of an average size (not including Executive Life and First Capital) of $13 million in admitted assets. The advantage of the bigger companies lies in the fact that they are often diversified across many large-scale businesses, such as individual life, group health, and group pension, and many also have several smaller businesses such as annuities, individual disability, long-term care, brokerage, and other financial and asset management services. A mistake in any one of these businesses generally will not bankrupt these companies. This is not true of smaller, less diversified companies. This does not mean, however, that large, diversified companies cannot make mistakes big enough to cause their bankruptcy. That is precisely what occurred in the cases of Executive Life and First Capital. The junk bond holdings of Executive Life and First Capital as of year-end 1990 amounted to 68 percent and 40 percent of their assets, respectively, compared to an average of 6.5 percent for the insurance industry as a whole. Thus, these companies were assuming asset risk of six to 10 times that of the industry and have paid the price of this overconcentration in one risky asset class.

There can be no doubt that all insurance companies are feeling to some degree the strain of the downturn in the national economy and a decrease in the investment performance of the assets in their portfolios. Nevertheless, the majority of insurers, even through the aggressive 1970s and 1980s, practiced conservative investment strategies and currently hold portfolios of relatively high-quality assets. According to a recent report by Frederick Townsend of Townsend & Schupp Company,

even after the NAIC implemented a more stringent classification method in 1990 for rating bonds, the total value of "high-risk assets" (bonds the NAIC classified as non-investment-grade, mortgage loans overdue or in the process of foreclosure, and real estate acquired by foreclosure), equaled 140 percent of industry capital.[1] Since the combined industrywide holdings of bonds, mortgages, and real estate amounted to over 850 percent of industry capital in 1989, it is clear that the rate of default and devaluation necessary for an insurer with typically diversified assets to experience bankruptcy would have to be unrealistically high. A recent survey of Standard & Poor's (S&P) rated insurers, for example, indicated that "as a group [insurers] can sustain losses from high-yield bonds for about 30 years, based on S&P's current expectations for bond defaults." (S&P 1991, p. 34) (S&P expects high-yield securities to have a default rate of 10 to 15 percent in 1991.) I do not mean to dismiss the potential insolvency problems for the industry, should additional large insurers like Executive Life and First Capital fail. These problems would be very real. But the likelihood of widespread failures across the industry is low, because of relatively high asset quality and diversification.

The insurance industry will not experience the same level of insolvencies as the thrift industry or the commercial banking industry. It is only logical to attempt to compare the financial condition of the troubled U.S. banking system and that of another major financial intermediary, the insurance industry. Kopcke and Randall cogently describe the implications of overconcentration of risks in one or two high-risk asset classes and mistakes in underwriting and asset–liability matching. But fundamental differences in the structure, regulation, and investment practices of banks and of insurance companies indicate that they perform differently during cyclical downturns.

Banks manage primarily short-term liabilities, passbook savings accounts, and so on, whereas insurance companies primarily manage longer-term liabilities such as life policies (20 or more years), GICs (four to 10 years), and group annuities (20 or more years). Often penalties and restrictions apply on the surrender of policies or insurer investment contracts that do not exist on bank deposits. This feature allows insurers to invest at fixed rates and not assume significant mismatch risk. In addition, the very structure of the regional U.S. banking system makes it very difficult for any but the few largest banks to diversify their investments geographically and lessen their dependence on the economic cycles of a regional economy. The Texas and New England banks are prime examples of this shortcoming. The majority of insurance

[1] This calculation was made for a 101-company composite comprising 71 percent of the life insurance industry's total assets.

companies, by contrast, are national in scope and hold far more geographically diversified assets in all asset classes, from commercial and residential mortgage loans to corporate bonds.

Banks not only are less geographically diversified than insurers but also concentrate their investments in fewer and historically higher-risk investment classes. For instance, whereas the banks concentrated their real estate lending in risky construction loans, insurers invested primarily in longer-term commercial mortgages granted on properties that were income-producing and well leased and generally had a 75 percent loan-to-value ratio. With this income and value cushion, the property value must deteriorate significantly before the insurer would suffer a loss. This difference in the quality of real estate mortgages held by insurers versus banks is borne out by the relatively low delinquency rate on insurance company commercial mortgages of 3.6 percent at year-end 1990, as compared to the much higher rate of delinquency experienced by banks in the troubled regions of the country. In another example, whereas banks aggressively pursued lending to less developed countries and highly leveraged transactions, insurers followed more conservative investment practices and invested only marginally in high-yield bonds with few or no loans to less developed countries. In addition, the regulatory reserve requirements of insurers for insurance policy liabilities are very conservative.

One important lesson that insurers have learned from the widespread failures in the banking industry is the false security and even weakness caused by Federal Deposit Insurance Corporation deposit funds, which removed the discipline and selection mechanisms of the market and burdened the public and the conservative, stronger banks with the task of bailing out the most aggressive failed banks. The consensus among insurers is that it is not healthy to bank on guaranty funds. In fact, it has been argued that raising FDIC insurance from $40,000 to $100,000 per account and deregulating the industry too late contributed to the weakness and trouble in the thrift industry. These are lessons that the insurance industry has internalized and is integrating into current discussions on how to address the future regulation of the insurance industry.

Regulation

The insurance industry has reacted with increased initiatives aimed at getting our arms around the current problems. The industry invites thoughtful analysis of its business—such as this forum—and has a long tradition of self-examination and self-correction. Well before the recent insolvencies of First Executive and First Capital, the insurance industry was exploring ways to better regulate and monitor the industry, with

the help of expert industry analysts and public policymakers. Like Monday morning quarterbacks, however, a plethora of self-proclaimed experts have surfaced selling superficial diagnoses and uninformed prescriptions for the industry. Management in our industry spends much time and money deflecting the myths sold by these amateurs.

As outlined previously, the insurance industry is a huge and complex one whose long-term track record of performance is quite good. In many ways, the system has worked. The majority of companies have been disciplined in their investment and management practices and have made adequate reserve provisions. With healthy industrywide earnings and additions to surplus registered at year-end 1990, and with the national recession bottoming out, perhaps the worst is behind us. In any event, short-sighted knee-jerk reactions either by regulators or by companies themselves must be avoided. Admittedly, we are in the midst of change and probable entry into what one industry analyst has called "a new era in life insurance solvency regulation."

Currently five federal-level committees and subcommittees, the NAIC, the American Council of Life Insurance, and a variety of private analysts are studying the industry with the primary focus being insurer solvency. We at John Hancock intend to work with all reputable bodies trying to shape industry policy for the future. At the same time, we in the industry are careful to discourage unenlightened proposals for strict and simplistic regulatory solutions that, in the long run, will serve only to constrain good management and weaken the industry. Some of the proposals currently before us include proposed legislation sponsored by Representative John Dingell of Michigan, supporting a federal oversight agency funded by user fees; minimum federal solvency standards and accreditation of state insurance departments; national liquidation of insolvent insurers rather than the existing state guaranty system; creation of a federal insurance fraud statute; and preemption of state regulation of reinsurers and surplus line insurers.

Although not so publicized, the Senate Antitrust Subcommittee (chaired by Ohio Senator Howard Metzenbaum) has been active in its attempts to extend federal antitrust regulation to the insurance industry through the repeal of the McCarran-Ferguson Act. The Senator believes that repeal of the Act will make the insurance industry more competitive and therefore lead to lower prices for consumers. Most insurance executives believe the repeal of McCarran-Ferguson would be harmful, because it would prevent insurers from sharing the actuarial data used to evaluate risk and to properly price products. This would be particularly harmful to smaller insurers, who rely more heavily on the shared actuarial data to set rates.

The states would generally prefer to remain in control of insurance regulation. Individually and collectively—through the NAIC—state regulators are trying to address the concerns and questions posed by

Congress and others. The NAIC has been extremely active on a number of key issues. Last year the mandatory security valuation reserve (MSVR) was increased for medium-grade and lower-grade bonds, thereby increasing the level of reserves available to absorb potential losses. The NAIC is also considering broadening the MSVR to an "asset valuation reserve" to include all invested assets. Several companies, among them John Hancock, already have voluntary reserves for other asset types, including mortgages and real estate. With regard to insurer solvency, the NAIC is developing a risk-based capital formula that could be used to determine the minimum capital and surplus requirement of each insurer. Again, this would only be institutionalizing a practice already common among the well-managed companies.

The NAIC would like to enhance its system whereby failure of an insurer to meet predetermined minimum ratios would trigger certain actions by state regulators. The NAIC would presumably get tougher on surplus relief reinsurance transactions and a number of accounting policies. California is already contemplating administrative action that would require insurers to remove from their financial statements any surplus created through reinsurance transactions. The NAIC is also pushing for the accreditation of state insurance departments. In 1989, the NAIC laid out guidelines for a set of minimum standards, hoping each state would use them to evaluate insurers. The NAIC's scheduled date for compliance is January of 1994, although to date only four states have been accredited (New York, Florida, Illinois, and South Carolina).

In taking all these actions, the NAIC hopes to prove to Congress that it is capable of regulating the insurance industry on its own. However, a study recently completed by the General Accounting Office (1991) pointed out several serious limitations:

(1) The NAIC does not have the authority necessary to force state action or to sustain reforms, since changes in state regulation must be approved by the state legislators.
(2) Since 1980, the NAIC has put forth a dozen recommended changes in state legislation; only one, however, has been adopted by more than one-half of the states.
(3) The General Accounting Office has expressed some skepticism about the NAIC accreditation process.

Another area of potential legislation concerns the state guaranty funds. Representative Dingell's trial balloon, mentioned earlier, proposed a national liquidation fund to replace the current state guaranty funds. One apparent flaw of the current system is that it allows an undercapitalized company to compete against stronger companies using the stronger companies' protection against losses. The guaranty laws vary from state to state, but generally the guaranty funds are not capitalized until a company fails and funds are needed to cover a

shortfall between assets and liabilities. This approach allows aggressive companies that cut margins to gain sales to place the risk on the conservatively managed companies they compete against.

What will be the result of the efforts of the Congress, the individual states, and the NAIC? The following appear to be the most likely outcomes:

(1) The budget deficit makes it difficult but not impossible to form a new federal bureaucracy to regulate insurance companies. The issue of federal versus state regulation will play out over the next few years. The final answer will depend upon a lot of issues, including how quickly the states can get their act together, the number and size of insolvencies, and the ability of the industry to coordinate an effective response.
(2) A risk-based regulatory approach to minimum statutory capital for insurance companies is highly probable in the next few years. Banks already operate under a risk-adjusted capital structure.
(3) Raising the current state minimum capital and surplus standards for life insurers will not in and of itself solve the capital problems of the life insurance industry, since even some large companies may be undercapitalized. If tougher surplus standards are adopted, it is highly likely that significant consolidation within the industry could result.
(4) Tougher standards could influence investment allocation away from riskier assets, which need to be supported by more capital; therefore, investment returns could drop, which would in turn affect product pricing and profitability.

Ill-conceived legislation would not be in the best interest of the industry. Therefore, insurers continue to be pro-active with regard to potential state and federal regulation and—like Kopcke and Randall—favor supervision and monitoring over strict regulation.

Conclusion

Looking to the future, I believe you will see companies returning to their core strengths and to disciplined financial management. I believe the industry will consolidate as more highly leveraged companies find it difficult to retain necessary levels of capital. A flight to quality will occur among both individual and institutional customers, who have learned the hard way that prudent, well-balanced investment and management have no easy substitute. Increased efficiency, differentiation between the top-rated insurers and all others, and a simultaneous refocusing on

rational pricing and profitability will characterize the future. The industry in the past has proven capable of successful self-correction, and the well-managed companies in the industry are already on their way.

References

Conning & Company. 1991. *A New Era in Life Insurance Solvency Regulation.* May.

General Accounting Office. 1991. *Insurance Regulation: State Handling of Financially Troubled Property/Casualty Insurers.* May.

IDS Financial. 1990. *Will the U.S. Life Insurance Industry Keep Its Promises?* Minneapolis, MN, March.

Standard & Poor's. 1991. *S&P's Insurance Book.* "Industry Commentary, Fallout from High-Yield Bonds for Life Insurers," by Phil C. Tsang. May 15, 1991, pp. 33–35.

Townsend, Frederick S., Jr. 1991. "High-Risk Assets: 140 Percent of 1990 Total Surplus." *National Underwriter,* June 3.

Discussion

*Frederick S. Townsend, Jr.**

What types of risk do insurance companies bear? Life insurance executives often think of mortality risk and morbidity risk, with little consideration of asset risk until recent years. In 1990, the New York State Insurance Department developed an experimental risk-based capital formula to determine target surplus levels for life insurance companies. (The formula has since been turned over to the National Association of Insurance Commissioners.) The Townsend & Schupp Company took the experimental New York formula and calculated the individual and composite results for 130 major life insurance companies, including the 100 largest companies ranked by asset size, comprising 84 percent of industry assets. We found that asset risk comprised 50 percent of the composite's target surplus, while insurance risk was only 19 percent, interest rate risk 18 percent, and business risk 13 percent of composite target surplus.

The Problem

Many companies have reached for riskier assets in recent years, seeking to attract deposit funds by offering high interest rates. The primary vehicle used by new and small life insurers was investment in junk bonds. Large and established life insurers, with mortgage loan and real estate investment departments, sought to increase long-term yields by investing in commercial mortgages and real estate projects. The Townsend & Schupp study found that the holdings by the 130-company

*President, The Townsend & Schupp Company.

composite of high-risk assets (the sum of junk bonds, overdue mortgages, and real estate acquired by foreclosure) equaled 123 percent of capital.

While problem mortgages and real estate are creating capital losses for some companies, overconcentration of junk bond investments caused the initial surge of conservatorship actions in early 1991. Executive Life of California, Executive Life of New York, First Capital Life, and Fidelity Bankers Life held 83 percent, 68 percent, 46 percent and 40 percent of their respective bond portfolios in non-investment-grade bonds as of December 31, 1990.

Overconcentration in a risky asset class was the first problem. The second problem was the poor credit quality of many of these bonds, which led to market values well below their stated asset values (amortized cost). Finally, the companies have no protection against a "run on the bank." These junk bond investors suffered asset write-downs, then were exposed to both truth and rumors, and then experienced runs on the bank, especially on single-premium deferred annuity (SPDA) products. This caused negative cash flow. This, in turn, caused the realization of further capital losses at depressed market prices.

Possible Remedies

In their paper, Richard Kopcke and Richard Randall point out that one remedy is more capital in the industry. Many stock life insurers have strong parent companies that can provide new capital. Kemper Investors Life, Northwestern National Life, and United Pacific Life have 34 to 35 percent of their bond portfolios in non-investment-grade bond issues, but all three companies have financially strong parent companies. In fact, this year Kemper Investors has received two capital infusions to reduce the heat and publicity surrounding its investment in junk bonds. Northwestern National Life's parent company is selling a new issue of preferred stock to raise capital for its life subsidiary.

A second remedy, which Kopcke and Randall downplay slightly, is to enact limits against concentrated investments in risky asset classes. If the companies in conservatorship that I mentioned earlier had limited their investment in junk bonds to 20 percent of their bond portfolios, would they be in the news today? I think not. Such limits might have saved them, had they been in effect five to ten years ago.

A third remedy might be to attempt to prevent runs on the bank on non-life products, such as the competitive single-premium deferred annuity (SPDA), by using smart product design. Limited early surrender options, large surrender charges, and market value adjustments may inhibit a run on the bank, but would these product features attract

any buyers? The market share will just drift to other, riskier carriers that do not enact these features.

Threats to Solvency

The problem of the run on the bank emphasizes the fact that many life insurers manage an unmatched book. While they expect to receive a sufficiently large margin to compensate for this risk, the margin has proved to be insufficient for many companies.

Basic life insurance products and annuity options offer death benefits and other services not matched by securities and mutual funds, as pointed out by Kopcke and Randall. Life insurers can earn sufficient margins on life insurance products, but often expose themselves to risk when they offer a competitive savings product such as the single-premium deferred annuity, which has no death benefits and therefore no distinction from investment products.

High capital ratios can increase the odds of survival, but it must be noted that Executive Life of California had an 8.5 percent capital ratio in 1988 and was already locked in to its ultimate fate before the problem was realized. Executive Life's management attempted to raise capital every year during the company's growth phase, perhaps recognizing the high risk inherent in the company's investment strategy, and until the last year they were successful.

So high capital ratios may even encourage higher levels of risk-taking. Conversely, some life insurers maintain low capital ratios to increase returns on equity, but they do not necessarily have to adopt risky investment strategies. For instance, major life insurers often direct annuity sales to subsidiaries with modest capital, which creates low capital ratios. Provident National, American International Life, Variable Annuity Life, and Transamerica Life all have capital ratios under 4 percent, but that is management policy. Management wants to isolate a given line of business and manage it for an efficient return. In the absence of a strong parent company, however, high asset leverage does increase the odds that failing insurers will not recover. First Capital Life and Fidelity Bankers Life, two companies the authors mention, maintained capital ratios under 5 percent with a risky asset mix for a number of years.

Kopcke and Randall's discussion of guaranty funds fails to state that life insurance reserves, unlike property–liability reserves, are determined by precise actuarial formulas, and that reserves must equal or exceed the cash values on each and every policy. Thus, if a life insurer's statutory surplus has fallen to zero, and if assets are fairly valued, several major companies will always be willing to assume the failing company's business.

It is interesting to note that life insurers hold 32 percent of total corporate bonds and 27 percent of commercial mortgages. The Townsend & Schupp 130-company composite shows that at last year's end, bonds were 56.8 percent and mortgage loans 24.5 percent of 1990 invested assets, with the weighted maturity of the bond portfolio at 11.5 years. Weighted bond maturities exceeding 10 years may be safe for life insurance products with death benefits and for annuitized products, because the buyer has a reason and the desire to keep such products in force with the issuing companies. Guaranteed investment contracts (GICs) and single-premium deferred annuities (SPDAs) should have shorter maturities, in order to match their liability durations and to protect the life insurers against unstable interest rate environments.

The "Deadly Trio"—the combination of high asset leverage, long bond maturities, and below-average investment yield—can kill a life insurance company when interest rates rise sharply. The company's inability to compete will force the sale of depressed assets when the capital ratio is too low. On the other hand, new companies, unburdened by low yields, did acquire substantial assets by promoting products as investment contracts, which buyers in turn viewed as financial investments.

The authors point out that 75 percent of their sample's assets are held by companies with a capital ratio under 6 percent. The Townsend & Schupp 130-company composite at the end of 1990 had a capital ratio of 6.1 percent including separate account assets, but the ratio is 7.5 percent when measured against general account assets less policy loans, whose risks are borne by the policyholders, not by the company. (Separate account asset risks are generally borne by the contract holders, although some exceptions are now arising.) Those 130 companies comprise 84 percent of industry assets. The United States as a whole has 2,400 life insurance companies and for the entire group the capital ratio is 10 percent. Many of the smaller companies have much higher capital ratios than the big boys in the industry.

Another point generally overlooked is that the capital ratio is driven downward in the life industry by regulation. Capital ratios are limited to 10 percent for mutual life insurers writing business in New York State, a major segment of the life industry assets in the United States. So a mutual company operating in New York that has excess accumulation of surplus must distribute it.

The value of real estate, stocks, junk bonds, and commercial mortgage loans depends on business risks, as the authors point out. And as has been demonstrated in recent months, this is the source of news stories that shake consumer confidence. When cash flow problems occur, some companies have financed cash flow with guaranteed investment contracts written with modest or negative spreads. The gain or loss on a GIC contract is usually determined when it is issued.

Companies should match the durations on GIC contracts. Fewer than 20 percent of GIC contracts renew with the same company.

The public does view companies with large surplus positions as offering safety, but some large companies have high risk levels. This is certainly true of Equitable Life Assurance, which has an asset profile and an underwriting record unlike any other of the 20 largest life insurers.

To date, it has been rapid growth and concentration in junk bonds that have put companies into conservatorship. Concentration in commercial real estate has been limited to the larger, more established life insurers, and has only caused large dents in their surplus.

The characteristics of potential failures in the life insurance industry include high ratios of risky assets to capital, significant differences between market values and stated asset values, capital losses, low capital ratios, the inability to raise capital, low net cash flow from operations, and high levels of cash surrender activity. Capital declines when capital losses exceed earnings, or when earnings are paid out in shareholder dividends to finance parent company commitments.

The basic risks to survival are operating leverage leading to operating losses, asset leverage leading to capital losses, low-quality assets with depressed market values, interest rate risk exposure to a decline in asset values, leveraged buyouts that force payout of operating earnings, low cash flow that causes untimely sale of depressed assets, and the dreaded run on the bank. Once a run starts, an otherwise sound company may have to be placed in conservatorship to prevent asset–liability mismatches from occurring.

If, ten years ago, all states had limited junk bond investments to 20 percent of invested assets, would the life insurance industry be in such turmoil today? Would any major companies have gone into conservatorship? As the authors point out, capital ratios decline in the problem-realization phase, not in the risk-taking phase. Perhaps an ounce of prevention is worth a pound of cure.

The Case Studies

The authors refer to eleven case studies, but present only four case studies in Appendix 2.[1] As a securities analyst in insurance stocks, I am critical of the four case studies on two counts: (1) the authors mesh parent holding company problems with the subsidiary life company problems, and (2) I disagree with the authors on critical issues.

Executive Life suffered from buying junk bonds that were issued

[1] An additional case has now been added with the takeover of Mutual Benefit Life. Only companies that failed or have been seized are identified. Ed.

not to support corporate operations but to finance leveraged buyouts. This made the bonds risky when purchased. Many of these bonds were bought through Drexel Burnham. A study of default rates on Drexel bonds, published in Barron's, revealed significantly higher rates than historical default rate studies.

In both the First Capital Life and the Fidelity Bankers Life cases, capital losses have not yet been "sufficient to easily wipe out capital and cause major losses to policyholders." On March 31, 1991, the two companies reported $151 million and $141 million of capital, respectively. The companies are in conservatorship to stop runs on the bank, and regulators have not yet forecast any losses to policyholders.

Baldwin-United subsidiaries issued SPDA contracts that guaranteed long-term returns of up to 14 percent per annum. Part of the company's downfall was investing policyholder assets in securities of affiliated companies, which provided no investment return to the life companies. This led to operating losses and ultimately to negative cash flow.

Monarch Life Insurance Company did not have bank debt and real estate problems. Its parent company did. The parent company invested in real estate and incurred debt independent of Monarch Life. Monarch suffered from sales success. This company had only $117 million of capital in 1984, but wrote $3.5 billion of direct premiums in the next three years. The cost of writing new business caused Monarch Life to raise capital through reinsurance and through sales of assets.

The Structure, Conduct, and Regulation of the Life Insurance Industry

*Kenneth M. Wright**

The economic and social function of life insurance companies in the United States is to provide financial security to individuals and families on a sound basis and at prices commensurate with the risks assumed. Life companies offer such security to the public in three distinct forms. First, life insurance offers protection against the financial risk of premature death of a breadwinner and the loss of income to the surviving family. Second, annuities and pension plans protect against the risk of outliving other forms of income, particularly after retirement from active employment. Third, health insurance offers protection against the financial strain of costly accidents or illness requiring extensive medical treatment. In serving these needs, life insurers also have long been a major source of long-term funds to the capital market through the investment of reserves in a variety of financial outlets.

At the end of 1990, the total assets of U.S. life insurance companies aggregated $1,408 billion, with 41 percent in corporate debt obligations, 19 percent in mortgage loans, 13 percent in Treasury and agency securities, 8 percent in common stock, 4 percent in policy loans, 3 percent in real estate, and 12 percent in miscellaneous assets. At latest count, there were 2,343 life insurance companies in the United States, of which 118 were mutual companies and the remainder were stock companies. It is estimated that about 1,200 of these companies are actually in operation; the others have been chartered but do not carry on an active current business. Mutual companies, though fewer in number,

*Economic Consultant, Wright Economics, and Retired Vice President and Chief Economist, American Council of Life Insurance.

hold about one-half of the total industry assets, but the share of assets held by stock companies has risen steadily over recent years.[1]

Investment funds arising from the life insurance process result from the accumulation of reserves generated by pension products, thrift plans, and whole-life or permanent insurance, sometimes known as cash value life insurance. Reserves generated by whole-life policies result from the level-premium method of payment, whereby the policyholder pays an unchanging periodic amount for the entire life of the contract. In the early years of the policy, premiums are higher than needed to meet the average of death claims at younger ages; thus, a reserve is accumulated to meet the higher number of death claims at later ages, though the premium payments remain at the same level for whole-life policyholders. Because of the sizable reserve buildup behind whole-life contracts, such policies have a cash surrender value, and they typically carry a policy loan privilege.

Term insurance is usually offered for a specified number of years, for example, one, two, or five. During that time the premium is unchanged but is based on the policyholder's attained age. In later years, the premium for term insurance increases sharply as the likelihood of death increases on average, but since premiums are rising, little reserve accumulation is needed to meet rising current death claims. Term insurance, like health insurance, operates largely as a "pay-as-you-go" system wherein current claims are paid from the inflow of current premiums from the group that is insured.

Annuities may be purchased by individuals through periodic payments for a fixed period of years, or by a lump-sum payment for an income stream either immediately or at a later date. Under corporate pension plans, annuities are typically purchased by the employer to start immediately upon the retirement of the employee. Such sums paid under annuity plans obviously require a buildup of reserves from which a stream of later payments can be made; these reserves are invested in the money and capital markets to provide a return that will augment the amounts available for pension benefits.

Space does not permit a description of the almost endless variations and the range of options among these basic forms of traditional life insurance products. Later reference will be made to some of the major product innovations in the 1980s and their impact on investment practices and strategies. Although many life insurers also offer health insurance, this line of business will not be discussed in the present paper.

It is important for the reader to be aware that not all life insurers

[1] The primary source of statistics cited in this paper is the publications of the American Council of Life Insurance.

offer the same mix of product lines. Some offer health insurance plans; many others do not. Many larger companies provide pension plans, while a greater number do not engage in this line of business. Some specialize in particular lines, such as individual annuities or credit life insurance, while others concentrate on traditional whole-life policies. As a result, no "typical" or "standard" insurance company can serve as a model for discussion. Nevertheless, the frequent reference to industry totals and the composition of investment assets is unavoidable in this paper, though the reader should bear in mind that such data do not reflect the situation for a "typical" company.

The plan of this paper will be to first describe life insurance investment practices prevailing in the early postwar years, the regulatory framework under which companies operated, and the financial condition of the business in the years before 1980. An historical review of major competitive developments, regulatory changes, and product innovations will then be undertaken, in order to set the stage for an examination of new forces, new products, and new investment strategies as they emerged during the 1980s and up to the present time. Finally, the problem of insurance company solvency will be examined.

Life Insurance Investments in the Early Postwar Years

Life insurers emerged from World War II with almost one-half of their invested assets in U.S. government securities as a result of wartime financing requirements. As the postwar demand for business capital developed, insurers sold their Treasuries to reinvest the proceeds in corporate bonds. Demand for housing finance was likewise strong, and life companies placed a major share of investable funds into home mortgages, largely FHA- and VA-backed loans.

Using 1950 as an early postwar reference point, the asset composition of U.S. life insurance companies included U.S. government securities, 21 percent; corporate bonds, 36 percent; residential mortgages, 17 percent; commercial and farm mortgages, 8 percent; state and local government securities, 2 percent; preferred stock, 2 percent; and common stock, 1 percent. The dollar amount of total assets was $64 billion, which ranked the life insurance business second in size only to commercial banks, and roughly triple the size of savings and loan associations as of 1950.

In the main, these investments were long-term in maturity, usually in the 20- to 30-year range on original issue. This pattern was considered appropriate to the long-term nature of life company liabilities to policyholders. With premiums flowing in from policies that would not require payouts for death benefits until 30 or 40 years later, it was sound policy to invest long, at the outer end of the yield curve where interest rates

were normally higher. Liquidity was not thought to be a problem, since the steady inflow of contractual premium payments was far in excess of cash surrenders or requests for policy loans. Cash flow was positive and rising, and companies were thus able to make "forward commitments" to business borrowers for funds to be delivered later, often 12 to 18 months hence.

Regulatory standards for life company investments had an obvious and material influence on portfolio practice. Life companies are governed by the regulations of state insurance departments and by the detailed state laws regarding investment standards, as well as chartering, licensing, policy contracts, accounting standards, and other operating procedures. State investment laws typically prescribe specific investments permitted, subject to certain limitations, or they list prohibited investments. The primary regulator is the state of domicile of the insurer, but a great many companies are licensed to sell insurance in other states and are thus subject to their jurisdiction as well. One approach to governing the investments of out-of-state companies is to require that they be of the same general character as domestic companies, or that their investments have a quality substantially as high. Another approach, for which New York is noteworthy, is that out-of-state insurers should "comply in substance" with the investment standards required of domestic insurers. Since New York was a very large insurance market in which most companies wished to sell, this substantial compliance requirement made New York standards the critical factor in investment practices for a very large share of the insurance industry.

For this reason, it is useful to examine New York investment laws as they prevailed during the early 1950s and in later years. Other states were somewhat less restrictive, generally speaking, but with the passage of years and through the unifying influence of the National Association of Insurance Commissioners (NAIC), the differences among the states today are somewhat less.

To illustrate, the investment laws of New York did not permit the purchase of common stock until 1951, and then only stock listed on a major exchange that had paid dividends in each of the past 10 years. Corporate bonds, to be eligible, had to be supported by earnings sufficient to meet interest payments over the previous five years, plus a ratio of new earnings to annual fixed charges of 1.25. In the early 1950s, conventional mortgage loans by life insurers had a maximum loan-to-value ratio of 66 percent, in order to provide a cushion against a possible decline in real estate values as experienced in the Depression years. For conventional home loans, this ratio was boosted in 1959 to 75 percent to keep life insurers more competitive with other lenders. Not until 1964 was the 75 percent loan-to-value ratio permitted for commercial real estate loans by life companies.

Percentage limits on categories of investment were also common, to ensure diversification of insurers' assets. For example, New York initially limited common stock holdings to the lesser of 3 percent of assets or 33 percent of capital and surplus. Not more than 5 percent of total assets could be invested in corporate bonds of any one issuer. Investments in foreign countries were permitted beginning in 1956, but were limited to 1 percent of assets, except for Canada where the limit was 10 percent. Limits were also in force on investment in income-producing real estate.

As part of the regulatory process, the state insurance department requires each company licensed in its state to submit a detailed annual statement of financial condition and investment operations during the year. Such disclosure includes a listing of every security acquired, held, and disposed of, along with particulars on each transaction. The basis for the annual statement is statutory accounting, following uniform rules developed by the NAIC, which also receives copies of each statement filed with each state. The state insurance department is responsible for conducting examinations of companies at least every three years, and this function is often shared with other states on a cooperative basis.

Throughout the 1950s, life insurance on the whole was a profitable industry, based on two major factors. First, mortality experience was more favorable in practice than the expected death rates built into outstanding policies, largely because of medical advances and widespread use of antibiotics. With longer lives, policyholders paid in premiums for many more years than expected. Second, the postwar rise in interest rate levels brought in higher investment earnings than the assumed interest rates built into policy contracts. These favorable results led to higher dividends to holders of participating policies, of course, thus reducing the net cost of their life insurance. But the companies also benefited from these developments and were able to improve their surplus positions.

Competitive Responses to Market Developments, 1950 to 1980

In 1949, a major court decision ruled that pensions were a legitimate part of collective bargaining in labor contracts. Almost overnight, a new field for saving and investment emerged, and labor unions bargained with employers to establish pension plans for their members.

Pension and Thrift Plans

In the early days, pension plans often were administered by the employer, or managed by the trust departments of larger commercial banks. Life insurance companies offered insured plans as well, and the number of plans they handled doubled during the decade of the 1950s. But the pension plans run by competing fund managers grew even faster, partly because they could offer pension fund portfolios that were heavy in common stocks, which enjoyed a high rate of return over the decade. Life insurers, restricted to low percentages of common stock holdings, found themselves at a competitive disadvantage

Chafing under these constraints, life insurers were able to bring about a change in the New York investment law in 1957 to raise the limit on common stock holdings from 3 percent up to 5 percent of assets. Not until 1969 was this limit raised further to 10 percent of assets or 100 percent of surplus, whichever was less. But this did not solve the competitive problem, since banks could place fully 100 percent of pension fund accumulations in equities to obtain a much higher return than the life companies could offer from their conservative portfolios of bonds, mortgages, and a sprinkling of common stock.

A breakthrough solution was found in the establishment of "separate accounts" for life companies, wherein the quantitative limits on investments were waived, but the qualitative requirements remained. Thus, a separate account could hold as much as 100 percent in common stock, but the investment standards of quality and dividend experience were the same as for the regular portfolio, thereafter known as the "general account." Funds placed in separate accounts were not backed by the capital and surplus of the life company; investment gains and losses belonged to the contract holder. Permission for separate accounts was made possible by new legislation in the several states between 1959 and 1964.

At first, separate accounts concentrated on common stock investments. Within five years, however, some companies were making bond investments in separate accounts; and by 1981, the dollar holdings of bonds were greater than common stock. Real estate separate accounts also developed by the mid 1970s, and mortgage loans also were added to the separate account portfolios of some companies. Within 20 years of their inception, separate accounts represented 9 percent of total assets of U.S. life companies; by the latest count, this figure has risen to 11 percent or $165 billion. It is worth noting, however, that fewer than 200 companies have a separate account operation at the present time.

While the competitive position of life companies in the pension market was doubtless bolstered by the use of separate accounts, their market share continued to slip vis-à-vis the noninsured pension plans. In 1974, passage of the federal Employee Retirement Income Security

Act (ERISA) gave a boost to insured plans because of more exacting requirements for fiduciaries and greater paperwork for fund managers, leading more employers to turn over this burden to insurance companies.

Another competitive boost in the pension area came in the late 1970s, when life companies started offering guaranteed investment contracts (GICs) to fund profit-sharing, savings plans, and 401(k) accounts for employee benefit schemes. With variations among negotiated agreements, the basic GIC plan calls for contributions from employee groups at a fixed interest rate, guaranteed by the insurer for a specified period of time. The market for such contracts has grown to an estimated $30 billion a year.

Competition for the Savings Dollar

Life insurance products can be viewed by the public in a variety of ways. One natural desire is to build a substantial nest egg to meet the needs of a surviving spouse and children after the death of the breadwinner. Another is to accumulate sufficient assets to live off after active employment, or even to retire early. Insurance and annuities can meet these needs, but consumers have looked to other forms of saving and asset building to satisfy these desires. Among the alternatives are common stocks and mutual funds, where faster gains may be possible than in the conservative track of insurance policies.

In the mid 1950s, common stocks in the United States began a steep upward climb that attracted increasing attention from the general public. Middle-income executives began checking stock market prices in the daily paper each morning, even before looking at the sports pages. Fears of another 1929 crash began to dissipate as new fortunes were made in common stock investment. In this setting, term life insurance became more popular with the public, since it was much cheaper per dollar of coverage than whole life. And it did meet the need for an "instant estate" in the event of an untimely death. True, it did not have a savings element as did whole life, but the slogan of the day was "buy term and invest the difference." Many did just that, and the percentage of new insurance purchased through term policies rose from 31 percent in 1955 to 41 percent in 1960, where it remained for the next decade.

The life insurance business responded to this notable shift in buying patterns in a variety of ways. Since some of the consumer dollar began flowing into mutual funds, insurance agents began to sell such funds to their policyholders in an attempt to provide full service and retain customer loyalty. Soon, the companies themselves began to set up mutual fund subsidiary operations and also to encourage their insurance sales force to get the training and obtain the licensing necessary to sell

mutual funds. Even today, life insurance interests are an important part of the mutual fund industry.

In the early 1960s, another approach was made to meet the demand for common stock investment. The variable annuity was developed, whereby the annuity would be denominated in a number of variable units, rather than a fixed number of dollars, with such units invested in a pool of common stock. The resulting annuity payments depend upon investment results, rising or falling with the value of the underlying stocks and dividend flows. Such annuities are required to be registered with the Securities and Exchange Commission (SEC) when sold to individuals, but are exempt from registration if offered as part of a qualified group pension arrangement. The variable annuity had the advantage of moving broadly with general stock market trends, but this new product lost its luster through most of the 1970s when stock prices turned down, and it lost ground to more attractive new products such as variable life in the 1980s.

Life Insurance and Annuities—The Changing Mix

An important change in the structure of the life insurance business since the early postwar years is the enormous growth of its pension business, relative to life insurance itself. Broadly defining pension reserves as those related to group annuities, individual annuities, and supplementary contracts with life contingencies, such reserves in 1955 were roughly one-quarter the size of the reserves behind life insurance. By 1980, pension reserves (as defined here) had grown to almost 90 percent the size of life insurance reserves. Most dramatic, however, is the ratio for 1989, when pension reserves stood at 2.2 times the size of reserves against life insurance policies.

Stated another way, life insurance premiums were 7 times as large as annuity considerations received in 1955. By 1980, life premiums were only 1.8 times as large, and by 1989 the reversal was complete, with annuity considerations running 1.6 times the size of life insurance premiums. Throughout the 1980–89 period, group annuities were the larger dollar amount and grew by 4 times in nine years. But individual annuity growth outstripped group annuities, growing by 7.8 times in the same period. Included in individual annuities are IRAs, Keogh plans, individual policy pension trusts, and tax-sheltered annuities.

Life Insurers and Disintermediation

No description of postwar developments would be complete without reference to the impact of disintermediation on life insurance

companies. As financial intermediaries, insurers have shared the woes of depository institutions, primarily through the avenue of policy loan demands at times of rising market interest rates. The first major surge of policy loan demand occurred in the second half of 1966 when market rates rose to new postwar highs, compared with the fixed interest rates on policy loans, limited by state law to either 5 or 6 percent at that time. Close to 14 percent of investable cash flow was drained off by policy loans, compared with less than 4 percent in a normal year. For an industry making use of forward commitments to purchase bonds and mortgages, this sudden disruption of available funds was a major concern for portfolio managers.

This episode activated industry officials to propose an increase in the statutory policy loan rate to 6 percent in all states; with support from the NAIC, state insurance laws were modified in a fairly short time, though the new rate could only apply to new policies. A second bout with policy loans came in early 1969, when rising inflation again brought rising interest rates. The impact on cash flow was even greater this time, draining 20 percent of investable funds by the second quarter of 1969 and holding above the 14 percent level for six consecutive quarters. In response to this renewed crisis, the industry decided to attack the fixed-rate feature of policy loans. Flexible rates, linked to a moving index of corporate bond yields, were proposed for future policies with a policy loan feature, and such legislation was enacted in due course by the several states.

As a percent of total assets of the industry, policy loans had been 4.8 percent at the end of 1965, moving up to 7.8 percent at the end of 1970. This percentage continued to rise with the persistently high level of market interest rates, reaching 8.7 percent in 1974. After a decline to 7.8 percent once more in 1978, the policy loan figure soared to a new high of 9.3 percent at the end of 1981. The advent of double-digit interest rates in 1980 and 1981 was the clear cause of the upsurge, but the industry was caught as never before in a liquidity squeeze. In addition to the policy loan drain, the 1980 liquidity problems were worsened by a shortfall of pension inflows, as corporations decided to put their funds into Treasury bills at 15 percent rather than GICs with life companies at 12 percent.

The 1979–81 round of disintermediation, interest rate spikes, double-digit inflation, and prospects for financial instability for years ahead—all these factors served as a catalyst for vast and far-reaching changes within the life insurance business, not only affecting liquidity standards and investment practices but also prompting a wide-scale redesign of standard insurance products. The following sections will outline these innovations which, without exaggeration, can truly be termed a revolution in this staid and conservative business.

The Life Insurance Industry in the 1980s

The dramatic events of 1979 through 1982 are etched in the memories of central bankers, financial market participants, and much of the general public and need not be repeated in detail here. Inflation rates soared to the double-digit range, leaving doubts about the future purchasing power of fixed-dollar insurance policies. Bond yields and loan rates in every market reached new highs, leading consumers to wish they could share in the attractive rates on bills, bonds, and bank certificates of deposit (CDs). Economic activity gyrated between recession and recovery with unusual speed and amplitude. Volatility in both interest rates and economic activity were the watchwords of the time and uncertainty ruled financial markets in all sectors.

In this setting, radical changes in the life insurance business were soon to follow. Product lines were redesigned and drastic alternations in investment strategies were forced upon the industry as it adapted to the new conditions of the 1980s. This section will outline those changes and their impact on the financial condition of the life insurance business.

The Shift to Interest-Sensitive Products

Three distinct forms of life insurance gained a major foothold among product lines in the early 1980s—universal life, variable life, and flexible premium variable life. As a new family of policies, all three had the common element of reflecting investment performance in the policies, by changing the size of the death benefit or the annual premium or both over the duration of the policy. As a group, they are known as "interest-sensitive" or "investment-oriented" life insurance policies.

Under universal life, the policyholder is able to vary his annual premiums as to the amount and timing of payments. New premiums after loading and mortality risk charges are invested in a floating-rate fund, and the earned interest credited to the policy will vary with investment results. Death benefits cannot fall below the face value of the policy, but they can expire if the level of premium payments or investment experience is not sufficient to carry the policy to maturity. Thus, the buyer assumes some of the investment risk, but he shares directly in the rewards of good performance. Universal life is sold both as individual policies and in group policy marketing. Universal life was first offered in 1979 but has since become a standard line for almost every leading company. In 1989, $275 billion of universal life was purchased, raising the amount in force to $1,400 billion.

Variable life carries a fixed annual premium but allows the policyholder to designate investment of his funds into bonds, equities, or a money market account and to vary his choice during the life of the policy

as he sees fit. The policy has a guaranteed minimum death benefit, but the size of the death benefit will increase or decrease over time depending on investment performance. This product has not had the appeal of universal life; in 1989 sales were $6.5 billion, with a total amount in force of $54 billion.

Flexible premium variable life is a combined version of the two preceding policy types and is sometimes called universal–variable life. Premium payments may vary and a choice of investment funds can be made. Death benefits will depend upon investment returns on the assets standing behind the policy. This product appeared in 1984 with fair success; purchases in 1989 were $36 billion with a year-end in force total of $107 billion.

These three related products are classified as whole-life insurance, and their popularity is shown by the fact that they captured no less than 32 percent of the whole-life market in 1984 and again in 1987. In the past three years, however, sales of universal and variable life products have flattened out, falling to 24 percent of whole-life sales, probably because of the lower and less volatile level of market interest rates in those years. The sales appeal of these products has apparently squeezed out much of the term life market, which declined from 60 percent of total ordinary sales in 1982 to 41 percent in 1989.

Individual annuities are also interest-sensitive and have been marketed aggressively throughout the 1980s in a variety of forms. Industry receipts from individual annuities were $5 billion in 1979; ten years later they had risen to $49 billion. Single-payment annuities were the fastest gainer, with yearly industry receipts rising from $1.9 billion in 1979 to $32.8 billion in 1989.

Changes in Investment Practices

Product redesign and the radical shifts in product mix during the 1980s required drastic alterations in investment strategies, with particular regard to liquidity needs, asset marketability, and the search for competitive yields. Emphasis on asset liquidity was heightened greatly after 1980, when companies had suffered from an enormous surge in policy loans. Huge fluctuations in market interest rates led to widespread expectations that volatile interest rates would characterize the markets for years ahead, adding to interest rate risk on longer-term assets. Equally important in assessing liquidity needs were the new, rapidly growing insurance products described above, which held great uncertainties as to how long premiums would continue to flow in and how to calculate the duration or average life of these liabilities.

The shift in portfolio practices took several forms. One change was the reduction in bond maturities, as a means of reducing average life and improving liquidity. In 1980, 85 percent of new bond acquisitions

were for maturities over 19 years; by 1985, only 50 percent were longer than 10 years, and by 1990, the percentage over 10 years had slipped below 40 percent. Similarly, the average maturity period on new commercial mortgage commitments was reduced from 222 months in 1980 to 99 months in 1985 and has remained low in more recent years.

Another aspect of the search for liquidity was the potential for resale of assets in secondary markets. For several decades, private placement bonds had been the favored outlet, but they lacked a ready secondary market if the need to sell arose. Public issues, both corporate and government, were only 25 percent of new bond acquisitions in 1980; by 1985 they had risen to 50 percent, and they accounted for 45 percent in 1990. The readiest resale market, of course, was for Treasury and agency securities, and such holdings rose from 3.3 percent of total assets in 1979 to 12 percent by the end of 1985—the first real surge of life company interest in U.S. government issues since World War II. At the end of 1990, holdings of Treasuries and agency issues represented almost 13 percent of the total life insurance assets.

By the mid 1980s, portfolio philosophy in the life insurance business was centered on the matching of assets and liabilities, in recognition of the diversity of product lines on the books of most companies. The traditional practices of buying longer-term bonds and mortgages and holding them to maturity were based on the long duration of liabilities for whole-life products and annuities for individuals or groups. With investment-oriented products coming to the fore, representing a greater share of liabilities, a rethinking of the duration of these products was essential.

The key to asset–liability matching lies in segmentation of different product lines according to the length of time they can be expected to remain on the books, prior to death claims, of course, but more importantly prior to withdrawals of funds from lapses, surrenders, policy loans, or switches to other accounts. New products, with little experience to go on, made this particularly difficult to estimate. But it was clear that each segment on the liability side had differing investment requirements as to the composition of maturities and liquidity needs on the asset side.

But each segment or product line also had different requirements on the matter of investment return, since the investment performance had a direct bearing on future sales as well as retention of outstanding policies. For example, guaranteed investment contracts (GICs) carried an explicit yield or rate, while universal life policies typically promised a set interest rate for the initial policy year. And if the rate at which interest was credited to such policies declined in later years, the company faced the risk that premium receipts would likewise fall off or dry up.

Another risk faced by companies was that rates offered by their

agents to new customers would not equal or exceed those of competing life companies, with a consequent loss of potential sales. In this setting, career agents brought considerable pressure on the home office to set initial rates high enough to match the competition and keep them high in later years even though marketplace yields might have declined. Moreover, if companies failed to offer attractive rates on interest-sensitive policies, they faced a loss of agent loyalty or loss of agent sales force, thus reducing their potential for selling other, more profitable lines of insurance. And where brokers were the sellers of such products, a company offering rates that were too low would find such brokers switching to products of some other insurer.

It should be pointed out that the investment performance on interest-sensitive insurance products is not dependent on the overall portfolio yield from the total of invested assets held by a company. Rather, companies since the late 1950s have utilized the "investment year" system of assigning returns to group pension products. That is, calculations are made as to the rates earned on "new money" received in a given year or even a given quarter. With the advent of interest-sensitive policies in the 1980s, the new money method was applied to individual policies as well. Policyholders or annuity buyers are often told what rate the company will pay in the coming year or longer, but later periods may bring higher or lower returns on the initial premium or annuity payment.

This setting has brought strong pressure on life company investment officers to search for higher yields than they might otherwise select. One way to achieve this goal is to mismatch assets and liabilities by moving out the yield curve where returns are higher for longer maturities. Of course, this method detracts from liquidity goals and adds a risk that withdrawals from the given segment may require asset sales at a loss if market interest rates move higher in the interim. Another way to bring in higher current returns is to lower quality standards by taking on riskier mortgage loans or by purchasing bonds with lower credit ratings (and higher yields). By assuming greater interest rate risk and/or credit risk, current yields can be raised to satisfy the demand of the sales force, though the risk of loss through defaults or forced liquidation at lower prices is obviously greater.

Company profit or loss on marketing interest-sensitive products depends on the spread between rates earned on the assets behind the policy and the rates credited, year by year, to the policy in question. To forestall lapses and surrenders, the incentive is strong to keep credited rates high, even if the earned rate starts to slip. Pressure then develops to take on greater risks to keep up the earned rate. But a companion method of maintaining spreads has also emerged, namely, expense reduction, which often takes the form of cutting head office staff including investment personnel. Chief investment officers have been

confronted with a double hazard: taking on riskier loans against their better judgment and seeing staff cut around them in the effort to trim expenses and maintain spreads.

The bottom line on these developments, according to informal feedback from investment managers, has been to reduce company profits on many product lines. Interest spreads have narrowed and even turned negative at some times and on some products, although no hard data are available to verify this. But it is clear that providing greater investment returns to customers in relation to earnings has left lower returns for the companies than in the past. At the same time, taking on higher investment risks in the hope of better yields has left companies exposed to greater losses than in the more comfortable investment years before the 1980s.

Profitability Trends in Life Insurance

Profitability in the life insurance business has always been difficult—some say impossible—to measure because of the unique accounting system used in the industry. Profitability for insurers is affected by a host of factors including mortality rates, investment returns, expense factors, policyholder dividends, federal and state taxes, and capital gains or losses.

A rough measure of industry profitability is the "gross return on equity," defined here as the net gain from operations before taxes and dividends to policyholders, taken as a ratio to capital and surplus. At the least, this ratio can show trends over time, although the level may have little meaning. From the early 1970s when the gross return was around 43 percent, this ratio reached a peak of 60 percent in 1979. But subsequent years brought a steady downtrend to 30 percent in 1987, followed by a partial recovery to 39 percent in 1989—the most recent data available.

Another crude measure sometimes used to monitor profit trends is the ratio of capital and surplus to total assets. If this ratio declines over time, profitability must be on the decline, and vice versa. In percentage terms, the capital–asset ratio for the industry slid from 8.4 percent in 1970 to 7.2 percent in 1980, and declined further to 6.4 percent for 1989. The downward trend in the 1970s arose in large part from the decline in stock market prices in 1973–74, which wiped out security reserves and encroached on surplus in many companies.

After 1980, a number of new forces came into play that reduced the capital–asset ratio to the present 6.4 percent. The costs of introducing universal life and variable life in the early 1980s were considerable for many companies, and the diminished interest margin in new products has doubtless played an important part. A related factor was the decline in the share of business known as fixed-cost nonparticipating insurance,

in which the policyholder pays a set premium but does not receive dividends, which would reduce his net cost. With less fixed-cost, nonpar business on the books, displaced in large part by universal and variable life, a smaller share of investment earnings was retained by insurers as company earnings. Also, the level of pretax portfolio yield for life insurers began to decline from a 1985 peak of 9.6 percent to an estimated 9.0 percent in 1990.

This way of looking at capital and profits is not complete, however, because it ignores the presence of security reserves, which are a form of earmarked surplus required by state laws. The mandatory security valuation reserve (MSVR) stands behind both bonds and stocks, built up from contributions keyed to the credit rating of the bond portfolio and the capital gains from the stock portfolio. It is then used to meet any losses on bonds or stock, thus providing a cushion for company surplus. Adding the MSVR to capital and surplus, the total capital ratio was 8 percent of assets in 1989, virtually unchanged for the past decade. The growing level of this reserve has been fed by sizable capital gains on insurers' holdings of bonds and stocks, particularly in 1988 and 1989. Results from 1990 are as yet unknown.

Does the capital–asset ratio tell us whether insurers are in sound financial condition and capital is adequate to absorb difficulties? Not really. Industry totals and averages have their limits, concealing possible capital inadequacy in individual companies. In reality, this becomes a question for state regulators in their examinations of individual companies, rather than an overview of industry aggregates. The NAIC several years ago established an Insurance Regulatory Information System (IRIS) to identify companies deserving of closer surveillance by using a variety of financial ratios or tests, of which the capital ratio is only one. Screening companies through this early warning system has helped state regulators to catch approaching insolvencies at an early stage, though the system is far from perfect. But it demonstrates the importance of relying on more than one simple relationship to judge financial conditions for an industry or an individual firm.

Diversification of Business Lines

In the search for profits, life insurers have long been attracted by the potential for entering related lines of business, either in the insurance field or in other forms of financial services. Some large companies, notably Aetna, Travelers, Nationwide, Allstate and State Farm, have been leaders in underwriting property and casualty insurance as well as life insurance and annuities. In fact, many life companies started as casualty companies and later added a life insurance line of business. Today, health insurance is a line carried by the vast majority of larger companies, though it calls for very different skills and underwriting

standards from the life insurance lines. Health insurance accounts for about 23 percent of the total premium income of U.S. life insurance companies but less than 3 percent of total reserves.

The holding company form of organization is widely used by life companies that have organized or acquired a company that handles another financial service or insurance line such as automobile insurance or homeowners' insurance. Life companies in the 1950s began selling mutual funds through their agents, and in some cases they organized and operated the investment company as an affiliate under the holding company. In the mid 1980s, more than 60 life companies offered mutual funds, half through securities affiliates. At least a dozen life companies owned securities firms that offered underwriting as well as full-service brokerage; another dozen offered full-service brokerage but not underwriting; and a few other companies owned discount brokerages. Many of these securities affiliations go back to the fact that life companies sell products, such as variable annuities, that are SEC-registered.

Other financial services in which life companies have been active include investment management beyond their own portfolios, real estate management, pension plan management, mortgage companies, leasing services, advisory service for REITs, writing or trading options, and financial data processing. With exceptions, such operations have not assumed major size, and they typically represent adjunct operations that utilize skills already developed within the company itself.

Depository Institutions and Life Insurers

When the Reagan Administration proposed in 1981 that commercial banks should be allowed to sell and underwrite all forms of insurance, shock waves went through the life insurance business. Added competition in an already competitive business was certainly unwelcome, particularly on the part of insurance salespeople who feared that the loan leverage of banks would give the banks an unfair advantage and steal customers away. At the head offices of many life companies, however, corporate planners were ready to hedge their bets by exploring whether their companies might thrive in the banking business and achieve some measure of diversification.

It was already the case that a very small number of life insurers owned a bank or a thrift institution. Several others decided to acquire a savings and loan or a "nonbank bank" in an effort to test the waters in this unfamiliar pond. Still others opened discussions with friendly banks about marketing insurance products, or even affiliating, if and when existing laws were changed. The primary motivation was not to be left behind the competition in the event that bank linkages of some sort were permitted.

Attempts by life insurers to acquire savings and loan associations

came to little. Some of the larger companies that already had securities affiliates found that the law would not permit simultaneous ownership of a thrift. Other attempts apparently foundered on the insistence of the Federal Home Loan Bank Board that they acquire weak or failed S&Ls, not the healthy, flourishing ones. In some states, insurance laws contained "doing business" clauses that did not permit life insurance companies to enter such other fields as owning a depository institution.

The best route for several large insurers seemed to be nonbank banks, but very few took this road in fact. The logic of acquisition was to position their sales force to offer customers federally insured time deposits and money market funds along with standard insurance products. Another motive, of course, was to find out what banking was all about, in case a larger move into full-scale banking became possible at a later date. However, a significant barrier to interest in acquiring full-scale banks was the prospect of dual regulation, in which the Federal Reserve, under the holding company laws, would have powers to supervise in some degree the broader operations of any life insurance holding company that owned a commercial bank subsidiary. This prospect was seen as a threat, an unwelcome interference in business affairs, and an added layer of already substantial regulation.

After a full decade of proposals, bills, legislative hearings, regulatory rulings, court cases, and endless discussion, commercial banks still are not able to sell or underwrite life insurance (with a handful of exceptions), and life insurers are not able to own commercial banks. But the proposals for such a revision of federal laws are still in the legislative mill today.

Growing Concern over Company Solvency

For the past two years, a primary concern of both industry leaders and regulators has been the solvency issue. Such concerns arise largely from the investment side of the insurance business, centered on the decline in market values of "junk bonds" held by life companies and the problems encountered with commercial real estate mortgage loans. Both of these problems had begun to emerge in the 1988–89 period but were worsened by the economic recession which began in the middle of 1990.

Just how vulnerable is the life insurance industry to widespread insolvencies? This is undoubtedly the key question today in many circles, triggered by announced investment losses by some major companies in late 1990 and by the more recent regulatory actions to close down the Executive Life units in California and New York and the First Capital holding units in California and Virginia. The two Executive Life companies were notorious for holding close to 50 percent of their invested assets in junk bonds acquired to fund the high-rate annuities

they marketed in recent years, and the practices of First Capital companies were similar.

Is the emphasis on junk bonds a widespread phenomenon within the life insurance business today? A special survey for holdings at year-end 1990 indicates that almost 6 percent of general account bonds fell into the three lower grades, equivalent to "B" or lower, and these were mainly private placements, not the publicly issued junk bonds sold to finance the leveraged buyouts of the 1980s. There is, of course, no fixed definition for "junk bonds" when translated back into grades used by the rating services such as Moody's. As a working estimate, however, it appears that the life insurance business holds between $60 billion and $70 billion in bonds that are loosely described as "junk bonds."

The concern about junk bonds, of course, is their potential for default on interest and/or principal payments to the bondholders, who must then take losses that could impinge on surplus or produce insolvency. But what is the record on bond defaults in the life insurance industry in recent years? The American Council of Life Insurance (ACLI) has assembled data on bond defaults for over a decade, based on annual surveys of company experience. Looking at the total bond portfolio, exclusive of Treasury and agency securities, defaults in 1976 averaged 0.91 percent on a dollar-weighted basis, fell to 0.28 percent in 1979, and rose again to 0.92 in 1983. After a decline, the figure was up to 0.89 in 1987 but then fell to 0.44 percent in 1988 and 0.54 in 1989, the latest year available. These percentages are impressive mainly because of their small size and the lack of clear upward trend.

Default data also can be broken down by public issues and private placements. Over the past 10 years, publicly issued bonds have had a low default record, with a recent high of 0.39 percent in 1987, declining in 1988 to 0.15 percent and 0.26 percent in 1989. Among private placements, the 1987 default rate was 1.46 percent, followed by more favorable rates of 0.80 percent in 1988 and 0.91 percent in 1989. Comparable data for 1990 are as yet unknown.

An offset of considerable importance to insurers' holdings of lower quality bonds is the countervailing rise over these years in holdings of Treasury and agency securities that are so safe that no MSVR contribution is required. In 1977, less than 3 percent of life company assets was invested in Treasury and agency securities; such holdings increased substantially in the 1980s and by 1990 stood at 12.8 percent of total assets and 24 percent of the bond portfolio.

Industry data show corporate debt securities at 41 percent of total company assets, while another 19 percent of assets is in mortgage loans, primarily backed by commercial real estate such as office buildings, shopping centers, industrial warehouses, hotels and resorts, and apartment houses. Serious financial problems in this sector have made headlines

in the financial press for many months, and life companies have shared in the difficulties as major holders of commercial mortgage loans.

Again, ACLI data tell the story, based on surveys initiated many decades ago. In the closing quarter of 1990, 3.7 percent of the commercial mortgage portfolios of reporting companies were counted as delinquent or in foreclosure, compared with delinquency rates below 1 percent of 1979 through 1984. About the only comfort one can take from the current 3.7 percent rate is to recall that the delinquency rate reached an even higher postwar record—4.7 percent—in the first half of 1976, when overbuilding in major cities combined with the recession of 1974–75 to produce a major problem for mortgage lenders. Once more, high vacancy rates and a continuing economic recession combine to boost delinquencies for life companies. Pessimists fear losses to insurance lenders that could threaten solvency; optimists point out that the industry survived an even worse situation in 1975–76. The final answer probably lies in how long the present recession will last.

Insolvencies and the Industry Responses

Before 1987, the number of insolvencies among life insurance companies each year was 10 or fewer and involved relatively small companies with assets below $50 million. The number rose to 19 companies in 1987, then fell to 10 in 1988, though still confined to smaller life insurers. But insolvencies soared in 1989 to 40 cases, including an insurer with $646 million in assets. Concern within industry circles rose sharply. The ACLI board of directors responded in September 1989 with the appointment of a special Task Force on Solvency Concerns, charged with determining whether the industry at large faced a solvency problem and what steps should be taken to reduce future difficulties.

One subgroup set to work analyzing 68 insolvencies of the preceding five years, of which 16 were in Texas, 6 in Arizona and 6 in Oklahoma; the remainder were scattered. The subgroup's report identified causes of past insolvencies as related to affiliate transactions often involving fraud in 47 cases, problems in accident and health insurance lines in 41 cases, underpricing of products in 40 cases, investment problems (often real estate) in 31 cases, and problems with new management in 25 cases. These causes often interrelate, of course.

Another subgroup analyzed trends in capital–asset ratios in a variety of ways for the period 1981 to 1988. Using weighted averages of capital and surplus plus mandatory security valuation reserve to admitted assets, this analysis documented a modest decline in the ratio over these seven years. More interesting, however, was the striking difference between large and small companies. Large companies with assets over $5 billion showed average capital–asset ratios (in percentage terms)

of 5.3 percent in 1988, in sharp contrast to companies under $100 million where average ratios were 20 percent. The breakdowns between stock and mutual companies showed wide differences in all size categories, with stock companies showing much stronger ratios than the mutual companies, especially in recent years. The detailed analysis of this report illustrates a key point this paper has tried to emphasize: industry aggregates and averages can provide only a starting point to the analysis of financial conditions among life insurers. The real story requires a much closer look, ultimately only in the way that a regulator can undertake through the examination process.

A paradox arises from the differences shown in the report of the subgroup on capital–asset ratios. Why do the largest insurers with the lowest ratios appear to be the strongest, financially sound companies? And why do the companies with assets under $100 million show up with much higher ratios, while companies in this size bracket are most often on the insolvent listing? These puzzles leave open the question of whether capital ratios are a meaningful guide to financial soundness, and whether capital adequacy is a problem in the life insurance business today.

The concern over solvency by the major trade association of life companies is not hard to understand, for several concrete reasons. Far from welcoming the disappearance of a competitor, the companies fear the impact of an insolvency on the public perception of their own financial condition and the potential for a "run on the bank" in the form of surrenders, policy loans, and lapses by policyholders, both individual and corporate. The integrity of life insurance products is also seen as being at risk if insolvencies spread, leading to a loss of new business of all kinds. A more immediate pocketbook effect of a large insolvency is the dollar assessment upon the remaining companies to support claims payment through the system of guaranty funds that stand behind companies in almost every state.

Role of State Insurance Guaranty Funds

Beginning in the early 1970s, a movement developed to set up state guaranty associations to satisfy benefit claims of policyholders and annuitants in the event that a company liquidated through insolvency does not have the necessary assets. The deficiency is met by assessments on all companies licensed in the state of the liquidated insurer. Such guaranty funds now exist in every jurisdiction except New Jersey, Louisiana, and the District of Columbia.

Typical coverage under guaranty funds is $300,000 in death benefits, $100,000 in cash or withdrawal value for life insurance, $100,000 in present value of annuity benefits, and $100,000 in health benefits. Some states (but not California) also provide varying coverage for unallocated annuity contracts such as GICs purchased by employers to fund pension

plans, usually limited to $5 million (as in New York) for any one contract holder. Most guaranty funds limit protection to residents of their own state, regardless of where the insolvent insurer was domiciled. Other states cover policyholders of an insolvent domiciled company, regardless of where the claimants are located.

One reason that GICs and similar corporate annuities have not always had guaranty fund coverage is the very large size of such liabilities and the fact that professional fund managers are in position to carry out their own analysis of insurer stability. To help those who place large sums with life insurers, a number of the bond rating services have begun to rate the claims-paying ability of life companies. Moody's, Standard & Poor's, and Duff & Phelps have offered this service in recent years, thereby supplementing the similar rating service of A.M. Best Co., which has been a prime source of insurance company data since 1899.

Until now, the burden of guaranty fund assessments upon life insurers has not been overwhelming, even in the aggregate. The largest claims have been on health insurance lines, rather than life insurance and annuities. The biggest year for assessments was 1989, when assessments of $34 million for life insurance and $50 million for annuities became necessary, dwarfed by $124 million in assessments to cover health insurance. Total assessments since the guaranty fund system began have amounted to less than $500 million through the end of 1990. It should be noted that assessment payments provide an offset against amounts payable for future state premium taxes; thus the net burden for companies is substantially lower. The major burden falls on state revenues and hence on the taxpayers of the states.

With the backup of state guaranty associations, the life insurance industry has been able to make the proud claim that no policyholder has failed to have his claim met because of insolvency. Yet, the real test may lie ahead since the size of some annuities issued by the Executive Life and First Capital units may exceed the dollar coverage limits of the guaranty funds that will become involved in due course. Without question, these are the biggest insolvencies to date, and some rough estimates of the deficiencies involved reach into the $1 billion range. With heavy assessments in sight, voluntary efforts to cover the excess policy amounts beyond the guaranty fund limits are doubtful. With so many unknowns as to the true financial state of these companies, including the ultimate value of assets in liquidation, it is difficult to speculate on the size and scope of the problem or the industry reaction to the needs that may arise.

Regulatory Responses to Solvency Problems

With junk bonds seen as one of the larger threats to company solvency, state insurance regulators have focused on limiting such

investments and even requiring divestiture. New York was the first to act, in June 1987, by imposing a 20 percent limit on "high yield–high risk" obligations publicly traded or issued in a leveraged buyout. In February 1991, this limit was tightened by applying it to all private placements and to all medium-grade (Ba-rated) bonds that had previously been outside the limit. In addition, new "inside limits" of 10 percent, 3 percent, and 1 percent were imposed on three categories of lower-grade bonds, as rated by the NAIC, effective in 1992.

In other states, Illinois imposed a 35 percent limit last August with an inside cap of 10 percent on bonds below the "B" rating. Maryland adopted a 20 percent cap on bonds of "Ba" or lower in December 1990, and similar limitations on lower-grade issues have been proposed for legislative change in Missouri, Florida, Nebraska, Indiana, Kansas, Colorado, Minnesota, and Connecticut. Other states are likely to follow, with Executive Life and other examples now in the headlines.

Another tightening action was the move by the NAIC in June 1990 to increase the required formula contributions to the MSVR, which stands behind the company holdings of bonds and stocks to absorb future losses. This action took effect with the year-end 1990 statements, and it mainly required larger reserve contributions from medium-grade bond-holdings, with the result that credits to bond reserves will be about twice the rate of the past, once the phase-in stage is completed in 1995. Beyond the revamping of the bond reserve, the NAIC is now considering a mandatory reserve against life company mortgage holdings, to cushion capital and surplus against potential losses in that investment area.

More broadly, the NAIC has been actively working to improve the policing of solvency problems within the industry by setting stiffer standards of regulatory surveillance and by developing Model Laws for the individual states and insurance departments to adopt. As early as December 1989, the NAIC adopted a Solvency Agenda for 1990 and followed this a year later with an updated Agenda for 1991. But the role of the NAIC is primarily advisory and exhortatory, rather than compulsory, for the individual states. This body has brought greater uniformity among state regulations and laws over many years, but it has no binding authority or penalty powers to enforce its agreed positions. Perhaps its most influential role has been through the Securities Valuation Office, which establishes statement values for each debt obligation held by each insurer, and by the Insurance Regulatory Information System (IRIS) which screens company reports for potential insolvency problems. Without the NAIC, state insurance regulation might have been a hodgepodge of conflicting, confusing, and impossibly complex laws for companies operating in multiple states. But the centralizing role of the NAIC has provided a reasonable degree of uniformity in regulatory standards and has fostered a high degree of interstate cooperation.

Embarrassed by the rising tide of insolvencies, and threatened by congressional proposals for federal regulation of the insurance business, state insurance commissioners have been moving more vigorously to tighten regulatory standards and enforcement. But it remains true that many of their desired changes require passage by state legislatures, which can be a slow and frustrating process. And the strength of their departments is dependent upon state appropriations, which can be an insuperable problem at times of widespread budget-cutting at the state level. For its part, the insurance industry at large has been a long-time defender of state regulation and has encouraged the efforts of the NAIC and the individual states to maintain regulatory standards that will protect the public, and the industry, from insolvencies. This attitude is not hard to understand when it is recognized that insolvencies cause incalculable damage to the industry at large by raising doubts and fears in the mind of the public over the financial integrity and soundness of any and all companies in the insurance business.

Concluding Observations

The foregoing account of financial conditions in the life insurance industry has attempted to be more factual than judgmental, in the sincere belief that the judgmental function can best be exercised by regulators who look beyond aggregate data and industry averages. Nevertheless, a few generalizations may be in order.

It is quite apparent that the life insurance industry today is not as financially sound as it was a dozen years ago. The nature of the business has undergone radical changes over that period, which have reduced its profitability and heightened its exposure to financial risks. In contrast to the 1970s, life insurance and annuities in the 1980s have become investment-oriented products, sensitive as never before to movements in market interest rates. The industry now passes along a greater proportion of its investment return to contract holders while still providing guarantees. To maintain profitability, it has reached beyond its traditional limits of credit risk and interest rate risk and has begun to pay the price of so doing. Competition among companies has become more intense than ever before, with a larger share of products linked to investment returns, allowing buyers of annuities and insurance to shop and compare on the basis of interest rates, either implied or guaranteed.

Life insurance traditionally has been a fixed-dollar product, and it worked best in a low inflation environment with moderate interest rates. In the very different climate of the 1980s, the industry was faced with the choice of adapting with new products or going under as a reservoir of financial assets for future use. It chose to adapt, by entering into head-on competition with other contenders for the savings dollar who

based their customer appeal on the attraction of interest rates. The buying public was faced with investment choices of high-yield bonds, money market funds, bank CDs with federal insurance, or common stocks with potential gains: this public had to be lured into meeting their insurance needs with policies that gave them some "piece of the action." The grudging decision by life companies to offer investment-oriented products, with all the attendant risks, was not a happy choice, but it was deemed necessary to survival in the environment of volatile interest rates and uncertain inflation prospects.

In the face of these rapid changes, carried out mainly between 1981 and 1985, state insurance regulators have had a major struggle to stay abreast of marketplace developments. On the product side, regulators must review the new policies being developed; on the investment side, the prevailing limits for investment practices were expected to suffice. But the competitive drive for higher yields with greater risks has pressed hard against the limits of conservative investment standards, breaking over into untested and unsafe ground. The regulators now face the difficult task of damage containment through more stringent surveillance.

In my judgment, the life insurance industry is not in trouble; some of the companies are in trouble. But the troubles of those few companies present very real problems both for the industry at large and for its regulators.

References

American Council of Life Insurance. *1990 Life Insurance Fact Book.* Washington, D.C. (Data from this and numerous other publications of the ACLI have been the primary sources for statistics cited in this paper.)

———. 1990a. *Report of the ACLI Task Force on Solvency Concerns.* Washington, D.C., September.

———. 1990b. *Statement to the ERISA Advisory Council, Work Group on Annuities.* Washington, D.C., October 23.

———. 1991. *Statement to the Subcommittee on Antitrust, Monopolies and Business Rights, Committee of the Judiciary.* U.S. Senate, Washington, D.C., April 9.

Bishop, George A. 1976. *Capital Formation through Life Insurance.* Homewood, IL: Richard D. Irwin, Inc.

Cummins, J. David, ed. 1977. *Investment Activities of Life Insurance Companies.* Homewood, IL: Richard D. Irwin, Inc.

Curry, Timothy and Mark Warshawsky. 1986. "Life Insurance Companies in a Changing Environment." *Federal Reserve Bulletin,* vol. 72, no. 7, July.

Meier, Kenneth J. 1988. *The Political Economy of Regulation: The Case of Insurance.* Albany, NY: State University of New York Press.

National Association of Insurance Commissioners. 1991a. *The NAIC Solvency Policing Agenda.* Kansas City, MO. February 1.

———. 1991b. *Financial Regulation Standards and Accreditation Program of the National Association of Insurance Commissioners.* Kansas City, MO. February 12.

National Organization of Life and Health Insurance Guaranty Associations. 1991. *Information for Receivers and Liquidators on the Life and Health Insurance Guaranty System.* Herndon, VA. February 20.

Discussion

*Terence Lennon**

Fundamental changes have occurred in the life insurance industry over the past decade. In my comments on Kenneth Wright's paper, "The Structure, Conduct, and Regulation of the Life Insurance Industry," I would like to analyze these changes from a slightly different perspective and with slightly different ornamentation. This analysis focuses on four time slices: the way it was, the way it became, the way it is, and the way it will become.

The Way It Was

Fifteen or twenty years ago, it would take a crook or a fool to run a life insurance company into the ground. And a fool would have had a very difficult time doing it. Today, mere mortals can do it. In the old days, good managers made lots of money; bad managers made money. Profit margins were uniformly high and interest rates rose gradually but were relatively stable. Cash flows were steady and, above all, predictable. Lapse rates, while they hit peaks and valleys, were also more or less predictable. And in the past, product life was generously long. The ordinary life policy and the spin-offs from it had existed for many decades and had more than paid for their development.

An old joke shows how life insurance companies used to be managed. A life insurance company was like a car going down a highway; at the wheel was the CEO who also controlled the accelerator,

*Assistant Deputy Superintendent & Chief Examiner, New York State Insurance Department.

next to him was the chief financial officer who read the maps and watched the gauges, and in the back seat an actuary knelt looking out the rear window, telling them where to go. And as odd as that sounds, it worked, because actuaries look at the long history of numbers and tell management what they should do in the future. And for that time it did work.

The management structure had other interesting characteristics in those days. It consisted of a series of autonomous or semiautonomous functional units: marketing, actuarial, the comptroller, and the chief financial officer. These units met several times a year, set things on automatic pilot, and, basically, everything worked. The profit margins were very generous. The balance sheet was filled out with a joyful conservatism born of legalized tax avoidance because, in those days, every reserve was a tax deduction. This structure is not as useful today.

During those times, everyone was fat and happy. Regulation was a cakewalk; regulators simply talked about the latest innovations in assets or whatever, and the amount of risk was limited. But then came the revolution.

The Way It Became

The revolution came in the form of a destabilization of interest rates. The common phrase "buy term and invest the rest" has been around since sometime in the 1950s, perhaps longer. However, people were not paying very much attention to it. Savings banks in those days paid 5 percent, while policyholders were credited with 3 to 3½ percent on any inside buildup. The one and one-half percentage point differential evidently did not interest anybody very much. But when interest rates started to climb in the late 1970s and into the early 1980s, the world changed. And during this period a subtle change took place among U.S. insurance consumers: they were transformed from savers to investors.

Overnight the question, "How much am I getting on my idle cash?" became important. The insurance industry was faced with a problem. It would see all its assets exit unless it did something. And so, James Anderson, who had been the head of Tillinghast, developed the universal life product, which basically unbundled the mortality coverage from the fund buildup and gave a market return on the fund buildup. In addition, the single-premium deferred annuity (SPDA), which had been around for years, was recycled and sold like a certificate of deposit.

A new set of risks became paramount. Historically, insurance companies had been managers of mortality and morbidity risk. All of a sudden they were asked to be managers of rate spread risk or investment risk. This was an entirely different ball game and one for which their management structures were not well suited. The new products

were sold based on interest rate illustrations. Currently, a generation of agents exists who do not know how to sell security—they sell illustrations. When this happens, the product becomes a commodity like any other commodity, and the margin shrinks, especially when too much of it is in circulation.

The decrease in margins inexorably led to a capital squeeze. The squeeze is twofold; real capital as a percentage of assets has decreased, but not markedly. More importantly, the quality of that surplus is diminished because of an assault on statutory accounting throughout at least half of the 1980s. This assault has removed some of the conservatism from balance sheets.

In New York, we have acted to prohibit a number of these "innovations." For example, securitization was proposed, but the way insurance companies were going to use it was problematic. It is a legitimate product for a bank to sell but, for an insurance company, it is basically mortgaging the future in ways that do not show up on the balance sheet. Another "innovation" of the 1980s, called financial reinsurance, entailed the shifting of liabilities without the shifting of risk. This was prohibited in New York in 1984; nevertheless, it has played a very significant role in the recent failures in other states.

Basically, the squeeze on statutory accounting has left the quality of surplus far different from what it was. You have two elements: a small shrinkage in the absolute size of capital, as well as a considerable reduction in the quality of that capital.

The conservative statement of liabilities in a life insurance company is valuable and has been very useful to regulators. Historically, one of the reasons that so few failures and insolvencies have occurred in the life insurance industry is that companies' conservative financial statements allowed a cushion for maneuvering, once a company became impaired. That is, the company still had a lot of value left in the book of business, so long as the assets were reasonably valued. This allowed other companies to come in and either buy the business or buy the company. Depending on the extent to which all of that conservatism or hidden value now has been squeezed out, once an impairment occurs, the result is a big problem.

The Way It Is

We now have a stressed industry. It is not a basket case, nor is it another savings and loan crisis at this moment. The problem companies are larger and more significant than the ones we have seen in the past, however. The cases of Executive Life of California (ELIC) and Executive Life of New York (ELNY) both illustrate a number of the problems of the 1980s and several of the abuses that New York regulators reacted to,

specifically asset–liability matching, required by New York since 1986; concentration in junk bonds, which New York limited in 1987; and the use of financial reinsurance, which New York disallowed in 1984.

But the early bird does not always get the worm. The first year that ELNY was up to about 19 percent in junk bonds they were called in and told that junk bonds were a new investment vehicle and 19 percent concentration seemed too high. Since "fallen angels" had been the only below-investment-grade securities on the market before that, the law was silent. ELNY told us not to worry, this was something they knew how to manage. We had little choice but to continue monitoring. The next year ELNY increased their junk bond concentration to about 33 percent. We called ELNY again with concern over the high concentration and were told not to worry. ELNY said they knew how to manage their finances and were probably not going to acquire much more. The following year their concentration reached the high 40s and we decided not to call them in, having already heard their presentation.

At that point we began drafting legislation to limit life insurance companies' concentration in junk bonds. It was 1986, in the heyday of junk bonds. Drexel Burnham had a very powerful lobby and the legislators heard something entirely different from them than they heard from us. When it was quietly suggested that we do it as a regulation, we proposed one. Then we were called to a hearing by the Legislature and excoriated for proposing the limitation as a regulation. By the time the regulation was promulgated in 1987, ELNY had increased its concentration in junk bonds to about 70 or 75 percent of assets. While we were trying to convince people that fiduciaries should not have this kind of concentration and that junk bonds were basically an untested investment vehicle, ELNY just kept loading up on them.

Our regulation made no requirement of divestiture, for two reasons. One is that the dumping would have played havoc with the market and, more importantly, ELNY's and ELIC's liabilities are about half long-term and half short-term. One-half of ELNY's liabilities are structured settlements and pension closeouts, which are long-term liabilities. And if they were priced based upon the coupon yields from those junk bonds, the company could not really sell the junk bonds, buy 8 percent Treasuries, and expect to meet its obligations. So a limitation could be imposed only on a prospective basis.

On that basis, ELNY decreased its concentration to below 50 percent near the end of 1989. Then during 1990, with all of the problems in the junk bond market, surrenders amounting to almost one-quarter of the company occurred. That took only non-junk assets out and brought the level back up to 60 percent again.

ELIC had different problems. They had, first of all, a much worse portfolio than ELNY, about 38 or 39 percent in the bottom two quality categories, meaning the default and essentially the C categories. They

also had a lot of financial reinsurance, as did, I believe, First Capital. And I think it was Commissioner John Garamendi's decision to no longer allow financial reinsurance that basically blew the hole in the bottom of those companies. Were it not for the delays in New York caused by intense lobbying, and if California had put the 20 percent limit in at that time, these two companies would not have been basket cases. Aggregate limits do work for insurance companies.

Insurance regulators operate in a way characteristically different from bank regulators. We do not go into the analysis of individual assets to the extent that bank regulators do. We do it more on the basis of both the liabilities and the assets and, frankly, more on the liabilities, historically, although now we are certainly learning more about asset-side regulation.

We are seeing the beginnings of some long-term solutions. Management structures are becoming much more integrated and dynamic. Pricing and product design have become more sensible and within a reasonable economic framework. Companies are putting a widespread emphasis on efficiency and lower expenses and they are developing methodologies to monitor their assumptions, because, frankly, insurance is a difficult business in which to track your profitability because it tends to evolve over a number of years. One problem is that many of the companies do not have adequate management information systems to monitor profitability. Most of the money that was put into computers was put into policyholder systems throughout the 1980s.

The Way It Will Be

The 1990s will be a decade of trauma and recovery. The National Association of Insurance Commissioners (NAIC) has a number of important initiatives. The NAIC certification process should be very helpful. It is no secret that regulatory resources are not evenly distributed throughout the country. One way of saying that is that we have 800 people in the New York department and some states have 12. Our department supposedly has more actuaries than the rest of the departments put together. So it is clear that a better distribution of resources is necessary.

Risk-based capital, I believe, is something whose time has come for life insurers. It was not necessary 20 years ago, but it is absolutely necessary now; and Frederick Townsend's comment that 50 percent of the risk-based capital formula is on the asset side is indicative of the reason why. In the mid 1970s an asset–surplus ratio meant something because the reserves of the company basically covered 95 to 98 percent of the company's risk. The assets tended to be fairly vanilla. Since then, the risk profile of companies has changed. Back then the risk profile of

companies was fairly homogeneous; now it is not. A company with an 8 percent capital ratio now might be in worse shape than one with 6 percent, simply because its assets are more risky or it has assumed other risks not addressed by the reserves. Risk-based capital's time has come; the life insurance industry understands it and is ready for it.

Changes in reserves and investment laws are positive steps. The asset valuation reserve is one major step. New York has had the mandatory securities valuation reserve (MSVR) that reserved for bonds and stocks. By this December we will have in place a reserve that addresses all classes of invested assets and requires both formula contributions and capital gains to be reserved. A group at the NAIC is also writing a model investment law, which, oddly enough, has never existed at the NAIC. The old New York law was, in effect, a model that was widely followed throughout the country. However, the New York law was changed in 1983; the qualitative standards were removed and the prudent person rule was substituted. Unfortunately the law did not assign a prudent person to every company. The quantitative or aggregate limits were left in the law, but no limit was added for junk bonds.

Many anticipate some kind of federal role in insurance regulation. In the past year, I have spent a lot of time in front of a variety of Congressmen who have a variety of experiences with the industry. Just before this conference we received requests to appear twice more in July 1991 in front of Congress. Representative John Dingell of Michigan seems to be headed toward developing some standards; this may or may not happen, it is very difficult at this point to know. The problem is that Congress is looking only at the most egregious cases of failure. This, by the way, makes the regulator's job easier. The fight in 1987 to do something about junk bonds was monumental compared to what I would have to do today to achieve a change because, on any issue, greater attention is being paid to the industry and this makes it much easier for a regulator who wants to get some things corrected.

We have made several trips now to Asia and I have spoken several times to international groups of regulators here. One of the tools that regulators in other countries all have that we do not have is the ability to influence tax policy, to induce conservatism through tax policy. That is totally absent in this country, even though it is a tool used by regulators virtually around the world. It is possible that it would come with federal regulation.

Conclusion

By the end of this decade we are going to have at least 20 percent fewer life companies. We will see major mergers in the next four to five years and I believe this is absolutely necessary. The demographics are

excellent for the industry. An aging population with a fairly significant accumulation of wealth fits well with what insurers do. If the industry manages the business well, it will continue its role as a valuable element of the country's financial structure.

And finally, I will comment on marking assets to market. Everybody loves to mark to market. The whole point is not that it can or cannot be done, but that marking the assets to market cannot occur without also marking the liabilities to market. Both sides of the balance sheet must be done. The problem is, particularly among the big insurers, that only a relatively small part of their asset portfolio has a readily obtainable market value, and no methodologies are in place now that would assign market values to the rest. What that does is leave it up to assumptions and guesstimates. I will guarantee that the companies that are stressed will have the most generous assumptions, both on the liability side, which again does not have a methodology now, and on the asset side. Our recommended substitute is cash flow testing; at this point I believe marking to market presents more problems and more difficulties in monitoring than does cash flow testing.

Discussion

*Kenneth J. H. Pinkes**

My comments represent Moody's interpretation of the various perspectives on the financial condition and regulation of the insurance industry given by leading financial service companies around the world. I will briefly describe what we consider to be the fundamental forces at work in the entire financial services industry and then draw some conclusions about the outlook for insurance policyholder risk. The main point I would like to add to Kenneth Wright's paper is that, in Moody's opinion, little hope exists in the near term of a return to a financial system with the level of stability that we saw in the 1950s and 1960s. This is not simply a problem of regulation, this is not simply a problem of inflation, but it is a question of trends at work that are going to maintain an environment of instability for a long period to come.

The Current Environment in the Financial Sector

Deregulation around the world has led to an increase in the efficiency of financial markets. We can define efficiency very roughly as the degree to which the allocation of investable funds follows the path of maximizing the long-term total rate of return and reflects minimal distortion resulting from an imperfect access to information by market

*Vice President and Director of Financial Institutions and Sovereign Research Group, Moody's Investors Service, Inc.

participants. Efficiency increases when artificial barriers to profit-maximizing behavior are removed and when access to information is accelerated and equalized.

But improved efficiency does not come without exacting a cost. Recent theoretical and empirical research on financial markets suggests that the technological developments and public policy measures that can create more efficient markets also create a greater degree of fragility for the banks, insurance companies, and other financial institutions comprising the markets. Fragility refers here to the susceptibility of institutions to shocks affecting financial values and leading to their becoming insolvent or illiquid. The rapidity of flows of information, and the pressure to sustain earnings in today's highly competitive environment, reduce the buffers or shock-absorbing reserves that used to be present throughout the financial structure. Shocks are now transmitted through the system much more rapidly than before, and institutions are no longer as protected by regulated access to low-cost funds or by other regulatory barriers to entry against new competitors. New techniques of monetary management and the emergence of a managed, floating exchange rate regime have created more volatility in interest rates and expose institutions to a greater degree of market risk.

Consequently, a trade-off results between efficiency and fragility in financial markets. In order to constrain institutional fragility without reducing efficiency, regulators have sought ways to more precisely reflect credit risk in investments, such as the new capital adequacy guidelines of the Bank for International Settlements (BIS), and the fine-tuning of the mandatory security valuation reserves by the National Association of Insurance Commissioners. Nevertheless, we do not believe such measures can totally remove the necessity to choose a point on the efficiency–fragility curve. National and interregional regulatory systems will make different choices, depending on national traditions, vested interests, and ideological and political preferences.

My reason for beginning with this preamble is to emphasize that it is not appropriate for Moody's, as a rating agency, to attempt to prescribe or even suggest to policymakers where, on this efficiency–fragility curve, their choice should fall. But it is our obligation to observe and judge the effects of such choices on the risks faced by investors in the obligations of the various classes of financial institutions.

Moody's fulfills its role in the credit markets by taking a long-term perspective. We believe two fundamental forces will determine the shape of tomorrow's financial services industry: the impact of information technology, and the impact of public policy on what will largely remain a highly regulated industry.

The Impact of Information Technology

Let me turn now to the first fundamental force that we believe is changing financial markets around the globe. We have frequently cited the effects of the twin forces of computer and communication technology in Moody's past analyses, so I will be brief. Various industry commentators have estimated compound annual growth rates in computer cost performance to be in the range of 20 to 30 percent. The cost of processing financial data is constantly driven down as new generations of computer hardware and software develop. Likewise, technological advance is dramatically improving the ability to communicate and to transmit information at reduced cost. These are secular, not cyclical forces and they will continue to express themselves far into the future.

These technological forces have three major results. First, the financial services industry will continue to witness, through unbundling, the creation of new products and multiple new businesses out of what had been very few products and businesses in the past. As advances in information technology permit better cost measurement, management can more effectively control and price a product or service. When management can realistically set prices on a reduced scale of business activity at low cost, it also has the potential to establish a new business and to measure its competition and success on a more discrete basis than in the past.

Financial services used to be largely a vertically integrated industry: financial companies generated internally most of the cost of the services they provided. But this has opened up with the development of specialized national-scale industries such as mortgage servicing, credit card administration, and providers of administrative services. In wholesale capital markets, assets are separated from their originators and, through sophisticated data manipulation and analysis, can be repackaged as high-grade securities for a global investor population. This would not be possible without declining costs for performance measurement for these various asset classes of securitized assets.

This turning outward to sell what used to be created for in-house consumption also results from the second major impact of advances in information technology, the arrival of economies of scale in many of these emerging industries within the traditional financial institution. This is especially true for the best-managed companies. In the past it could be reasonably argued that the opportunities for scale economies in financial services were quite limited. This is not to say that companies could not achieve higher returns through dominant share. But in the old days those returns would likely come from pricing power rather than cost performance. Many have argued that as late as the middle 1970s such businesses as retail banking and processing of health insurance

claims actually had diseconomies of scale. But today we believe that, for the most cost-effective companies, ATM networks and the extraordinary capital intensity of communication and computer software and hardware have changed that situation at the level of the discrete business unit. Today we believe information technology has added cost performance to the pricing power associated with leading market share. As a result, many market participants now believe that the economic incentive for scale advantage has expanded.

The third result of technological advance, complexity, in fact results from the prior two. The rapid decline in costs, and the creation of multiple new businesses, each with its own scale economies and market dynamics, have thoroughly complicated strategic decision-making. Aggregate size is no longer a valid measure of strategic success: it is market share and cost performance within each specific niche that have become predictive of long-term success. Furthermore, an appreciation of reinforcing scale economies in related niche businesses has taken on new importance in strategic planning. The conclusion seems clear: the portfolio of businesses that has replaced the integrated firm is far more difficult to manage. For regulators and analysts, a firm's long-term success, or failure, is more difficult to predict using traditional financial parameters.

The Impact of Public Policy

Let me turn now to the second group of fundamental forces that will determine the shape of the financial services sector: the regulatory and public policy environment. We have been hearing four themes in recent years: first, a greater tolerance for concentration. In the U.S. financial services sector, perhaps the most fragmented financial system in the developed world, we have seen a greater tolerance for concentration than has been seen since Andrew Jackson revoked the charter of the Second Bank of the United States in 1831. And this is not just an American phenomenon. The evolution of an integrated European market is actually leading national governments to encourage consolidation in what is seen as a much larger competitive arena. In both Europe and the United States, policy tolerance for concentration, at least in part, appears to reflect greater confidence in technologically driven, cost-based efficiencies of scale.

The second shift in public policy is a greater willingness to subordinate regulatory sovereignty for common global or regional standards. This goes beyond the significant strides made by the BIS/Cooke Committee and by various European Community directives. Similar moves are well underway in the securities industry and among state insurance regulators.

The third policy shift underway is a greater willingness to accept the continuing blurring of the boundaries between the highly regulated financial sector and the commercial sector. Unbundled services do not necessarily have to be provided through a regulated financial institution. As business risk and scale economies become more important in predicting success or failure, regulators and analysts are finding it more difficult to adequately measure risk using traditional financial parameters. Sound risk measurement in the future will rely more on prudential judgment and on analytical tools from the commercial sector, as the overlap expands.

The fourth and final public policy development appears to be a greater insistence that providers of risk capital and liabilities in general absorb losses in the event of failure. These four regulatory and public policy trends reflect policy that has tilted, at least until very recently, toward efficiency via market liberalization, at the expense of stability.

To summarize Moody's environmental outlook: declining information technology costs and public policy shifts are combining to introduce unprecedented complexity into the management, analysis, and regulatory supervision of financial services companies. The landscape of competitors is shifting and they are more difficult to identify. Competitors come from different regions, countries, industry sectors, and even from outside the traditional financial services industry. Sophistication about technology and shifting shared-cost positions has never been more important.

Meanwhile, convenient regulatory barriers to help define competition are eroding, and the pace of change in relative market share has quickened as public policy tolerates greater concentration. Furthermore, increased business risk is compounded by declining regulatory protection and greater insistence on market discipline.

Finally, management uncertainty about the security of its business position is in itself fueling fierce competition and greater risk-taking. These are tough times for top management, the regulatory community, insurance policyholders, and I might add, industry analysts.

The Outlook for Success in Financial Services

This summary may have pointed out little that is new to you, but it helped set the stage for developing the central points in Moody's outlook for specific companies. Let me describe the key factors that we believe will predict success in this environment. The greatest challenge, particularly for large companies, is developing a realistic sense of resources and opportunities. Let me choose an example from outside the insurance industry. A few years ago, the management of a major U.S. bank holding company described its national retail strategy to

Moody's. It was based on an active cash acquisition program, since the firm's stock price was depressed. The emphasis was on rapidly reaching national scale as regulatory barriers dropped. The strategy included two problems, however.

First, the strategy lacked precision and emphasis on how value would be created through acquisition and consolidation. The firm was the victim of what, even then, was a flawed measure of success: the belief that size itself would deliver market power and above-market rates of return. The company would have been more successful in its acquisition strategy by adding clearly conceived and highly focused operating strategies to the benefits it expected to achieve through size alone. It would have priced its acquisitions more wisely as well. Second, the firm showed a lack of realism in assessing the financial resources necessary to achieve success. At the time, we estimated that a truly national retail strategy would require more than $15 billion in equity capital, well beyond the capacity of this firm.

This "strategic myopia"[1] was in part a legacy of the prestige ascribed to the leadership of the largest financial institutions. While that prestige was, in the past, well-deserved, it often fostered complacency and sustained a false picture of reality. A simple truth about financial service companies is that, at least early on, a declining strategic position is difficult to detect. The first decay is at the margin, but it accelerates steadily. Reversal requires dramatic and painful restructuring, or, as is more often the case, a deteriorating business position leads to betting the ranch by reaching for credit risk or new business risk.

The second success factor, focus, is related to realistic resource assessment. In this fluid industry environment, the less diversified firms have generated superior returns. Regional banks in the United States have not performed better just because their markets have faced less margin pressure. We believe they have also done well as a result of clear operating strategies that resulted from concentration on a few businesses. Some larger, more diversified firms had mediocre returns until they narrowed their numerous business lines to manageable proportions. They are now winning through focused implementation.

This is not to say that a firm cannot successfully manage a broadly diversified strategy in multiple competitive environments, but it is very tough. Despite the segmentation, specialization, and new product and business development that underlie these diversified firms, their managements still seem tempted to impose a unified vision and management style on the total enterprise.

The third and final success factor is the capacity for what we call organizational innovation. As the technology component of the value

---

[1] My apologies to Ted Levitt of the Harvard Business School.

added in financial services grows, the old way of doing things goes out of fashion more quickly. Middle managers are often stranded by obsolete skills. They suffer increased career risk and stress as they watch repeated downsizing and shrinking staff. Precious few companies have been able to establish middle management enthusiasm for change as a matter of self-interest or self-preservation.

At the same time, risk control systems require constant revision and innovation. The pursuit of competitive advantage by new product development often leaves risk control as an afterthought. We have seen examples in the initial offering/public offering mortgage-backed securities market, foreign exchange markets, swaps, and GIC markets, where controls came well after the sale of the product, and often at a considerable cost.

Finally, organizational innovation is necessary to deal with the fragmentation of markets. It is necessary to instill a keen eye for value creation and competitive advantage at lower and lower levels of management.

Despite all these pressures to accelerate organizational innovation, caution is needed as well. Excessive change can also lead to organizational turmoil. So what is Moody's outlook for the financial services sector? First, business risk will continue to rise. As innovators become more efficient and stronger, the weak will get weaker. New efficiencies are destabilizing because they cannot be adopted at the same rate by all market participants.

Many firms continue to pursue unfocused and unrealistic strategies, in good part because it has become much more difficult to determine the sources of sustainable competitive advantage. Only a select few have established a high degree of organizational innovation and momentum.

This dynamic environment is not friendly to high ratings and it is certainly harsh in the demands it places on the regulatory community. Our orientation as a rating agency is to downside protection, not upside potential. And uncertainty itself will prove unfriendly to the maintenance of high ratings.

But, from the perspective of many market participants, the situation can be viewed more favorably. First, enormous efficiencies are coming into the financial system through consolidation, technological innovation, and new operating technologies. Second, substantial customer needs remain unmet, giving astute firms the opportunity to gain advantage, generate revenue, and prosper.

Discussion

*Robert E. Schneider**

Kenneth Wright's paper presents an admirable summary of the evolution of the life insurance industry, its products, and the investment practices prevalent among its companies. The conclusion that the industry as a whole is not in trouble is valid, even though some individual companies are in trouble, and those companies present very real problems for the industry and the regulatory community. However, it is not clear that we should accept the statement that "the life insurance industry is not as financially sound as it was a dozen years ago." The nature of the primary risks to which the industry is exposed has shifted over that period, and while the problems facing many companies today are significant, they are not necessarily more severe than the problems of the late 1970s and early 1980s.

Changes in Product Design

The shift to interest-sensitive products is cited as a major shift in the fundamental nature of the industry. Clearly, increased emphasis on the investment component of the pricing of life insurance products occurred during the 1980s, as interest rates remained at historically high levels. However, it is important to understand that the investment component has always been an important factor in pricing these products. The introduction of "interest-sensitive" products reflects a shift in product design intended to allow companies to compete on the basis of current interest rates (which are both high and volatile), without providing

*Executive Vice President and Chief Financial Officer, The New England.

overly risky guarantees with respect to interest rates to be credited in the distant future.

The primary product of the mutual segment of the industry, participating whole life, has always paid dividends that included a significant contribution from the interest earnings in excess of the guaranteed rate. This product is structured today as it has been for many years, and it competes successfully in the marketplace with universal life and other forms of interest-sensitive life insurance products.

The major change in life insurance product design has occurred within the stock company segment of the industry. The guaranteed cost products sold by these companies in times of more stable interest rates were not competitive as interest rates rose and became more volatile, because it would have been unsound for the companies to guarantee such high interest rates for the many years the contracts are expected to be in force. It was therefore necessary for stock companies to develop products that mirror the participating contract's ability to provide the policyholder with high current interest rates (through the dividend mechanism in the case of participating policies) for as long as that condition exists, while not guaranteeing it indefinitely. The resultant products were primarily universal life and a fixed-premium version of that product known as excess interest whole life (or EIWL), which operates with similar mechanics to universal life. As a result of this product evolution, all of the life insurance products sold by the industry today are in fact interest-sensitive. While the market share of universal life and variable life may have declined since 1987, the market share of interest-sensitive products has not declined.

This shift toward interest-sensitive products is, however, not as much of a change from the past as is often assumed, since the market share of participating whole life has always been significant. It is also not necessarily true that the interest-sensitive nature of the new stock company products has in and of itself increased the risk profile of those companies. The competitive pressure to maintain credited interest rates is very real; however, the company is not obligated to maintain rates and the product structure allows actual results to be passed on to policyholders. In addition, all life insurance products, including interest-sensitive products, have disincentives to surrender (for example, large penalties designed to recoup high up-front costs, and the requirement to requalify for replacement insurance).

Annuities

The shift toward annuities, both single-premium deferred annuities (SPDAs) and guaranteed investment contracts (GICs), has had major implications for the risk profile of the industry. In general, these

products generate more investment risks for the insurance company than life insurance products, even considering the problems posed by the policy loan and surrender provisions of the latter. (Of course, they pose very little mortality risk, unlike the life insurance products, and so are not necessarily more risky in total.)

The typical SPDA product sold to individuals does not guarantee a high rate of interest, but it is not structured to impose any significant penalty for surrender, either. Since the funds backing this product must be invested in intermediate- to long-term assets in order to generate competitive credited interest rates, and since the product is viewed by the purchaser as an investment, the company is exposed to significant interest rate risk. This risk exists even though most large annuity writers have employed modern hedging techniques to minimize it to the extent possible.

The provisions of the typical GIC contract and the sophisticated investment management techniques employed by most writers of these products make it possible to insulate the company fairly well from interest rate risk, although there are examples of companies that have assumed significant interest rate risk by assembling mismatched portfolios. However, given the segmented approach taken by most large companies in managing their asset–liability matching, aggregate industry data cannot be used to reach the conclusion that the industry as a whole is in this position. On the other hand, the extremely competitive nature of the market and the fact that interest rates are guaranteed for the length of the contract impose a much greater degree of credit risk in this arena than exists with respect to either life insurance or SPDAs.

Investment Practices

Many of the shifts in investment practices described in Wright's paper are correctly attributed to the shift in product design and product mix. The life insurance industry has become much more sophisticated over the last decade in the areas of asset–liability matching, asset segmentation, and the use of hedging techniques to manage interest rate risk. However, many of the changes mentioned are also in large part a reaction to the problems caused by prior investment strategy but not well understood until the liquidity crisis of the late 1970s and early 1980s.

Until that time, assets were normally invested for 20 to 30 years to take advantage of the positive slope of the yield curve, because it was assumed that life insurance policies and group annuity contracts sold at that time represented a liability of similar duration. The value of the implicit options granted to the policyholder by virtue of the cash surrender and policy loan provisions and their impact on the duration of

the liabilities were not well understood. The events of 1979 to 1982 demonstrated to the industry the high degree of interest rate risk and the inadequate degree of liquidity inherent in the typical company's asset–liability structure. The movement to assets with shorter average lives, higher allocations to more liquid assets, and the increased use of high-quality government and agency bonds described in Wright's paper are largely in reaction to the recognition of these risks, rather than in reaction to newly emergent product designs.

The need to maintain sufficient liquidity to withstand the proverbial "run on the bank" has been demonstrated by recent events to be a key requirement for success. Failure to maintain the necessary degree of liquidity has been the downfall of the large firms that have failed; Baldwin-United and First Executive both had to sell assets into a depressed market in order to raise funds to meet policyholder demands. The recent increase in the proportion of the industry's assets devoted to higher-quality securities (especially the recent movement in government bonds from 3 percent of assets to 13 percent) is an indication that companies have recognized this need and are acting upon it.

Junk Bonds and Commercial Real Estate

The current level of public concern about junk bonds and commercial mortgages and their impact on life insurance companies is much greater than in prior periods when credit losses were significant. With the exception of a very few companies, the extreme concern over junk bonds seems misplaced. Only 6 percent of industry assets are invested in junk bonds, and it must be recognized that the definition of "junk" used in this calculation encompasses many bonds that are far less risky than the stereotypical junk issue (that is, public issues used to fund corporate buyouts with extremely high debt to equity ratios). As Wright's paper points out, many of the privately placed issues included in this calculation include covenants that provide far greater security for the lender than anything available in the public markets. In addition, much of the concern over the risk inherent in junk bonds is based on the level of risk inherent in the types of issues that are classified in the category 5 (10 percent reserve). However, a majority of the 6 percent of assets included in the industry's holdings of junk bonds fall into category 4 (5 percent reserve). The industry has a long history of investing in this type of credit, especially in the private placement arena. To suggest that massive defaults threatening company solvency are likely is a severe overstatement of the problem.

Mortgages and real estate represent a far larger percentage of industry assets than do junk bonds. The problems in this area have been well-publicized. Some observers have compared the life insurance

industry to commercial banks or to savings and loans in trying to quantify the exposure to problem mortgages. These comparisons are inappropriate, because the nature of the mortgages held by insurers is very different from those held by banks and S&Ls; insurers are limited to loans of 75 percent of the value of the property, while banks often lend 100 percent. As a rule, insurers make loans only on completed properties, while depository institutions often fund the construction phase, which is a far riskier proposition. Finally, insurers normally make loans nationwide, whereas most banks concentrate their lending in the geographic area in which they are located, thus concentrating their exposure to a regional economic downturn (such as the recent problems in New England).

Even with these differences, however, it is clear that insurers continue to suffer significant credit losses in their mortgage and real estate portfolios. The ultimate threat to solvency will be determined by their ability to adjust credited interest rates on the corresponding liabilities. A company that holds large amounts of GICs backed by mortgages will be less able to respond appropriately to credit problems than a company that holds an identical asset portfolio, but has used those assets to back life insurance products with adjustable credited interest rates. At this point it appears that the severity of the problem is comparable to that of 1975–76. While that is certainly not good news for the industry, it must be remembered that the problems experienced at that time did not go so far as to threaten company solvency.

Profitability and Capital Ratios

Industry profitability is probably impossible to measure on the basis of publicly available, statutory information. The entire statutory accounting system is designed to monitor company solvency through the balance sheet rather than measure current earnings in a meaningful way. As a result, true economic earnings are badly distorted in any analysis of the statutory earnings statement.

Total capital, including mandatory security valuation reserves (MSVR), remains at 8 percent of assets at the end of the 1980s, virtually unchanged from the ratio at the beginning of the decade, as Wright observes. In fact, the ratio might be expected to have declined, as a result of the shift of business to annuity products. Virtually all calculations of risk-based capital requirements assign a lower level of required capital to annuity products than to life insurance products, because of the lower level of mortality risk in the annuity line.

Concluding Observations

The sharply increased level of competition and the shift toward annuity products have caused the life insurance industry to assume certain increased investment risks over the past 10 years. At the same time, the degree of sophistication involved in the investment techniques employed by the industry has increased as well. Portfolios have been restructured to eliminate much of the risk to which companies were exposed at the beginning of the decade. While the current recession imposes significant pressure on the investment portfolios of life insurers, it is not clear that the current risks faced by the industry are any greater than those facing the industry entering the 1980s. It is clear that the approaches taken toward investment portfolios are a great deal more diverse. As a result, we can expect to see individual companies face grave difficulties, and perhaps even insolvency. Taken as a whole, however, the life insurance industry is in no danger.

The Structure, Conduct, and Regulation of the Property–Liability Insurance Industry

*J. David Cummins and Mary A. Weiss**

Dissatisfaction with property–liability insurance is widespread and seems to be growing. Insurance availability and affordability have become major issues in election campaigns nationwide, and Congress is threatening to impose new federal regulations. This unusual amount of attention seems to reflect fundamental changes in the nature of insurance and insurance markets. Insurers maintain that they are functioning as efficiently and effectively as possible under difficult circumstances. But a significant proportion of the public, public interest groups, legislators, and regulators believe that insurers themselves are a primary cause of the problems in property–liability markets.

This paper presents an analysis of the structure, conduct, and performance of the suppliers of property–liability insurance. The discussion is carried out in the context of the market problems that have plagued the property–liability insurance industry in recent years. The objective is to provide an indication of the relative roles of insurer conduct and external structural factors in creating the turmoil in this important market. The paper begins with an overview of the problems and issues in property–liability insurance markets. Each issue raises important questions about market structure and performance. Subsequent sections of the paper evaluate industry market structure and explore its implications for the solution of the problems confronted by the property–liability insurance industry.

*Harry J. Loman Professor of Insurance and Risk Management, The Wharton School, University of Pennsylvania; and Assistant Professor of Risk Management and Insurance, Temple University, respectively.

Problems in Property–Liability Insurance

Property–liability markets have undergone a series of crises during the past 20 years. Each crisis has spurred regulatory or legislative action in an attempt to solve the problem and return markets to normalcy. While some of these actions have been effective, the problems have not been eliminated and, in fact, continue to recur. Their persistence suggests that a different approach may be necessary. This section presents an overview of the market problems in property–liability insurance, in order to provide the context for the structure and performance discussion to follow.

Insurer Solvency

Perhaps the first to surface was the problem of insurer insolvency. During the late 1960s, numerous insurer insolvencies took place among so-called "high-risk" auto insurance companies. The primary cause of the failures was fraud and mismanagement (Olson 1970). Following congressional hearings and a major study by the U.S. Department of Transportation, the states implemented more stringent solvency monitoring and created state insurance guaranty funds to compensate policyholders owed money by failed insurers. Unfortunately, the insolvency problem has not gone away and, in fact, worsened during the 1980s. Guaranty funds may even have contributed to the insolvency problem by inducing insurers to take excessive risk (Cummins 1988).

Several market structure questions are raised by the insolvency issue: (1) How serious is the insolvency threat in property–liability insurance? (2) Does the organization of insurance markets provide appropriate incentives for the maintenance of solvency? (3) Is regulation the answer, or would less intrusive approaches be equally effective? The latter question is particularly important in view of the move to subject the industry to increased solvency regulation at the federal level.

Pricing and Rate Regulation

A second major problem concerns pricing and rate regulation. Workers' compensation is the most heavily regulated line, with rates subject to prior regulatory approval in all but a handful of states. Private passenger auto insurance is regulated by about one-half of the states. Most commercial lines such as commercial auto and general liability in effect have been subject to minimal price regulation.

Although a trend towards deregulation of insurance rates appeared during the 1970s, the liability insurance crisis of 1984–85 (see below) and the problem of inflation in private passenger auto insurance (Cummins and Tennyson 1992) have focused renewed attention on rate regulation. In 1989, California voters reacted to rising insurance rates, particularly in

private passenger auto insurance, by approving Proposition 103, which enacted sweeping reforms of the property–liability industry and the regulatory system. Among its provisions were a mandatory 20 percent rate rollback, applicable to most lines of insurance, and the imposition of rate regulation in a market where competitive rating had been in effect for more than 40 years. Proposition 103 is symptomatic of public dissatisfaction with insurance and the insurance industry. Rising insurance costs have led to similar movements in other states ranging from Arizona to Pennsylvania.

A beneficial aspect of intensified rate regulation, particularly in Massachusetts, has been the development of more sophisticated rate-making methodologies (Cummins and Harrington 1987). These methods have the potential for use in rational rate regulation and in the monitoring of prices and profits under competitive regulatory regimes. Unfortunately, their lessons have not yet been absorbed by regulators in California and most other jurisdictions. The use of inappropriate methodologies can unfairly penalize insurers and destabilize insurance markets.

The questions raised by the price inflation/rate regulation issue are the following: (1) To what extent are price increases merely a reflection of underlying cost factors beyond the control of insurers? (2) Are insurers taking appropriate measures to control claims costs? (3) Is increased rate regulation likely to reduce the rate of insurance inflation, or could the market be restructured to permit market forces to control costs more effectively?

Market Failure in Liability Insurance

The liberalization of liability rules and changing public and judicial attitudes toward lawsuits during the past 20 years have led to significant increases in the frequency and severity of liability claims. The result has been destabilization and, in some instances, the collapse of liability insurance markets.

The first to be affected was the market for medical malpractice insurance. Increasing uncertainty and rising costs in this market led most of the major multiple line insurers to withdraw in the mid to late 1970s. Eventually, tort reform and the introduction of medical mutuals led to the reestablishment of a market for this type of insurance. The problems of malpractice insurance subsequently spread to other types of liability insurance. Particularly hard-hit were segments of the market such as environmental pollution liability, where insurers faced significant difficulties in estimating claim costs. Unlike the malpractice case, well-functioning markets for risky coverages such as pollution liability have not been reestablished.

The culmination of the difficulties in the liability insurance market was the crisis of 1984–85. Industrywide, premiums increased by 78

percent in 1985 and 68 percent in 1986. Price increases exceeded several hundred percent for some policyholders; for many, coverage was unavailable at any price. A number of regulatory and public policy measures were adopted in response to the liability crisis such as risk retention groups (RRGs) and flex-rating plans, which require insurers to file for prior approval any rate changes exceeding a specified range.

Among the issues raised by the liability crisis are the following: (1) To what extent was the crisis unique to the 1980s; that is, are underlying structural factors present that make such crises likely to recur in the future? (2) Is increased rate regulation likely to prevent crises and stabilize liability markets? (3) Is tort reform needed to maintain the liability market? (4) Could the market be restructured to permit market forces to cope more effectively with future crises?

Underwriting Cycles

Reported underwriting profits in property–liability insurance follow a cyclical pattern that averages about six years in length. The usual description of the cycle is that of recurrent soft and hard markets. During a soft market, coverage is widely available and insurers compete vigorously in price. The price competition eventually causes profits to deteriorate. When prices and/or insurer equity levels become "too low," a hard market develops. Hard markets are characterized by rising prices and reductions in the quantity sold. After prices rise sufficiently to restore profitability, the market softens and the cycle begins anew. Among the questions raised by the cycle are the following: (1) What causes the real cycle? (2) To what extent are price/availability crises such as the general liability crisis of 1984–85 just extreme forms of the ordinary price cycle? (3) What can be done to prevent cycles and stabilize insurance prices?

Anticompetitive Practices

Accusations of anticompetitive practices are a common element of the public policy debate about property–liability insurance. The existence of rating bureaus such as the Insurance Services Office (ISO) and the National Council on Compensation Insurance (NCCI) is viewed by many as impeding price competition. Critics have used the existence of bureau pricing as evidence in favor of the repeal of the McCarran-Ferguson Act, which currently exempts insurers from federal antitrust laws.

Other observers argue that bureau pricing is not anticompetitive. They point out that pooling of loss data is necessary in order to achieve statistical credibility and that the use of bureaus permits insurers to take

advantage of economies of scale in data collection, computer equipment purchases, and legal and actuarial expertise. They contend that many smaller companies would be forced out of the market by high expenses if they had to perform these tasks on their own. Even so, the ISO announced in 1989 that it would phase out advisory rate filings and limit its activities to serving as a statistical agent. The NCCI and other bureaus are also cutting back their rate filing activities.

A more serious problem is the allegation that insurers collude by using restricted output as a threat to obtain more favorable contract terms. This allegation resulted in a 1988 suit against the industry by 19 state attorneys general. The suit charges that insurers conspired to push for the adoption of claims-made forms to replace occurrence forms in general liability insurance.[1]

Perhaps the most troublesome of the alleged antitrust issues is that of retroactive loss loading (Cummins and Tennyson 1992). Since insurance prices are set prospectively, insurers should have strong incentives to control claim costs. Any reductions in claim costs should flow through directly to profit. Furthermore, standard competitive pricing theory implies that insurers should not be able to pass along past pricing errors to future policyholders; that is, they should not be able to retroactively load past losses into future rates. However, much of the discussion of insurance inflation suggests that insurers do engage in retroactive loss loading and, as a result, do not have very strong incentives to control claim costs. The usual allegation is that insurers do not do enough to resist fraudulent claims and keep claim costs under control. Under this reasoning, mandatory rate rollbacks make sense because they refund part of the retroactive loss load to buyers and can be used to motivate insurers to take appropriate loss control measures.

The anticompetitive allegations raise several important questions about industry market structure and conduct: (1) Is the insurance market actually competitive, or do significant anticompetitive elements remain? (2) Would small insurers be placed at a cost disadvantage if rating bureaus were further restricted? (3) Do insurers engage in retroactive loss loading or are they taking effective measures to control claims costs? These and other issues are explored in more detail below.

---

[1] Occurrence policies protect the insured against loss arising from any covered occurrence during the policy period regardless of when the lawsuit is filed (subject, of course, to statutes of limitations, and the like). Thus, losses due to a negligent act performed during the current contract period would be covered by the current contract even if lawsuits are filed and settled subsequent to the contract year. A claims-made policy covers the insured only for claims made in the current contract year. Claims-made policies are favored by insurers because they make claim costs more predictable.

The Structure of the Property–Liability Insurance Market

The insurance industry traditionally has been viewed as competitive (Joskow 1973). However, in view of the questions that have been raised about market conduct, it seems appropriate to take another look at the structure of the industry.

Numbers and Types of Firms

One of the myths about property–liability insurance is that the vast number of insurance companies (roughly 3,000) proves that competition exists. However, only about 1,900 firms play a significant role in the market, and 1,300 of these are clustered together in about 340 insurance groups under common ownership. After controlling for grouping, only about 1,000 independent entities operate in the property–liability insurance market.[2]

Since property–liability insurance is not a homogeneous product, it is appropriate to look at specific market segments when analyzing the number of firms. Insurance markets are segmented by line of business and by geographical location. Table 1 shows the principal lines of insurance and their premium volume in 1981, 1985, and 1989. A striking result is the overriding importance of automobile insurance, which represents nearly 45 percent of total industry revenues. The most important commercial line is workers' compensation, representing 14 percent of total premium volume, although liability coverages such as general liability and medical malpractice have been growing in importance.

The numbers of firms by line of insurance in 1981, 1985, and 1989 are shown in Figure 1. Between 400 and 500 firms write private passenger auto insurance. Although this indicates a market that has a viable number of competitive firms, the number of firms writing in any particular geographical area is likely to be much smaller, especially in problem areas such as inner cities, which have few suppliers. It is perhaps surprising that so many firms are in the general liability market, given the instability of the market during the 1980s. Unlike the malpractice market of the 1970s, the crisis conditions did not lead to a wholesale withdrawal of firms from the market. The number of firms writing general liability increased from 573 in 1981 to 617 in 1985 and 737 in 1989.

In a few markets, such as medical malpractice, workers' compensation, and reinsurance, the number of firms has been declining. To the

---

[2] These data are taken from *Best's Aggregates and Averages, 1989 Edition*. Oldwick, NJ: A.M. Best Company.

Table 1
Net Premiums Written in Property–Liability Insurance
Percent of Total

Line of Insurance	1981	1985	1989
Private Passenger Auto Liability	19.8	19.3	21.1
Private Passenger Auto Physical Damage	14.1	14.5	14.2
Commercial Auto Liability	4.8	5.4	5.8
Commercial Auto Physical Damage	2.7	2.8	2.5
Homeowners	11.5	9.6	8.5
Fire and Allied	5.1	4.3	3.4
Commercial Multiple Peril	6.9	8.3	8.4
General Liability	6.1	7.9	8.8
Medical Malpractice	1.3	2.0	2.1
Workers' Compensation	14.7	11.8	13.6
Reinsurance	3.3	3.9	3.3
Other	9.7	10.2	8.3
Total Premiums (Millions)	$99,268	$146,091	$208,388

Source: A. M. Best Co. 1990. *Best's Aggregates and Averages.*

extent that weaker firms made these exits, the decline in the number of firms should not be viewed as an adverse development. For example, it is widely believed that underpricing by thinly capitalized reinsurers contributed to market conditions that led to the 1984–85 crisis. However, all three lines are also considered relatively risky, and the decline in the number of competitors may indicate that supply problems are on the horizon.

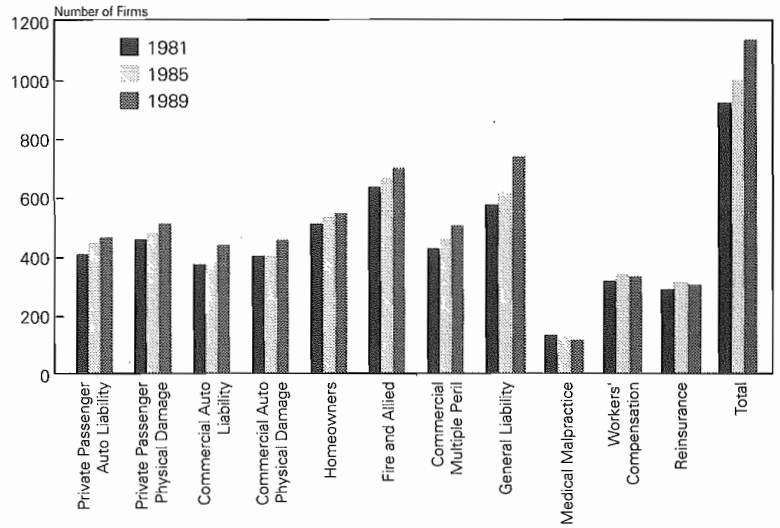
Organizational Form

The issue of organizational form in insurance has attracted considerable attention in the academic literature. The predominant organizational forms in insurance are stock companies, mutuals, and reciprocals. Stock companies are owned by stockholders, whereas mutuals have no capital stock and are nominally owned by their policyholders. Reciprocals are associations of buyers who agree to mutually insure one another. Because most modern reciprocals are not distinguishable from mutuals, they are grouped together with mutuals for the statistical analysis presented below.[3]

[3] Reciprocals differ from mutuals in being unincorporated and in being operated by an attorney-in-fact, which may be a corporation. The traditional reciprocal maintained separate accounts for each member into which premiums were deposited and proportion-

Figure 1

Number of Firms by Insurance Line



Source: A. M. Best Co., *Best's Executive Data Service (BEDS).*

The existence and continued survival of different organizational forms in insurance is generally attributed to the fact that they have differential advantages in dealing with particular types of insurance. According to the economic theory of agency, the modern firm is viewed as a nexus of contracts entered into by various parties to bring about the production or distribution of goods and services. The three major contracting groups in insurance are owners, managers, and policyholders.

The owners are the residual claimants to the firm's assets. In the modern stock company, ownership is typically separated from management; that is, the owners do not manage the firm themselves but instead hire professional managers. The managers become the agents of the

---

ate claim assessments made. If deposits were insufficient to pay claims, members could be assessed, within limits defined by the reciprocity agreement. Members withdrawing from the pool were permitted to take their account balance. Most modern reciprocals typically are not assessable and do not maintain separate member accounts. The Lloyds association, modeled after Lloyds of London, is a fourth organizational form. Lloyds associations have not proved to be a viable organizational form in this country.

owners; they are hired to act on behalf of the owners. However, the managers have their own objectives, which may diverge from those of the owners. For example, the owners may want to maximize the value of their equity share in the firm while the managers (agents) want to maximize their own compensation or prestige. To prevent the managers from acting opportunistically in those situations where their interests and the owners' interests diverge, the owners must expend resources to monitor and control management behavior and provide incentive compensation to align the managers' interests more closely with their own. These activities generate agency costs.

In addition to owner-manager conflicts, potential conflicts also arise between owners and policyholders and between managers and policyholders. For example, owners want maximum flexibility with respect to pricing and underwriting, while policyholders prefer stable premiums and no uncertainty with regard to coverage amounts or availability. Stockholders also may have an incentive to increase firm risk, thus reducing the value of debt (policy) claims and increasing the value of owners' equity. To protect themselves from exploitation by owners, policyholders must incur agency costs, for example, to monitor the insurer's financial condition after purchasing the policy. Conflicts can also arise between policyholders and managers. Most insurance services are delegated by company management to insurance agents, and the agent's interest may diverge from that of the policyholder. For example, the agent can maximize his own value by charging a high price and giving minimal service, whereas the policyholder is looking for a lower price and better service.

Mayers and Smith (1989) have used the theory of agency to develop hypotheses about the success of various organizational forms in insurance. They point out that mutuals are likely to be successful in lines where the owner-policyholder conflict is relatively important because the policyholder-owner functions are merged in a mutual. However, the owner-manager conflict is more significant in a mutual than in a stock company since mutual policyholders do not have the option of selling their ownership share or launching a proxy fight if management is not performing according to expectations.[4] Mayers and Smith hypothesize that mutuals will be most successful in lines of business where the need for managerial discretion in pricing and underwriting is relatively low,

[4] Actually, in principle, a proxy battle would be feasible in a mutual insurer. In practice, with the large number of policyholders in most modern mutuals, a successful proxy battle would be virtually impossible to sustain. The situation is different in organizations such as medical mutuals, particularly those operating in narrow geographical areas, because the fewer policyholders are already in contact through professional societies. This is one reason why the medical mutual has proved to be a successful organizational type.

for example, in lines with good actuarial tables and relatively high policyholder homogeneity. Mutuals should also do better in lines characterized by long-term policies, where the possibilities for stockholder expropriation through excessive risk-taking are highest. Finally, mutuals should be most successful if they limit their operations to a few lines of coverage and/or a relatively narrow geographical area. These restrictions limit management's ability to exploit policyholders.

Conversely, stock companies should do better in lines that require a higher degree of managerial discretion. In addition, stocks should have an advantage in dealing with high-risk lines of business because they can spread risk not only over the policyholder pool but also across the securities markets. The superior ability of stock firms to raise capital enables them to rebuild their capital position quickly following an adverse loss shock.

The market shares by organizational form are shown in Figure 2. The data are generally consistent with the organizational form hypotheses. Overall, stock companies account for 61.4 percent of the property–liability insurance market. However, mutuals and reciprocals account for more than half the market in private passenger auto, homeowners, and medical malpractice insurance. Private auto and homeowners are personal lines requiring relatively low managerial discretion in pricing and underwriting. Thus, owner-manager conflicts in these lines are likely to be low. Malpractice is a line characterized by long-term (that is, long-tail) policies as well as a relatively high degree of control over management on the part of the owner-policyholders.[5] It is also noteworthy that stock insurers are dominant in general liability, a line requiring both a high degree of managerial discretion in setting rates and the ability to diversify risk and raise capital.

The findings on organizational form have implications for public policy towards insurance markets. For example, these findings indicate the types of insurance in which the formation of mutuals is likely to be a viable solution to limitations on insurance supply. They also reinforce the notion that access to capital markets is critical to maintaining the supply of insurance.

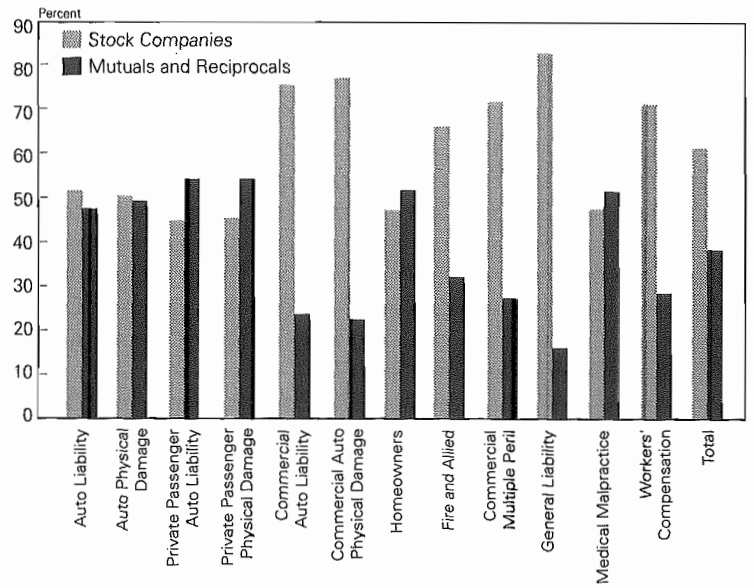
Distribution Channels

Marketing costs absorb a significant share of the insurance premium dollar. Industrywide, the ratio of marketing expenses to premiums written is 17.2 percent, expressed in percentage terms. The administra-

[5] This control is maintained because the owners of most medical mutuals are already joined together in professional associations and because medical mutuals operate in relatively restricted geographical areas.

Figure 2

Property-Liability Insurance Market Share by Organizational Form and Line, 1989



Source: A. M. Best Co., *Best's Executive Data Service (BEDS)*.

tive expense ratio, including marketing and other costs, is 26.0 percent. Thus, marketing costs account for about two-thirds of the total non-loss expenses of the property–liability insurance industry. It is not surprising that insurance reformers have focused a considerable amount of attention on insurance marketing expenses.

Of course, agents perform valuable services in return for these expenses. Agents advise policyholders on insurance coverages and provide assistance with claims settlement. For business clients, the agent's services are likely to be even more extensive. For insurers, agents provide an initial underwriting screen and gather critical underwriting data. The question is not whether agents provide services but whether the services could be provided at a lower total cost.

The four major types of marketing channels in property–liability insurance are independent agents; exclusive agents; direct writing, that is, mail or telemarketing; and brokers. Independent agents represent more than one company (about six on average). They are paid by

commission, ranging from 15 to 30 percent of the premium depending upon the line of business. Their most salient distinguishing feature is the ownership of renewals. Ownership of renewals means that the agent and not the company owns the client list. If a company terminates the independent agent, the agent retains control of the business and is free to switch it to another company.

In contrast, exclusive agents represent only one company. They are also paid by commission but the commission is usually less than the independent agent's. In the exclusive agency system, the company and not the agent owns the client list. Direct writers do not use agents but instead use company employees who sell insurance by telephone. Direct writing companies are fully vertically integrated, exclusive agency firms display a degree of vertical integration, and independent agency firms are not vertically integrated. Brokers differ from agents in the technical sense that the broker represents the buyer, while the agent represents the company. In the practical sense, the most successful brokers are relatively large firms, often with international interests, providing specialized services to business clients.

Direct writing and exclusive agency companies have lower expense ratios than independent agency companies (Cummins and VanDerhei 1979). The expense ratios for a sample of insurance companies using these distribution systems are presented in Table 2. The expense ratio differences are largest in the personal lines. Earlier studies contended that independent agency firms have higher expense ratios because they are less efficient than exclusive agency firms and suggested that the costs of insurance could be reduced if all insurers sold directly or used exclusive agents. Later researchers (for example, see Pauly, Kunreuther, and Kleindorfer 1986) have argued that the expense difference is not a deadweight loss but rather that independent agency firms are more service-intensive.

A more modern view uses the theory of agency to analyze insurance distribution (see Regan 1991). One version of this argument acknowledges that independent agents are less efficient than exclusive agents, at least for some types of coverage. The primary reason for this is that exclusive agency firms can install a single computerized pricing and rating system that links every agent directly with the company.[6] Of course, independent agency firms also can put computer systems in their agencies, but in general these firms do only a fraction of the business in each agency. They are also powerless to prevent others from free-riding on their technology. The agency theory view argues that independent agents survive in spite of their cost disadvantage because

[6] Under prior technologies, the exclusive agents also had an advantage, but on the basis of more document-intensive systems.

Table 2
Expense Ratios, by Distribution System, 1989
Percent of Premiums

Line of Insurance	Distribution System		
	Direct	Exclusive	Independent
Private Passenger Auto Liability	20.5	24.6	29.3
Private Passenger Auto Physical Damage	20.3	23.5	29.0
Commercial Auto Liability	17.8	22.8	29.9
Commercial Auto Physical Damage	22.5	26.8	31.3
Homeowners	26.1	28.6	36.0
Fire	33.4	33.1	37.9
Allied Lines	30.9	31.2	35.5
Commercial Multiple Peril	24.8	36.1	35.9
General Liability	24.4	25.1	28.6
Medical Malpractice	—	11.5	25.7
Workers' Compensation	15.1	21.1	22.1
Reinsurance	9.4	29.0	26.9

Source: A. M. Best Co. 1990. *Best's Aggregates and Averages.*

they are more effective than exclusive agents in dealing with certain types of "agency" conflicts. Thus, the higher cost of independent agencies represents rents paid to them to cope with these conflicts.

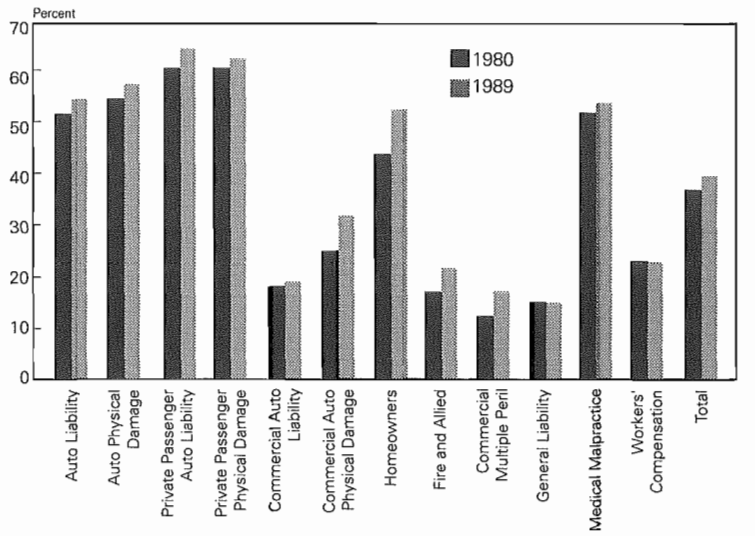
Independent agents are adept at dealing with conflicts between the company and the policyholder. Companies have an incentive to minimize services and delay claim payments, a particular problem for small business buyers who do not have much leverage over the insurer. Furthermore, an insurer is unlikely to grant trade credit to a small business buyer on favorable terms. Unlike the buyer, the independent agent does have leverage with the company because of his or her ability to switch clients to another insurer. Thus, the agent can intervene to ensure better services. The agent can also provide trade credit to the buyer because independent agents bill commercial customers directly and then remit the premium balance to the insurer.[7]

The market advantages conveyed to the buyer by the independent agent are line-specific; for example, trade credit is more significant for business buyers than for personal buyers. The premium volume of the typical personal lines buyer is not sufficient to justify the use of much of the agent's time. Personal buyers are likely to be served more effectively

[7] This is obviously not an efficient system because it leaves the insurer with non-interest-bearing receivables. Insurers have made some progress in converting independent agents to direct billing, especially for personal lines, but for commercial lines most business is still agency billed.

Figure 3

Direct Writer Market Share, by Line



Source: A. M. Best Co., *Best's Executive Data Service (BEDS).*

by more efficient firms which can control quality by standardizing services across their captive agency force. Thus, independent agents should be more successful in commercial lines and exclusive agents and direct writers in the personal lines. Figure 3 shows that these predictions are borne out. The largest market penetrations for exclusive and direct companies are in personal auto, where these firms have about 60 percent of the market, and in homeowners, where their share is over 50 percent. Exclusive agency firms have a much lower market share in commercial multiple peril, general liability, and other commercial lines.

Agents also have a type of market power that may be viewed as anticompetitive. Specifically, they are protected from price competition by anti-rebate laws in most states. These laws, which are a form of resale price maintenance, prohibit agents from discounting, that is, from "rebating" part of the commission to the buyer. Anti-rebate laws impede price competition and prevent the formation of wholesalers, who could provide insurance at a discount. The insurance market would be more efficient if these laws were repealed, as a few states have recently done.

Table 3
Concentration in Property–Liability Insurance, 1989
Percent

Line of Insurance	Top 4 Firms	Top 10 Firms	Top 50 Firms	Herfindahl Index
Private Passenger Auto Liability	43.2	56.6	85.6	.0650
Private Passenger Auto Physical Damage	41.8	53.9	80.4	.0676
Commercial Auto Liability	19.6	38.1	80.9	.0214
Commercial Auto Physical Damage	19.6	35.0	78.0	.0313
Homeowners	39.5	52.7	82.1	.0573
Fire and Allied	18.9	36.3	73.9	.0149
Commercial Multiple Peril	21.8	43.1	85.9	.0263
General Liability	32.6	51.9	84.5	.0450
Medical Malpractice	32.0	52.3	92.4	.0364
Workers' Compensation	26.7	49.2	88.4	.0364
Reinsurance	46.1	63.6	94.3	.0584
Total	24.2	40.4	75.3	.0257

Source: A. M. Best Co. 1990. *Best's Aggregates and Averages* and *Best's Executive Data Service (BEDS)*; authors' calculations.

Market Concentration

In the traditional theory of industrial organization, concentration was held to facilitate oligopolistic or collusive practices and thereby to lead to noncompetitive profits. The more modern view is that increasing concentration, at least within limits, may be a natural development in some markets and does not necessarily have adverse consequences. If efficient firms are gaining market share, prices may fall at the same time that concentration and possibly profits rise.

Such a scenario may be applicable to some lines of property–liability insurance. Four- and ten-firm concentration ratios and Herfindahl indices for the principal lines of insurance are presented in Table 3. Concentration is highest in the personal lines, particularly private passenger auto and homeowners, where the exclusive agency firms and direct writers have a significant efficiency advantage. Eight of the top ten firms in personal auto and six of the top ten in homeowners are exclusive or direct writing firms. The hypothesis advanced here is that these firms owe their market share primarily to their efficiency advantage in dealing with personal clients. Thus, gains in market share by these firms would be expected to be accompanied by lower prices.

Further concentration of these markets should not necessarily be viewed as adverse.

The expense ratio advantage of the exclusive and direct firms does not necessarily translate into a competitive advantage in commercial lines markets. Buyers in these markets may be willing to pay rents to independent agents to intervene with insurers. In addition, the mix of commercial lines business written by independent agency firms may be significantly different from that written by exclusive and direct writing firms. Independent agency firms may tend to write larger, more complicated exposures that require higher service intensity. If so, one would expect to see lower concentration levels in commercial lines because independent agency firms can compete more effectively and because they are more numerous than exclusive agency firms. This is exactly what the data in Table 3 show. In contrast to the 43 percent four-firm concentration ratio in personal auto, the ratio in commercial auto is only 20 percent. Commercial multiple peril, a package policy somewhat similar to homeowners, has a four-firm concentration ratio about one-half that of homeowners.

Further information on concentration is provided in Figure 4, which shows the Herfindahl indices for direct business and reinsurance assumed.[8] Figure 4 supports the hypothesis that vertically integrated firms have an advantage in the personal lines. The Herfindahl indices for direct premiums written in the personal lines are higher than the corresponding indices for reinsurance assumed. Because of their efficiency, the vertically integrated firms hold a large share of the direct market. However, vertical integration conveys no particular advantage in the reinsurance market, so the independent agency firms retain a larger share of this market. The pattern is reversed in the commercial lines. Here, concentration is lower in direct markets than in reinsurance markets. Independent and exclusive agency firms compete on a more equal footing in the commercial lines direct markets. However, because of the riskiness of many commercial coverages, fewer firms have the risk-bearing capability to handle reinsurance in these lines, leading to a more concentrated reinsurance market.

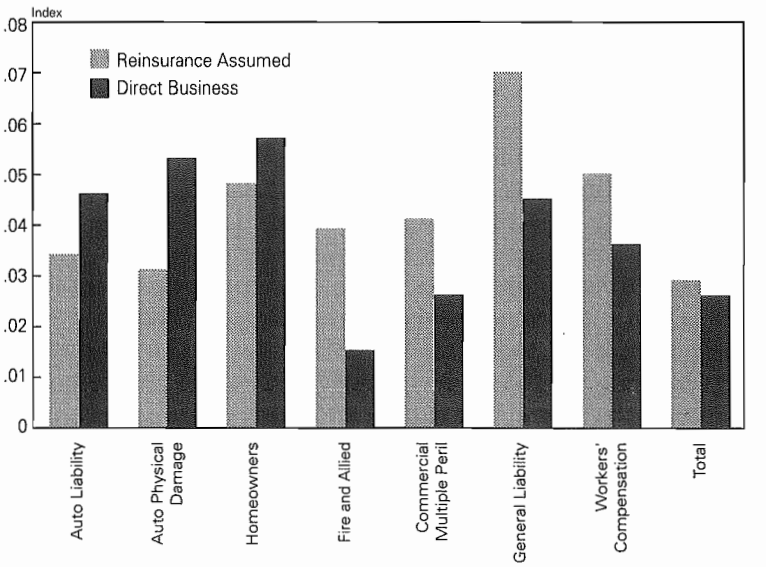
Entry and Exit

Ease of entry and exit are essential to maintaining a competitive market. The threat of entry prevents existing firms in the industry from

[8] Reinsurance is essentially insurance purchased by insurers from other insurers. Insurers purchase reinsurance in order to reduce risk through diversification and increase their policy-writing capacity without sustaining significantly higher probabilities of ruin.

Figure 4

Direct Business and Reinsurance Herfindahl Indices, 1989



Source: A. M. Best Co. data tapes.

overpricing. Freedom of exit is important because firms are reluctant to enter markets if they will incur substantial costs upon exiting.

The most important sources of entry in property–liability insurance are (1) the formation of new insurers, (2) entry by existing property–liability insurers into new lines and markets, (3) entry by other financial service firms such as life insurers and banks, and (4) self insurance, risk retention groups, and captives. The direct costs of entry as a new insurer appear to be low. The insurer must meet minimum capital and surplus requirements, but these do not appear to be sufficient to serve as a serious entry barrier. Obtaining state licenses can be a costly and time-consuming process, but methods are available for speeding up the process, such as purchasing an inactive insurer or "shell."[9]

[9] A few states, such as New York, have seasoning requirements that prevent insurers from entering until they have been in business for some number of years (for example, three to five). Obviously, if every state had such a requirement, seasoning would serve as a "catch-22." Fortunately, this is not the case.

The need for a marketing force can serve as a barrier to entry in property–liability insurance. Independent agents partially fulfill this role because they can easily add new insurers to their portfolio. However, agents tend to place a high proportion of their business with their lead carriers.[10] This means that new entrants are not likely to receive the independent agent's most desirable business; and they may have to pay higher commissions to attract agents, increasing their expenses. Entry as a de novo exclusive agency firm is also difficult because of the high initial investment required to hire and train an exclusive agency force. Entry as a direct writer is somewhat easier because the marketing staff is smaller and requires less training and experience.

The lack of an existing policyholder base is a formidable entry barrier, because of a phenomenon known as the aging effect. Aging means that policyholders who have been insured with the company for several years have lower loss ratios than policyholders with similar underwriting characteristics who have been insured only for a short time. The aging effect arises as a result of information asymmetries. The insurer learns a great deal about a policyholder by insuring him or her over a period of years. This is inherently private information that is not transferred to subsequent insurers if the policyholder switches companies. Newly underwritten policies inevitably include a higher proportion of "bad" risks than the company's existing base. Thus, a new entrant, with no existing book of business, will face higher loss costs than insurers currently in the market.

If they have the determination and the cash to overcome the aging problem, financial service firms provide a significant source of potential entry into property–liability insurance. Several large life insurance companies have successfully entered the market. At present banks are not permitted by federal banking law to offer insurance, but this situation is likely to change in the near future.

Existing property–liability insurers provide another important source of entry. These are likely to be firms that have specialized in particular lines of business or geographical areas but decide to expand into new markets. They are likely to have underwriting expertise, capitalization, and licenses and thus can enter relatively quickly. State Farm's entry in the 1970s into commercial multiple peril provides a case in point.

It is noteworthy that the existence of rating bureaus facilitates entry into property–liability insurance by providing cost and underwriting information as well as policy forms to new entrants. If the pooling of data were not permitted, the costs of entry would be higher.

---

[10] A recent survey by *Independent Agent* magazine showed that agents place from 50 to 60 percent of their business with the lead company.

Even though entry barriers and costs are reasonably low in property–liability insurance, the costs of exit may be relatively high, particularly in certain markets. In a politicized rate-making environment, firms may be unable to earn a fair rate of return. If this continues over a sufficient period of time, the insurer is likely to try to withdraw from the market. However, a number of jurisdictions have been successful in forcing insurers to continue to write particular lines of business in order to retain their licenses to write other lines. Even if the company is successful in exiting, it may be required to continue to participate in funding deficits in the state's residual market. Thus, exit is neither unrestricted nor costless. Potential solutions to this problem include more rational regulation, deregulation, and/or fewer restrictions on exit.

The number of firms entering and exiting the property–liability insurance industry from 1981 through 1989 is shown in Figure 5.[11] The figure shows that entries exceeded exits in every year except 1984, the low point of the liability crisis. Cumulative net entry over the period amounted to about 260 firms. The 1989 market share of firms entering the industry in the period 1981–89 is shown in Figure 6. New entrants account for 5 to 10 percent of premium volume in most lines of insurance. The exception is malpractice, where new entrants accounted for 22 percent of total writings. It seems reasonable to conclude that entry into insurance is relatively unrestricted and that threat of entry is likely to deter any significant departures from competitive pricing.

Prices, Profits, and Financial Condition

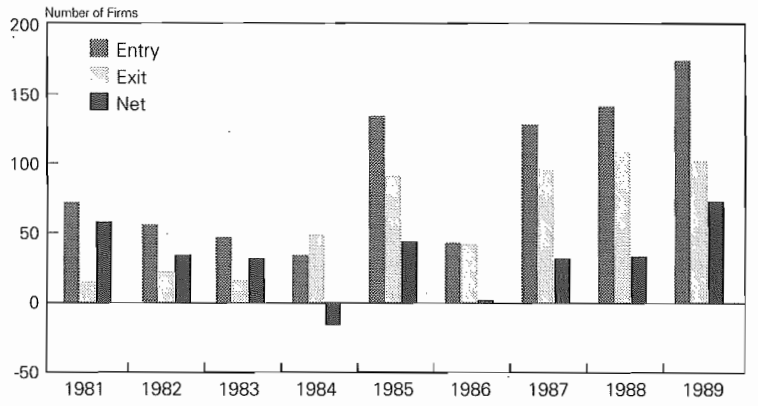
The typical property–liability insurance policy agrees to reimburse the insured for losses covered under the terms of the policy. The loss payment is triggered by a contingent event such as a fire, an accident, or a potential liability suit. In return for the insurer's promises, the policyholder pays a premium. Because a time lag nearly always occurs between the premium payment and loss payment dates, the competitive insurance premium is the present value of the losses, expenses, and taxes arising out of the insurance transaction.

The insurance company provides a mechanism whereby buyers of insurance can pool risk. Risk pooling permits buyers to transfer an uncertain and potentially large loss amount to the insurance pool in return for a certain, smaller payment, the premium. However, even for

[11] Entry is defined here as an instance where a firm writing no business in a given line of insurance (that is, premiums written = 0) begins to write business in a given year. Exit is defined as a firm going from positive writings to zero writings. These entries could be new firms, existing insurers, or other financial service firms.

Figure 5

Entry into and Exit from the Property-Liability Insurance Industry



Source: A. M. Best Co., *Best's Executive Data Service (BEDS).*

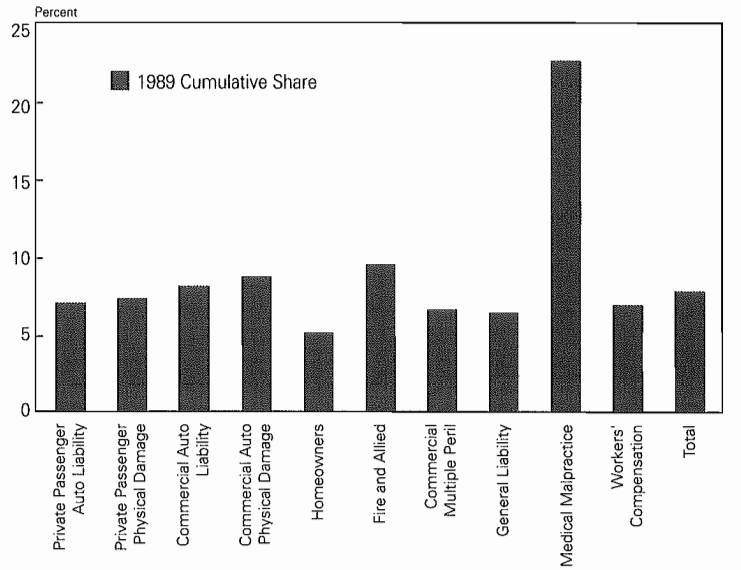
large risk pools, losses will never exactly equal the expected value but are always greater or less than this amount. Because of the possibility that losses will be greater than expected, insurance companies must maintain equity, often referred to in insurance as policyholders' surplus. Equity provides a financial cushion so that losses can be paid even if larger than expected. Of course, even for well-capitalized insurers, equity does not provide complete protection from ruin. In a well-functioning insurance market, equity levels are sufficient to maintain ruin probabilities at "acceptable" levels. Ultimately, the level of equity and the probability of ruin are endogenous to the market: "safer" insurance costs more and buyers receive the level of safety they are willing to purchase.

The Supply of Insurance

Insurance companies will be present to provide insurance as long as equity capital is available. And capital will be available in efficient capital markets if it earns a fair rate of return, that is, a rate of return commensurate with the risk of writing insurance. Equity capital in insurance has several sources: new capital issues in securities markets, contributions of capital by stockholders, contributions by policyholders, and retained earnings.

Figure 6

1989 Market Share of Entrants between 1981 and 1989



Source: A. M. Best Co., *Best's Executive Data Service (BEDS).*

Direct issuance of new capital in securities markets is used infrequently by insurers. One reason for this is that few insurers are publicly traded. Of the more than 600 stock insurance companies and groups, only about 40 are publicly traded. A few stock insurers are closely held or owned by management. Most, however, are owned by other publicly traded firms, either diversified financial services firms or nonfinancial corporations.

Although the lack of direct access to capital markets would seem to limit the ability of most stock insurers to raise capital, this is actually not the case. Ownership of stock insurers by other firms may facilitate capital issue. One problem that a publicly traded stock insurer faces when issuing capital is that of asymmetric information. Insurer accounting statements are difficult to evaluate, and even highly trained evaluators cannot determine the accuracy of loss reserves and other accounts, let alone the firm's business prospects, without additional information that generally is not circulated outside the company itself. Thus, the market is likely to require an additional risk premium when issuing

capital to publicly traded insurers, raising the cost of capital above its true value. The insurer's management is much more likely to reveal confidential information to a parent corporation than to the securities market. One reason is that adverse information released to the market also becomes available to regulators, who may impose additional regulatory costs on the firm. The parent is likely to incur a smaller "information tax" than the insurer would directly because the parent faces the risk that the cost of capital will increase for its other operations if it attempts to deceive the market about the financial prospects of its insurance subsidiary. Thus, ownership of insurers by conglomerates or holding companies rather than directly by the public internalizes information asymmetries and reduces the cost of capital. More equity enters the industry through contributions by parent corporations than by direct public equity issues.

Mutual insurers do not have the option of issuing capital directly in securities markets.[12] The policyholders provide the primary source of new outside equity for most mutuals. However, because of the lack of control over management in the typical mutual and the inability to cash in the ownership right by selling shares, policyholders are not a viable source of new capital in most instances. Medical mutuals, where policyholders maintain more control over management, are an exception; but in general mutuals are disadvantaged in their ability to raise capital.

The sources of new equity in property–liability insurance are shown in Figure 7. The primary source of capital is retained earnings. In nearly all years from 1976 to 1989, a net addition was made to capital from retained earnings and an outflow of capital occurred as dividends to the capital providers. Only between 1984 and 1986, when the industry was attempting to recover from the insurance crisis, did a net inflow of external capital occur.[13] This indicates that the insurance and equity markets were functioning appropriately during this period; that is, insurers were able to recover from the crisis relatively quickly by obtaining funds from shareholders.[14] It also implies that shareholders believed that fair returns on writing insurance were possible, at least for some coverages.

---

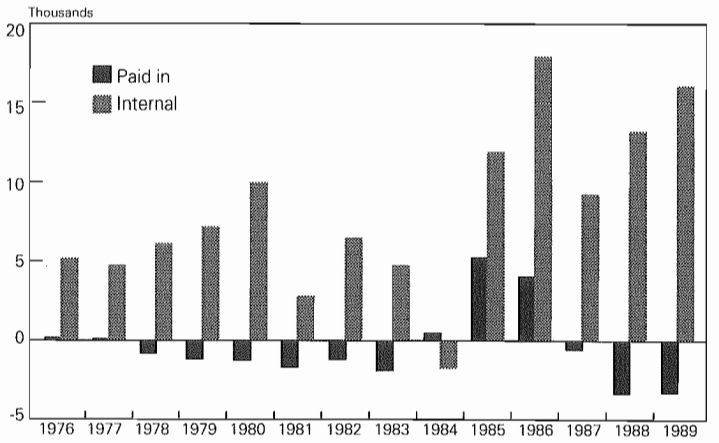
[12] There are some exceptions to this. A few mutuals have formed downstream stock companies that make public equity issues. During the 1980s, regulators permitted some mutuals to issue Eurobonds and count them as equity rather than debt. These are rather unusual circumstances and do not provide a consistent source of new capital.

[13] External capital equals capital and surplus paid in, less stockholder dividends.

[14] Although Figure 7 includes mutuals as well as stock companies, nearly all of the net inflow of external capital during the period 1984 to 1986 was attributable to stock insurers.

Figure 7

Sources of Capital in Property-Liability Insurance



Source: A. M. Best Co. data tapes.

Insurance Prices

Insurance economists are plagued by the general unavailability of accurate data on insurance prices. Insurer financial statements contain no information on the number of exposures. Some data on price per exposure unit are available on auto and homeowners insurance, but these data do not provide information on particular rating territories within states.

Faced with these obstacles, economists have developed two primary measures of price: the inverse loss ratio, and the economic premium ratio. The inverse loss ratio is simply the ratio of premiums earned to losses incurred. The rationale is that the objective of insurance is to redistribute losses, and the price for this service is the premium. Hence, the price relative to value received is the ratio of premiums to losses. While this is a useful measure in cross-sectional studies, it is less useful for time series analyses because premiums reflect the present value of policy cash flows whereas reported losses are undiscounted. Thus, if interest rates rise, the inverse loss ratio declines but this does not necessarily mean that prices have declined.

Because of the limitations of the inverse loss ratio, economists have

recently developed the economic premium ratio (Harrington 1988; Winter 1990; and Cummins and Danzon 1990).[15] This is the ratio of premiums to the discounted value of losses. To obtain the discounted value, one needs to know the payout pattern and the discount rate. Research on these variables is ongoing, but the best current approach is to use the Taylor method (Lemaire 1985) to compute the payout pattern and the U.S. treasury yield curve as the discount rate. Most analysts agree that it is appropriate to use accident year losses, representing losses for accidents occurring during a particular calendar year, rather than calendar year losses, which include the effects of revaluations of loss reserves for prior claims. Some controversy exists about the appropriate numerator. Harrington (1988) recommends premiums earned, while Cummins and Danzon (1990) use premiums written. The objection to premiums earned is that it represents an average price over a two-year period, which is then inappropriately compared to losses from the current period. On the other hand, using premiums written introduces a potential error due to growth of the exposure base. Ideally, this problem would be solved if the National Association of Insurance Commissioners (NAIC) required insurers to report more useful data. A variant of the economic premium ratio is the Myers-Cohn price, which is the present value of losses plus the present value of federal income taxes incurred by the insurer as a result of writing a given block of policies.[16]

Analysis of insurance prices using the economic premium ratio shows that nearly all of the increase in liability insurance prices during the 1984–85 crisis can be explained in terms of underlying cost factors. In particular, accident year losses increased substantially over this period and interest rates fell.[17] In 1985, when the largest increase in general liability prices took place, nearly all of the increase was due to loss and interest rate changes.

Pricing formulas such as the economic premium ratio can be used to analyze the controversial issue of cash flow underwriting, which occurs when insurers slash prices to obtain funds to invest during periods of high interest rates. This practice is alleged to destabilize markets and cause insurance crises. In fact, price reductions (increases) in response to rising (falling) interest rates are the expected outcome in a competitive insurance market. The price of insurance is the present value of losses, expenses, and taxes. Although most expenses are paid early in the

---

[15] Some economists use the economic loss ratio, which is the inverse of the premium ratio.

[16] The original formula appears in Myers and Cohn (1987). Cummins (1990) presents a version of the Myers-Cohn formula that is more convenient computationally.

[17] Subsequent loss analysis reveals that insurers did not overestimate losses for 1984 and 1985 but did overestimate 1986 accident year losses by about 12 percent.

policy period, loss and tax flows cover a considerable period of time in some lines of insurance; and the present value of the policy cash flows may be significantly less than their nominal undiscounted value. "Cash flow underwriting" is a problem only if price competition becomes excessive.

Two indices of the responsiveness of premiums to interest rates are the pricing factor and the duration. The pricing factor is simply the present value of the loss-payout-tail proportions. It is multiplied by losses incurred to obtain the present value of losses for use in the economic premium ratio. The pricing factors in several key insurance lines are shown in the top panel of Table 4. For example, the pricing factor for general liability in 1980 was 0.603. This means that the present value of losses incurred is 0.603 times their nominal value. The pricing factors for long-tail lines such as malpractice, general liability, and workers' compensation are much lower than for shorter-tailed lines like homeowners. Prices in the former lines can be expected to be more responsive to interest rates. The general liability pricing factor increased by 12 percent in 1985 and by 11 percent in 1986. Thus, premiums would have risen by those amounts even if nominal losses had remained constant.

The duration is a measure of the interest rate elasticity of the present value of losses. Specifically, it is equal to -1 times the elasticity of the pricing factor with respect to the discount factor $(1 + r)$, where r = the discount rate. An increase in interest rates from 7 percent to 9.14 percent represents a 2 percentage point increase in the discount factor, $(1 + r)$. Such a change would lead to an 8 percent drop in the pricing factor in a line with a duration of 4. The highest interest rate durations are in liability lines such as general liability and malpractice. General liability durations are in the neighborhood of 4 and malpractice durations often exceed 4.5. Private passenger auto liability has a duration of 2.5, whereas the homeowners duration is around 1. It is normal for competitive insurance prices to respond to changes in interest rates, and the proportionate response varies significantly among lines.

Although "cash flow underwriting" is normal in competitive markets, it is still possible that insurers underpriced during the early 1980s, precipitating the crisis of 1984–85. This issue has been investigated by Danzon and Harrington (1990), who find weak evidence of underpricing in the general liability insurance market in the early 1980s. They attribute this to the "winner's curse" phenomenon, whereby the winners in markets consisting of unbiased bidders will be the firms that bid too low in any particular situation. Excessive risk-taking by naïve or go-for-broke firms also may have contributed to underpricing during this period. Their strongest finding, however, is that the general liability price increases of the mid 1980s primarily reflected underlying cost factors.

Table 4
Pricing Factors and Durations, Selected Lines of Property–Liability Insurance

Pricing Factors

Year	Private Pass. Auto Liabil.	Commercial Auto Liabil.	Home-owners	Commercial Multiple Peril	General Liability	Medical Malpractice	Workers' Comp.
1980	.823	.754	.893	.790	.603	.524	.710
1981	.787	.708	.868	.751	.550	.473	.669
1982	.801	.722	.881	.764	.559	.481	.681
1983	.837	.767	.904	.802	.614	.534	.722
1984	.813	.735	.890	.776	.572	.493	.693
1985	.858	.792	.919	.823	.642	.561	.744
1986	.886	.834	.935	.858	.710	.629	.784
1987	.877	.821	.930	.847	.687	.605	.771
1988	.869	.811	.924	.838	.676	.595	.762
1989	.866	.810	.921	.838	.682	.602	.762

Durations

Year	Private Pass. Auto Liabil.	Commercial Auto Liabil.	Home-owners	Commercial Multiple Peril	General Liability	Medical Malpractice	Workers' Comp.
1980	1.607	2.325	.939	1.865	4.005	4.553	2.276
1981	1.565	2.260	.917	1.793	3.874	4.419	2.185
1982	1.567	2.259	.919	1.793	3.858	4.398	2.180
1983	1.611	2.328	.942	1.870	3.997	4.541	2.277
1984	1.577	2.272	.924	1.807	3.871	4.408	2.194
1885	1.631	2.358	.954	1.903	4.049	4.591	2.315
1986	1.684	2.449	.982	2.010	4.292	4.853	2.471
1987	1.666	2.419	.972	1.974	4.209	4.763	2.417
1988	1.660	2.409	.968	1.962	4.186	4.739	2.401
1989	1.666	2.424	.971	1.981	4.254	4.817	2.438
Mean	1.623	2.350	.949	1.896	4.059	4.608	2.315

Source: A. M. Best Co. 1990. *Best's Aggregates and Averages*; authors' calculations.

Standard economic theory strongly suggests that firms should not be able to engage in retroactive loss loading. That is, prices for any given block of policies should reflect the cost factors for those policies; insurers should not be able to charge off prior pricing errors to future policyholders. New entrants or rival firms could be expected to undercut a retroactive price while earning a fair rate of return on the incoming policy cohort.

Although the arguments against retroactive loss loading are fairly strong, Cummins and Danzon (1990) suggest that retroactivity may be feasible in some insurance markets and, in fact, may be necessary if firms are to participate in the markets on a long-term basis. They use an option pricing model of the insurance firm to analyze the following scenario: (1) An adverse loss or investment shock occurs that moves the

insurer significantly away from its target safety level. The target safety level is hypothesized to exist because buyer clienteles demand specific levels of safety from their insurers. Buyers wishing to deal with an A+ insurer are likely to go elsewhere if the company becomes a B+ insurer. (2) The insurer would like to raise new capital to return to its target safety level. However, it cannot do so by charging competitively fair premiums to the incoming cohort because any improvement in the safety level increases the value of the outstanding reserves to prior policyholders. Prior policyholders receive this improvement for free because they cannot be charged additional premiums. Thus, incoming equity will be penalized, and capital providers will be reluctant to supply new equity. (3) The insurer raises prices above competitive levels to the incoming policyholder cohort, raises new equity, which is not penalized because of the higher insurance prices, and returns to the target safety level. Prices then return to competitive levels. The insurer can charge noncompetitive premiums because it holds private information on its policyholders, implying that they face non-trivial costs of switching to another insurer. It does not exploit this information during normal market periods because demand elasticity would lead to suboptimal sales volume.

The Cummins-Danzon hypothesis implies that retroactive loss loading may be necessary in an otherwise competitive insurance market to maintain insurer safety at the level demanded by buyers. Cummins and Danzon provide some empirical evidence supporting the hypothesis. However, given the contrast between this hypothesis and conventional economic theory, more evidence will be needed before any firm conclusions can be drawn. The hypothesis does not necessarily imply that insurers have weak incentives to settle claims efficiently. Insurers that control their losses and expenses still should be more successful than those that do not. One of the factors that impedes switching following a loss shock is that losses are highly correlated across the industry, so that the firm and its rivals experience the need for additional capital at about the same time. A firm that consistently raises prices to cover loss or expense inefficiencies is likely to lose out during normal markets and will have to raise prices more than its rivals following a shock.

Profitability

Public policy discussions of insurance are often based on misinformation about profitability in the industry. The points of view range from that of the insurers, who have been successful in convincing many business analysts that they consistently lose large sums of money, to that of extremist public interest groups who claim that insurers are

financially viable as long as cash inflows are greater than cash outflows. The truth, not surprisingly, lies somewhere in between.

Various rule-of-thumb profit measures are used in property–liability insurance. Most of these convey some useful information about insurance markets. The problem is that their limitations are often overlooked, resulting in incorrect conclusions about profitability. Two important "trade ratios" are the combined ratio and the overall operating ratio. The combined ratio is the sum of the loss ratio, the ratio of losses incurred to premiums earned, and the expense ratio, the ratio of expenses to premiums written. It is widely used as a measure of underwriting profitability: if the combined ratio is above 1.0, the implication is that losses and expenses exceed premiums. This obviously provides a misleading indication of profitability because it does not take investment income into account. The overall operating ratio was introduced as a way to correct the combined ratio for investment income. The operating ratio is the combined ratio minus the ratio of investment income attributable to a particular line of business to premiums earned.[18] It is analogous to the return on sales measure used in other industries.

During the 1980s, the overall industry combined ratio ranged from 1.03 in 1980 to 1.18 in 1984. Of course, because the denominators of the two components of the ratio reflect market discounting, while the numerators do not, the ratio varies with interest rates. It is not correct to conclude that relatively high combined ratios necessarily mean that returns in insurance are too low. The operating ratio ranged from 0.956 in 1987 to 1.074 in 1984. This ratio is more reliable, but an operating ratio above 1.0 does not necessarily reveal unprofitable operations, because the ratio is a rather crude approximation to the more appropriate discounted cash flow calculation.

A better measure of the rate of return in a line of insurance is the internal rate of return, the rate of return that sets the discounted cash flows from a project equal to zero. It is compared with the target rate of return, or cost of capital, to determine whether the rate of return on the project is acceptable. Usually, the project is acceptable if the internal rate of return exceeds the cost of capital.[19] One difficulty in applying this rate to measure insurance profits is that publicly available sources do not contain information on the timing of premium flows in various lines of insurance. Another problem is knowing how much of the company's equity should be allocated to each line. These are solvable problems; for example, the NAIC could require insurers to release information on

[18] Investment income is usually allocated by line on the basis of reserves.

[19] For some cash flow streams the decision criterion is reversed, that is, one accepts the project if the internal rate of return is less than the cost of capital. See Brealey and Myers (1988). Such cash flow patterns are not typical.

premium flow patterns, and researchers will develop theoretically correct techniques to allocate surplus. The analysis of insurance markets would be substantially improved if the internal rate of return were eventually adopted as a standard profit measure. It is already being used by several jurisdictions in rate regulation.[20]

As part of the study reported in this paper, the authors calculated industrywide internal rates of return for six major lines of insurance for the period 1980 to 1989. Surplus was allocated by line on the basis of reserves using the ratio of industrywide reserves to surplus in each year. The accident year loss ratio and the expense ratio appropriate for each line in each year were used as inputs into the model. Investment returns were based on current market rates, and a weighted average was obtained using the industrywide asset portfolio proportions for each year. Tax rates specific to each asset were used to compute an after-tax investment return. Underwriting profits taxes (tax credits) were obtained using the appropriate IRS discount factor for years subsequent to 1986 and the prior tax rules for the years 1980 to 1986. Loss flows were extracted from the industrywide Schedule P using the Taylor method. The insurance internal rate of return model is explained in Cummins (1990).[21]

The results are presented in Table 5. The table generally reveals high rates of return in the early 1980s, attributable to high interest rates and relatively favorable underwriting ratios. The internal rates of return exceeded 20 percent for two or more of these years in general liability, personal auto liability, and workers' compensation. The returns then decline approaching the crisis years of 1984 and 1985. Following the crisis, the returns in general liability and commercial multiple peril recover to more normal levels. However, returns in workers' compensation remain relatively low, while returns in private passenger auto continue to decline. The auto and workers' compensation results in the late 1980s are not surprising, because these lines have been subjected to intense regulatory scrutiny and increasingly restrictive rate regulation. Less heavily regulated lines such as general liability bounced back more quickly to more normal profit levels. The auto and workers' compensation findings suggest that supply problems in these markets may be on the horizon.

---

[20] The internal rate of return has been introduced, usually by insurers, in several states including Maine, Pennsylvania, and Virginia. A similar technique, the Myers-Cohn model, is used in Massachusetts.

[21] Premium flows were assumed by the authors. Changing these flows generally would affect the levels of the internal rates of return but not the patterns across years. Nevertheless, the results should be viewed as a first attempt at calculating marketwide internal rates of return profitability in insurance. Suggestions for refining the calculations would be appreciated.

Table 5
Internal Rates of Return in Selected Lines of Property–Liability Insurance
Percent

Year	Private Pass. Auto Liabil.	Commercial Auto Liabil.	Home-owners	Commercial Multiple Peril	General Liability	Workers' Comp.	CAPM Costs of Capital
1980	29.1	18.9	10.8	23.0	23.3	23.6	19.8
1981	30.2	19.1	20.6	19.0	25.2	27.8	23.4
1982	26.5	13.9	16.2	11.3	19.8	25.6	18.8
1983	19.5	7.0	12.7	4.5	13.4	15.7	17.1
1984	18.7	4.6	9.2	.7	12.2	13.0	18.2
1985	13.6	7.3	−.4	4.2	10.7	11.7	15.9
1986	10.3	10.8	8.2	20.7	13.4	7.8	14.6
1987	10.1	13.2	25.1	38.8	14.1	13.5	13.9
1988	9.5	12.5	15.6	26.8	14.4	13.3	14.7
1989	8.4	9.7	−7.1	10.3	14.3	13.1	16.7
Mean	17.6	11.7	11.1	15.9	16.1	16.5	17.3
Standard Deviation	8.1	4.6	9.0	11.3	4.7	6.4	2.7

Source: A. M. Best Co. (various years); Ibbotson Associates (1990); authors' calculations.

To determine whether the internal rates of return are reasonable, a cost of capital or "hurdle rate" is needed. Although estimation of costs of capital by line is impeded by data limitations (see Cummins and Harrington 1987), it is relatively easy to estimate overall company costs of capital. Since the beta of the insurance industry tends to average around 1.0, an approximate cost of capital can be obtained using the capital asset pricing model (CAPM) with Treasury bill rates and market risk premia obtained from Ibbotson Associates (1990). The results are shown in the last column of Table 5. The internal rates of return for personal auto, workers' compensation, and general liability are close to the CAPM costs of capital from 1980 to 1982 and generally fall below the CAPM in 1983 to 1986. Thereafter, general liability returns recover to the CAPM level, while personal auto and workers' compensation returns do not. Commercial multiple peril follows a pattern similar to general liability, while homeowners and commercial auto have generally lower returns. Because risk varies by line, it is not necessarily true that returns close to the CAPM are adequate or that returns below the CAPM are inadequate. Nevertheless, the results suggest that most of the unregulated commercial lines are earning adequate returns, while more tightly regulated lines are under-earning.

In order to maintain insurance supply, insurers must be able to earn returns commensurate with their risk. If regulation prevents insurers

from earning a fair return, market availability problems will develop. Another way to determine whether returns are adequate is to calculate the return on equity for firms in the industry. Unfortunately, significant confusion exists about the measurement of returns in insurance. Ideally, a market return measure would be used, but only a few companies have traded securities. Consequently, for most firms, book return measures must be used. But book return measures are likely to be poor indicators of the true return on equity because of insurance accounting practices. For example, reserves are reported at undiscounted values while bonds are reported at amortized cost. An accurate book return measure would correct for these and other accounting anomalies. Facilitating the computation of more meaningful book return estimates should be a regulatory priority. Another problem with accounting return analyses in insurance is that the insurance industry insists on ignoring unrealized capital gains. In reality, however, both realized and unrealized capital gains are legitimate components of the return on equity and should not be omitted.

Three book and two market rate of return measures are presented in Table 6. The book return measures are the statutory return on equity and two GAAP (generally accepted accounting principles) measures. The statutory return is based on regulatory accounting procedures. It consists of statutory net income, which includes realized but not unrealized capital gains, divided by average statutory surplus. This is the return measure used most often by insurers and regulators. On the average, the statutory return on equity was 12.6 percent from 1976 to 1989. The statutory return has been used by California and other states in establishing target rates of return for regulatory purposes. This is unfortunate, because this return measure does not correct for statutory accounting anomalies and is biased downward due to the omission of unrealized capital gains.

Two GAAP rates of return are presented, including and excluding capital gains. When capital gains are excluded, the average GAAP return is the same as the average statutory return, 12.6 percent. When capital gains are included, however, the average return is 14.3 percent, which is closer to the expected CAPM return for a stock with a beta of 1. It is clearly inappropriate for regulators to omit realized capital gains when computing regulatory hurdle rates.

The two market rates of return are based on the A.M. Best Company's insurance stock price indices. Although these indices are not ideal for various technical reasons, they do provide an indication of the market returns on property–liability insurance stocks. According to the market measures, property–liability insurance stocks registered an average rate of return of 17 percent, while multiple line stocks earned 12.1 percent from 1976 to 1989. The average of these two returns, 14.5 percent, is close to the GAAP return including unrealized capital gains.

Table 6
Rate of Return on Equity in the Property–Liability Insurance Industry
Percent

Year	Statutory	GAAP No RCGs	GAAP With RCGs	Market Property–Liability	Market Multi-Line
1976	11.4	11.4	19.3	25.5	42.1
1977	23.0	21.3	18.6	−4.1	−5.0
1978	21.9	20.2	21.0	5.1	8.9
1979	18.2	16.7	20.9	29.3	21.7
1980	15.5	14.3	20.1	11.1	9.4
1981	12.9	12.0	8.8	21.0	13.2
1982	9.5	9.1	12.4	26.6	−3.2
1983	8.8	8.5	10.0	10.1	10.1
1984	1.3	1.9	−1.0	4.8	11.8
1985	2.6	4.3	9.2	50.0	45.9
1986	15.0	15.1	16.7	9.7	−4.6
1987	13.8	16.7	14.8	−7.1	−15.4
1988	13.4	14.5	16.0	11.5	2.9
1989	9.7	10.2	14.0	43.9	31.5
Mean	12.6	12.6	14.3	17.0	12.1
Standard Deviation	6.0	5.3	5.9	16.1	17.3

Note: ROE = return on equity, GAAP = generally accepted accounting principles, RCGs = realized capital gains.

Source: GAAP ROE = Insurance Services Office. Statutory ROE = A. M. Best Co. Market returns = A. M. Best stock indices.

The conclusion is that great care must be taken in estimating prices and rates of return in insurance. The imperfections of rule-of-thumb measures such as the combined ratio and operating ratio should be recognized, and analysts should strive to compute more accurate estimates based on models that appropriately recognize the timing of policy cash flows. Regulators should abandon statutory accounting for rate of return purposes and should not ignore unrealized capital gains.

Financial Condition

Recent failures of both life and property–liability insurers have focused attention on the financial condition of the insurance industry. This section presents some key solvency data on property–liability insurance.

The financial condition of property–liability insurance companies is evaluated annually by the NAIC using a series of 11 audit ratios comprising its Insurance Regulatory Information System (IRIS). Insurers failing four or more of the ratio tests are singled out for special

regulatory scrutiny. Although the audit ratios are reasonably good predictors of failure, they are far from perfect. The ratios have not been updated over time, and weak insurers have become adept at concealing their financial condition. Nonetheless, the NAIC ratios remain an important solvency indicator.

Table 7 summarizes the results of the NAIC audit ratio tests for 1989. The NAIC evaluates companies and major groups separately. The companies that are members of the groups are included in the company tests so some overlap occurs between the two samples. Both the company and group results are shown in Table 7.

The table reveals that 6.4 percent of the companies and 7 percent of the groups failed four or more tests. On some tests, such as the two-year operating ratio, the change in surplus, and two-year reserve development, the failure rate was considerably higher. For example, the surplus test shows that 13.5 percent of companies experienced a decline in surplus of more than 10 percent or an increase of more than 50 percent. Both are considered adverse indicators because they reveal deteriorating capitalization and/or balance sheet manipulation. Because test results are not readily available for prior years, it is difficult to say whether the industry's financial condition has deteriorated. However, the failure rate on several of the tests suggests that further investigation is in order.

Leverage ratios are important indicators of an industry's financial condition. Five leverage ratios for property–liability insurance are presented in Table 8. The premiums to surplus ratio, the most widely used leverage ratio in insurance, has been shown to be a good predictor of insolvency. Although companies pass the IRIS test if this ratio is less than 3.0, most companies strive for a ratio of 2.0 or less. The premiums to surplus ratio for the industry as a whole declined during the late 1980s, reaching its lowest level in more than 15 years in 1989. The loss reserve to surplus ratio is slightly higher now than during the late 1970s and early 1980s but does not appear to be excessive. The ratios of total reserves to surplus and liabilities to surplus also are in the normal ranges.

The last ratio in Table 8 is the ratio of reinsurance receivables to surplus. These receivables are premium or loss payments owed by reinsurance partners. Receivables may not be collectible in a financial crisis if the reinsurer fails. Some insurers tend to use overly optimistic assessments of reinsurance receivables to bolster their balance sheets. This ratio poses some cause for concern because it has been higher during the 1980s than during the late 1970s. Since many reinsurers are virtually unregulated, regulators have shown substantial concern that reinsurance may prove to be the Achilles heel of the property–liability industry. The receivables ratio suggests that further research on this topic might be of value in monitoring industry financial condition.

Junk bonds have recently played a major role in the failure of large

Table 7
Insurance Regulatory Information System (IRIS) Test Results for 1989
Percentage of Insurers Failing to Meet a Ratio Test

Ratio Test	Property–Liability Insurance Companies (N = 2377)	Property–Liability Insurance Groups (N = 157)
Premium to Surplus Fail if Result >300%	5.2	7.1
Change in Writings Fail if Result >33% Or if Result <−33%	20.9	8.3
Surplus Aid to Surplus Fail if Result >25%	3.0	3.8
Two-Year Operating Ratio Fail if Result >100%	13.2	11.5
Investment Yield Fail if Result <5%	6.6	1.3
Change in Surplus Fail if Result <−10% Or if Result >50%	13.5	8.9
Liabilities to Liquid Assets Fail if Result >105%	9.6	7.0
Agents' Balance to Surplus Fail if Result >40%	7.6	7.0
One-Year Reserve Development Fail if Result >25%	6.5	3.8
Two-Year Reserve Development Fail if Result >25%	10.4	14.0
Estimated Reserve Deficiency to Policyholder Surplus Fail if Result >25%	6.9	8.9
Percentage of Insurers Failing 4 or More Ratio Tests	6.4	7.0

Notes: 100% minus Operating Ratio is the Profit Percentage. Reserve Development Tests indicate reserve inadequacy as a percentage of estimated reserves from a prior period (e.g., one year, two years).
Source: National Association of Insurance Commissioners.

life insurance companies. If the statutory accounting statements can be believed, junk bonds are not a serious problem for the property–liability insurance industry as a whole, although they may be a problem for some individual insurers. Industrywide, the regulatory statements show that property–liability insurers held only $4.6 billion in non-investment-grade bonds or bonds at or near default in 1989. This

Table 8
Leverage Ratios for Property–Liability Insurance Industry

Year	Premiums To Surplus	Loss Reserve To Surplus	Total Reserves To Surplus	Liabilities To Surplus	Reinsurance Receivables To Surplus
1976	2.41	1.87	2.86	3.21	.05
1977	2.44	1.91	2.87	3.27	.05
1978	2.28	1.92	2.79	3.19	.06
1979	2.10	1.89	2.70	3.07	.06
1980	1.82	1.77	2.46	2.79	.06
1981	1.83	1.90	2.60	2.95	.07
1982	1.71	1.85	2.51	2.85	.08
1983	1.66	1.86	2.51	2.81	.08
1984	1.86	2.11	2.83	3.15	.11
1985	1.92	2.05	2.81	3.13	.11
1986	1.88	1.96	2.67	2.97	.11
1987	1.86	2.09	2.79	3.10	.11
1988	1.71	2.04	2.69	3.04	.10
1989	1.56	2.01	2.61	2.93	.10
Mean	1.93	1.95	2.69	3.03	.08

Source: A. M. Best Co. (Various years). *Best's Aggregates and Averages.*

represents 1.5 percent of the total bond portfolio or 3.4 percent of industry equity. The potential problem, of course, is that some companies' classifications of bonds as investment grade may be overly optimistic and/or that their investment grade bonds are at the lower end of the quality range. Thus, the regulatory statements may mask significant bond default risk.

The insolvency problem among property–liability insurers seems to have improved somewhat since its peak in 1985. The number of insolvencies rose from four in 1980 to 25 in 1985 and the total assessments for companies going insolvent in each year rose from $38 million in 1980 to a high of $909 million in 1985. However, both the number of insolvencies and the level of assessments have tapered off somewhat in 1988 and 1989. Fourteen insurers became insolvent in 1989, leading to assessments of $246 million. The total assessments for companies becoming insolvent in 1989 amounted to only two-tenths of 1 percent of industry equity.

Based on the readily available data, it seems difficult to argue that the property–liability insurance industry faces an unmanageable insolvency problem. However, the publicly available data may mask some serious problems. Extensive additional research would be needed to determine whether insurers actually pose a solvency threat of savings-and-loan-industry magnitude.

Summary and Conclusions

The property–liability insurance industry is under attack by regulators, legislators, consumer groups, and the public. Insurers are held largely responsible for premium inflation in automobile insurance and other lines. They are said to have caused the liability crisis of 1984–85 through irrational pricing and to have increased premiums to unreasonable levels once the crisis developed. Insurers are accused of conspiracy and collusion, and are alleged to be grossly inefficient in marketing, administration, and loss control. Perhaps their worst offense is that they are about to become insolvent in large numbers and thereby engulf the nation in a serious financial crisis.

The analysis presented in this paper reveals little support for these allegations. The property–liability insurance industry is competitively structured, with numerous firms competing for business in most lines. Entry barriers appear to be low and the number of firms in the industry continues to increase. Internal rates of return and returns on equity appear to be reasonable. During most recent years, insurance prices appear to have responded appropriately to changes in interest rates and to increased loss and tax payments. Publicly available data offer no clear indication of an impending insolvency crisis.

These comments not withstanding, serious problems need to be addressed. Among them are the following: (1) Availability and affordability of auto insurance. To a significant extent, this problem is beyond the control of the insurance industry. The real problem is the increasing frequency and severity of bodily injury claims and the rising severity of property damage claim costs. A partial solution is to provide insurers more incentives to control claim costs, for example, by mandating the creation of industrywide fraud bureaus. However, the auto insurance problem cannot be solved until the liability system is brought under control. Elective no-fault insurance provides one way to do this. (2) The underwriting cycle and the causes of insurance crises are still not fully understood, impeding effective public policy measures. More research is needed to identify the sources of these problems, but this will require better data, which should become a regulatory priority. (3) The use of inappropriate profitability measures has led to widespread confusion and irrational actions by regulators. Appropriate measures are available and should be used. (4) Rate regulation is unlikely to solve the problems of insurance availability and affordability. More likely, restrictive regulation will exacerbate these problems. Regulators should focus on more effective monitoring of prices and profits. (5) The present system of solvency surveillance and monitoring is inadequate. The regulators are not able to tell us the extent of the industry's junk bond problem and persist in using antiquated accounting rules and regulatory techniques. More intelligently designed items of information in the regulatory

statement would add immeasurably to our understanding of the industry. It is not apparent that federal regulation is the answer, but clearly something should be done to improve the solvency system.

Considering the combined effects of cost inflation, crises, and regulatory ineptitude, the property–liability insurance industry remains remarkably healthy. History has shown that intrusive regulation is more likely to create problems than to solve them. Regulation should be improved and focused on those areas, such as solvency surveillance, where it can do the most good. The primary role of the regulator should be to provide information to the market rather than to attempt to exercise control.

References

A.M. Best Co. Various years. *Best's Aggregates and Averages.* Oldwick, NJ: A.M. Best Co.

———. 1990. *Best's Executive Data Service (BEDS).* Oldwick, NJ: A.M. Best Co.

Brealey, Richard C. and Stewart C. Myers. 1988. *Principles of Corporate Finance.* New York, NY: McGraw-Hill Book Company.

Cummins, J. David. 1988. "Risk-Based Premiums for Insurance Guaranty Funds." *Journal of Finance,* vol. 43, no. 4 (September), pp. 823–39.

———. 1990. "Discounted Cash Flow Ratemaking Models in Property–Liability Insurance." *Journal of Risk and Insurance,* vol. 57, pp. 79–109.

Cummins, J. David and Patricia M. Danzon. 1990. "Price Shocks and Capital Flows in Liability Insurance." Working paper, The Wharton School, University of Pennsylvania, Department of Insurance and Risk Management. Philadelphia, PA.

Cummins, J. David and Scott E. Harrington, eds. 1987. *Fair Rate of Return In Property–Liability Insurance.* Norwell, MA: Kluwer Academic Publishers.

Cummins, J. David and Francois Outreville. 1987. "An International Analysis of Underwriting Cycles." *Journal of Risk and Insurance,* vol. 44, no. 2 (June), pp: 246–62.

Cummins, J. David and Sharon Tennyson. 1992. "Controlling Automobile Insurance Costs." *Journal of Economic Perspectives,* forthcoming.

Cummins, J. David and Jack VanDerhei. 1979. "A Note on the Relative Efficiency of Property–Liability Insurance Distribution Systems." *Bell Journal of Economics,* vol. 10, pp. 709–719.

Danzon, Patricia M. 1988. "Medical Malpractice Liability." In Robert E. Litan and Clifford Winston, eds., *Liability: Perspectives and Policy.* Washington, D.C.: The Brookings Institution.

———. 1984. "Tort Reform and the Role of Government in Private Insurance Markets." *Journal of Legal Studies,* vol. 13, no. 3 (August), pp. 517–49.

Danzon, Patricia M. and Scott E. Harrington. 1990. "Price Cutting in Liability Insurance Markets." Working paper, The Wharton School, University of Pennsylvania, Department of Insurance and Risk Management, Philadelphia, PA.

Harrington, Scott E. 1988. "Prices and Profits in the Liability Insurance Market." In Robert E. Litan and Clifford Winston, eds., *Liability: Perspectives and Policy.* Washington, D. C.: The Brookings Institution.

Ibbotson Associates. 1990. *Stocks, Bonds, Bills and Inflation Yearbook.* Chicago, IL: Ibbotson Associates.

Joskow, Paul. 1973. "Cartels, Competition and Regulation in the Property–Liability Insurance Industry." *Bell Journal of Economics and Management Science,* vol. 4, pp. 375–427.

Lemaire, Jean. 1985. *Automobile Insurance: Actuarial Models.* Norwell, MA: Kluwer Academic Publishers.

Mayers, David and Clifford W. Smith, Jr. 1989. "Ownership Structure Across Lines in Property–Liability Insurance." *Journal of Law and Economics*, vol. 31, no. 3, pp. 351–78.

Myers, Stewart C. and Richard Cohn. 1987. "Insurance Rate Regulation and the Capital Asset Pricing Model." In J. David Cummins and Scott E. Harrington, eds., *Fair Rate of Return in Property–Liability Insurance*. Norwell, MA: Kluwer Academic Publishers.

Olson, Douglas G. 1970. *Insolvencies Among Automobile Insurers*. Advisory Report to the U.S. Department of Transportation. Washington, D.C: Government Printing Office.

Pauly, Mark, Howard Kunreuther, and Paul Kleindorfer. 1986. "Regulation and Quality Competition in the U.S. Insurance Industry." In Jorg Finsinger and Mark Pauly, eds. *The Economics of Insurance Regulation*. New York: St. Martin's Press.

Regan, Laureen. 1991. "A Transactions Cost Analysis of Property–Liability Distribution Systems." Working paper, The Wharton School, University of Pennsylvania, Philadelphia, PA.

Tennyson, Sharon. 1989. "The Dynamics of Insurance Supply: Testing Competing Hypotheses." Working paper, The Wharton School, University of Pennsylvania, Philadelphia, PA.

Winter, Ralph. 1990. "The Liability Crisis of 1984–1986 and the Economics of Competitive Insurance Markets." Working paper, University of Toronto.

Discussion

*Roger S. Joslin**

J. David Cummins and Mary A. Weiss have written an interesting and enlightening essay. The paper for the most part accurately describes what we see today in the marketplace of the property–liability insurance industry.

To paraphrase and to provide the framework for my response: (1) insurance is an intensely competitive business; (2) the rhetoric of affordability, availability, insurance cycles, and profit measurement could stand some light along with the heat; (3) insurance rate regulation should observe the provision of the Hippocratic oath that says "Do no harm"; and (4) while a solvency crisis does not exist for property and liability insurers, the mechanisms for measurement and assurance of solvency should be strengthened.

Competition—Guess Who Suppresses It?

Competition in property and liability insurance is intense. Competition, like democracy, does not always yield ideal results. New problems emerge, however, each time either system is modified in an attempt to improve the results.

As the authors point out, the number of insurers is large, minimum capital required for entry is low, and technology is not a major factor in the business. Of course, easy entry is meaningless if exit is nearly

*Senior Vice President and Treasurer, State Farm Mutual Automobile Insurance Company; Chairman of the Board, State Farm Fire and Casualty Company.

impossible. Who holds insurers hostage and imposes multi-million-dollar exit taxes?

In some markets price ceilings are imposed. How many cars would Mercedes-Benz try to sell at Volkswagen prices? Even Volkswagen might hesitate to expand its market if every car sold carried with it a burden of selling a Mercedes at half price. Is it any wonder the most regulated states and lines of insurance are witnessing withdrawal of companies? Future generations will read with dismay about the current attempts in North America to replace a market-based economy with state planning at the same time Eastern Europe is moving toward a market-based economy.

While some allege the McCarran-Ferguson Act allows insurers to conspire to perform all sorts of vile acts, the antitrust exemption conferred is limited, not all-inclusive. Price fixing is allowed only to the extent sanctioned or imposed by state regulation. The independent ratemakers broke the state-sanctioned insurance cartel by the early 1960s. Our concern now turns to the emergence of prices fixed, directly or indirectly, by state regulation.

State Farm endorses modification of McCarran-Ferguson so long as the avowed purpose of enhancing competition is advanced. To that end, we believe any amendment should prevent states from regulating independently developed rates in competitive lines of insurance.

Rhetoric—Let There Be Light

Affordability and availability are two distinct problems, although they are mentioned together so often one might believe the words are synonyms. Without doubt auto insurance has become unaffordable for many, not all of whom live in the inner city. Complicating the issue—intensely—is the middle-class taxpayers' revolt.

Affordability

Can costs, including insurer profits, be reduced significantly? The answer is no. Allegations of gross inefficiencies really are attacks on agents and the cost of their services. The other significant insurer expenses are the costs of settling claims, including providing litigation defense, and state premium taxes. The difference between average profits and clearly substandard profits is two to three cents per premium dollar.

Will anyone voluntarily provide subsidies for long? Absolutely not. Consumers will not pay. Government will not tax. The leading commercial writers are announcing with their feet the limits of cross-subsidization.

Are there any other solutions? Yes, the solution is to change the system. Something is drastically wrong when the ratio of bodily injury claims to property damage claims is five times higher in Philadelphia (75 percent) than in Pittsburgh (15 percent). Something is drastically wrong when one-half of bodily injury claimants in Los Angeles are represented before a claim is even asserted and three-fourths are represented before the claim is settled. While these are metropolitan examples, the lottery fever is spreading.

Monetary incentives for fraud and for litigation must be eliminated. If economic losses were paid only once rather than two, three, or four times, plus multipliers, the economic losses would decrease. If losing litigants, including insurers, paid both parties' costs of litigation, litigation would also decrease. Fraud bureaus, however commendable, cannot do the job unassisted. The criminal justice system, already overloaded in our metropolitan areas, was not designed to cope with people running to get on the bus after the accident occurs.

Availability

Auto insurance is generally available, even in the worst of markets. But brand-name insurance becomes harder to find when assigned risk or joint underwriting plans are priced drastically below cost. When the price of so-called high-risk plan insurance is held below voluntary market prices, consumers make rational economic decisions by choosing the lower-priced coverage. Statistical analysis then confirms the prevailing prejudice: voluntary market insurance is not available.

Other lines of insurance become unavailable at any price when it is no longer possible to estimate future exposure based on past experience. For example, the market for day care center liability insurance virtually disappeared when the courts signaled multiples of policy limits might be available for intentional acts of a single person. The quest for deep pockets to pay for the cleanup of intentional acts of pollution dried up the market for insurance against negligent and accidental pollution. What other creative retroactive liability lies on the horizon?

Insurance cycles occur because insurer decision-makers fare no better than economists in predicting or recognizing changes in trends. Cycles are aggravated by competitors attempting to build or maintain market share. Cycles persist because corrections for past errors, whether underpricing or sloppy underwriting, take so long to bring down to the bottom line. Those who seek to understand cycles need look no further. Those who seek to modify or prevent cycles may yearn for a return to the stability and uniformity of cartels.

Profitability

The measurement of property and casualty insurance company profit could stand improvement. Removal from the emotion-charged field of rate regulation would help. Perhaps a disinterested third party could do the job. As you may recall, the General Accounting Office (1989) said property and casualty profits were below average and auto insurance profits were below the property and casualty average. This did not, however, prevent at least one politician running for office at the time from claiming that the report showed that auto insurers in his state were "making big money," as he had "known all along."

I marvel at the theoreticians' fascination with the capital asset pricing model (CAPM). Much of the literature suggests CAPM only arguably measures what it purports to measure. Applicability to insurance company profits appears totally dependent on bootstraps.

If insurer profits must be studied and measured, internal rate of return appears promising as a methodology. Of course, any model is dependent upon its assumptions. Allocation of surplus to line and jurisdiction is a critical assumption. It does not make sense to me to allocate surplus according to loss reserves, a past imbedded event, when the risk of writing or renewing insurance policies relates to future events.

Rate Regulation—Good or Bad?

Good rate regulation may be an oxymoron. Power over rates gives the appearance and perception that the regulator can do more than a little about the cost of insurance. The temptation to reallocate prices for political advantage without regard to underlying costs is hard to resist. Aggressive rate regulation tends to suppress symptoms until disease is rampant.

The politician whose regulatory efforts increase the cost of insurance or retard competition is nearly immune from accountability. The public that views insurance as an unfair tax will accept price suppression with gratitude. The complexity of the business makes it difficult to isolate, let alone explain, the impact of various regulatory measures. Given the time lag between cause and effect, the perpetrator will have moved on to new endeavors before the seeds sown are recognized as weeds. For many years one state's elected insurance commissioner would not grant a rate increase in an election year. He said, "This is the policyholders' year. Next year belongs to the companies." The year after the election, companies received two years' worth of adjustments. The commissioner was not selling out consumers, only playing the game for personal advantage.

On the other hand, a large state west of the Alleghenies has no rate

regulation. And for 20 years the insurance commissioner, the courts, and insurance companies in Illinois have been spared the political dance about rates. The state's consumers have fared well, with premiums below the average of comparable markets. Coverage is available. Competition is hearty. Small companies have fared well. From time to time rates have even decreased, as companies have had enough confidence in the political environment to correct pricing errors downward as well as upward.

It is hard to identify the accomplishments of rate regulation beyond the opportunities for social engineering and political demagoguery.

Solvency—Courage, Not Crisis

Property and liability insurance does not face a solvency crisis. Most companies are much more strongly capitalized than are savings and loans, banks, and life insurers. Yet well-managed, responsible companies are continually embarrassed by and asked to pay for preventable, or containable, insolvencies.

Effective regulation for solvency must be fair, understandable by ordinary mortals, and automatic. Laws now on the books in many states arguably are adequate. Yet delay is the rule rather than the exception. Guaranty funds allow governors, insurance commissioners, and judges to rest comfortably. Insurance accounting and widely accepted industry practices are part of the problem. The politics of public image and clout are ever present. The necessity for judicial sanction of a drastic remedy provides untold opportunities for obfuscation.

Many insolvencies involve gross mismanagement. More than a few result from outright fraud. As was demonstrated by GEICO and CNA, honestly run, financially troubled property and casualty companies can recover, given time. The key in all instances is to prevent management from "making it up on volume."

Those concerned about property and liability insurer solvency should:

(1) Eliminate the mirrors and shell games used to create the illusion of solvency. Give no credit for reinsurance unless the reinsurer and its contract meet stringent standards.
(2) Prevent naïve or fraudulent optimism from funding growth. Permit the booking of underwriting profit only after the accident year has been closed for two or three years.
(3) Require good assets to fund liabilities. Marketable, investment-grade, non-affiliated investments should exceed liabilities. Since some "good" companies cannot meet this standard, a tolerable compromise might require good assets to exceed discounted indemnity and loss adjustment expense liabilities.

(4) Establish minimum capital standards that are realistic, easy to calculate, and risk-based. While some modern theorists recoil from the simplicity of premium-to-surplus ratios, in a competitive market premiums charged must bear a rational relationship to the discounted flow of future claim payments. Premiums are the leading edge of growth, which, particularly when rapid, is more hazardous than stability. A clear regulatory statement using ratios of premiums to surplus could read: 2:1 = strong; 3:1 = bears watching; 4:1 = hazardous; 5:1 = action required—no new business; and 10:1 = drastic action required—no renewals. The specific numbers are less important than the words "action required."

(5) Reduce the profit opportunities and increase the risk of loss to insider manipulators. Expand the definition and time period of voidable preferences to allow conservators and liquidators to recover compensation paid to owners, directors, officers, and managing general agents. Make it easier to reverse "bad deals" between troubled companies and financially interested parties.

This outline does not require federal intervention, although federally imposed minimum standards could speed the process. A few key states could lead the way by requiring all companies doing business in the state to meet these requirements. Regulators and the industry need a dose of courage to rise above the lowest common denominator.

Conclusion

To summarize, cost reduction, not merely price reduction, should be our goal. Overregulation may be good politics, but it is bad economics. Effective regulation should focus on the doable, namely assuring that promises made are promises paid.

Reference

U.S. General Accounting Office. 1989. *Profitability of the Automobile Lines of the Insurance Industry*. October.

Discussion

*James M. Stone**

It is said that asking the right questions is 90 percent of wisdom. By that standard, J. David Cummins and Mary A. Weiss have written an extraordinary paper. In its first few pages, the paper lays out a list of queries that go right to the heart of the matter. This is a troubling period for industry leaders and for regulators, and anyone who wants to know why should begin to grapple with the catalog of Gordian knots these authors offer up.

To paraphrase a few questions from the list: How serious is the property and liability insolvency threat and what can anyone do about it? Can some form of regulation help stop personal lines insurance premiums from rising faster than general price and income indices, and thus temper consumer anger? Are periodic crises in commercial lines liability, accompanied by sudden price jumps and coverage reductions, the inevitable consequence of our current civil justice system or of some cyclical economic characteristic of this industry? Does the industry behave in a competitive manner or is it a cartel? When I saw what Cummins and Weiss were promising to clear up for me, I settled in for an especially careful reading.

With respect to competition, the authors' principal contribution is to point out that lines of business written predominantly through independent agents (including most commercial lines) tend to be less concentrated than lines written mostly by direct writers (especially personal auto, the industry's largest line by far). This is an important observation. The authors do not say it, but the implications of this observation may give some reformers a modest pause in their current

*President, Plymouth Rock Assurance Corporation.

quest to reduce the independent agent role in personal auto insurance. What lies behind the authors' observation is the finding that direct response insurance marketing, with its dependence on massive computer systems and expensive list acquisitions, has economy-of-scale characteristics so pervasive as to tend toward natural monopoly. Agency marketing, with service competition as its principal driver, tends to have few (or negative) economies of scale above some relatively low threshold. To establish regulatory schemes that favor simply the lower distribution costs, rather than a combination of low distribution costs and good service, is to wish for a highly concentrated industry.

With respect to the severity of cycles in commercial insurance lines, the authors dismiss the oversimplified notion of "cash flow underwriting" as the culprit. They correctly conclude that cash flow underwriting, which is the acceptance of foolishly low premiums in order to generate investable assets, can only be a problem if competition is somehow excessive. This is a condition that no one seriously alleges concerning the commercial property and liability insurance industry. Cummins and Weiss do not say what does cause the commercial insurance cycles. My own theory is that a part of the answer can be found in the literature of market signaling. Whereas personal lines coverage is priced by statistical inference and the law of large numbers, pricing in commercial lines is a function of scarce data, artistic interpretation, intuition, and a sprinkling of black magic. In other words, no one knows the right prices to charge, so when the underwriter has finished searching his data and his heart, he looks at what other artists (or magicians) at the competition are doing. When they cut prices, the underwriter not only faces competitive pressure, he feels he has received a valuable datum on the underlying reality. When he responds, the market takes this signal too as a source of data that prices should be lower. The same of course happens in the upward direction, as was the case during the so-called liability crisis of the 1980s. As long as underwriters must divine the future from far too little information, I would expect that accentuated cycles will continue to characterize the commercial lines.

With respect to solvency, the authors call for "extensive additional research . . . to determine whether insurers actually pose a solvency threat of savings-and-loan-industry magnitude." I am more optimistic than they are, but only if the standard is comparability with the S&L disaster. Property and liability companies have serious problems, and doubtless a number of insolvencies will occur in the coming years. The economics of this industry, however, were never as pernicious as those of the deregulated savings and loan industry, where the higher the short-horizon investment return (and consequently the higher the level of portfolio risk), the more deposits the institution could attract, with guarantees rendering scrutiny of solvency irrelevant to the customer. The long-tailed life insurance industry, were it not for a lack of

government guarantees, could have been an equal disaster. Even without the guarantees, it had more than enough of such behavior, and this has resulted in innocent victims aplenty with more to come. The property and liability industry, which does have government guarantees, has some offenders, but investment returns are a sufficiently small component of price, and market shares sufficiently price inelastic in the short run, to have kept this phenomenon from spinning totally out of control. Worries about property and liability solvency are justified, and the issues of obsolete accounting and weak reinsurance raised by the authors are valid, but the comparison with S&Ls does not lead toward the nub of the industry's woes. Lack of guarantees and inertia in market shares may have proved themselves a useful form of ballast.

Since I am the president of a highly regulated personal lines insurer, I was particularly interested in reading what the authors would say about the public policy issues in those lines. For that I had to wait for the concluding pages, which state that the availability and affordability of auto insurance are "beyond the control of the insurance industry . . . (and) the auto insurance problem cannot be solved until the liability system is brought under control. . . . Rate regulation is unlikely to solve the problems. . . . More likely, restrictive regulation will exacerbate these problems." This left me hungry, for this is the nub of the personal lines industry's woes.

My view is that auto insurance, a business the authors measure as providing 45 percent of total industry revenues, is uniquely cursed. It is compulsory in most states, and it is pronouncedly income regressive. The cost is largely a function of traffic density, and of the prevalence of theft and fraud. So it tends to cost more in crowded, poor, and crime-damaged neighborhoods. Insurance in many core city areas today costs the ordinary family upwards of $2,500, where family income might average less than $25,000. Auto insurance in a posh suburb often costs less than $750 a year, where the average family might earn $100,000. The percentage arithmetic will highlight the regressivity. Good public transportation is an alternative for all too few, and so it should be no wonder that the honest urban resident, who needs a car to get to work, views compulsory automobile insurance as a regressive tax. That the word "tax" has a narrower meaning to lawyers is irrelevant, as was amply proven by California's Proposition 103. That ballot question, with a lifetime of implications for industry economics, would not have passed without overwhelming majorities in Los Angeles County, where the regressivity is especially steep.

When the authors call this problem outside the control of insurers, they are technically correct, but to leave it unsolved will subject the industry to decades of torment. The industry must, if only to protect itself, work closely with public officials and find a cure. Lessened dependence on the tort mechanism and tighter fraud control, two tools

the authors favor, are worth pursuing, but they are politically elusive and insufficient at their best. It may be time to reexamine the notion of compulsory insurance, which I had long supported, if regressive income effects are so closely coupled with it. And rate flattening by regulatory design, however unseemly it looks to economic purists, is something we had all better get used to. In 1977 as Insurance Commissioner, I initiated a tempering of rate relativities across geographic territories in Massachusetts, which I viewed as a justifiable spreading of social costs over a broader social base. As an industry executive, I feel even more committed to that approach now. Simple solutions or benign neglect will not solve the regressive tax problem in auto insurance.

Cummins and Weiss raise all the right questions, and I am personally grateful for their complimentary reference to the "more sophisticated rate-making methodologies" developed by regulators in Massachusetts. But they only scratch the surface. I shall take their article as the introduction to a much longer book they may soon write and I, for one, will be certain to read.

The Structure and Regulation of Insurance Markets in Europe

*Sotirios Kollias**

Despite the huge upheavals in financial and industrial structure of the past decade, the European insurance markets, with the partial exception of the United Kingdom and Switzerland, have traditionally remained highly fragmented national markets. In contrast to the banking and securities sectors, they have been overprotected and have not been part of any globalization process. This may be explained partly by the specificity of the insurance business, which has historically given rise to excessively restrictive regulatory systems, and partly by the existence of cultural differences and practices, which by themselves have restricted domestic competition and made foreign penetration difficult.

In view of this situation, the limited impact of the first attempt by the European Community in the 1970s to open insurance markets through the freedom of establishment is not surprising. In recent years, however, the process of insurance market integration has been set in motion, to some extent by autonomous factors such as the blurring of frontiers in financial services and the linkages between financial sectors, but mainly in the context of the European Community's plan to complete the internal market by the end of 1992. An important part of this ambitious project is the creation of an integrated financial area, with full liberalization of capital movements and the free supply of

*Head, Financial Integration and Capital Movements Division, Directorate General for Economic and Financial Affairs, Commission of the European Communities. The author is grateful to his colleagues Victor Andrés Maldonado, Antonio de Lecea, Gerassimos Thomas, and José de Frutos for valuable comments. The views expressed in this paper are those of the author, not necessarily those of the Commission of the European Communities.

financial services across borders in the field of banking, securities, and insurance.

The first section of this paper highlights the basic structural characteristics of the European insurance markets. The following section analyzes the current balance between insurance regulation and competition in the context of the European Community's financial integration program, the proposals relating to insurance, and the outlook for effective opening of the markets. This is followed by a discussion of the regulatory interactions of the insurance sector with the banking sector at the production, distribution, and ownership levels, and some concluding remarks.

Basic Indicators

Market Share

The insurance business is well developed in several European countries. After suffering declines in the early 1980s, insurance markets in Europe have been expanding, although not as quickly as in Japan, which has seen its share of total world premiums rise steeply (partly at the expense of the United States) from only 2.2 percent in 1960 to 24 percent in 1988. Europe's share that year is estimated to have been about 30 percent, compared with 37 percent in the United States. The European Community (EC) accounted for 23 percent, while Switzerland and the non-EC Scandinavian countries accounted for most of the remainder of Europe's share.[1]

In line with population size, the largest markets in Europe are Germany, the United Kingdom, and France, jointly accounting for more than 75 percent of the EC total direct insurance production in 1988. Italy, a country with a similar population size, participated with a bare 7.5 percent, implying a much less developed market.

Relative Size

Two frequently used indicators of the development of the insurance sector in a country are shown in Table 1. The first relates the level of annual premiums to national income and measures the flow of savings through insurance expenditure. The second relates the level of annual premiums to population and measures the concentration of insurance in

[1] The relative shares in world GDP are: 20 percent for the United States and for the European Community, and 11 percent for Japan. Thus, Japan's share of premiums is very large compared to its economic importance.

Table 1
Basic Indicators of Development of the Insurance Industry, 1988

Country	Annual Premiums[a] as a Percentage of GNP	Per Capita Premiums[a] (U.S. Dollars)	Average % Growth of Premiums 1984–88	Insurance Employment[b] as a Percentage of Total
Ireland	11.4	938	4	n.a.
United Kingdom	9.3	1,358	13	1.34
Netherlands	7.5	1,180	14	.83
France	6.4	1,123	20	.97
Spain	6.3	546	64	.53
Germany	6.2	1,241	12	.91
Denmark	5.6	1,128	18	.52
Belgium	5.1	775	14	1.59
Luxembourg	3.1	762	19	n.a.
Portugal	3.0	122	26	1.27
Italy	2.9	415	20	.61
Greece	1.4	76	18	.98
EC Average	5.7	805	20	.95
United States	10.0	1,965	7	1.76
Japan	9.9	2,292	26	2.67

[a]Direct business plus reinsurance accepted

[b]Includes intermediaries

Source: *Sigma*, publication of the Swiss Reinsurance Company; OECD Insurance Statistics; and *EUROSTAT*.

a country. The higher the indexes, the higher the development of the country's insurance industry.

Differences in operating costs and investment efficiency, as well as exchange rate considerations in the case of the second indicator, may distort comparability. Table 1 shows, however, that the insurance sector is highly developed in the United Kingdom and the Netherlands, compared to that of the southern EC countries. France, Germany, and Spain stand in the middle. The position of Ireland is partly explained by preferential tax treatment of life insurance premiums, in conjunction with high marginal rates of income tax, and that of Japan by the preponderance of single-premium business, motivated by low interest rates on deposits. Among the non-EC countries (not shown in Table 1), the ratio of premiums to GDP is very high (12.1) in Switzerland, and the ratios in Sweden and Finland are somewhat higher than the EC average.

Financial Intermediation

The role of the insurance sector in the financial intermediation process can be indicated by the value it adds to national income or by its

contribution to total employment, the latter also shown in Table 1. It appears that for EC countries the sector contributes relatively more, in terms of employment, in the United Kingdom, Belgium, and Portugal. Since the latter two countries have a relatively underdeveloped insurance sector, more employment suggests a certain degree of inefficiency.

Another measure of the importance of the life insurance industry in the domestic financial market is the ratio of life funds (that is, reserves and other liabilities to policyholders) to national income. Data are not readily available, however. It has been reported that this ratio is about 30 percent in Switzerland, the United Kingdom, and Japan, and about 20 percent in Germany, the Netherlands, and the United States (Vittas and Scully 1990). Such ratios imply that life funds represent a substantial pool of resources. It should be noted, however, that interactions with pension fund regimes (substitutability, cultural aspects, fiscal treatment and the like) should be taken into consideration if precise comparisons are to be made.

Efficiency

Comparisons of efficiency are difficult because any single indicator cannot capture all explanatory factors, such as regulatory intensity, operating costs, investment returns, business mix, and so on. In general, the performance of the insurance industry in Europe is considered to have been better than in the United States or Japan.

The ratio of life funds to gross premiums could be used as a proxy for the efficiency of the life insurance industry. It takes account of operating costs and investment returns, but it can be distorted by differences in the business mix or in reserve policies. Over the period 1986–88, this ratio fluctuated between 6.5 and 7.0 in Germany and Switzerland and between 6.0 and 6.5 in the United Kingdom and the Netherlands, and around 5.0 in the United States and 4.0 in Japan. The high ratios in Germany and Switzerland probably reflect conservative reserve policies, that for the United Kingdom probably reflects investment efficiency, and that for the Netherlands low operating costs. The relatively low rates in the United States and Japan reflect high operating costs and low investment returns as well as a business mix that requires a lower volume of reserves (a large proportion of single-premium life policies).

The rate of return on investment of assets of life insurance companies may be a better indicator of efficiency, but data are not available. It is estimated that U.K. companies achieve average rates of 15 to 20 percent, against 7 to 8 percent for German companies. Even if allowance is made for differences in the inflation rate, the U.K. companies appear to be more efficient, mainly as a result of their greater freedom to invest in domestic and foreign equities.

Profitability

Comparisons between countries are difficult because of differences in accounting, tax, and prudential regimes, and many other factors. Only a few general trends can be observed.

In the nonlife subsector, underwriting has resulted in constant losses (negative ratio of underwriting income to premiums), with the only exception being Germany. All other European countries have incurred losses averaging about 10 percent a year over the period 1983–87 (de Lecea 1991). These losses, however, were more than compensated for by the sharp increase in asset values. Thus, nonlife insurance undertakings appear to survive because of a pure financial intermediation role, that is, collecting funds in order to invest, rather than by performing a profitable economic activity.

In the life subsector, yields have been positive. The shareholders' profits as a percentage of annual premiums vary substantially, however, from one country to another. This is explained by the different statutory rules regarding the allocation of profits between shareholders and policyholders. German companies are mandated to rebate 90 percent of any surplus to policyholders, whereas in the Netherlands, the United Kingdom, and Spain, shareholders receive most of capital gains.

A survey conducted by the EC Commission regarding the performance of composite versus specialized life insurance companies showed that over the 10-year period since 1979, out of 4,000 companies authorized within the European Community, only four cases of winding up of specialized life companies occurred, along with several failures of specialized nonlife companies. No failures of composite companies occurred.

It has been reported that in 1990 (not a representative year from which to draw conclusions), the United Kingdom's five big composite insurers revealed a combined pre-tax loss of more than $1 billion, compared to a profit of more than $1.5 billion in 1989 (*The Economist*, February 9, 1991). Falling property and share prices, where U.K. insurers predominantly invest, as well as bad past decisions are the main reasons for this performance. In general, however, U.K. insurers have enjoyed profits. They have been involved in less damaging competition than their U.S. counterparts, but in more risk-taking than the other European insurers.

Regulation and Competition

With the exception of reinsurance, which has an international market,[2] European insurance markets have traditionally remained isolated in national markets. Legal barriers to cross-border trade, on grounds of consumer protection, and restrictive regulatory frameworks, country-specific distribution channels, and differences in customs and practices have prevented both external and domestic competition. As a result, different products, but also wide price differences, have prevailed between countries.

Regulatory intensity has not been the same in all European countries. Germany followed by France and the southern EC countries are considered to be highly regulated. Last on the list could be the Netherlands and the United Kingdom, which rely strongly on market forces and keep regulatory intervention to the absolute minimum. This can also be supported by the number of employees in regulatory agencies in 1990: 320 in Germany, 250 in France, 116 in the Netherlands and only 73 in the United Kingdom (Finsinger 1990). The regulatory intensity seems to be closely correlated with the price levels of life and nonlife insurance, as contained in a 1988 Price Waterhouse report. Italy and France reported the highest prices while the Netherlands and the United Kingdom reported the lowest. Prices in Germany appeared lower than those in Italy and France, but this was probably due to the fact that German companies are mandated to rebate 90 percent of any surplus to policyholders, and not due to more competition.

More recently, and especially since 1988, the regulatory and competitive situation has started to change. Country-driven deregulation, new products, new methods of distribution, and the creation of new spheres of power are taking place through mergers, acquisitions, establishment of bank/insurance subsidiaries or participation links, and cooperation agreements between insurance companies and between insurance companies and banks. Out of the 40 most significant bank/insurance acquisitions in the EC between 1985 and 1990, ten deals involved institutions of different countries (Thomas 1991). The main motivation for such changes is preparation for increased competition in view of the EC's project to create a Single European Market by the end of 1992.

The First EC Directives: Freedom of Establishment

The first attempts of the European Community to open up competition in direct insurance markets go back to the 1970s. Two pieces of

[2] An EC directive of 1964 requires all member states to remove all restrictions upon freedom of establishment and freedom to provide services relating to reinsurance.

legislation, the First Non-Life Insurance Directive, adopted in 1973, and the First Life Directive, adopted in 1979, laid down some basic rules for setting up branches and agencies throughout the Community.[3] In addition, the Life Directive introduced the principle of specialization, that is, a company could carry out either life or non-life business. It allowed existing composite companies to continue to operate, however.

The integration impact has been insignificant. Over the period 1975–86, the share of foreign companies remained virtually unchanged in the four largest EC countries. In 1986, it ranged from 3.7 percent in Germany to 4.8 percent in the United Kingdom, and none of the four countries had shares of foreign companies above 13 percent, even if domestic companies with foreign majority interest are added. The corresponding shares in Spain and the Netherlands were twice as large. The number of foreign insurers increased at first but decreased dramatically in the 1980s (Finsinger 1990).

The absence of an appreciable impact of the freedom of establishment on integration and competition could be attributed to the substantial differences in the domestic regulatory frameworks that the foreign undertakings had to comply with. It could also partly be attributed to a series of obstacles that have prevented foreign establishments from operating freely: country-specific distribution channels; the general rules concerning accounting, company law, and contract law; and the existence of state monopolies for certain lines of business.

In recent years, however, a wave of intra-Community mergers and acquisitions (one element of the insurers' strategies to exploit the expected advantages of the 1992 single market) has taken place, in particular in the rapidly growing markets of Italy, Spain, and, to a lesser extent, France: that is, in countries where regulation has traditionally been high. Substantial foreign penetration, but mainly from outside the Community, has also been observed in the United Kingdom, which was probably chosen as a base from which non-EC insurers can operate throughout the European Community after 1992.

The EC Financial Integration Plan

The adoption in 1987 of the Single European Act institutionalized the European Commission's program—known as the White Paper—to complete the internal market by December 31, 1992: that is, to create an area without frontiers in which goods, services, capital, and persons circulate freely.[4] An essential part of this project is the creation of an

[3] The Insurance Directives mentioned in this article are listed in the references.

[4] The Single European Act modified the Treaty of Rome. Besides updating the internal market provisions, the most important of which are the 1992 deadline for its completion

Table 2
Program of Financial Integration

I. *Basic Requirements*
- Freedom of all capital movements
- Freedom of establishment of institutions
- Free cross-border supply of services in the
  - Banking sector
  - Securities markets (investment services)
  - Insurance sector
- Harmonization of prudential rules

II. *Other Parameters*
- Relations with third countries
- Stability of exchange rates
- Fiscal aspects
  - Approximation in company taxation
  - Approximation in interest income taxation
  - Elimination of tax-preferential treatment in favor of domestic securities and domestic institutions
- Pension funds: review of prudential rules, in particular of restrictions on investment of assets abroad
- Payment systems: improvement in terms of efficiency and cost
- Social aspects: prevention of the use of the financial system for money laundering

integrated financial area, the two main components being the full liberalization of capital movements and the free supply of financial services in the field of banking, securities, and insurance. As with economic integration, financial integration is expected to bring important efficiency gains through more competition and exploitation of economies of scale, thus implying a wider choice, at lower prices, of financial products for the consumer and increased international competitiveness of the financial sector of the EC economy.

The requirements for financial integration are listed in Table 2. Freedom of insurers to establish operations in another member state and free cross-border supply of insurance are essential elements. But these freedoms cannot be effective for integration and competition without harmonization of prudential and regulatory systems, which vary enormously between the member states. Harmonization is a difficult task,

---

and replacement of unanimity by qualified majority (56/74) vote for many decisions, it introduced Community powers in new fields, such as economic policy cooperation, social and economic cohesion, research and development, and the environment. Moreover, it formalized the status of the European Council (meetings of Heads of State) and upgraded the role of the European Parliament in the EC decision-making. The White Paper is a list of about 300 measures needed to complete the internal market that the Commission proposed to elaborate, mostly in the form of directives, and submit to the Council for adoption.

Table 3
The Approach of the EC Commission to the Harmonization of Prudential Rules

Objectives:	Liberalization and integration of markets Protection of investors and depositors Solvency of financial institutions Equal conditions of competition (level playing field)
Principles:	Single license, permitting a financial institution to set up a subsidiary in the other states without new authorization and new capital endowment Few basic definitions and rules, in particular those concerning capital adequacy and the covering of risks Mutual recognition of rules and standards not harmonized at the Community level Home country control, that is, supervision of subsidiaries abroad by the country where their head office is located

especially in the insurance field, because it is characterized by many particularities. Table 3 shows the conceptual approach of the EC Commission to this central issue. The principles of "single license," "mutual recognition," and "home country control" play a crucial role in solving the problem. They are designed to ensure consumer protection, solvency of institutions, and "level playing field" conditions in a flexible market environment.

The Second EC Directives: "Large" versus "Mass" Risks

The basic principles in Table 3 have already been applied to banking legislation[5] and have been incorporated in a proposal for a directive concerning the securities markets.[6] In the insurance sector, while staying within the general harmonization framework, it has been necessary to follow a two-stage approach because of a landmark judgment of the European Court of Justice.[7] While confirming the right to provide cross-border insurance services, the Court argued for a greater degree of harmonization for the protection of small policyholders ("mass risks") than for industrial or commercial customers ("large risks"). The distinction has been crucial in the subsequent legislative work regarding the application of the principle of home country supervisory control.

Two pieces of legislation, the Second Non-Life Directive, adopted in

[5] Second Banking Directive: 89/646/EEC, OJ/L/386 of 30.12.1989.

[6] Commission Proposal for a Directive on Investment Services: COM (88) 778, OJ C 43 of 22.2.1989.

[7] Judgment of 4 December 1986 in Case 205/84: Commission versus Germany, France, Ireland, and Denmark—Freedom to provide insurance services.

1988, and the Second Life Directive, adopted in 1990, liberalized cross-border supply of insurance in cases deemed to require relatively less protection: the former liberalized large commercial risks, as of January 1, 1990; the latter liberalized insurance sought by individuals from abroad on their own initiative, as of January 1, 1993.[8] Home country control is applied to these cases, while the provision of "mass risk" nonlife services and the marketing of life insurance abroad are to continue to operate under the regulations of the host country.

The Proposals for Complete Freedom

Two more recent far-reaching framework proposals for third nonlife and life directives generalize the free supply of insurance under home country control in all cases.[9] They introduce coordination rules in regard to technical provisions, the representation of assets, the contract law, the abolition of state monopolies, and other aspects. An important feature is the ending of specialization between life and nonlife business, which had been imposed by the First Life Directive in 1979 for all newly created companies.

Although a number of supplementary directives may be necessary concerning the accounts of insurance companies, distribution aspects, intermediaries and so on, the adoption of the above framework proposals will complete the legislative work concerning the integration of the EC insurance markets and indeed that of financial integration in general.

Outlook for Effective Integration

In view of the above developments, the balance between regulation and competition is expected to shift rather quickly from isolated national markets to Community-wide integrated markets, and from highly protected industries to a competitive environment. A deregulation–reregulation process is taking place in such a way as to ensure consumer protection and financial stability as well as market flexibility.

The Second Non-Life Directive has already established a Community-wide market for large commercial risks, though its impact may turn out to be limited since barriers in this line of business were relatively lower and, in any case, much of the activity was already international. The impact of the Second Life Directive should presumably be larger but again, cultural differences may limit it. In addition, transitional periods

[8] Greece, Portugal and Ireland may defer the application of these directives until January 1, 1999, while Spain may defer until January 1, 1997 and January 1, 1996, respectively.

[9] COM (90) 348 final of 31.8.1990 and COM (91) 57 final—SYN 329 of 22.3.1991.

have been arranged for countries where life insurance growth potential is very high. For both directives, specific distribution networks entrenched in each country may be an indirect obstacle.

However, these directives and the prospect of the third proposals, as well as the integration in the banking and securities markets, have prompted the important structural changes that are now taking place in the European insurance markets. Mergers, acquisitions, joint ventures, cross-sector subsidiaries and direct participations, bank-insurance conglomerates, and network distribution alliances are part of the strategies of the operators in order to compete in the new environment that is being shaped.

Legal Frontiers with Banking

The structural, regulatory, and competitive environment of the insurance industry in Europe is changing, not only because of EC financial integration but also because of the phenomenon of convergence between the insurance sector and the other financial sectors, especially banking. Autonomous forces, such as demographic developments, declining savings, changing consumer habits, and new communication and information technologies, have led to interpenetration of markets and have reduced the fragmentation of activities. The convergence, however, has been accelerated by the EC integration plan.

Banks have been challenged by life insurance companies and other nonfinancial institutions and have lost part of their market share of savings. In response, they have sought to expand their product range into insurance and other areas, taking advantage of their distribution networks and their huge customer bases. It is too early to assess these strategies; nevertheless, the different cultures and sales skills in these two lines of business suggest they may not lead to results that accord with theoretical expectations.

Despite the growing interactions, insurance companies in Europe remain legally distinct from banks and other financial institutions. This section looks at the regulatory aspects of such interactions at the production, distribution, and ownership levels.

Production

In all European countries, the business of insurance underwriting is regulated under special law. Banks are not permitted to write insurance business directly. The first EC directives on the freedom of establishment limit the activities of insurance companies to insurance and to operations directly linked with it. Such directly related operations may bear similarities to non-insurance products, for instance, the granting of a loan on the basis of an insurance policy or life insurance products with

a financial component. Nevertheless, they are considered to be included in the definition of insurance products.

Symmetrically, the production of banking services is confined to banks. Thus, insurance services do not figure in the list of activities annexed to the Second Banking Directive, which is the central piece of legislation for the creation of the common market in banking. A few exceptions, however, are observed in Italy, Spain, Greece, and Ireland where for historical reasons certain banks, or all banks on a limited scale, can directly produce insurance services.

Thus, the concept of production in general remains legally separated between insurance and banking institutions, the rationale being the different specificity of each sector (nature of risks, inverted production cycle for insurance, and the like). Arguments against bank production of insurance include the avoidance of tied-in sales and other practices as well as conflicts in supervisory responsibilities.

In the European Community, separation of production is also imposed within the insurance sector. The First Life Directive of 1979 established the principle of specialization, that is, either life or non-life activity, for any newly created insurance company, while the Second Life Directive of 1990 specifies that the existing composite companies cannot benefit from being free to supply either form of services beyond the end of 1995. Although the specialization is conceived as offering more security to policyholders, the tendency towards the creation of large financial groups has circumvented the effectiveness of specialization. In fact, the proposal for a third life directive suggests the ending of such an obligation.

The legal distinction between banks and insurance companies, however, has not prevented convergence at the product level. The financial (savings) component traditionally incorporated into most life insurance products has swelled, especially through new products (such as variable capital and insurance-capitalization products) and through group life insurance. Some of the new products have grown very rapidly in the United Kingdom, France, Italy, Spain, and Portugal. On the other hand, an insurance component in financial products is less usual.

Distribution

The distribution of insurance products by banks is generally allowed in most European countries, though under specified conditions. For instance, in France, bank employees must qualify as an insurance intermediary, while in Portugal distribution is permitted on the condition that no advice is involved. In Greece, distribution by banks is allowed only in towns with less than 10,000 inhabitants, and in the United Kingdom, banks can distribute only life insurance. On the other

hand, most European countries limit the distribution of financial products (other than insurance) by insurance companies.

Ownership Linkages

The convergence between the insurance and banking sectors is also taking place at the company or institution level. Ownership linkages can take various forms, such as minority or majority participations, establishment of a subsidiary, joint ventures, and the constitution of a holding company. The regulatory frameworks in this regard vary substantially from one country to another and are constantly changing at the prospect of the EC single market. Nevertheless, certain trends can be identified at the EC level concerning the establishment of subsidiaries and direct participations.

Subsidiaries. With the exception of Belgium, all EC member states allow banks to establish a subsidiary insurance company. (All but Belgium also permit the establishment of a subsidiary bank by an insurance company.) Such operations must comply with the specific prudential rules and the general regulatory framework regarding participations, thus ensuring legal independence. Both the bank and the insurance supervisory authorities control the operation.

Cross-participations. Similarly, with the exception of Belgium, all EC member states authorize direct participation of a bank in an insurance company, though specific limits and requirements may be imposed in order to avoid concentration of power and distortions in competition. The EC Second Banking Directive limits shareholding participation of a bank in a nonfinancial enterprise to 15 percent of own funds, but it does not impose any limit on such participation in an insurance company.

Direct participation of an insurance company in a bank is also allowed, but some member states (France, Germany, Greece, the Netherlands, and Portugal) apply stricter rules and limits because of the role banks play in the payment systems of a country, and in order to ensure the sound financial position of insurance companies and, hence, protect the policyholders. For instance, in Belgium and Germany, the authorities regulate insurance companies' participations in banks under the criteria for the amounts of incorporating insurance companies' technical reserves, while in the United Kingdom an insurance company's assets must be held in a certain form. The situation in the EC, and in Europe in general, is to be contrasted with that in the United States, where such operations are strictly limited, and in Japan, where they are prohibited.

Bank–insurance conglomerates. Cross-participations and establishment of subsidiaries have given rise to the formation of bank–insurance conglomerates. This is one of the most striking features of recent trends in European financial markets, while in the United States and Japan,

where banks' domestic activities are more strictly circumscribed, the bank–securities firm or group is predominant. Even without ownership linkages, the two components can be brought together under a holding company with central management.

The regulations of virtually all EC countries permit the formation of such conglomerates. Economies of scale and of scope are the main advantages, while the risks include tied-in sales, dominant positions through excessive concentration, internal credits avoiding prudential rules, profits transfer, and so on. This is why some countries impose limits on different aspects of inter-sector activities. For instance, Germany, Denmark, and the United Kingdom limit internal credits.

At the EC level, the question of ownership linkages has been discussed since 1985 under the general heading of "financial conglomerates." The most important issue appears to be that of cooperation of the supervisory authorities. In a draft directive on the consolidation of accounts of insurance companies, close cooperation among competent supervisory authorities is required if a bank or a holding company controls a subsidiary insurance company.

Conclusion

Traditionally fragmented and protected from external and domestic competition, the European insurance markets are currently undergoing important structural and regulatory changes. Market forces are playing a role, as shown in the convergence of insurance with other sectors, especially the banks, at the product, distribution, and institution levels, but the main drive is the EC financial integration plan for the areas of banking, investment, and insurance, and the single European market in general, which has in turn accelerated the phenomenon of convergence.

As a result, 1992-induced strategic operations are taking place at a vigorous pace, leading to the formation of bank–insurance conglomerates by way of subsidiaries, participations, and distribution alliances. The balance between the advantages and risks is not yet clear. But the need for cooperation of supervisory authorities at both the national and international levels is evident.

References

"British insurance companies: Light at the end of their losses?" *The Economist*, February 9, 1991, p. 88.

de Lecea, Antonio. 1991. "The Community Insurance Industry on the Eve of the Single Insurance Market." Working Document, EC Commission, Brussels.

Finsinger, Jorg. 1990. "European Market Integration and the European Insurance Industry." Research Report, Centre for European Policy Studies, Brussels.

Price Waterhouse. 1988. "The Cost of Non-Europe in Financial Services." EC Commission, Brussels.

Thomas, Gerassimos. 1991. "EC Banking: An Overview of Recent Developments." Internal Paper II/192/91, EC Commission, Brussels.

Vittas, Dimitri and Michael Scully. 1990. "Overview of Contractual Savings Institutions." Research Paper, World Bank, Washington, D.C.

Main EC Insurance Directives
(OJ = Official Journal of the European Communities)

Reinsurance	:	64/225/EEC, OJ L 56 of 4. 4.1964
Non-life insurance	:	73/239/EEC, OJ L 238 of 16. 8.1973 88/357/EEC, OJ L 172 of 4. 7.1988
Life insurance	:	79/239/EEC, OJ L 228 of 16. 8.1979 90/619/EEC, OJ L 330 of 29.11.1990

Discussion

*Henry G. Parker, III**

Foreign investment in the United States exceeds American investment overseas by much more than previously was thought. The U.S. Department of Commerce estimates the shortfall at a minimum of $281 billion and possibly as high as $464 billion in 1989, the latest year for which such data are available. This investment shortfall occurs as well with regard to the U.S. and overseas insurance industries.

What is the significance of these numbers? Some will say they simply prove that the United States is a good place to invest and that the international capital markets are doing their proper job by sending money here. Others will argue that the United States is no longer competitive in world markets and we are rapidly mortgaging our future to foreigners.

On which side falleth the insurance industry? And does the structure of insurance industries abroad affect this growing imbalance?

In the discussion that follows, the reader will quickly detect a personal bias. Speaking objectively, however, it is clear that the structure of our industry overseas is having an increasingly profound effect here at home.

The World Market for Insurance

When last measured (for the year 1987), U.S. insurance industry direct overseas investment totalled some $11 billion. Now that is a small but measurable 3 percent of total U.S. overseas investment. Return on

*Senior Vice President and Managing Director, Chubb & Son Inc.

that investment was then 16.4 percent—about at the average of all industries—but climbing.[1]

The U.S. players are regrettably few. When Chubb first began its own international expansion in the late 1950s, it had a number of U.S. competitors—as many as 30 or 35. Chubb now counts itself one of only a handful of U.S. property–casualty insurers with a global underwriting and servicing presence.

In my judgment this condition is patently absurd. First of all, world premium volume today exceeds $1 trillion and real premium growth is several times that of world gross national product growth. The U.S. market share of world premium volume declined from 43 percent to 37 percent in the two-year period ended in 1988. One-half of that decline was the soft dollar, the other half was very real. And by not working overseas, U.S. insurers and brokers intentionally deny themselves access to 63 percent of the marketplace. That 63 percent enjoys a growth rate far exceeding its 37 percent counterpart in the United States, and it enjoys an insurance density (premiums per capita) only one-third of the U.S. density.

What is wrong? One of the answers could be the American insurers' domestic mind set, the fact that pressure to boost quarterly earnings per share deprives U.S. executives of the longer-term vision needed to run an international operation. Clearly, another reason could be the failure to recognize that the U.S. premium pond is shrinking as a percentage of the world market.

If some U.S. insurers are shortsighted, they are not as a class myopic. They do not fear competition, nor do they lack resources. The U.S. market is the world's largest. It is wide open and competitive. But protectionism is still a major factor in many countries. Consider, for example, that 26 countries today, all outside the Communist bloc, deny a license to operate to any foreign insurance company. India, the world's largest democracy, is a good example. In addition, approximately 30 countries mandate that all, or a portion, of ceded reinsurance be placed with a state-owned or controlled reinsurance monopoly. What is so bad about that? The government, using its monopoly, tends to set the rates, allowing for little price or form competition. And the monopoly dissuades local companies from acquiring and utilizing the latest insurance technologies developed in the more advanced markets. I might add that, at worst, several of these government reinsurers are bankrupt.

But is the playing field becoming more level so that U.S. insurers can expect to have an easier time overseas in the future? Emphatically—

---

[1] Data taken from U.S. Bureau of Economic Analysis, *Survey of Current Business*, August 1988.

"Yes!" First, a few major U.S. international insurers, including Chubb, have consistently found ways to offer most of their products worldwide to the U.S. exporter and overseas investor, in spite of regulatory restrictions. And second, help has become available from the U.S. federal government.

The U.S. insurance market is now responding to issues ranging from nationalization and localization in developing nations, to licensing, taxation, and market access in the industrial and industrializing countries. Our federal government has responded to barriers to trade in services by enacting policies addressing the problem. Taiwan is an example. Did you know that no United States insurance company could insure Taiwanese persons or corporations as recently as four years ago? Now more than a dozen U.S. companies are in Taiwan. Another example is Korea. Under the August 1986 agreement settling our section 301 action under the Trade Act of 1974, guidelines for licensing U.S. insurers in Korea were established, with follow-up mechanisms.

Longer term, the initiative that promises the greatest hope for liberalization in the services industries, including insurance, is the inclusion of services and insurance in the Uruguay round of the General Agreement on Tariffs and Trade (GATT) negotiations. These initiatives were launched four years ago, and until that point GATT had never negotiated services or insurance. Last December, GATT stumbled over agricultural disputes, and the negotiations stopped. Talks started again in February and if successful, the talks will make it possible to look to a future where discriminatory regulations in many markets will be reduced or eliminated. The vote in the Senate and House committees recently supporting extension of "fast track" negotiating authority for the President bodes well for a successful GATT conclusion.

Insurance industry structure abroad is changing rapidly—and nowhere more successfully than in the European Community. Sotirios Kollias has described this brilliantly in his overview of the structure and regulation of insurance markets in Europe.

The completion of the European internal market in insurance is a priority objective of the EC Commission and, if approved, will be accomplished by adoption of the Third Life and the Third Non-Life Insurance Directives. The proposal for the Third Non-Life Directive was approved by the Commission on July 18, 1990 and transmitted to the Council. Regarding life insurance, the second stage was just reached last November in the second directive, which governs freedom to provide life insurance services.

The general strategy for the third stage, as in nonlife insurance, will coordinate rules on the prudential and financial supervision of the business; provide mutual recognition, on the basis of harmonization at the Community level, of authorizations granted to insurance undertakings and of the prudential supervision systems of the different member

states; and grant a single authorization, valid in all member countries, with supervision of the entire business of the entity in all 12 countries by that company's home member state (referred to as "home country control"). Such a strategy has already been used to complete the internal market in other financial services areas, and currently the insurance industry in Europe is behind the times in re-regulating to accomplish a single insurance market. The political will is there, in the form of the single European act.

Now we need adoption of the Third Life and Non-Life Directives, especially because all other Community financial products now benefit from a "European Passport," distorting competition to the detriment of those insurers, and especially life insurers, with whom other financial entities compete directly within the Community in the case of certain products. Clearly the "European Passport" for insurance will not occur by January 1, 1993. 1995 is the earliest time when some form of real market uniformity will be achieved. Reaching that stage may trigger insolvencies over the next several years, especially in Spain, Portugal, France, and Italy.

The European Community Market

When it happens, what will the insurance face of the European Community look like?

Competition

Freedom of establishment and free exchange of services will heighten competition. It has not been the custom, nor indeed the law, to shop commercial and industrial risks across borders except for the so-called "large" commercial and industrial risks. Now insurers will.

Prices

The Cecchini report (1988) demonstrated how startling were differences in insurance costs among and between the member countries. As an example, premium differences on identical fire and theft exposures covering premises and stock were found to range from 15 percent below the average in Luxembourg to 153 percent above the average in France, and a startling 245 percent above the average in Italy. If you relate those price differentials to the vision of an insurance shopping supermarket across Europe, you can begin to see the potential for wholesale price reductions.

Expenses

In principle, underwriting expense ratios will be reduced because some EC insurers will elect not to maintain expensive full-service offices in each country where the risks are located.

Product Innovation

Innovative new products will appear. Uniformity of insuring terms and conditions will appear, and this should benefit consumer, broker, and underwriter alike. Bulk buying of coverages will entice underwriters to "discount" as the result of newfound spread of risk, which did not exist before. The Green movement and growing European sensitivity to a cleaner environment have already produced regulations imposing manufacturer compliance. Environmental liability offers a new significant challenge—and opportunity—to insurers to whom European commercial and industrial firms will look for protection. One would hope that the experience of U.S. firms in areas such as product liability, asbestosis, and other environmental liability areas will be of value to European insurers.

Critical Mass

Anticipating the third directives, most of Europe's largest insurers have long since embarked on European strategic moves through acquisition or alliance. Merger and acquisition activity is way up. Geographically, Italian, German, and French companies have been especially active. The United Kingdom, with a mature but fragmented market imposing few restrictions against acquisition, is a prime target. Examples of other geographical trends would be the domination of the Belgian market by the French and of the Scandinavian market by the Swedish. Functionally, merger and acquisition activity will blend individual country underwriting and service facilities with distribution systems offered by banking members of the same financial conglomerate.

Alternative Distribution Methods

Brokers are the major distribution source in northern Europe, less so in southern Europe where exclusive or direct agents hold sway. But the lack of firewalls between financial services institutions in the European community means that even brokers and agents will not have free run. Existing bank and insurer combinations mean that insurance products, both life and property–casualty, are today being retailed over bank and other financial service counters. This trend will continue, across European borders. As such, the products focus on middle-income consumers and on credit-related standard products, capitalizing on the

bank's advantage of having advance knowledge of the transaction. But many other distribution methods can be found, including manufacturers, who in Europe are often also in the financial services business. Many own their own insurance companies. The workplace has become a major channel of distribution in Europe. In addition, direct response marketing is the latest fellow on the distribution block in Europe. Print and television media, credit cards, and other direct response marketing tools are aimed at the private-passenger auto market, life products, hospital indemnity, and the like.

Accounts Directive

The European Community is striving to reach agreement on a directive covering the accounting practices of insurance and reinsurance companies. It is a complex directive and a key part of liberalization of the industry in Europe. It will introduce a uniform structure, content, and evaluation method for annual and consolidated accounts. But disputes continue. One dispute concerns the treatment of reinsurance on companies' balance sheets and valuation rules. Some countries, led by the United Kingdom and the Netherlands, are pushing for the net approach, for liabilities that are shown net of reinsurance. Italy and France object. They want a gross approach, with gross amounts only to appear under liabilities, with the reinsurance figures being accounted as an asset.[2]

How Are the U.S. Markets Coping?

First of all, the major U.S. international underwriters are already in place. For Chubb, as an example, 1992 began in 1967, when we formed our Common Market insurance company headquartered in Brussels. Chubb is licensed or has full-service branches in all Common Market countries today, save one. AIG, CIGNA, Continental, Hartford, Travelers and Kemper are broadly established as, indeed, are a handful of other U.S. international insurers. The major U.S. brokers already have a strong presence in Europe.

---

[2] As I write this paper, Luxembourg, which currently holds the EC's presidency, wants all these problems resolved in a directive at the June 17, 1991 meeting of the Ministers. I hope this will happen. But if it does not, the single European passport for insurance will be delayed until it does.

Will 1992 Attract Many Future Players from the United States?

It is unlikely, with the notable exception of the major U.S. life companies, which are beginning to show renewed interest in overseas markets. But if 1991 plays out as its proponents anticipate, I believe that the current lack of interest on the part of U.S. property–casualty insurers to study their opportunities in a $4 trillion economy will prove a strategic mistake. The European Community is America's chief trading partner, accounting for $145 billion annually in combined imports and exports. This is more than either Canada or Japan. If we were to include the output of U.S.-owned companies in Europe and European-owned firms here (think of the reverse flow insurance potential), the size of the relationship is $1 trillion a year. And yet, in a past survey, the bulk of U.S. insurance executives surveyed indicated a lack of interest in European operations.

Is European Protectionism a Possibility?

A significant concern is that the leveling of prices, as the pricing war seeks its own natural level, will spur a new protectionism after 1992. It is not too early—EC protestations to the contrary notwithstanding—to foresee a Europe, faced with a bleak cycle of underwriting deficits brought on by transborder competition, reacting after 1992 by refusing entry to markets outside of Europe that might then wish to enter.

The introduction of a reciprocity standard in the 1989 second life insurance directive and into the 1989 banking directive has raised some eyebrows. The concern is that Europe may not continue to provide national treatment. Should the reciprocity provisions be adopted—and the Commission denies this will happen—some U.S. markets are concerned that the national insurance authorities in the European Community might use this provision to exclude or limit U.S. company positions in the hotly competitive market predicted for European insurance after 1992. This fear has some basis. In the GATT, the EC Commission negotiators argue that the U.S. system of state regulation is discriminatory toward foreign insurers. An EC reciprocity provision, were that to occur, would encourage a national insurance authority in Europe to use the Commission's GATT position on U.S. regulation as the basis to question, delay, or possibly even refuse authorization to a U.S. company.

A second matter relates to universal banking. Europe's financial institutions increasingly operate in a universal framework. In fact, at the end of 1989, obstacles to bank ownership of insurers (and vice versa) remained only in Denmark, Sweden, and the Netherlands. And these are about to disappear. We in the United States, on the other hand, have a Glass-Steagall Act, a Bank Holding Company Act, and other provi-

sions that keep financial activities separate. The EC Commission negotiators have raised Glass-Steagall provisions as a trade barrier in the GATT negotiations. Might our differences in internal regulatory practices, under a reciprocity standard, lead to questioning of the authorization of a U.S. insurer, using as justification the EC GATT negotiators' position? I am not concerned. I led the second U.S. insurance trade delegation to the Commission in Brussels two months ago, and the Commission verbally assured us that the Commission stands for national treatment, not reciprocity. But the threat itself seems to have had a chilling effect on U.S. interests in European insurance markets. Verbal assurances are not binding over time. Might the European Court have a view different from that of the Commission?

Now, How about the Pacific Rim?

It is a little-understood fact that the insurance markets of Asia today write well in excess of $200 billion a year in premiums. As such, they hold 23 percent of world premium income, driven by Japan, the world's second largest insurance market. In 1988, the latest year for which we have such statistics, the Asian markets grew collectively by 19.2 percent, by far the fastest growth rate in the world. The EC market grew 9.2 percent—and in that year, the U.S. market grew 2 percent. (Note that preliminary estimates for 1990 show annual U.S. premium growth back up to 6.9 percent.) Asia has hardly slowed down since 1988. While Europe 1992 makes all the headlines, the Pacific Basin exceeds the entire European Economic Community in premiums, and its current rate of premium growth is twice that of the EC. Not surprisingly, then, U.S. and other alien insurers are interested, indeed anxious, to become a presence in those markets, the more so because insurance density (premiums per head of population) runs from $4 per person per year in Indonesia and India, to $15 in Thailand, to $233 in Taiwan, to $392 in South Korea, to $2300 in Japan—all this compared with $1700 in the United States. And if you think Japan is tops, it is not. Switzerland is, with $2320 in premiums per Swiss. Yes, the expansion prospects are mind-boggling.

Effects on the U.S. Insurance Industry

Finally, we are witnessing in Europe, and in the Pacific, the development of enormous diversified financial services firms. Many of them already have capital and revenue bases that outstrip their U.S. counterparts. Their insatiable appetite for new asset deployment playgrounds has already brought many of them to our shores. Among those that could be mentioned for 1990 alone were the acquisition of the Home

Insurance Company by TVH Acquisition Corporation and the purchase of Fireman's Fund Insurance Company by a subsidiary of Allianz AG Holding. They followed the acquisition in 1989 of Maryland Casualty Company by Zurich Insurance Company, of General Casualty Company by Winterthur Swiss Insurance Company, and of Businessmen's Assurance Company of America by Assicurazioni Generali, Italy's largest insurer. Considering the strong financial services ties that most of these European insurers have at home, one must ask the question: Will the presence in the United States of entities of these foreign diversified financial firms heighten the integration process for financial services in the United States? I think the answer has to be "Yes." Indeed, non-U.S. companies, including domestic companies controlled by foreign entities, already are major participants in every aspect of the U.S. financial services market.

With respect to the banking sector, over 500 branches or agencies of foreign banks are in the United States. Over 80 U.S. banks are foreign-controlled, including some of the largest. Foreign banks from Europe and Australia with unlimited insurance and securities powers in their own countries are expanding operations in the United States. So far, and consistent with the U.S. policy of national treatment, their non-banking activities here are restricted to those permitted to U.S. banks. But how long will this continue? And even today, do their more diversified non-U.S. income streams give them a competitive advantage vis-à-vis U.S. banks? Today, multifaceted Canadian companies are running U.S.-based insurance, mutual fund, and investment banking operations, from manufacturing to wholesale and retail distribution. When the trade ministers of the United States, Canada, and Mexico began negotiations on June 12, 1991 in Toronto, the Canadians made no secret of the fact that a further expansion of Canadian visitation rights into the U.S. financial services arena was high on the Canadian agenda.

In 1986, 143 insurance branches, subsidiaries, and agencies had been established in the United States by non-U.S. entities. Those companies, in that year, accounted for an estimated $33 billion in insurance sales or about 7 to 8 percent of the U.S. market. Today about 25 percent of the membership of the American Insurance Association is foreign insurance companies, and today foreign companies write about 10 percent of total U.S. primary property–casualty premiums. Though it would not appear so judging from the lack of interest on the part of the U.S. insurance community, insurance is among the most global of financial service activities. Inevitably, then, the structure of insurance industries abroad will affect the structure of our domestic insurance industry. Anything that contributes to a more rational distribution of the available resources of the insurance industry will be good for development on a world scale. And nothing would make so large a contribution to this end as the recognition and implementation, by governments and

by industry operators, of a nondiscriminatory, open-trade policy based on the principles of national treatment. In the meantime, somebody should compliment those insurance executives who embrace these global imperatives, and wake up the ones who do not.

References

Cecchini, Paolo. 1988. *The European Challenge: 1992.* Brookfield, VT: Gower Publishing Company.

U.S. Bureau of Economic Analysis. *Survey of Current Business.*

Discussion

*Steven S. Skalicky**

Sotirios Kollias has prepared a comprehensive paper outlining the structure and challenges facing the European insurance markets as 1992 approaches. Recent political and economic developments present the same issues to the world community.

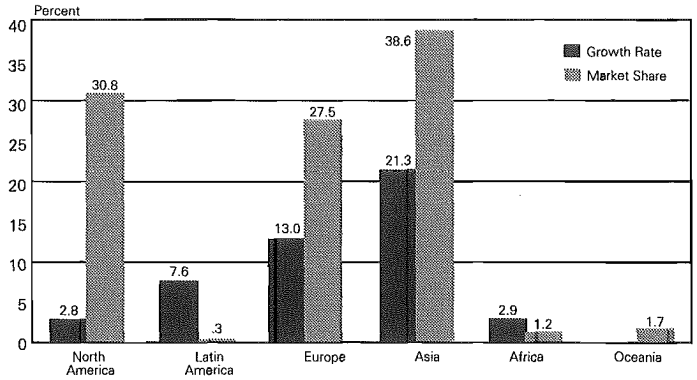
Barriers that have created highly fragmented national markets are under attack throughout the world. Japan is currently targeting 1993–94 to remove market segregation between life and non-life companies and the financial service industries. Eastern Europe, including the Soviet Union, is in the midst of dismantling state insurance monopolies, allowing foreign participation. China has permitted the formation of a second state-owned insurer to compete with the PICC, and Hong Kong is heading towards 1997. Latin American countries are exploring the reshaping of state-owned monopolies, and Mexico has recently expanded the allowed percentage of foreign ownership of insurance companies.

While some areas will move more slowly than others, the changing face of the global insurance markets in the 1990s will present challenges and opportunities for the industry, the consumer, and the regulators (Figure 1). I would like to highlight the structure of insurers in the major growth markets aside from the European Community, and briefly point out some issues that relate to regulation and solvency and the outlook for the world's insurers.

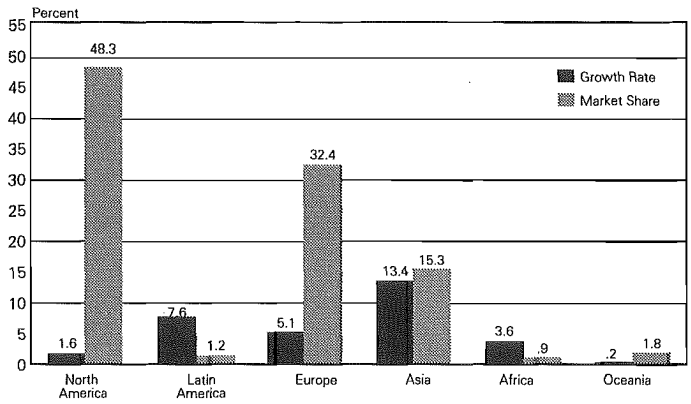
*Assistant Vice President and Deputy Comptroller, American International Group, Inc.

Figure 1

1988 Life Growth Rate & Market Share



1988 Non-Life Growth Rate & Market Share



Source: SIGMA World Insurance 1988

Asia

Asia has the potential to be the fastest-growing market with the most volume in the 1990s. With a 27.5 percent share of the total world insurance market for 1988, Asia is the third largest segment following North America's 39 percent and Europe's 30 percent. Asia's real growth rate of 19.2 percent far outpaced Europe's rate of 8.3 percent and North America's 2.1 percent. Japan is the dominant market in Asia, representing 24 percent of the world market share, and as a country it ranks first

Table 1
The World's Largest Insurers
A. The World's 10 Largest Stock Insurers, Ranked by Premium Volume, 1989
Millions of U.S. Dollars

Company/Country	Premium Income			Assets	Market Value
	Total	Life	Non-Life		
Allstate/U.S. (Parent: Sears, Roebuck)	$14,345	$1,056	$13,289	$34,010	$11,533
Aetna Life & Casualty/U.S.	13,311	2,538	10,773	87,099	5,669
American International Group/U.S.	11,524	2,995	8,529	46,143	12,358
CIGNA/U.S.	11,494	1,494	10,000	57,779	3,676
Zurich Insurance/ Switzerland	9,592	2,311	7,281	37,191	5,566
Prudential/U.K.	9,394	7,702	1,692	63,138	8,079
UAP-Union des Assurance/France	9,204	4,710	4,494	45,835	7,457
Allianz Group/Germany	8,494	3,681	4,813	54,169	28,454
Travelers/U.S.	7,793	3,203	4,590	56,563	2,814
Swiss RE/Switzerland	7,658	1,343	6,315	23,493	3,599

B. The World's 10 Largest Mutuals, Ranked by Premium Volume, 1989
Millions of U.S. Dollars

Company/Country	Premium Income	Total Assets	Surplus
Nippon Life/Japan	$36,526	$161,743	$ 5,421
DAI-ICHI Mutual/Japan	26,404	112,427	3,716
Prudential/U.S.	25,094	163,967	4,780
Sumitomo Life/Japan	24,271	95,952	2,973
Zenkyoren/Japan	23,319	123,268	1,940
State Farm Mutual/U.S.	23,254	57,155	18,028
Meiji Mutual/Japan	16,491	62,161	1,980
Metropolitan Life/U.S.	15,193	98,740	3,787
Asahi Mutual/Japan	12,460	51,570	1,852
Mitsui Mutual Life/Japan	10,390	39,484	1,322

Source: A. Ourusoff in *Financial World*, September 4, 1990. 1989 data. State Farm data for Surplus taken from *The Wall Street Journal*, September 21, 1990.

in life business, with 35 percent of world premiums, and second in non-life, with 13 percent of world premiums.

Japan is characterized by a relatively small number of companies, fewer than two hundred, compared to the thousands in the United States and Europe, with the major companies comprising the bulk of the market. Life premiums in Japan amounted to $214 billion in 1988 and non-life business amounted to approximately $70 billion, with 37 percent of the business allocated to a savings element, which is unusual

compared to the rest of the world. The top 15 companies represent 95 percent of the market, with foreign companies representing 3 percent of the total non-life market.

Companies are organized as mutuals or stock companies with a segregation of life and non-life business. Japanese mutual life companies comprise the majority of the top 10 mutual insurance companies in the world (Table 1). Business is conducted primarily through agents with affinity tie-ins to companies and associations.

The Ministry of Finance regulates the Japanese insurance industry and also controls banks and the securities industry. Premiums, investments, and surplus requirements are strictly supervised. Companies are required to maintain assets locally equal to technical reserves, and certain types of assets, such as equities and real estate, are restricted. No solvency fund is maintained for the benefit of policyholders.

Current proposals are directed at freeing the distinction between life and non-life business and banking and securities companies. Reforms are also directed at easing restrictions on the composition of assets, including real estate, equities, and foreign currencies.

Recent deregulation of premium rates to a range rather than one fixed rate resulted in all companies choosing the lowest premium rate. Allowing banks to pay a higher interest rate created a net outflow from the insurance industry. Nippon Life is as big as the entire Japanese non-life industry. Japanese banks rank as the largest companies in the world, with the top five being three times as large as Nippon Life (Table 2). Given the propensity of the Japanese consumer to save, and the savings feature inherent in most insurance products, deregulation will likely increase competition for the consumer's savings, thus reducing margins.

The market is technically open to foreign competition; however, with licensing requirements taking up to two years and the affinity relationships of agents, it is a difficult market to enter. Recently some movement to speed up approval of foreign companies has occurred as a result of political pressure from other nations.

The Japanese property–casualty insurance market has high expense ratios, approximately 40 percent, with loss ratios of approximately 50 percent, low compared to the United States and Europe. Litigation is minimal; however, companies are becoming wary of overseas liability. Expansion to overseas markets has generally taken the form of participation retaining local management, or branch office operations to service Japanese business operations in local markets. The one exception was the acquisition of Iowa National Mutual Insurance Company by Toyota Motor Corporation with the intent of insuring autos produced in the United States.

Its size and growth potential obviously make Japan a major market for companies that hope to be global insurers. And the resources of

Table 2
The 10 Largest Companies in the World, Ranked by Assets, 1990

Company	Country	Assets (Millions of U.S. Dollars)
Dai-Ichi Kangyo Bank Ltd.	Japan	$472,223
Sumitomo Bank Ltd.	Japan	470,699
Fuji Bank Ltd.	Japan	469,086
Sanwa Bank Ltd.	Japan	450,180
Mitsubishi Bank Ltd.	Japan	410,815
Industrial Bank of Japan Ltd.	Japan	331,326
Tokai Bank Ltd.	Japan	285,843
Barclays PLC	United Kingdom	241,210
Mitsui Taiyo Kobe Bank Ltd.	Japan	237,981
Bank of Tokyo Ltd.	Japan	234,771

Source: *Forbes*, April 29, 1991, p. 165.

Japanese companies could make them global insurers, if their strategy changes.

Life and non-life are generally segregated in Asian countries and distribution systems are primarily agency with rates set by tariff, although compliance varies. Supervision and regulation are fairly strict and foreign participation is subject to restrictions. Aside from South Korea, which represents 1.4 percent of the total and 2.2 percent of life insurance, no other country in Asia approaches 1 percent of world premiums. However, the growth rates in China, the Philippines, Singapore, South Korea, Taiwan, and Thailand are all in double digits, ranging from 10 percent to 23 percent. Life insurance growth has been higher than non-life.

The attraction of these markets is not the current premium but rather the potential that will be generated as the consumer's per capita income increases and industrial production expands. China's insurance density is currently 2.5. If China were to approximate Japan's 2,320, the market would be twice the size of current total world premiums.

Latin America

The insurance market in Latin America represents less than 1 percent of the world's total and has been characterized by state monopolies, restricted foreign entry, and a limited number of companies in each country. The growth potential, however, is significant as economic growth and per capita income increase.

Perhaps the most optimism centers around Mexico, which will

benefit if the North American Free Trade Agreement (NAFTA) takes effect in 1993. Joining Canada, the United States, and Mexico, the aggregate GNP and population of this free trade zone would exceed those of the European Community. If successful, NAFTA could prompt other Latin American countries to speed free market reforms currently underway.

The insurance industry grew by 15 percent in Mexico in 1989. Forty-three companies were in operation; 37 were privately owned, two were mutuals, two were reinsurers and two were state-owned. Plans are underway to sell the state-owned companies to private investors. The allowable foreign ownership of companies was recently increased to 49 percent, resulting in four outside purchases. Seven companies dominate 80 percent of the market.

Since deregulation in 1989, the insurance market in Mexico has seen downward pressure on rates. Only one of the five largest companies reported a positive result in 1990. Distribution channels are mass marketing and agents. The General Directorate of Insurance and Securities regulates the industry and requires 35 percent of technical reserves to be deposited with the Central Bank.

Other countries in Latin America are also reviewing the easing of restrictions on insurance markets. Uruguay is considering a bill that would eliminate the national monopoly. Reforms are being debated in Peru, where the market is dominated by the state-owned insurance company. Venezuela anticipates changes to increase foreign equity in banks; insurance may follow. Colombia is undergoing reforms to change the restrictive tariff structure, required local reinsurance, and mandatory investments in government bonds. Chile and Bolivia already represent comparatively open markets with growth potential. Brazil and Argentina must overcome current problems with internal reinsurance monopolies before they can open to additional investment. Argentina may eliminate its reinsurance monopoly before year end. The potential for Latin America is similar to that for other emerging markets: growth.

Eastern Europe

Reforms underway in Eastern Europe are allowing foreign participation and ownership in markets that were previously state-owned monopolies. The 1988 world market share, including the Soviet Union, was approximately 3 percent. The Soviet Union represents almost 75 percent of the total, because of its size and population. As with other emerging markets, the attraction is growth potential.

Transition from state control, with its implications for premiums and for claims, will follow other political and economic changes. Changes will take time, varying by country as the economic transitions

take place. East Germany, Czechoslovakia, and Hungary are furthest along.

Distribution systems in Eastern Europe have largely been through banks and other outlets with little need for agents under monopolistic, required insurance. Premiums were fixed at low rates and claims were paid with state subsidies as needed. Claims were high, with no change in premium. These characteristics will have to change in a free market. One insurer has already depleted its start-up capital of $320 million as a result of losses in the auto liability sector in East Germany.

Insurance laws are in the process of being written to set up the structure, supervision, and foreign participation in the Eastern European insurance market. Solvency regulation faces problems with the old structure for state-owned monopolies; however, new entrants will be required to meet the regulations.

As the economies expand and per capita income rises, the potential for insurance markets will grow. Eastern Europe, and the Soviet Union in particular, obviously face more problems than the European Community or Asia.

Conclusion

Globalization of the insurance industry will present unprecedented challenges to the insurance companies, the consumers, and the regulators responsible for monitoring companies. Opportunities will exist for those companies that are able to take advantage of changes that present true economic benefits. Because of the difficulty of entry and enormous start-up costs for a new insurer in a market, the major thrust towards globalization will be mergers and acquisitions. This will favor the larger companies, which have the capitalization and resources to achieve market penetration. An analyst from a major brokerage firm has suggested that by the turn of the century it is possible that no more than 12 to 15 major global insurers will be in business. Size does offer advantages for efficiency of scale as well as the ability to absorb the costs necessary for expansion. Blindly pursuing acquisitions, however, also can lead to disaster. Acquisitions in emerging European markets are currently priced in the range of 20 to 30 times earnings, whereas U.S. companies averaged 10 in 1989.

Rate competition will benefit consumers through higher rates of return for life products and lower premiums for non-life coverage. The risk to the consumer, however, is that the promise to pay may not be kept. Relying on gains in real estate and securities to offset underwriting losses, or to meet unrealistic interest rate guarantees, eventually leads to problems in the industry. We are already seeing this in the United States, and Japan and Europe may follow. Malaysia recently took control

of an insurer to prevent insolvency. Allowing additional competition from banks and other institutions may only compound these issues. While financial companies have significant assets that could be used for acquisition entry into the insurance industry, such entry should be based on segregated capital, because of the additional risk undertaken.

The fact that insurance is a risk-taking business must not be forgotten. Determination of liability years after coverage makes the risk unique among financial service products. In the United States it is estimated that environmental liability cleanup will cost in excess of $40 billion, with the assignment of liability creating unparalleled litigation and costs. Anticipating the liability and costs was impossible when these products were originally priced.

Regulators will be faced with the challenge of dealing with companies that are involved in markets, products, and cultures that differ from those they have become accustomed to. Representative John D. Dingell has stated that "The regulatory system must anticipate and deal effectively with the activities of the pirates and dolts who inevitably will plague an attractive industry such as insurance, where customers hand over large sums of cash in return for a promise of future benefits."[1] While pirates must be dealt with individually, the dolts referred to were managers who pursued business with little understanding of the ultimate costs involved and the long-term impact. Regulators will have to monitor closely the international expansion of companies entering new markets, with increased competition narrowing margins and profits.

The changes taking place in the 1990s will present opportunities for companies able to adapt and take advantage of these new markets. They will also present challenges to the consumer and to the regulators, who must monitor the industry.

References

Conning & Company. 1990. *New Developments in Mergers and Acquisitions, Life and Health, Property and Casualty Underwriters, Insurance Brokers.* June.

Coopers & Lybrand. 1988. *International Insurance Industry Guide, Fourth Edition.* London: Lloyd's of London Press Ltd.

Finquelli, Michael A. 1990. *European Integration: Banks and Insurance Companies Square Off in a Distribution War.* New York: Salomon Brothers, Inc, June.

———. 1991. *Insurance In Eastern Europe.* New York: Salomon Brothers, Inc, May.

Insurance International. 1991. *Mexico and the NAFTA.* London: Lloyd's of London Press Ltd. March.

KPMG Peat Marwick. 1988. *Insurance Company Financial Reporting Worldwide.*

[1] Transmittal letter with his report *Failed Promises* (U.S. Congress, House of Representatives 1990).

Picoult, Myron. 1991. "Insurance Industry, The Foreign Exposure of the Major U.S. Insurers." Oppenheimer & Company, Inc., *Industry Review*. February.

Smith, Douglas. 1991. *Business Insurance Looking to the East*. Crain Communications, Inc. January 7.

Swiss Reinsurance Company. 1990. *World Insurance 1988*. *SIGMA*, Swiss Reinsurance Company, Economic Studies Section. April.

U.S. Congress, House of Representatives, Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce. 1990. *Failed Promises*. 101st Congress 2nd Session, February. Washington, D.C.: Government Printing Office.

Public Policy and Life Insurance

*Gerard M. Brannon**

Life insurance is one of the most heavily regulated businesses in the United States economy. Because of the industry's importance to American families, to our economy, and to our tax system, policy decisions that affect life insurance products receive a great deal of scrutiny. That scrutiny is likely to increase in the wake of recent insolvencies. The purpose of this paper is to provide a framework for evaluating tax and regulatory policies in the life insurance market.

Life Insurance Products

Life insurance companies are in the business of providing risk coverage and investing the customer's savings. Traditionally, they offer insurance against three kinds of risk:

(1) Insurance against early death, which by analogy to insurance against fire should have been called death insurance, but in a masterstroke of salesmanship was called life insurance;
(2) Insurance against living too long, provided by life annuities; and
(3) Insurance against accidents and sickness, through accident and health insurance or disability insurance.

*Consultant, American Council of Life Insurance. The author is grateful for the assistance of Kathleen Utgoff, economist at Groom and Nordberg, for her many helpful discussions and for her analysis of trends in the life insurance industry. The author would also like to acknowledge the advice of Kenneth M. Wright, Richard Minck, and Stephen Kraus.

The life insurance business also provides products that allow for significant savings on a tax-favored basis. Savings products and risk coverage are not necessarily joint products. Of the three types of risk coverage offered, only the annuity requires the accumulation of significant savings. An annuity is an arrangement by which a group of people pool their savings and the survivors draw on the pool.

A short-term insurance policy against death, called term life insurance, does not differ significantly from fire or casualty insurance and involves a very small amount of prepayment, or saving. To avoid excessive administrative expenses in these kinds of policies, it is efficient to sell a policy covering a period of a year or two.

By contrast, permanent or whole life insurance policies involve more prepayment of premiums than term insurance, so the policy has an identifiable cash value; it is a store of individual saving. Saving and insurance motives can also be distinguished in the annuity field. Annuities certain are pure savings products with a fixed payment period; life annuities paid until death are insurance; and life annuities with a minimum guaranteed payment period fall between pure savings and insurance. Accident and health insurance can be handled like any other line of casualty insurance, but a special noncancellable form involves a savings accumulation similar to the savings element in ordinary life.

Joint Savings and Life Insurance Policies

Rationalizations for combining life insurance and savings have always existed. For example, one says that permanent life insurance is necessary to protect the customer against becoming uninsurable. But term policies can be guaranteed renewable if the company adds enough to the premium to cover the risk. And permanent life insurance is not needed to protect the customer from the high cost of term insurance at older ages. The customer pays this cost under a permanent life policy as well, but in ways that are not so apparent.

Some other rationalizations are not so easily dismissed (Belth 1967b). The "Christmas Club" reason for combining a savings product with a life insurance product is the discipline of regular payment. The "retirement" rationale says that when the need for life insurance decreases after retirement, the cash value of the joint savings and life insurance product can be used to help finance retirement.

Probably the most important reason for combining savings and life insurance is that life insurance savings are taxed less heavily than many other kinds of savings. Life insurance savings receive the treatment that all savings would receive under a consumption tax. Two other forms of savings that receive favorable tax treatment are pension savings and the savings in the form of home ownership. Pension plans are slightly less

Table 1
Distribution of Life Insurance Company Reserves
Percent

	1955	1975	1989
Life Insurance	72.4	63.3	29.9
Health Insurance	.8	2.7	2.8
Pension and Annuity	26.8	34.1	67.3

Source: American Council of Life Insurance (1990).

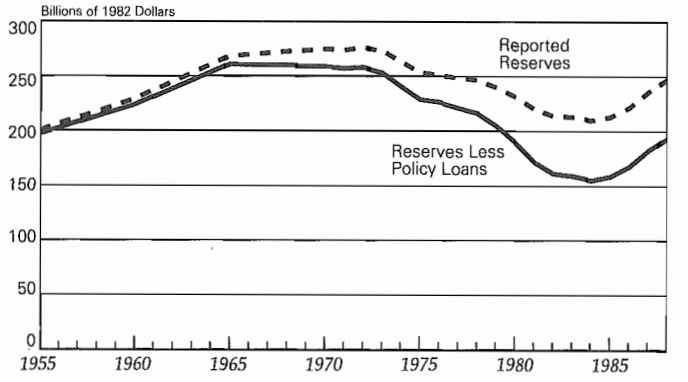
tax-favored than life insurance because pensions are taxed after a certain age whether or not the funds are saved. Home ownership is more favored than life insurance savings; no tax is paid on the income in kind produced by a home, and mortgage interest payments and real estate taxes are deductible. Most other forms of savings, including bank and thrift deposits, are taxed on an income basis; namely, interest earned is taxed annually.

But the income tax system does not provide the only, or even the most important, tax subsidy to financial institutions. Federal deposit insurance provides a substantial subsidy to banks and an even larger subsidy to thrifts. The Securities and Exchange Commission (1991) recently completed a study of FDIC insurance and concluded that the value of deposit insurance is three to five times greater than the premium collected. During the 1980s, the annual value of this subsidy was $20.3 billion. By comparison, the value of the tax subsidy to life insurance (which is called a tax expenditure) was measured at slightly less than $8 billion in the 1992 federal budget (OMB 1991, Part III, p. 17). Total bank deposits are far greater than the liabilities of insurance companies, however, and the relative subsidy is similar per dollar of liabilities. The SEC study concluded that the subsidy to banks amounts to about 100 basis points, a 16 percent subsidy when interest rates are at 6 percent. By comparison, since the average marginal tax rate of policyholders is in the neighborhood of 20 percent and some of the inside buildup in life insurance is taxed when policies are surrendered, the tax subsidy to life insurance is under 20 percent.

Historical Business Patterns

Table 1 shows how the life insurance company business has shifted over time, away from traditional life policies and into the annuity business, which is largely group annuities for pension plans. In 1955, nearly three-quarters of all the reserves held by life insurance companies were life insurance reserves, with slightly more than one-quarter in

Figure 1 *Real Value of Life Insurance Reserves*



Source: *Life Insurance Fact Book Update* and *Economic Report of the President 1990.*

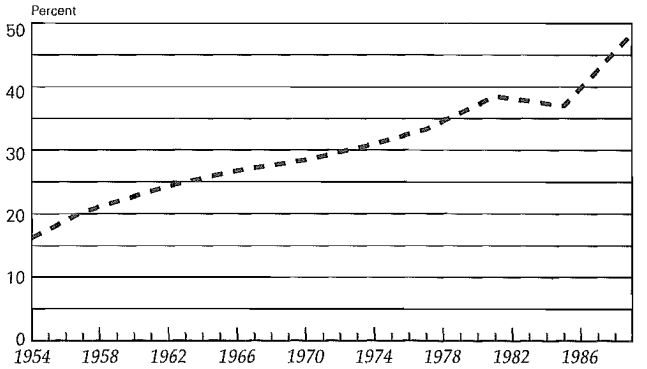
pension and annuity reserves. By 1989, the proportions were nearly reversed. Much of this change is a result of the enormous growth in the pension business but a good deal of the change can be attributed to stagnation in the life business. Figure 1 shows the real value of life reserves since 1955. Adjusted for loans to policyholders, which do not decrease reported reserves, real (1982 dollars) life insurance reserves were lower in 1988 than in 1955. Even without adjustments for policy loans, real life reserves are lower now than they were throughout most of the 1960s and 1970s. Both measures of reserves have grown in real terms since the mid 1980s, however.

One reason for the anemic pattern in life reserves is that households have moved away from life insurance products with a savings component (a positive cash value). Term insurance, which requires fewer reserves than permanent life, has become more popular. Figure 2 shows the distribution of insurance in force between term insurance and permanent life insurance since 1954. While term insurance accounted for only 16 percent of all insurance in 1954, it represented almost one-half the amount of insurance in force by 1989. It appears that even though life insurance can contain both savings and insurance features, consumers are increasingly separating their purchases of these products. Demand for insurance is increasing. Life insurance in force as a percent of personal income has increased fairly steadily since World War II, from 102.7 percent of personal income in 1950 to 196.3 percent in 1989.

This pattern in life reserves is apparent in household balance sheets

Figure 2

Term Insurance as a Percent of Total Amount of Life Insurance in Force

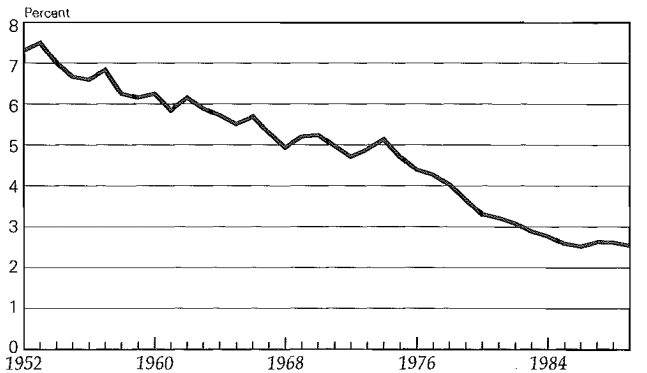


Source: *Life Insurance Fact Book.*

as well. Life insurance assets as a percent of household financial assets have declined from 7.3 percent of household assets in 1952 to 2.5 percent in 1989 (Figure 3). During that period households shifted their financial assets away from savings in life insurance products and direct owner-

Figure 3

Life Insurance Reserves as a Percent of Household[a] Financial Assets



[a]Households, Personal Trusts and Nonprofit Organizations.
Source: Federal Reserve System, *Household Net Worth, December 1990.*

ship of corporate equities to two other tax-preferred savings vehicles—homes and pensions (Board of Governors of the Federal Reserve System 1990). The share of household assets in mutual funds also increased beginning in the late 1970s with the rise in money market mutual funds. The growth of mutual fund savings is particularly noteworthy because this product offers neither the guarantees nor the tax advantages (for non-pension funds) that are available to other forms of savings. In 1989, total assets of mutual funds ($1 trillion) rivaled the assets of life insurance companies ($1.3 trillion); and they amounted to one-half the assets of commercial banks ($2.1 trillion) (Investment Company Institute 1990).

Life Insurance Regulation

From an early period in the United States, the sale of life insurance has been regarded as a matter of unique governmental concern. In order to make certain that funds are available to cover claims, insurance companies are required to set aside reserves. Both the calculation and the investment of these reserves are regulated by state law. The regulation of actuarial reserve methods goes back to the work of Elizur Wright in Massachusetts in the 1860s and the general pattern of the other state regulations goes back to the findings of the Armstrong Commission in New York in 1906.

The topic, public policy and life insurance, raises questions about whether and how government should intervene in the life insurance market. This discussion will begin by examining some of the arguments used to justify government intervention. It will also refer to the politics of regulation, recognizing the considerable literature that emphasizes the "capture" of regulating institutions by those regulated.[1]

Special Problems in Life Insurance Markets

Adverse selection. Even though the private insurance market is a market for dealing with risk, insurance companies profit by avoiding risks. Successful insurance is based on the correct pricing and pooling of risk. To the extent that companies can estimate different probabilities for different classes of customers, it is profitable to introduce premium differentials. Where they are prohibited, companies with more high-risk customers will be less solvent, creating strong pressures to avoid high-risk customers. Despite these economic forces, premium differentials are sometimes viewed as unacceptable discrimination.

[1] For a survey and some testing of alternative theories, see Peltzman (1989). And Meier (1988) uses this approach to analyze life insurance regulation.

Moral hazard. Many forms of insurance tend to inflate the cost of the insured event because they weaken the incentive to avoid these events. Moral hazard is a more serious problem in the health insurance market than in life insurance. Widespread misuse of health insurance increases the use of medical services, drives up prices, and aggravates the problems of the uninsured. Standard contract features such as co-payments and deductibles are used to reduce moral hazard. In addition, services most susceptible to moral hazard, such as cosmetic surgery and psychiatry, are sometimes excluded from coverage. Providers of these excluded services have successfully lobbied against coverage restrictions in some states. The end result has been an increase in the price of health insurance that has reduced coverage. The percentage of all workers covered by a group health plan declined from 62 percent in 1980 to 57 percent in 1987.

Consumer information. Still another feature of the life insurance market often used to justify regulation has to do with the complexity of many life insurance products, which makes it difficult for consumers to evaluate products rationally. Insurance pricing is so complex that it gave birth to a new branch of mathematics. Some aids are available to consumers, such as the work of Belth, the Nader organization, and Consumer Union.[2] Some evidence shows that consumers do evaluate policies rationally and that poorly priced policies do not survive in the marketplace. Winter (1981) found very little variation in the prices of insurance policies when all aspects of the policy are taken into account.

The Armstrong Commission (1906) made some early efforts to standardize contract forms but substantial variety still remains. A long-standing regulatory effort has been to simplify contract language. The growing field of private insurance for nursing home costs is particularly beset with the problems of defining the insurable event and dealing with customer misperceptions about coverage under the policies.

Rationality of provision for death. Life insurance companies commonly allege that consumers have an irrational reluctance to think about death. The high selling expenses associated with life insurance policies are often justified on the grounds that individual agents are needed to assist customers in overcoming irrational avoidance behavior. The fact that life insurance salespeople rate fairly high in occupational ranking suggests customers think they get a valuable educational service from life insurance agents.

The contention that consumers buy too little life insurance is supported by economic analyses. Auerbach and Kotlikoff (1989) exam-

[2] Interestingly, Belth, a pioneer in the field of educating consumers about life insurance, felt impelled to resign from a Consumer Union panel on life insurance and publish a technical journal article explaining his differences (Belth 1967a).

ined life insurance purchases using three Surveys of Consumer Finances. The data provided information on some 1,200 families with both spouses present and one or two spouses working. The data included information on earnings, wealth, and pension plan entitlement, including Social Security and life insurance coverage. Assuming that actuarially fair annuities were available, the authors calculated for each family the lifetime consumption that could be afforded while both earners were alive and the lifetime consumption that could be afforded if one earner died.

The authors made a conservative assumption that a surviving spouse would need 50 percent of the previous affordable consumption to maintain the accustomed living scale if one spouse died; if a family had made provisions for less than 70 percent of this, the family was defined to be underinsured. Auerbach and Kotlikoff conclude that just over 30 percent of families are inadequately insured; for lower-income households the underinsured fraction is almost one-half. From this they conclude that the high incidence of poverty among widows is not merely an extension of lifetime poverty but a matter of insufficient insurance. A similar conclusion was reached by Myers, Burkhauser and Holden (1986).

Government Policies toward Life Insurance Companies

In the light of these special market features, this paper addresses four broad types of government policy toward life insurance companies: reserve regulation, investment restrictions, solvency guarantees and other consumer protections, and purchase inducements. To a large extent, the policies are interrelated; the implications of these interrelationships are discussed in the final section.

Reserve regulation. State insurance regulation requires that life companies be solvent after deliberate overstatement of liabilities. It is fairly obvious that, looking backward, a state of insolvency could be attributed to having charged too little for the service provided and/or having dissipated the receipts before rendering the service. Reserve regulation addresses both problems by requiring that life companies have at all times enough book assets to cover future death benefits on all policies, assuming that mortality is less favorable than the most likely level and that interest earnings on assets are lower than the most likely level. In addition, expenses of acquiring the business (commissions) must be deducted immediately rather than amortized over the life of the policy.

Because of the conservative position that states have taken with respect to acquisition costs, a new company that rapidly expands its life insurance business will have a poor balance sheet. It is standard practice within the industry for a growing company with a critically poor balance sheet situation to seek "surplus relief" through reinsurance. Such a

company has a group of assets—life insurance policies that it has issued—worth more than a state insurance commission will recognize. The issuing company can circumvent conservative accounting rules by selling policies to a reinsurer.

In the 1960s and 1970s, reserves for life insurance companies as a whole were conservative and capital was underestimated. One clear indication of this was an excess of market value over book value during this period (Belth 1967b). Those were decades of steadily increasing interest rates, resulting in reserve interest rates chronically below market rates. However, it appears that book and market rates in the late 1980s were much closer for life insurance companies (Kramer 1990, p. 27). Required reserves appear to be more realistic as well.

What about the quantitative aspect of reserve regulation? Do reserves need to be so large? Do the underlying assumptions have to be conservative? Most countries have such rules but they vary in specificity from the mere requirement of actuarial certification in the United Kingdom to the highly specific rules in Germany.[3] Despite the variation in reserve regulation, little difference has been found in the experience of insolvencies (Finsinger and Pauly 1986).

In 1977, Canada terminated its previous strict reserve requirements in favor of the British system of allowing companies some flexibility, subject to approval by an independent actuarial audit. Mathewson and Winter (1986) have studied the movement of life insurance prices in Canada in relation to interest rates both before and after reserve requirements were deregulated. Although it is not clear just how much conservative reserve requirements protected consumers, the authors concluded that the rigid reserve rules did tend to result in higher prices for life insurance. The results, however, were barely significant.

Investment restrictions. These restrictions limit life insurance companies to relatively risk-free investments and presumably make it unnecessary for the consumer to evaluate the riskiness of the company's investment portfolio. Sometimes they also preclude financial innovations such as junk bonds. Even before the advent of junk bonds, however, investment restrictions created problems because a "conservative" investment policy does not protect policyholders against inflation risk or the solvency problems that can arise when interest rates increase with inflation and policyholders withdraw funds.

In recent years developments toward incorporating more risky investments into the insurance framework have emerged. One technique is the variable policy, in which the savings element is invested in a segregated set of equities with the value of the savings element

[3] For more information on the British and Canadian systems, see Sondergeld (1989) and Kimball (1969).

indexed to the value of the equities. This form has been very popular in the annuity field, especially for pension plans, but in the life field, separate account policies remain experimental. Another variant is the universal life form, where the savings element is clearly demarcated and the yield on savings can be linked to a specific market indicator, such as the T-bill rate. It seems eminently sensible that life insurance savings should have a range of possible investments, relying on financial markets to adjust the return to the risk. Returns and associated risks should be clearly demarcated so that the investors making the risk choice participate in resulting gains and losses.

The experience with sharply fluctuating interest rates in the past 30 years has led to the virtual disappearance of the old, nonparticipating policy under which the insurance carrier was insuring a minimum rate of return as well as against mortality. The two major interest-sensitive products are the participating policy—the typical mutual policy—and variants of the universal life policy sold by stock companies. The two reflect interest rate changes differently. The participating policy is compelled by regulation to spread interest earnings evenly over all policyholders, old and new. Under the universal life form, which clearly delineates the insurance and savings components of a policy, a cohort of new policyholders can be assured a current earning rate on the savings component; old policyholders experience current rates only as their old investments mature. In a period of rising interest rates the universal life form offers obvious advantages in attracting new policyholders, and many mutuals have formed stock subsidiaries to sell universal life in recent years.

Solvency guarantees. State regulators can intervene in the affairs of a nearly insolvent company and, if necessary, can impose levies on other life companies to cover the deficiencies of the insolvent company. These levies are sometimes credited against premium taxes so that, effectively, state funds are used for guarantees. From 1975 through 1989, the state guaranty fund system has resulted in assessments of $315 million for health insurance, $125 million for life insurance, and $124 millon for annuity contracts (ACLI Task Force 1990). Only $62 million of the Baldwin United losses were covered by state guaranty funds. The remaining losses were covered by advances of about $150 million from brokers (under threat of litigation) and $50 million from life insurance companies (in addition to guaranty fund assessments).

Some observers predict growing insolvencies in the future (Leary 1991), and the collapse of First Executive has caused some alarm. But solvency problems in the life business are clearly not in the same league as the solvency problems of banks and thrifts. Some insurers have a high percentage of junk bond holdings, but overall, bond default rates have remained low (Sutton 1991). Total life insurance insolvencies, including Baldwin, over the previous 15 years equaled only 1 percent of

company capital and surplus in 1989. On the basis of a detailed review of financial indicators, a study commissioned by the Insurance Information Institute (Kramer 1990) concludes that in the life insurance industry, "trends that raised risk levels earlier in the 1980s have reversed themselves by the end of the decade." Kramer also concludes that the capital position of the weakest life insurance companies is far stronger than the capital position of the weakest banks and that it is "analytically bankrupt" to compare thrifts and insurers.

Other consumer protections. A traditional area of consumer protection has been the standardizing of policy forms and language. This is a long-standing issue in life insurance but it is an emerging problem for long-term care insurance. Given the growing cost of Medicaid, which now pays for one-half of nursing home costs in the United States, the regulation of long-term care policies is an important public policy issue.

A well-designed long-term care policy appears economically feasible (Friedland 1990). The major problem is that the insurable event is not well defined because the medical indications for nursing home care are not clearly established. A number of insurance policies are available but much unhappiness exists with both the exact coverage and the level of consumer understanding. The lack of definition in long-term care insurance can work both ways, to harm particular customers or to endanger the solvency of the insurance company. Earl Pomeroy, past president of the National Association of Insurance Commissioners, claims that "some consumer abuses are so severe as to raise questions about the very viability of the product." (Consumer Union 1991.) Some insolvencies have even occurred because of long-term care liabilities. No real alternative to welfare will be available for most nursing home care until a fairly clear insurable event with a calculable probability has been defined for long-term care insurance.

Although premium rates are regulated in the health insurance business, most states do not regulate life insurance premiums, relying on reserve requirements to ensure adequate rates and competition to prevent excessive rates. In addition, states routinely regulate policy forms to ensure full disclosure.

Some regulations seem to be more in the interests of agents than policyholders. All states forbid "twisting," where, allegedly, the policyholder is encouraged through misleading information to switch policies. Price competition through rebates of commissions is also outlawed in most states.

A few states have passed laws prohibiting certain rate differentials such as those based on sex. These laws are unlikely to survive because of the distortions that they create, not the least of which is above-market rates for some groups. After Montana passed the first unisex insurance law in 1983, lawmakers were inundated with complaints from parents of daughters whose car insurance rates soared.

The Employer Retirement Income Security Act of 1974 (ERISA) is the major form of consumer protection in the pension business. The impact of ERISA falls mostly on employers rather than on financial intermediaries because the most restrictive pension regulations are those designed to make sure that pension tax benefits are distributed equally among workers in a firm. Employers have been forced to redesign their pension plans several times in the last decade because of these regulations (Utgoff 1990).

Pensions are also subject to minimum vesting, funding, and diversification rules under ERISA. In addition, ERISA established an insurance program for defined benefit pensions. The Pension Benefit Guaranty Corporation (PBGC), the federal agency that runs this guarantee program, has experienced claims far in excess of original projections and the agency has had solvency problems virtually since inception (Ippolito 1989).

As guarantors of pension annuities, the PBGC and state solvency funds are competitors. When a company purchases an irrevocable contract for an annuity to cover pension liabilities, those liabilities shift from PBGC coverage to coverage under a state guaranty fund.

This situation has raised a number of concerns, particularly in light of the pension annuities sold by First Executive. The workers covered by these annuities had no say in the selection of the insurer, while the companies that sponsored the pension plan gained because of the high interest rates that attracted customers to First Executive. The federal government is considering a standard that would prohibit the purchase of annuities from unacceptable insurers. The design of such a standard has proved difficult, however, given that First Executive subsidiaries were highly rated until recently. The insurance commission in California wants the PBGC to make up for any shortfall in First Executive pension annuities. It is clear, however, that such an action would be the equivalent of a federal guarantee of life insurance companies, a highly questionable move in light of the record of other federal guarantee programs.

Unisex pensions are required by law. After the 1983 Supreme Court decision in *Norris v. Arizona Commissioner,* monthly pension annuities could not reflect longevity differences between men and women. Sex-based actuarial tables for pensions are an illegal form of sex discrimination. Carlson and Lord (1986) describe the predictable problems that this ruling has created.

Purchase inducements. The assertion that life insurance is underpurchased can be used to justify purchase inducements, which can range from the social provision of life insurance to a subsidy for private purchases. Federal law contains several provisions that are designed to increase insurance coverage. The survivor benefit structure of Social Security is compulsory life insurance. In addition, pension plans are

required to provide survivor benefits for spouses of vested participants. The federal tax code is used to provide significant purchase subsidies as well. A subsidy that is restricted to employed individuals provides for an exclusion from income of employer-paid group term insurance up to $50,000 of coverage. All policyholders are entitled to the tax-free inside buildup that is provided for cash value insurance.

The life insurance industry uses the argument that consumers under-purchase life insurance in order to justify retaining the tax advantage for life insurance contained in the tax-free inside buildup, the interest on the reserve accumulation. But this tax advantage subsidizes savings, not insurance against the death of a breadwinner. If an individual buys term insurance and separately accumulates savings in a bank account or a mutual fund, the interest on the savings is taxed annually as income of the saver, and no deduction is allowed for the term insurance premiums. If the savings are used instead to purchase permanent insurance, the interest is not subject to income tax if it becomes part of the death distribution or if it is used to pay for the insurance premium. The interest beyond that used to pay for term insurance may be taxed if the policy is surrendered, but only after considerable delay. The Treasury Tax Reform Plans I and II in 1984–85 recommended repeal of the inside buildup advantages, as well as repeal of the deferral possibilities in deferred annuities (U.S. Treasury 1984). These were largely rejected by the Congress.

The effort to subsidize life insurance purchases through the encouragement of savings-type life insurance makes it more difficult to guarantee the solvency of life companies. If we are highly concerned that dependents of breadwinners not be left without resources, the approach should be to encourage the purchase of term life insurance and to guarantee the ability of insurance companies to fulfill term life insurance contracts.

When the insurer is simultaneously a savings institution subject to investment risks, it becomes difficult to separate a guarantee of the insurance function from a guarantee of the investment function, although the case for protecting widows and orphans is clearly different from that for protecting savers in general.

The tax law also complicates solvency problems by offering the tax advantage of postponed income recognition for annuities, even for annuities certain. The postponement of income recognition until receipt appears reasonable in the case of life annuities that are in the payment stage. The taxpayer has accepted income postponement as a way of leveling receipts over the remaining lifetime and government should do likewise. Before the payment stage, however, the current taxation of investment income would be more consistent with the taxation of other types of savings that are not tax-preferred, namely savings in depository institutions and mutual funds.

The tax law subsidizes not only the purchase of insurance but also the purchase of insurance from small companies. It is clear from the simple statistics of large numbers that small life insurance companies are inherently more prone to solvency problems, and consequently less efficient (Geehan 1977). In the regular corporate income tax, a small company is given a rate reduction that reaches a top value of $11,750 at incomes between $75,000 and $100,000 and is then phased out up to an income of $335,000. For a small life insurance company additional relief peaks at $612,000 (at an income of $3 million) and does not phase out entirely until income is $5 million. The small life insurance company has 50 times as much relief as any other small company.

Tax scholars are unanimous that no basis exists for progressivity in the general corporate tax and even less of a case exists for small insurance companies because of their inherent inefficiencies in providing risk coverage. The small business provision in insurance tax law can only be described as misguided.

Overview and Conclusions

Government intervention in the life insurance industry is found in four major areas: reserve regulation, consumer protection, solvency guarantees, and purchase inducements in the form of tax benefits. Any evaluation of these policies must recognize that life insurance companies offer some products, such as pensions and health insurance, that are also sold by other financial intermediaries, and that the unique product of the industry—term life insurance—is often combined in a single product with tax-favored savings.

The most long-standing government policy toward life insurance is reserve regulation, including the control of investment quality. This policy appears to have been reasonably successful in achieving its announced purpose, consumer protection. Until recently, the solvency record of the industry has been remarkably good. This has not been achieved without cost, however. The investment restrictions have reduced the yield on savings and the price of life insurance has probably been kept a bit higher.

Other consumer protection efforts beyond reserve regulation are more difficult to evaluate. While some observers have complained that state governments have moved too slowly to make consumers aware of interest and time value in life insurance, the increased popularity of term life and universal life policies indicates that awareness has blossomed. The current battlefront over disclosure is long-term care. In this new and changing market it is not surprising to find efforts to provide insurance or to find that the existence of insurance changes behavior.

Nor is it surprising that companies will try to limit their exposure in ways that are not always transparent to consumers.

State solvency guarantees can be characterized as evolutionary products of healthy experimentation, with much input from the life companies concerned about the product image. Until recently, solvency problems have been minor. Some of these insolvencies can be blamed on the federal tax subsidy that results in increased numbers of small life insurance companies, because small companies inherently are more susceptible to failure.

We should expect a solvency guarantee program to be successful so long as it is limited to insurance contracts as opposed to investment vehicles. Term insurance alone requires limited reserves. Unanticipated changes in mortality do not appear to be a big financial threat for life insurance companies.

The state solvency guarantee policy may well be at a crossroad. As interest rates rose in the 1970s, the conservative orientation of insurance regulation began to chafe. One effect of increased interest rates was disintermediation, a familiar term to banking experts. The industry survived this fairly well, in part by offering new interest-sensitive products. The obvious dangers, however, appear when firms compete for investors based on returns. Many of the financial problems in the life insurance industry seem to be related to risky investments undertaken because of the pressure to guarantee high returns.

The state solvency guarantee programs should move in the direction of guaranteeing plain vanilla life insurance, which includes minimum guaranteed returns; speculative investment products should not be guaranteed. If a willing borrower and a willing lender agree to a product with an 8 percent yield guarantee, they should be free to do so, but no good reason exists to provide a solvency guarantee for this feature, even if the product is called life insurance. Similarly, a financial intermediary should be able to offer an investment with the return based on the yields of rates of junk bonds, even if this investment is in the form of an annuity or a life insurance policy. Since the extra return is based on extra risk, a guarantee is difficult to justify. No guarantee should be given on a pure savings contract.[4]

While a guarantee feature does attract investors, the life insurance industry probably could also attract funds to a non-guaranteed vehicle that would not be hobbled by the investment restrictions that a guarantee requires. Non-guaranteed mutual funds have prospered, while banks and thrifts that enjoy almost unlimited coverage have struggled.

The conclusions regarding the tax treatment of insurance are mixed.

---

[4] I am indebted to Warren Wise for clarifying my thinking on this point. He may not agree with the conclusion, however.

It appears that underinvestment in life insurance is a problem, particularly in low-income families. But the employer-paid group insurance subsidy is unlikely to get to the lowest-income workers, who are even less likely to receive any fringe benefits. The inside buildup tax exemption for policies that contain investments is also of little use to low-income workers.

What makes a judgment on inside buildup difficult is the erratic structure of the present U.S. income tax. Before 1986 much academic literature was written about our hybrid tax system—half an income tax and half a consumption tax. The Reagan tax reform effort in 1985–86 was a conscious movement toward a purer income tax. Since that time, the Congress has shown only a limited interest in a purer income tax and currently both the Administration and important segments of the Congress are vying to move back toward a consumption tax, with proposed capital gains relief, expanded IRAs, and Family Savings Plans.

Some very large segments of the savings flow in the United States are subjected to consumption tax treatment: pension savings, home equity, and savings invested in municipal bonds. One big savings flow that is denied consumption tax treatment is bank deposits. But bank deposits get an alternative subsidy in the form of a guarantee that is comparable to the tax exemption for the inside buildup.

Direct investment in a business through stocks, bonds, and most mutual funds does not get consumption tax treatment or a subsidized guarantee. Although much of the concern from the early 1980s about a hybrid tax system is still well taken, it is not clear whether we should resume the aborted march to a pure income tax or move to a consumption tax. Reasonable people disagree on this.

A great deal of effort has been devoted, over the past decade, to defining components of life insurance contracts that are ineligible for favorable tax treatment because they are deemed to be investment products rather than insurance. It is not clear how necessary this exercise has been to the achievement of a desirable tax system. Many other forms of savings that could be classified as investments are tax favored. Moreover, life insurance companies do not appear to be cornering the savings market through savings disguised as life insurance products; life insurance reserves are stagnant; the share of household savings accounted for by life insurance has declined; and consumers are increasingly purchasing term insurance which benefits little, or not at all, from the inside buildup. It is also not clear that a tax on the inside buildup would have resulted in a lower deficit, even in the near term. It could easily be argued that a tax incentive that kept funds out of banks and thrifts was a net benefit to taxpayers.

While it is not clear that the IRS should be working diligently to distinguish between investment products and insurance products, this distinction should be a major area of concern to officials at state guaranty

funds. As long as investment (savings) products are guaranteed, insolvencies will continue to occur because reserve regulations and investment decisions cannot anticipate every financial innovation. Moreover, entrepreneurs who see these innovations as opportunities rather than abuses of the guarantee system will always be present.

The conventional wisdom in the insurance industry and in Washington appears to be that a satisfactory resolution of the First Executive failure depends on full restoration of contractually promised benefits to all policyholders. Full restoration is believed to be necessary in order to head off intrusive and damaging federal regulation of the industry. But this line of reasoning is flawed. A policy of full protection of all contractual obligations will result in the same dynamics that have plagued banks and thrifts—mounting insolvencies, high premiums, and increased capital requirements.

The mutual fund industry is a better model for financial regulators than either the banking or the thrift industry.

References

American Council of Life Insurance. 1990 and updates. *Life Insurance Fact Book*. Washington, D.C.

———. 1990. *Report of the ACLI Task Force on Solvency Concerns*. Washington, D.C., September.

Armstrong Commission. 1906. Report of the Joint Committee to Investigate Life Insurance Companies. Albany, NY: Brandon Printing Co.

Auerbach, Alan and Laurence Kotlikoff. 1989. "How Rational is the Purchase of Life Insurance?" National Bureau of Economic Research Working Paper No. 3063, Cambridge, MA, August.

BarNir, Ron and Robert Hershbarger. 1990. "Classifying Financial Distress in the Life Insurance Industry." *Journal of Risk and Insurance*, vol. 57, March, pp. 110–136.

Belth, Joseph M. 1967a. "A Note on the Consumer's Union Life Insurance Series." *Journal of Risk and Insurance*, vol. 34, September, pp. 485–90.

———. 1967b. "Observations on Solvency in the Context of Life Insurance Regulation." *Journal of Risk and Insurance*, vol. 34, December, pp. 539–60.

Board of Governors of the Federal Reserve System. 1990. *Flow of Funds Accounts. Financial Assets and Liabilities, Year-End 1966–1989*. December.

Carlson, Severin and Blair Lord. 1986. "Unisex Retirement Benefits and the Market for Lemons." *Journal of Risk and Insurance*, vol. 53, September, pp. 409–18.

Cho, Dongsae. 1986. "Cost, Output and Scale Economies in the Life and Health Insurance Industry." *Journal of Insurance Issues and Practices*, vol. 9, January, pp. 12–26.

Consumer Union. 1991. "The Traps in Long-Term Care Insurance." *Consumer Reports*, vol. 56, June, pp. 425.

Derrig, Joanne. 1985. "Regulating Transactions Between Affiliates: A Comparison of the NAIC Model Insurance Holding Company Law with Its Federal Banking Law Counterparts." *Journal of Insurance Regulation*, vol. 3, June, pp. 444.

Finsinger, Jorg and Mark V. Pauly, eds. 1986. *The Economics of Insurance Regulation: A Cross-National Study*. New York, NY: St. Martins Press, Inc.

Fitzgerald, John. 1988. "Regulatory Lessons from Baldwin United." *Journal of Insurance Regulation*, vol. 6, March, pp. 285.

Friedland, Robert B. 1990. *Facing the Costs of Long-Term Care*. Employee Benefit Research Institute.

Geehan, Randall. 1977. "Returns to Scale in the Life Insurance Industry." *Bell Journal of Economics*, Autumn, pp. 497.

Huebner, S.S. 1959. *Economics of Life Insurance*. 3rd ed. New York, NY: Appleton-Century Crofts, Inc.

Investment Company Institute. 1990. *Mutual Fund Fact Book*. Washington, D.C.: The Institute.

Ippolito, Richard A. 1989. *The Economics of Pension Insurance*. Homewood, IL: Irwin.

Kimball, Spencer. 1969. "The Regulation of Insurance." In Kimball and Denenberg, eds., *Insurance Government and Social Policy*. Homewood, IL: Irwin.

Kramer, Orin. 1990. *Rating the Risks: Assessing the Solvency Risk in the Financial Services Industry*. December 31. New York, NY: Insurance Information Institute.

Launie, J.J. 1968. "Price Differentials in Life Insurance." *Journal of Risk and Insurance*, vol. 35, June, p. 283.

Mathewson, G.F. and R.A. Winter. 1986. "The Economics of Life Insurance Regulation: Valuation Constraints." In Finsinger, Jorg and Mark V. Pauly, eds., 1986 (see above).

Meier, Kenneth. 1988. *The Political Economy of Regulation: the Case of Life Insurance*. Albany, NY: State University of New York Press.

Myers, Daniel A., Richard V. Burkhauser, and Karen C. Holden. 1986. "The Transition from Wife to Widow: The Importance of Survivor Benefits to the Well-Being of Widows." University of Wisconsin, Institute for Research on Poverty, Discussion Paper no. 806–86, April.

Office of Management and Budget, Executive Office of the President. 1991. *Budget of the United States Government Fiscal Year 1992*. Washington, DC: Government Printing Office.

Peltzman, Sam. 1989. "The Economic Theory of Regulation after a Decade of Deregulation." *Brookings Papers on Economic Activity Micro.*

Securities and Exchange Commission, Office of Economic Analysis. 1991. "Estimating the Value of Federal Deposit Insurance." March.

Sondergeld, Donald. 1989. "Guaranteed Returns: A Tragedy of the Commons." *Journal of Insurance Regulation*, vol. 7, pp. 13–18.

U.S. Department of the Treasury. 1984. *Tax Reform for Fairness, Simplicity and Economic Growth.* Washington, D.C., November.

U.S. Senate. Commerce Committee. 1991. *Hearings on Insurance Company Solvency.* Senate hearings 102–127, esp. testimony of Marty Leary, February 27, and of Thomas Sutton for ACLI, May 9.

Utgoff, Kathleen. 1990. "The Proliferation of Pension Regulations." *Regulation*, Cato Institute, Summer.

Winter, Ralph A. 1981. "On the Rate Structure of the American Life Insurance Market." *Journal of Finance*, vol. 36, March, pp. 81–96.

Discussion

*Joseph M. Belth**

Gerard Brannon's paper is provocative because it discusses a number of controversial topics. I will comment on only one—federal income taxation of the inside interest—although my comments necessarily will touch on other aspects of Brannon's paper. I will break the topic into two parts, the first dealing with cash-value life insurance and the second dealing with the accumulation period in life annuities.

Life Insurance

Life insurance, or what Brannon corrrectly observes should be called "death insurance," performs important functions. It allows an individual to protect dependents against the individual's death when the individual's resources are insufficient to meet his or her objectives for those dependents. Possible illegal methods for handling that insufficiency include robbing a bank, printing money, and insider trading, but life insurance is the only legal method.

Unfortunately, this useful financial arrangement suffers from two related and potentially fatal flaws. Life insurance deals with a subject the individual finds unpleasant—namely, the individual's death. Under these circumstances, the human tendency is to postpone discussion of the individual's needs for life insurance, and therefore to postpone its purchase. Consequently, life insurance must be marketed aggressively.

What I call the anti-procrastination function is performed by life

*Professor of Insurance in the School of Business at Indiana University (Bloomington) and editor of *The Insurance Forum*.

insurance agents. The only effective way to motivate agents to perform that function is to compensate them through substantial commissions, most of which are paid at the time of sale. Without substantial compensation, the anti-procrastination function will not be performed and the amount of life insurance purchased by individuals will be small.

The second potentially fatal flaw is the shape of the curve representing the probabilities of death by age. In the early years, probabilities of death are low. The probabilities increase with advancing age, and in the later years they increase rapidly. Natural premiums for life insurance, therefore, are small in the early years of age, increase with advancing age, and in the later years increase rapidly.

The shape of the curve is a problem for two reasons. First, the low probabilities mean that gross premiums derived from natural premiums tend to be small in the early policy years. Thus, the insurance company does not receive enough premium revenue in the early policy years to compensate agents adequately for performing the anti-procrastination function.

Second, the rapid increase in probabilities of death in the later years produces adverse selection; that is, as gross premiums derived from natural premiums increase rapidly, the relatively healthy members of the insured group tend to drop out, leaving only the relatively unhealthy members still insured. Thus, the quality of the remaining group of insured individuals tends to deteriorate more rapidly than it would from the mere aging of the group.

Level-premium, cash-value life insurance represents an effort to deal with both of these problems. The higher premiums in the early policy years provide the insurance company with more revenue to compensate agents for performing the anti-procrastination function. Also, the level premiums reduce the amount of adverse selection because policyowners are not faced with rapidly increasing premiums.

Level premiums, however, do not solve the underlying problems. When it is suggested that the amount of the agent's commission or the size of the front-end load be disclosed to the consumer, life insurance companies and agents oppose such proposals vigorously. They are probably right when they say such disclosure would be an impediment to the sales process.

Also, level premiums do not level out the price of the life insurance protection. If policyowners were informed of the yearly prices per $1,000 of protection, which tend to increase with advancing age, adverse selection would occur just as it does in the case of gross premiums derived from natural premiums. Proposals to disclose yearly prices per $1,000 of protection are also opposed vigorously by the life insurance industry.

In short, level-premium, cash-value life insurance represents an effort to overcome two potentially fatal flaws. The effort has been

successful because the life insurance industry has been able to avoid disclosing vital information to policyowners and prospective policyowners. In addition, many deceptive sales techniques are widely used, but that subject is beyond the scope of this discussion.

Level premiums give rise to the savings component of life insurance. The federal income taxation of the inside interest in cash-value life insurance is generally deferred until the policy terminates, and then the inside interest is either fully or partially exempt, depending upon the circumstances surrounding termination.

Life Annuities

A life annuity is an arrangement under which the annuitant receives periodic payments, usually monthly, as long as the annuitant lives. The arrangement may or may not involve a minimum number of payments in the event of the annuitant's early death. The idea of a life annuity is to exhaust a principal sum, together with interest, over an individual's lifetime. Brannon correctly describes the arrangement as "insurance against living too long."

Life annuities make sense only when interest rates are low. In that situation, interest payments alone generally do not provide adequate income for the annuitant, and invasion of the principal usually is necessary. The only way to invade the principal and be certain not to exhaust the principal before the annuitant dies is to utilize a life annuity.

When interest rates are high, interest payments on a given amount of principal may be almost as large as life annuity payments derived from the same amount of principal. It makes little sense to use a life annuity that exhausts principal when it is possible to obtain similar interest payments and preserve the principal.

Thus far I have been referring to the liquidation period of a life annuity. A life annuity may have a lengthy accumulation period, either because it is purchased through installment premiums, or because it is purchased with a single premium paid many years before the beginning of the liquidation period.

Federal income taxation of the inside interest during the accumulation period of a life annuity is generally deferred until the annuity is surrendered or until the liquidation period begins. This favorable tax treatment has led to the widespread use of life annuities even where the purchaser has no desire to use the life annuity to liquidate principal and interest over the lifetime of the annuitant. Indeed, life annuities generally are not needed in today's relatively high-interest environment.

Conclusion

The favorable federal income tax treatment of the inside interest in cash-value life insurance and in the accumulation period of life annuities may at one time have been justified, because it was considered socially desirable to encourage the purchase of substantial amounts of life insurance for the financial protection of dependents and the purchase of substantial amounts of life annuities for retirement purposes. It may also have been justified on administrative grounds, because it would have been difficult to establish systems to tax the inside interest currently.

Today these justifications are being weakened. With regard to the social arguments, fewer and fewer individuals are purchasing larger and larger amounts of cash-value life insurance, so that the favorable income tax treatment of the inside interest is increasingly a benefit for individuals with high incomes. As for life annuities, they are being used increasingly by individuals solely because of tax considerations. The administrative arguments against current taxation of the inside interest are also weaker because of modern computer technology.

Two powerful arguments remain for continuing the favorable federal income tax treatment of the inside interest. Although the life insurance companies' share of the savings dollar is declining, life insurance companies remain important financial institutions. I believe that current taxation of the inside interest would have a devastating impact on the life insurance industry and would threaten its very survival. I question whether it would be sound tax and economic policy to take such a step, even though it may be justified on theoretical grounds.

The second argument is purely political. Current taxation of the inside interest is so controversial, and the political power of the life insurance industry is so broadly based, that any elected representative would be committing political suicide to support the idea. I cannot believe that Congress would vote to impose current income taxation on the inside interest, thereby producing a relatively modest amount of revenue, in the face of ferocious opposition by the life insurance industry.

Discussion

*Earl R. Pomeroy**

The insurance regulator's role is a particularly difficult one. An insurance regulator stands in the cross fire of the market economists and portions of the insurance industry who decry regulatory intervention and resulting disruption of free market forces, and consumers and legislators who berate regulators for inactivity whenever circumstances suggest that existing regulatory provisions are not always adequate.

Gerard Brannon has presented a substantive and thought-provoking paper. In particular, I shall comment on the four broad types of governmental intervention in the insurance industry, as outlined in the paper: reserve regulation, consumer protection, solvency guarantees, and tax policy. The concluding section will offer some observations on the existing regulatory structure of the insurance industry in light of the proposal for a new federal role relative to the industry.

Reserve Regulation of Life Insurance

The life insurance industry today has lower capitalization levels, slimmer profit margins, and higher risks on its investment portfolio than it did 10 years ago. These factors have provoked a regulatory response that has improved the sophistication of regulatory oversight, while increasing the breadth of regulatory strictures on the calculation and management of reserves by the life insurance industry. Insurance commissioners increased regulatory intervention in response to the characteristics of the marketplace that have made solvency policing a

*Commissioner of Insurance, State of North Dakota.

significant concern. In this respect, insurance regulation has rejected the economic theory that this financial services industry is best left to its own devices, as companies are ultimately answerable to the undeniable laws of the unfettered free marketplace.

More specifically, regulatory strategies for greater oversight of reserve regulation have included building a greater sophistication into the bond evaluation system used by the Securities Valuation Office while incorporating higher reserve requirements for the lower gradations of bond investments. In addition, the National Association of Insurance Commissioners (NAIC) has recently adopted a model law that imposes restrictions on concentrations of lower-quality bonds. Generally, these restrictions limit "junk bond" holdings to 20 percent of a company's assets, with tighter restrictions specifically applicable to the lowest bond classifications. The Insurance Commissioners are now developing reserve requirements for real estate and other assets, as well as limitations on concentrations of identified higher risk investments.

A consequence of this regulatory activity will be lower investment returns to insurance companies and lower investment returns and higher premium prices to consumers. Another consequence will be the restriction of capital formerly available to certain types of economic activity. In light of the fact that the regulator's highest priority is solvency protection, however, the reserve regulation initiatives are important and wholly appropriate.[1]

Consumer Protection

The initial thrust of regulatory intervention in the marketplace in order to address consumer protection came in requiring certain disclosures to consumers. The rationale underlying this action was that in light of the intangible character of insurance products, consumers were entitled to specific information in order to make prudent choices.

As time has passed, however, the insurance policies offered have grown in complexity while the regulatory structure has grown in sophistication. It has become apparent that regulation aimed merely at informing consumers is not sufficient and more aggressive regulation is required. For many years now, insurance regulation has been directed at dictating minimum product quality for various types of insurance

[1] Further enhancing all of this effort will be improved benchmarks for evaluating the adequacy of insurance company reserves, through the development of risk-based reserving principles. The NAIC activity in this area has been led by Terence Lennon of the New York State Insurance Department, who deserves a great deal of credit for the leadership he has provided to the nation's insurance regulators in this area.

policies. In terms of a free market analysis, this regulatory action restricts consumer choices, albeit for the purpose of ridding the market of consumer alternatives that do not represent a "good buy" under nearly any circumstance.

A case in point is raised in Brannon's paper concerning long-term care insurance. In recent years, regulators have moved to prohibit certain policy limitations that insurance companies have used to limit payment of benefits. While these moves have dramatically improved product quality, they have also increased the claims cost likely to be experienced by the insurance industry on these products. As a result, premium prices have increased.

Many of the health insurance products, including long-term care insurance, face active congressional oversight and intervention. I believe this is especially the case with health insurance over other lines of insurance because health insurance coverage directly involves social policy issues, and Congress has not had sufficient funds to deal directly with the problems arising in health care financing. Some members of Congress seem to go by the maxim, "When one cannot appropriate, the next best thing is to regulate."

Congress tends to be more interventionist in the consumer protection area than insurance regulators, for several reasons. The first is philosophical: while regulators are accustomed to regulating the industry itself, the breadth of congressional legislative authority leaves them much more accustomed to attempting to achieve social goals through the imposition of market restrictions. Perhaps another reason can be attributed to the necessarily more general analysis given to the insurance industry by members of Congress as opposed to insurance regulators. The interplay of market forces may be less clearly understood by legislators, given the infinite variety of issues with which they must deal. An example is again afforded by long-term care insurance. Present congressional proposals would specifically require two features in every policy—inflation protection and nonforfeiture values. While without question these features enhance product quality, requiring their inclusion in each policy sold will dramatically increase premium prices and make this estate protection policy unaffordable to a portion of the market. Another example of the level of intervention Congress is comfortable in mandating can be found in Medicare supplement insurance. In the Omnibus Budget Reconciliation Act of 1990 Congress established a mandate that no more than 10 variations of insurance policies will be allowed in this market (unless a policy is specifically authorized as containing an "innovative benefit").

Solvency Guarantees

Brannon's paper suggests that the costs of solvency guarantees should fall entirely upon the financial services industry that is underwritten. As an individual regulator, I wholeheartedly agree with this assertion. As noted in Brannon's paper, unfortunately this is not the case for the savings and loan industry nor for the banking industry, nor as a general matter is it true for the life insurance industry. Most of the states with life and health guaranty funds offer a tax credit that effectively reduces an insurance company's premium tax obligation to a state by the amount of assessments it pays into the guaranty fund. Accordingly, in reality, life guaranty funds ultimately represent a state taxpayer assessment, not an insurance company assessment.

Brannon correctly asserts a marketplace danger of guaranty funds. By guaranteeing all policies, market forces encouraging sound solvency management practices—including high capitalization and low-risk products—compare unfavorably to higher-risk products written by companies having thin levels of capitalization.

While regulators acknowledge that solvency guarantees through insurance guaranty funds may have the effect of dulling consumer sensitivity in this area, clearly guaranty funds serve a critical role in the insurance market today. Regulators have tried to minimize the downside consequences of guaranty funds by restricting agents from touting the existence of the insurance guaranty funds while soliciting the sale of insurance products. In North Dakota, for example, an agent may not discuss the guaranty fund until notification is provided with the delivery of the insurance policy—well after the application has been submitted to the insurance company.

An issue exists today as to whether guaranty funds will have adequate capacity to cover policyholder obligations in light of either the failure of an extremely large life insurer or in the event of a rash of several life insurance insolvencies. Guaranty fund capacity is determined by an assessment limitation, based upon the amount of premiums written by insurance companies in a state in a given year (usually 2 percent of premium writings). In light of recent hearings the NAIC has held on this subject, I am reasonably hopeful that the guaranty fund mechanism does have sufficient capacity on a state-by-state basis, even in light of the regulatory action taken against Executive Life Insurance Company.

In this specific instance, I commend Commissioner John Garamendi of California for his careful handling to date of this terribly complex insolvency. In the event a course of liquidation had immediately been embarked upon, given the virtually illiquid condition of many of the junk bond assets held in the Executive Life investment portfolio, a significant shortfall would have resulted that probably would have

exceeded the reach of the insurance guaranty fund. I am hopeful the course the California Insurance Department has set upon, including the solicitation of contributions from other interested parties, will provide the policyholders with substantially the benefits of their contracts, without busting guaranty fund capacity throughout the country.

Tax Policy

Expertise as an insurance regulator has not afforded me particular expertise regarding the tax policy issues presented by the current insurance industry tax structure. However, I have some general observations.

First, Brannon's paper offers useful comments on the significant tax subsidy now provided in support of the present employer-based health insurance system. While this policy has historically been extremely successful at obtaining insurance coverage for most Americans through employer-based health insurance plans, obviously further governmental intervention will be required in the not-so-distant future, in light of the chronic difficulties of crisis proportions now existing in this line of insurance. The significant tax subsidy that has been available for employer-based health insurance would seem to provide considerable basis for additional government initiatives, aimed at cost and coverage issues, in the employer-based health insurance system.

A second issue on tax policy involves solvency. Dramatic changes in tax policy have the potential to cause significant consequences in the insurance marketplace. It is likely that aggressive tax policy changes would have a detrimental impact on company surplus positions and could cause difficulty to the most thinly capitalized companies. I do not offer this as a reason not to address inequities in the present tax structure, but rather as a word of caution. Significant changes in tax policy should be implemented on a phased-in basis after ample notice and lead time have been afforded, in order to avoid causing failures of insurance companies that have not had a chance to prepare for these changes.

Implicit Strengths in the Existing Regulatory Structure

State insurance regulation came into being in the mid 1800s when the character of the insurance industry was quite different and federal government activity significantly more limited. However, this does not mean that the existing structure is irrelevant to the challenges of regulating today's insurance industry.

State insurance regulation has had an evolutionary character which,

generally speaking, has allowed states to successfully perform their regulatory responsibilities. For example, recognizing the need for interstate coordination of insurance regulatory activities, the Insurance Commissioners formed the National Association of Insurance Commissioners in 1871. Four years later they developed the forerunner of a uniform financial statement that provides for uniform insurance accounting methods for all companies, regardless of their state of domicile. In 1909, they established the Securities Valuation Office for the purpose of implementing a uniform valuation of bonds held by insurance companies. In the 1930s, multistate financial examinations were begun in recognition of the fact that companies were often doing business across state lines. In the 1970s, the NAIC established a series of solvency evaluation tests which were run on the financial statements of all companies filing with the NAIC.

The state regulatory system has undertaken more dramatic steps in recent years to stay abreast of an industry that has grown significantly more complex over the past 10 to 15 years. Nationwide regulatory changes have been implemented through the use of four strategies, based upon unique attributes of the existing regulatory structure.

First, additional requirements have been added to the financial statements required of all insurance companies. Actuarial verification of loss reserves and CPA audits were implemented throughout the regulatory system by incorporating these requirements into the Annual Statements in 1990.

Secondly, the NAIC presently has an annual budget in excess of $15 million and a staff of 155 for the purpose of supporting the more than 8,100 men and women involved in insurance regulation throughout the state insurance departments. The staff and budget have more than doubled since 1987, reflecting general recognition that greater support services from the NAIC would be an important aspect of improving the regulation of this industry.

Thirdly, regulators have implemented a system of peer review, wherein the performance of departments vis-à-vis financially troubled companies is monitored and evaluated on an ongoing basis. In the event a domestic state refuses to take required action on a financially troubled company, other state regulators are prepared to initiate the activities required for the protection of policyholders throughout the nation.

Finally, and most importantly, the NAIC has taken the historic step of adopting minimum standards for the regulation of solvency. The standards were enacted in 1989, and in 1990 an audit mechanism was established for the purpose of verifying state compliance with the minimum standards. To date, four states have passed an audit review and have been certified. States have a particularly strong incentive to obtain certified status, in light of the additional regulatory requirements that will apply to domestic companies of noncertified states, beginning

in 1994. States not meeting compliance standards may face the prospect of the redomestication of their insurance companies, because of the imposition of further regulatory burdens on their companies' ability to transact interstate business. This incentive to obtain certification appears to have been very successful during the 1991 legislative cycle. To date, 45 states have been identified as including in their legislative proposals the solvency regulatory bills required to obtain certification.

The U.S. insurance industry is extremely competitive, and this has resulted in relatively extensive insurance regulation. Without question, the United States has more insurance regulators per company than any other country. The insolvencies occurring within the existing industry structure are due in part to the intense competition in price and product quality. While regulators and policymakers alike recognize the need to reduce the number of insolvencies now and in the future, it is unlikely that consumers will stand for significantly higher prices in order to provide sufficient return to insurance companies to ensure that insolvencies will not occur.

Downside Consequences of Dramatic Federal Regulatory Intervention

Insurance regulators have significant concerns regarding the future of the insurance market in the event that sweeping new federal regulatory proposals are passed by this Congress. Some of the reasons for their concern are as follows.

First, the federal perception of the solvency problem appears to be overstated. The intense level of current federal interest seems to be driven in part by the extreme sensitivity concerning solvency caused by the substantial number of savings and loan failures, as well as a perception that the financial difficulty experienced by the Executive Life Insurance Company may represent a harbinger of things to come within the life insurance industry. In point of fact, economic analysis of the three financial services industries reveals that insurance is substantially different from the thrift and banking industries and is in considerably better financial health. In addition, while Executive Life became financially imperiled in light of its reliance upon junk bonds in its investment portfolio (69 percent of its assets were junk bonds, prior to the action taken by the California Insurance Department), the life insurance industry as a whole has followed a much more conservative investment pattern. On average, only 6 percent of the assets of the insurance industry are junk bonds.

Second, reforms of the existing structure have not been given enough time to work. The activity of state insurance regulators in improving oversight regarding solvency is without precedent within the

state regulatory system. These reforms should be objectively assessed as to whether they have sufficiently addressed the new complexities of the insurance market. Obviously, it will be cheaper, quicker, and more cost efficient to enhance the present regulatory structure than to scrap it for a new and unproved system with close analogies to failed regulatory systems. The dual regulatory structure has been recognized as playing a prominent role in the widespread failures realized within the thrift industry, for example.

Third, the market consequences of a federal regulatory structure may adversely affect the insurance industry. The analysis to date of the state regulatory system has had a tendency to note every insolvency as a significant regulatory failure. Under this analysis, regulators are seemingly being held to a standard of perfection. State regulators would be the first to acknowledge that the existing structure is not perfect and that failures will occur within the present state regulatory format. On the other hand, however, the existing structure, with the expertise, resources, and existing authority all located at the state level, represents a regulatory system that will compare favorably with any federal proposal.

Any viable federal proposal must be developed according to the laws of least political resistance. One can anticipate that these laws will have the following consequences.

First, state rate regulation will not be preempted. In light of the political activity taking place at the state level relative to rate regulation, driven by the affordability crisis in private passenger auto and health insurance, state governments would vigorously oppose preemption of rate regulatory authority. Any member of Congress from a large urban district is unlikely to vote to remove from the state regulatory system the ability to evaluate and control premium rates.

Accordingly, the industry faces the prospect of federal solvency regulation while rate regulation continues at the state level. Over the long haul, it would be untenable to separate rate regulation and solvency regulation, in light of the inextricable relationship between adequate rates and financial solvency. Having a regulatory system not charged with the complete responsibility would increase the likelihood that an affordability crisis driven by soaring claims costs would result in the suppression of premium rates below levels required to maintain financially strong companies.

Second, it is easier to add than to preempt. Accordingly, a new federal regulatory oversight role would likely come in addition to the existing regulatory responsibilities of the states. Portions of the insurance industry looking favorably on federal regulation as a means to avoid state regulation may find themselves sorely disappointed to find more regulatory requirements, not less, as a consequence of some new federal role. As mentioned earlier, dual regulatory structures have not

proven to be the end-all of solvency regulation, as evidenced by the other financial services industries. Insurance premium tax revenues are critical to the budgets of state governments, which have assumed ever greater responsibilities in recent years. I believe states would fight to the death any proposal to preempt state premium tax collection.

Third, it is also inevitable that any new federal role be financed entirely by the insurance industry. Given the federal budget deficit, any federal initiative must pay its own way, and that would particularly be the case in a regulatory undertaking of the insurance industry. Administrative costs to companies would increase in order to pay for any additional regulatory functions.

Fourth, regulation driven by a federal system is more subject to political manipulation nationwide than a state-by-state regulatory system. As evidenced by the significant changes in regulatory philosophies between recent Administrations, philosophical swings can be extremely disruptive to the functioning of a financial services industry.

Conclusion

In conclusion, I believe the debate on insurance regulation will represent a ball game with two halves. In the first half, the state regulatory structure is competing against the concept of a perfect regulatory system. Implicit in some of the searing criticism received to date is the idea that a perfect structure would not have allowed these regulatory lapses and that a federal response would be in the nature of establishing a perfect structure. In the second half of this ball game, the existing regulatory system will be competing against an actual federal proposal. I expect that the evaluation of the existing system will be much more favorable when contrasted with a concrete federal alternative constructed along the aforesaid principles of least political resistance.

Discussion

*Warren R. Wise**

Gerard Brannon presents some interesting points in his paper, "Public Policy and Life Insurance." In response, I will comment first on his point that life insurance combines death protection and investment of the insured's savings. I will then address, somewhat more extensively, his comments regarding the solvency problem now facing the life insurance industry.

Policy Values

Brannon asserts that the cash value resulting from premiums paid on permanent life insurance is equivalent to a savings account. He denies that it is related to the protection provided by the policy. This analysis is not entirely accurate and leads to some faulty conclusions.

The cash value accumulation in a life policy results from the leveling of the total premium over the anticipated term of the insurance protection. Without this leveling, the premium in the later years would be excessive. Leveling involves a modest prepayment of premiums needed to support coverage in later years. The resulting cash value in the policy is not a savings plan. It is simply the means of providing lifetime protection at an acceptable price.

The assertion that permanent insurance involves a savings plan leads to several questionable conclusions. For example, it is erroneous to conclude that permanent insurance includes savings because the federal

*Executive Vice President and General Counsel, Massachusetts Mutual Life Insurance Company.

tax on these savings is less than the tax on other kinds of savings. As explained, the cash value exists to help meet insurance costs in later years. It does not exist because of the applicable tax treatment. In fact, cash value life insurance existed long before the enactment of our federal income tax law.

It also is erroneous to conclude that the tax-free inside buildup in life insurance is a tax subsidy to savings and not a subsidy to encourage the purchase of life insurance protection. The cash value is integral to the death protection provided by the permanent whole life policy. Congress gave tax-free status to the interest added to the cash value to encourage Americans to provide adequate protection against untimely death. The tax-free status for this interest is not intended as a stimulus to enhanced savings.

The tax-free status of the interest added to the cash value on a permanent life insurance policy also is consistent with the legal doctrine of constructive receipt. Under that doctrine, income is not taxed if the taxpayer would have to incur a substantial detriment to realize the income. The constructive receipt doctrine applies to interest on cash values because the policyholder would have to give up the policy or incur some other substantial detriment to realize the interest added to the cash value. The policyholder cannot obtain a comparable policy without paying a new front-end sales load. If uninsurable, the policyholder may not be able to obtain new insurance at all. These are substantial detriments. Congress also granted tax-free status for the interest added to the cash value in a permanent life insurance policy because it did not want to impose a tax on income saved instead of consumed.

Before I discuss the solvency problem, I want to commend Brannon for making two very important points.

Some criticize the life insurance industry because they believe the tax-free treatment for interest added to the cash value in a life insurance policy is an unnecessary tax subsidy. Brannon points out that other financial institutions receive even greater subsidies from the federal government. He notes, for example, the substantial subsidy given to banks and thrift institutions through the federal deposit insurance program.

Brannon also makes a telling point regarding the dramatic decline in the amount of assets committed to life insurance. The insurance industry should take note of this. The trend also is significant beyond the insurance industry, because traditionally life insurers have been a major source of long-term investment capital for our economy.

The Solvency Problem

Now I would like to discuss the life insurance solvency problem. Brannon asserts that solvency is a significant problem in the life insurance industry today, and I agree.

The Problem

The record shows clearly that the number of life insurance companies becoming insolvent has increased significantly over the last few years. In the 16-year period from 1975 through June 1990, 168 life insurance companies became insolvent or impaired. From 1975 through 1982, insolvencies averaged five per year; from 1983 through 1989, the average rose to 17 per year. In 1989, 43 insolvencies occurred, the most in any year. Between 1975 and 1989, assessments to guaranty funds totaled $485 million. Costs rose from $62.4 million in 1988 to $160 million in 1989.

This trend is continuing. In 1990, over 25 percent of all life insurance companies had four or more financial ratios outside the usual ranges. Companies like these have historically been designated by the National Association of Insurance Commissioners (NAIC) for immediate regulatory attention.

The change in the size of the companies becoming insolvent also is significant. Not long ago most insolvent companies were small and had only a few policyholders. Now we face the problems that arise when major companies like First Executive and First Capital become impaired. We also face the financial problems surrounding an insurer like Monarch right here in Massachusetts.

The life insurance industry offers a unique product. It receives money from customers today in return for an intangible promise to pay benefits at some future date. The value of the promise depends entirely upon the insurer's ability to pay. The solvency problem is truly serious if the consumer's financial needs are not met because the insurer fails to meet its obligations. This is true no matter what the size of the insurer may be. It is not an acceptable answer to say, as some do, but not Brannon, that on the average only a few companies become insolvent and the amount involved is comparatively insignificant. We must focus on the plight of the insurance consumer who buys insurance but fails to receive the promised insurance benefit.

As Brannon observes, the high interest rate environment of the late 1970s and early 1980s triggered a product revolution in the life insurance industry. As a result, the industry is more competitive than it was 10 years ago. Profit margins have declined. Capital and surplus levels have declined. Companies that could comfortably ride out bad times, like the current slump in the real estate market, are now at greater risk because

the liability side of the balance sheet has changed. Today life insurance companies offer more investment-oriented products, such as single-premium life, universal life, and guaranteed investment contracts, as well as traditional products with higher cash surrender values like participating whole life insurance. In order to offer higher returns, some insurers are taking more risks on the asset side of the balance sheet as well. As a consequence, the industry is more vulnerable to failure than it once was.

The product innovations in the life insurance industry over the past several years could result in an abuse of the solvency system. But, as I will discuss later, controlling possible abuse is feasible. It can be done without denying protection for the values associated with these policies.

Brannon's Solvency Suggestions

Brannon and I agree that today solvency is a major problem in the life insurance industry. We do not agree about the solution to the problem.

Brannon suggests that solvency protection provided for insurance consumers should be limited to the death benefit provided by the policy. He asserts that the protection should not extend to the cash value or "savings" associated with the policy. Clearly, Brannon goes too far in suggesting that solvency protection should be denied to the cash value in any life insurance policy. Solvency protection should be provided to all persons who buy life insurance and whose quality of life would be imperiled by the failure of their insurer to fulfill its promises. The loss of the protection afforded by a permanent life policy or a universal life policy, both of which have cash value, is just as devastating to a consumer (especially one who has become uninsurable) as the loss of the protection provided by a term policy that does not have cash value. Any "solution" to the solvency problem that does not cover assets is probably unworkable and is certainly incomplete.

For these reasons I believe Brannon's suggestions regarding how the solvency problem might be solved miss their mark. Before offering my suggestions regarding how the industry could approach the solvency problem, I want to discuss several fundamental principles that should be included in any solution to the solvency problem.

Principles regarding Solvency Solution

Any solution to the solvency problem must protect the interests of the insurance consumer. It would not be acceptable simply to protect life insurance "insiders," such as industry executives, sales representatives, state insurance regulators, or any federal regulators.

In addition, all the interested parties should be required to make a contribution toward the cost resulting from the insolvency of a company. The contributors should include all life insurance companies, including the insolvent company, life insurance sales representatives, state insurance regulators, and all life insurance consumers affected by the insolvency. The present system, which unfairly requires that only financially successful life insurance companies cover the cost of an insolvency, must be abandoned.

Improved Regulations

The regulations that help prevent insurance companies from becoming insolvent must be improved to meet the solvency problem. Specifically, life insurance companies must be required to meet risk-based capital and surplus requirements. In other words, a company should maintain high investment reserves if it follows a high-risk, high-yield investment strategy. A company also needs to maintain high reserves where liquidity is lacking or where the company does not match assets and liabilities.

Reserve requirements should also be strengthened, and the opinion of a valuation actuary should be required on asset–liability matching. Prudent insurers that write investment-oriented business have been matching assets and liabilities since the early 1980s. New York State law requires matching. All states should require it.

Investment restrictions should be strengthened. Insurance regulations must take into account the growing dependence by the industry on investments other than stocks and bonds, such as junk bonds and commercial mortgages.

Accounting practices should be improved, as should audit and examination practices. Controls over reinsurance transactions should be strengthened. Perhaps most important, insurance regulators should have sufficient resources to do a good job. In the past, state insurance departments have not had the resources they need. This situation has been worsened by the recent fiscal crises faced by many states, including Massachusetts.

Guaranty Fund Improvements

Guaranty funds maintained by any government for the benefit of life insurance consumers need improvement to meet the solvency problem. Every life insurance company that becomes insolvent places a heavy financial burden on well-managed insurers to make good on the promises made by the insolvent company to its policyholders. In effect, well-managed life insurance companies pay twice—once when they lose business to companies that make unrealistic promises and later become

insolvent, and a second time when they are assessed by guaranty funds to pay for the insolvent companies' promises.

Today the insurance industry sustains guaranty funds by assessments on solvent companies. In other words, when an insolvency occurs, state guaranty funds raise the money needed to cover losses by an assessment on solvent companies. It would be better to fund the insolvency by advance assessments on all life insurers. By doing so, even insurers that ultimately become insolvent would contribute toward the costs arising from the insolvency.

The amount assessed in advance should be determined on a risk-adjusted basis. It seems reasonable that companies creating the greatest risk should be required to make the largest contributions to the guaranty funds. To make this plan effective, insurance regulators should select the factors that will show the degree of risk involved in each company. They also should make advance assessments based on their determination of the risk created by each individual insurance company.

As mentioned above, four groups should pay for the cost of insolvencies: other insurance companies, insurance sales representatives, the government, and insurance consumers. Insurance companies should help pay for the cost of insolvencies because they have a self-interest in maintaining the reputation of the industry. Life insurance sales representatives should be required to contribute to the guaranty fund maintained for the benefit of their clients. Insurance consumers rely on the advice they receive from their sales representatives. If the representative is financially at risk, the representative will be more likely to sell insurance written by a financially secure insurer. Contributions could be obtained from sales representatives by requiring that they contribute to the guaranty fund before they can obtain their license to sell insurance.

State insurance regulators should also be required to contribute to the cost resulting from an insolvency involving insured persons living in their state. This requirement should be imposed because the cost incurred would give the state a strong incentive to regulate vigorously to prevent insolvencies. The contribution from the state could be obtained by permitting insurance companies to offset their guaranty fund contributions against their state premium tax liability. Many states already permit this.

Insurance consumers also should bear part of the cost if the company they select later becomes insolvent. This could be done easily by limiting the amount of their recovery to a portion of their loss. For example, under California's new law, insured persons can recover only 80 percent of their claim. Forcing consumers to bear a portion of their loss might encourage them to investigate carefully before they choose their insurer. This might help reduce the financial burden resulting from the insolvency of insurers.

Who Should Administer the Solvency System?

These are the principles needed for an effective solution to the solvency problem. But who should be responsible for administering the solution? Two ways to deal with the solvency problem are being considered. One involves strengthening state regulation of the solvency of the life insurance industry. The other involves federal oversight of life insurance industry solvency matters.

Many responsible persons in the life insurance industry believe the best approach is to strengthen state regulation of solvency. They believe that the NAIC should develop model laws and regulations for this purpose to be adopted by the states. This process is already underway. Leaders in the NAIC, like Commissioner Earl R. Pomeroy, have taken the initiative in this effort, which the life insurance industry supports.

A successful NAIC effort will meet the needs of insurance consumers and it will preserve the existing scheme of insurance regulation. But the important question is "Will the effort succeed?" Will all the states adopt the NAIC model laws? If the states do act, will they do so without making meaningful changes in the NAIC model laws? And will all the states have all the resources needed to regulate effectively under the new system?

These are troublesome questions. The problem today is bad enough! It will be infinitely worse if the industry—its leaders, its sales representatives, and its regulators—promises a solution and then fails to deliver it.

Some thoughtful leaders in the industry and some representatives in Congress suggest federal oversight of life insurance solvency as another solution. This approach would use a federal "lever" to promote a uniform, minimally competent level of state regulation, but would otherwise minimize federal involvement in insurance regulation.

To obtain this result, Congress could simply enact a law setting forth: (1) specific and uniform solvency standards; (2) specific guaranty fund provisions; and (3) minimum financial resource and competency standards for state insurance departments. The federal law would further provide that these provisions should be adopted by the states within a stated period, say two years. Adoption of these provisions by the states would be a condition for continuation of the privilege given insurers under the McCarran-Ferguson Act to sell insurance in interstate commerce, while also being regulated by the states and not by the federal government.

The federal law also should provide that, if an individual state fails to enact a timely law adopting the federal solvency standards, insurance companies domiciled in that state would be prohibited from selling insurance in interstate commerce outside that state. To give relief to these companies, the law could further provide that companies domi-

ciled in such a state would be allowed to sell insurance outside their state of domicile if they agree to be bound by the laws of any other state that had adopted the federal solvency standards.

This federal oversight approach is an attempt to preserve the traditional role of the states in regulating life insurance activities, and particularly solvency, while also ensuring that the provisions to protect insurance consumers from solvency losses are adopted uniformly and are applied effectively throughout the country.

Which approach should we support? A successful effort to improve state regulation is most desirable. The efforts of the NAIC and individual state commissioners to improve state regulation are commendable. On the other hand, the General Accounting Office recently studied this effort carefully and concluded that it will not succeed, even though it is highly laudable. The reason given: the NAIC does not have the jurisdictional clout to obtain the desired result.

If the effort to improve state regulation fails, we should all support federal solvency standards and federal oversight of solvency through a system like the one I have described. The life insurance industry serves an important need of its customers and, more broadly speaking, an important need of our society. We have a duty and an ethical obligation to meet our responsibilities to our policyholders. The solvency problem must be solved, and it will be. If it can be solved at the state level, fine. But, if federal intervention is necessary to obtain an effective solution, the industry should accept the federal role because a solution to the solvency problem is "the right thing to do."

Public Policy and Property–Liability Insurance

*Scott E. Harrington**

The property–liability insurance industry has experienced significant turmoil during the past decade. Three related issues have received enormous attention: increases in the frequency and severity of insurance company insolvencies, high and increasing costs of automobile and workers' compensation coverage, and volatility in prices and in availability of commercial liability insurance coverage. These phenomena have led to considerable debate over the efficacy of state insurance regulation and the industry's limited exemption from antitrust law. Much of the policy debate concerns whether federal regulation of insurance company solvency, expansion of state regulatory control over insurance pricing, and narrowing or elimination of the exemption from antitrust law are needed to deal adequately with these problems.

This paper addresses solvency regulation, rate regulation, and the antitrust exemption for the property–liability insurance industry. In each case, it first briefly reviews rationales for government action to enhance economic efficiency. Then it will discuss regulation in practice and whether proposed changes will enhance efficiency. The discussion suggests three conclusions. First, the case for substantive federal intervention in solvency regulation is not compelling, and federal intervention could ultimately lead to an increase in the total cost of insolvency. Second, state regulatory control of insurance pricing is inefficient. Rather than expanding state regulation, efficiency would be better served by deregulation of rates. Third, substantial change in the industry's antitrust exemption will not alleviate market problems. It

*Professor of Insurance and Finance, College of Business Administration, University of South Carolina.

could aggravate these problems, and it definitely would require a costly period of adjustment.

Solvency Regulation

Insolvency risk for property–liability insurers arises from uncertainty over both the magnitude of liabilities for claim payments and the return on assets purchased with investor capital and premiums. The value of insurer net worth also may fluctuate with changes in interest rates. Finally, up-front payment of premiums and deferred payment of claims create a significant risk of fraud and opportunistic behavior by insurers.

Rationales for Solvency Regulation

In general, consumer difficulty in identifying weak insurers, possibly weak incentives for solvency by some insurers, and high costs to consumers of insurance company failure provide the major rationales for government monitoring of solvency (including controls on insurer behavior) and government guarantees of insurer obligations in the event of insolvency.[1] The case for government monitoring will be presented first, assuming that government guarantees of insurer obligations do not exist. The case for government guarantees and their relation to monitoring will then be discussed.

Government monitoring. The expected cost to insurers of providing coverage declines as insolvency risk grows. The costs of evaluating insurer insolvency risk are high for many consumers. If some consumers cannot identify financially weak insurers at the time coverage is purchased and some firms have weak incentives for solvency, uninformed consumers will be attracted to insurers with low prices but high insolvency risk. If all consumers are uninformed, financially weak insurers might drive out all safe firms by charging lower prices. Since consumers would soon learn that their insurance had little value, demand for coverage would decline. Moreover, even if consumers could costlessly and accurately evaluate solvency risk prior to purchase, they would remain vulnerable to changes in insurer behavior that would increase insolvency risk and appropriate policyholder wealth after the time of sale.[2]

---

[1] For further discussion of several of these issues see Munch and Smallwood (1981), Finsinger and Pauly (1984), and Kunreuther, Kleindorfer, and Pauly (1983).

[2] Such changes in behavior could be especially likely if an insurer's financial condition were seriously weakened by adverse experience.

In principle, government regulation can prevent or at least mitigate these problems. Insurers with the incentive to be safe would be likely to demand such regulation. In addition, a high incidence of insolvencies without solvency regulation would be likely to stimulate substantial consumer awareness of insolvency risk and motivate some insurers to undertake a variety of activities to bond future claim payments, such as restrictions on minimum capital and payments of funds to policy owners. One likely type of restrictive covenant would be an agreement for the insurer to submit to external monitoring. A rationale for government monitoring is that it could be less costly than multiple private arrangements.

Compulsory insurance requirements provide another motive for government monitoring of insurer insolvency risk. For example, persons with few assets to protect are likely to demand low-premium, low-quality compulsory liability coverage. Since the market could be expected to meet this demand, government regulation of solvency might be needed to achieve the underlying policy objective of compulsory coverage.

Government guarantees. Since safety is costly, the efficient level of insurer insolvency risk will not be zero. Absent government guarantees of insurer obligations, insolvency would impose large costs on policyholders, and they are likely to demand some protection against such costs. Risk-averse policyholders will be willing to pay more than the expected cost of unpaid claims to receive such protection. Private provision of such protection may be infeasible, given the possibly high correlation across insurers in factors causing insolvency and the large amounts of capital needed to insure the solvency of a private guarantor. However, it is possible that public provision of mandatory coverage with the costs spread broadly among insurance buyers could be efficient.

The possibility that failure of one insurer or rumors of trouble could produce a "run" that would adversely affect otherwise solvent insurers might provide a second motive for government guarantees. Without government guarantees, it is possible that a run could occur if a failure led to cash flow problems and ultimate liquidation of assets (tangible or intangible) at prices below their true value. However, this motive would appear to be much weaker for property–liability insurers than in a fractional reserve banking system.

Unless all policyholders are unable to identify safe insurers, a major drawback of government guarantees is that they are likely to increase the incidence of insolvency. The reason for this is that accurate risk-based premiums are likely to be infeasible in practice. Hence, government guarantees will involve moral hazard: policyholders will have less incentive to buy coverage from safe insurers and some insurers will have less incentive to be safe.

Since government guarantees erode market discipline for high-risk

insurers, regulation must provide more discipline if an increase in the frequency and severity of insolvencies is to be avoided. However, increases in regulatory monitoring are unlikely to offset completely the effects of reduced private incentives, for two reasons. First, the amount of information and knowledge concerning insurer safety that is available to regulators will not equal that diffused among and communicated through large numbers of market participants and transactions. Second, if government guarantees spread the cost of insurer insolvencies broadly among insurers, policyholders, and taxpayers, they can reduce pressure on government to commit resources and adopt internal controls that are necessary for efficient monitoring. The extent to which this occurs depends on the design of guarantees. Among other factors, if insolvencies impose costs on the owners of safe insurers, they will have greater incentive to demand regulatory actions to control these costs. I return to this subject below.

The general literature on moral hazard in insurance (for example, Shavell 1979) suggests that it is likely to make partial insurance coverage optimal. This implies that efficient guaranty fund protection will not provide complete protection to policyholders and, intuitively, that the optimal "co-payment" will be relatively greater for consumers who are best able to monitor insolvency risk—that is, consumers who can monitor at relatively low cost. A complicating factor is that co-payments will not induce greater monitoring if the costs are borne by other parties, as would be true if the liability insurer of a judgment-proof tortfeasor were to become insolvent.

Solvency Regulation in Practice

State governments have primary responsibility for insurance regulation. Some coordination and uniformity among the states is achieved through the National Association of Insurance Commissioners (NAIC), which promulgates insurer financial reporting requirements and adopts model legislative bills for consideration by individual states. Primary responsibility for solvency regulation of an insurer traditionally has rested with regulators in its state of domicile.

Overview of state solvency regulation. Solvency regulation has three main facets: (1) controls over insurer operations, such as licensing requirements, minimum net worth requirements, and limitations on choice of investments; (2) monitoring of insurer financial condition, including periodic on-site examinations; and (3) a system for paying a portion of the claims of insolvent insurers. The most important monitoring system is administered by the NAIC. A team of examiners uses statistical analysis of financial ratios and scrutiny of financial results to prioritize insurers for further regulatory review or action by regulators in the state of domicile.

Most states enacted guaranty funds after the NAIC adopted a model property–liability insurer guaranty fund bill in 1969.[3] With the exception of New York, which has a pre-funded plan, each state's guaranty fund assesses surviving insurers (in proportion to their premium volume in the state) for amounts needed to pay covered claims of its citizens (Figure 1). Most states limit coverage to $300,000 or less per claim except for workers' compensation insurance claims, which usually are fully covered. The maximum assessment on insurers in any one year generally is limited to either 1 or 2 percent of state premium volume. If the limit is reached, additional assessments are made in subsequent years.[4]

Causes of recent insolvencies. During the period 1984–89, the number of property–liability insurer insolvencies was much larger than historical norms, but the annual insolvency rate was always less than 1 percent of all insurers. Net assessments by guaranty funds increased dramatically during this period (Figure 1) but they still represented less than one-half of 1 percent of nationwide premiums in each year.[5] Many insurers that failed in the 1980s wrote relatively greater amounts of commercial insurance, compared to earlier periods when insolvent insurers more often had specialized in auto coverage.

The increase in property–liability insurer insolvencies has led to substantial controversy over the underlying causes and the efficacy of state solvency regulation. Much of this controversy revolves around a report issued by a U.S. House of Representatives subcommittee chaired by Rep. John Dingell (D., Mich.), following an 18-month investigation. The Dingell report blames insolvencies on insurer fraud and mismanagement coupled with ineffectual regulation and raises the specter of another savings and loan type disaster unless something is done.[6]

The Dingell report reiterates many criticisms of state solvency regulation that have been discussed for the past 20 years. Specific criticisms include insufficient resources devoted to regulation, use of unreliable information, lack of coordination among regulators in different states, infrequent and poorly prioritized on-site financial examinations, and the absence in many states of requirements for independent

---

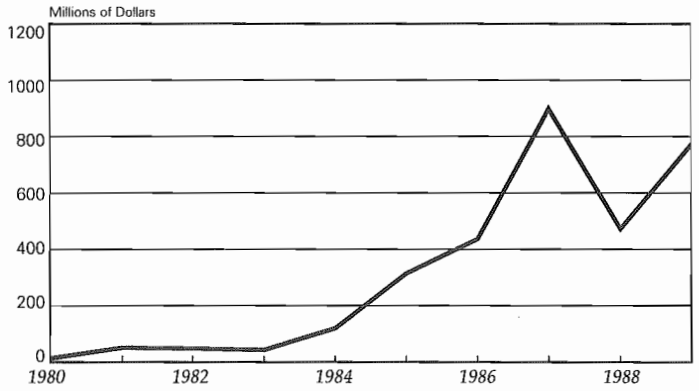
[3] This followed the introduction of a bill in the U.S. Senate that would have created a federal guaranty system. At that time only a few states had guaranty systems.

[4] Guaranty fund laws in a majority of states include a provision that permits insurers to raise subsequent premiums to cover the costs of assessments. However, in a competitive environment, premium rates will only reflect the expected cost of assessments from new and renewal sales rather than the cost of assessments related to coverage sold in prior years. Other states require premium surcharges for assessments or allow insurers to offset assessments against state premium taxes over a period of years.

[5] Premiums written for the industry totaled $208 billion in 1989.

[6] For further discussion and critique of this report, see Harrington (1991). Also see NAIC (1990).

Figure 1 *Net Assessments by Property-Liability Insurance Guaranty Funds: 1980 to 1989*



Source: National Conference of Insurance Guaranty Funds.

CPA audits of insurer financial statements, for certification of loss reserves by an actuary, or both.

The report focuses on four property–liability insurer insolvencies, three of which (Mission Insurance Company and affiliates, Integrity Insurance Company, and Transit Casualty Insurance Company) are large compared to historical norms. As of year-end 1989, net guaranty fund assessments for these three insolvencies totaled almost $900 million. The National Conference of Insurance Guaranty Funds (NCIGF) projected that net assessments ultimately would total $1.3 billion, but the magnitude of the ultimate deficit and required guaranty fund assessments is subject to significant uncertainty.[7]

The Dingell report and other anecdotal analyses generally suggest, based on hindsight, that these insurers undertook rapid growth in new and risky product lines and charged substantially inadequate prices and established woefully deficient loss reserves (reported liabilities for claim costs). Inadequate prices and loss reserves are frequently emphasized in postmortems of insurers. However, as is discussed further below, it is

[7] According to the Dingell report, the receivers for these insolvencies estimated a total deficit of $5 billion. Transit Casualty accounted for over one-half of this amount, but the report suggested that the estimate for Transit Casualty could contain substantial error. As of year-end 1989, the NCIGF projected net assessments of approximately $300 million for this company.

usually difficult to determine the extent to which these phenomena reflect unfavorable realizations in losses as opposed to deliberate underpricing and under-reserving. Mission, Integrity, and Transit Casualty also made extensive use of managing general agents authorized to make risk selection and pricing decisions and to arrange for reinsurance. Much of the insurance and reinsurance sold by these insurers was reinsured with hundreds of different U.S. and foreign reinsurers. Some of these reinsurers became insolvent and did not pay amounts owed Mission, Integrity, and Transit Casualty. Many others are denying payment, alleging fraudulent concealment of information by these companies. These disputes are now being litigated.

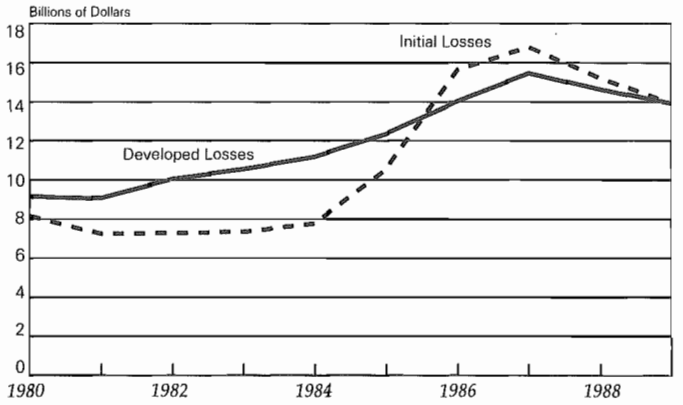
As has been the case for some synopses of the savings and loan mess, allegations that property–liability insurer insolvencies are due mainly to incompetence and moral turpitude are exaggerated and incomplete. At least two other causes need to be considered. First, unexpected growth in liability claim costs for policies sold during the early 1980s undoubtedly contributed to the increase in the number and magnitude of property–liability insurer insolvencies, which began in 1984 (Figure 2).[8] This increase in insolvencies followed sharply deteriorating industry financial results for commercial liability insurance coverage and coincided with the onset of the highly publicized liability insurance crisis.

Mission, Integrity, and Transit Casualty had been in business for many years prior to insolvency, had received the highest financial rating from the major insurance company rating agency (the A.M. Best Company) almost until the time that regulatory action was taken, and had been audited by leading CPA firms. As the Dingell report emphasizes, these insurers rapidly expanded sales of liability coverage prior to insolvency. In retrospect, much of this coverage was very risky; for example, toxic waste liability, products liability for pharmaceutical companies, excess limits coverage, and reinsurance. Based on hindsight, the Dingell report concludes that these companies engaged in massive and deliberate understatement of loss reserves. However, a significant amount of the reserve inadequacy for these and other insurers that failed since 1984 is likely to have been caused by unpredictable increases in both the frequency and severity of claims, even if financial problems associated with such increases did cause some in-

[8] General liability insurance includes coverage for products liability, environmental liability, and the like. While some of the growth illustrated in Figure 2 could reflect deliberate understatement of loss reserves in the early 1980s, the data nonetheless suggest substantial unexpected growth in claim costs. The data do not include the experience of insurers that later became insolvent. Such companies may have been most likely to deliberately understate loss reserves in the early 1980s.

Figure 2

Property-Liability Insurance Industry Reported Losses: 1980 to 1989



Note: All figures in constant 1989 (GNP-adjusted) dollars. Initial losses are losses reported at end of year t for accidents in year t. Developed losses are losses reported at end of 1989 for accidents in year t. Losses include allocated but exclude unallocated loss adjustment expenses.

Source: A.M. Best Co., *Best's Aggregates and Averages*, 1990 edition.

surers to pursue high-risk strategies in the face of imminent insolvency—that is, to "go for broke" or "gamble for resurrection."

Second, although little is known about this issue, interest rate risk also might have played a significant role in the problems of some insurers, as was the case for many savings and loans. Property–liability insurers invest mainly in medium- and long-term government and high-grade corporate bonds. Since changes in interest rates generally have a greater impact on the value of these investments than on the value of insurer liabilities, the market value of property–liability insurer net worth is negatively related to interest rates. It is possible that increases in interest rates in the early 1980s, in conjunction with unexpected increases in claim costs, produced severe financial problems or actual insolvency for some insurers. These problems may have led some of these insurers to go for broke.

The property–liability insurance market also appears to be characterized by cyclical fluctuations in prices. While the causes of such fluctuations are not fully understood, cyclical reductions in commercial liability insurance prices during the early 1980s could have contributed to the financial problems and subsequent insolvency of some insurers (Harrington and Danzon 1991).

The role of guaranty funds. It would be very difficult or impossible to sort out the effects of guaranty funds from other factors that cause insolvency. Based on theory, it is highly probable that guaranty funds contributed to the increased frequency and severity of insolvencies in recent years, as well as to the greater prevalence of insolvent insurers that wrote significant amounts of commercial insurance as opposed to personal auto coverage. As noted earlier, guaranty fund protection can encourage entry and growth of weak insurers with low premiums, and it can facilitate go for broke behavior by insurers that have been wounded by exogenous influences.[9]

Without guaranty fund protection, many insurance buyers would have much less incentive to choose an insurer with the lowest premium, regardless of its safety. Although many insurance buyers might be ill-prepared to assess insurer financial strength, others (such as large commercial buyers, or agents and brokers) are better able to do so. Moreover, a strong preference for safety would motivate insurers to make their promises to pay claims more credible to all buyers. This could be achieved by holding more capital, by obtaining high ratings from private financial rating services, and the like. Agents and brokers would be more motivated to identify and deal with safe insurers in order to avoid loss of future income due to policyholder departures in the event that an insurer failed. Other parties, such as providers of mortgages and auto loans, also would be expected to pay more attention to insurer safety.

Contrary to complaints that guaranty fund protection may be inadequate, a significant advantage of property–liability insurance guaranty funds is that coverage is limited.[10] Expansion in the scope of guaranty fund protection should be avoided. Instead, the scope of protection probably can be reduced to achieve a better balance between providing incentives for safety and protecting consumers from losses in the event of insolvency. One approach is to reduce or even eliminate guaranty fund protection for commercial insurance. This would increase incentives for commercial buyers to deal with safe insurers and discourage them from buying coverage that they know is underpriced. Variants of this approach have been endorsed by a large insurer trade group and by the NAIC, and about 10 states have adopted limitations related to net worth of commercial insurance buyers. A majority of state guaranty

---

[9] Insurers with substantial intangible assets (such as those that arise from investments in sales forces) that could be lost in the event of insolvency have considerable incentive to operate safely regardless of the scope of guaranty fund protection. However, guaranty fund protection gives buyers less incentive to purchase coverage from such insurers unless their intangible assets are associated with the provision of desired services.

[10] Life-health guaranty fund coverage is even less comprehensive and is arguably inadequate in some states.

funds contain small deductibles for covered claims. Consideration also might be given to incorporating a coinsurance provision that would require buyers (commercial only or both commercial and personal) with guaranty fund protection to bear a percentage (for example, 10 percent) of their loss above any deductible in the event of insolvency, unless the loss falls on some party other than the buyer.

Changes of this type can be made only if political pressure for expansion of guaranty fund protection is overcome. The benefits of guaranty fund protection are obvious and highly visible to the public; the costs are spread broadly and are largely invisible. The popular media seem to emphasize incomplete coverage under existing guaranty funds rather than promote informed discussion of the advantages of further restrictions.

The adoption of risk-based capital requirements for insurers or advance, risk-based premiums for insurance guaranty funds also might mitigate the adverse effects of guaranty fund protection on incentives for safety. An NAIC task force is studying the former possibility. These proposals have theoretical appeal, but their successful application is likely to be hindered by inability to measure insurer risk accurately, especially the magnitude of insurer liabilities. Moreover, regulatory choice of capital standards or risk-based premium rates also would be subject to substantial political pressure.

Any state guaranty fund system with advance premiums (as opposed to current post-insolvency assessment schemes) also would create a risk that accumulated funds would be appropriated by state legislatures for non-insurance purposes.[11] Perhaps more important, post-insolvency assessment in many states may provide financially strong insurers (and their trade organizations) with more incentive to exert pressure for effective solvency surveillance and efficient liquidation of insolvent insurers than would be the case with advance premiums. The reason for this is that unexpected increases in the costs of assessments are likely to be borne by owners, as opposed to being fully shifted to customers or taxpayers.[12]

Is Federal Regulation Desirable?

The increase in property–liability insurer insolvencies has led to valid concern about the ability of regulation to detect and deal with aggressive pricing and deliberate understatement of loss reserves, as

[11] Experience under New York's advance premium system provides some support for this concern.

[12] The desire to avoid loss of premium tax revenue in states that allow offset of guaranty fund assessments against premium taxes also might produce pressure for controlling the cost of assessments.

well as with the extent to which reinsurance can be used to finance excessive growth. However, based on evaluation of industry net worth relative to liabilities and, perhaps, recent actions by the NAIC (described later in this section), industry analysts generally believe that the financial condition of the property–liability insurance industry is basically sound (Stevenson 1990; McCauley and Siemek 1990). Under the current regulatory system and reasonable economic scenarios, it is implausible that insolvency problems in insurance will even begin to rival those of the savings and loan industry.

Nonetheless, it is highly probable that legislation will soon be introduced that will provide for some federal role in insurance regulation. While few details are available, it is possible that such legislation will require minimum federal standards for state solvency regulation and provide for direct federal regulation of reinsurers and surplus lines insurers.[13] Other frequently discussed proposals for federal intervention in solvency regulation, some of which have a long history, include an option for federal regulation of companies that operate in many states, and a federal insurance guaranty program.

The NAIC has taken a number of steps during the past several years designed to improve solvency regulation (NAIC 1990). The extent to which pressure generated by the Dingell investigation influenced some of these changes is not clear. It is likely to have had some effect. Model bills have been enacted or amended to require increased disclosure and oversight of the activities of managing general agents and reinsurance brokers and managers, and to significantly strengthen conditions that reinsurers must meet before insurers can reduce their reported liabilities to reflect reinsurance purchases. The amount of financial statement disclosure for reinsurance transactions and loss reserves was significantly expanded. The NAIC also adopted minimum standards for state solvency regulation and a mechanism for certifying state compliance.

The establishment of minimum standards by the NAIC weakens the case for federal standards. At least 15 states have requested certification; many others are considering legislation needed to achieve compliance. If some states fail to take action, their insurers will be likely to receive greater scrutiny in other states where they do business (or in states where they may be seeking a license). The attendant erosion in traditional deference to domiciliary regulators will create pressure for certification. Financially strong insurers also can be expected to pressure for certification of their home states.

Recent insolvency experience and debate should lead to improved monitoring by state regulators. It is clear that regulators need to pay

[13] Surplus lines insurers sell coverage in a state without being licensed and subject to full regulation.

close attention to insurers with rapid growth and extensive use of reinsurance in product lines that are difficult to price. This is especially important if most of their policyholders are largely protected by guaranty funds, if their owners or principals have little to lose from insolvency, or both. More attention also should be devoted to measuring interest rate risk and to estimating and monitoring the market value of net worth.

In principle, increased centralization of solvency regulation has its advantages (for example, reduction in possibly inefficient duplication of effort, better coordination of liquidations of multistate insurers, and so on). However, it is not clear that politically induced inefficiencies would be smaller with federal regulation. In fact, they could be greater. Given the history of federal guarantees for depository institutions, the risk that federal intervention in insurance solvency regulation will ultimately lead to an inefficient expansion in the scope of guaranty fund protection is not trivial. Spreading the cost of insolvencies even more broadly through a federal guaranty system, which probably would be "prefunded" (and most assuredly would be backed by taxpayers), is the one thing that should be avoided if the objective of policy is to minimize the total cost of insurer insolvencies.

Moreover, while one might hope that the Congress would learn from past mistakes, congressional inaction in dealing with mounting insolvency costs for savings and loans is relevant to the debate over insurance regulation. The deliberate congressional policy of "forbearance" for insolvent thrifts, which multiplied the total cost of insolvency by allowing go for broke behavior, is (or at least should be) sobering in this regard. It has been argued persuasively that the policy of forbearance was not an aberration; it was an ordinary and routine response to constituent pressure (Romer and Weingast 1990). State regulators also may face considerable pressure to delay liquidation of insolvent domestic insurers, but regulators in other states will face less pressure to do nothing while losses mount, and deference to domiciliary regulators is not without limits. Moreover, any shortcomings of state regulation that allowed the costs of recent property–liability insurer insolvencies to increase seem trivial compared to the federal policy of deliberate forbearance for insolvent savings and loans. Since the incentives facing the Congress have not obviously changed, it is not at all clear that a fiasco of this sort cannot happen in some other area.

Rate Regulation

Government regulation can affect the average overall rate level for an insurer. For a given average rate level, it also can affect the level of rates paid by consumers with different characteristics (for example, by

restricting rate classification). If regulation suppresses rates below market levels, whether overall or selectively, supply shortages can be prevented, at least in the short run, by mandating service to all customers through involuntary market mechanisms such as reinsurance pools, joint underwriting associations, and assigned risk plans.

Rationales for Rate Regulation

Little or no justification exists for regulation of property–liability insurance rates to enhance efficiency. The competitive structure of most property–liability insurance markets, most notably the absence of substantive entry barriers, is inconsistent with supra-cost pricing in long-run equilibrium. The industry's limited antitrust exemption does not alter this conclusion, as will be discussed below. Entry barriers for the sale and underwriting of insurance by other institutions, such as banks, might possibly prevent the introduction of alternative technologies, but they will not produce supra-cost prices. Hence, regulatory limits on maximum rate levels are not justified (Joskow 1973; Klein 1989; and Cummins and Tennyson 1991; also see Harrington 1990).

The use of regulation to establish minimum rates has been suggested as a means to reduce insolvency risk for some insurers and perhaps to dampen any cyclical fluctuations in prices.[14] Even if this approach were politically feasible, it is not at all clear that it would be preferable to regulatory monitoring of pricing and risk-taking, especially in view of the anti-competitive potential of minimum rate regulation.

Adverse selection with asymmetric information could provide some rationale for government establishment of residual markets and regulation of residual market rates but evidence suggests that these markets are very small, absent substantive regulatory suppression of voluntary or residual market prices. Theoretical work on insurance pricing also raises the possibility that insurers may engage in some inefficient risk classification (Crocker and Snow 1986), but again this is not likely to justify significant intervention in insurer pricing and risk selection decisions. Finally, theory suggests the possibility of efficiency gains from subsidizing liability insurance rates for some persons or entities that might otherwise engage in risky activity without liability coverage (Keeton and Kwerel 1984). Even if this is true in principle, regulators do not have the knowledge of individual consumer preferences that is necessary for efficient implementation (that is, for target efficiency).

---

[14] Several states passed "flex-rating" laws following the liability insurance crisis of the mid 1980s. The alleged purpose of these laws, which require approval of percentage rate changes in excess of specified benchmarks, was to reduce price-cutting in so-called "soft" markets that was believed to affect subsequent price increases and availability problems in "hard" markets.

Rate Regulation in Practice

Rate regulation across states is very diverse, both in terms of statutory authority for rate regulation and implementation by state insurance commissions. In personal auto insurance, for example, over 20 states have "competitive rating laws" intended to allow market competition to determine rates. The remaining states require some form of prior approval by regulators before rates are changed. Rate regulation in some of these states is probably pro forma. In contrast, for many years a relatively small number of states, including Massachusetts, New Jersey, and South Carolina, have employed comprehensive rate regulation with varying degrees of overall rate suppression and restrictions on rate classification. The results of such policies have included large involuntary markets and exits by many insurers.[15]

The trend in both auto insurance and workers' compensation insurance in the past several years has been toward greater regulatory intervention to limit price increases. While workers' compensation was exempted, this trend is exemplified by the passage of Proposition 103 in California, with its populist proposal for an across-the-board rate rollback for most property–liability lines, its limits on rate classification, and its institution of prior approval rate regulation. The greater politicization of rate regulation in auto and workers' compensation insurance coincides with increases in the underlying costs of providing coverage and thus in premium rates that would be charged in the absence of regulation.

Attempts to make coverage more affordable through rate regulation cannot be reconciled with economic efficiency. Proponents of public-utility-style rate of return regulation (including limits on allowable operating expenses) and restrictions on rate classification argue that insurance rates are too high because of inadequate competition that produces inefficiency and excessive profits (Consumer Federation of America et al. 1989). They also argue that rate classification is arbitrary and unfair (or that insurers somehow fail to do it correctly). While they argue for repeal of the industry's antitrust exemption in order to promote competition, their regulatory agenda is completely at odds with this goal. These claims cannot be reconciled with the industry's competitive structure, especially ease of entry. Again, the antitrust exemption does not alter this conclusion. If it did, the efficient solution would be to modify the exemption, not to expand rate regulation.

While measurement of insurer profits and rates of return is prob-

[15] For example, 15 insurer groups left the South Carolina automobile insurance market in 1990, mainly because of the adverse regulatory environment.

lematic, accounting data do not suggest excessive returns.[16] Claims of widespread inefficiency usually point to "large" ratios of operating expenses to premiums. The costs of settling and paying claims (for example, attorneys' fees) are lumped together with commissions to agents, risk selection and policy issue costs, and state premium taxes. The level of claim costs is usually not mentioned, unless it is to castigate insurers for not doing enough to reduce accident rates.

The argument that insurance markets exhibit widespread inefficiency implies that insurers are willing to leave large amounts of money on the table. Instead, insurers have substantial incentive (the lure of higher profits) to minimize costs, including both the sum of claim payments and claim settlement expenses and the cost of product distribution necessary to provide a given level of service. The argument that the insurance industry is highly inefficient also presumes an absence of competition. If a large part of the market could be served at lower cost, why does some company not do so, given the immense profit potential? Why do consumers upset by high premiums not flock to insurers with lower expenses, if by doing so they could pay less without any reduction in service? If rate regulation somehow distorts incentives for efficiency, the efficient policy is to abandon rate regulation, not to control expenses.

It is possible that some inefficient insurers could survive if consumers find it difficult to identify low-cost insurers. Whether this is an important problem in insurance markets has been disputed by academic researchers (for example, Dahlby and West 1986). My own view is that it is implausible that significantly greater premiums for large numbers of buyers could be due to costly consumer search. Moreover, to the extent that comparison shopping is difficult enough to justify action by the government, the preferred mode of regulation is increased information disclosure rather than rate regulation or restrictions on insurer expense levels.

Consequences of rate suppression. The use of rate regulation to suppress rates has several adverse consequences that are suggested by basic economic theory and, in some instances, empirical evidence (see, for example, Grabowski, Viscusi, and Evans 1989; Rottenberg 1989). Rate suppression will make less coverage available voluntarily. This produces larger involuntary markets, such as joint underwriting associations and

[16] Available evidence on profitability in the property–liability insurance industry, although subject to considerable debate, does not indicate excessive profits or rates of return on net worth. While details differ, most analyses suggest that the rate of return on net worth for the overall industry during recent years has averaged around 10 percent. (See, for example, Insurance Services Office 1989; also see Cummins and Tennyson 1991.) Measurement of insurer profitability is problematic for several reasons. See Harrington (1988) for details.

reinsurance pools. It also provides an incentive for insurers to reduce product quality, perhaps in some cases by increasing insolvency risk. As noted, continued restrictions on rates also have influenced exit by some insurers.

Rate suppression and the mandated markets that tend to follow also are likely to produce significant cross-subsidies. Rates tend to increase for consumers who, on average, have low expected claim costs so that high-risk buyers can pay below-market rates. Such policies reduce the incentive for high-risk buyers to control claim costs. Moreover, by requiring insurers to pool claim costs among companies, reinsurance facilities and joint underwriting associations are likely to reduce the incentive for individual insurers to settle claims efficiently. It is also possible that rate suppression reduces political pressure on state legislatures to adopt potentially desirable forms of claim cost control.

Restrictive rate regulation also can produce long and costly rate hearings, in which insurance industry employees, state government employees, consultants, advocates, other experts, and counsel for all parties engage in unresolvable arguments concerning issues such as the magnitude of future loss costs, the appropriate size of premium loadings for insurer expenses and income taxes, and the rate of return needed by insurers.

The application of public-utility-style rate of return regulation in the property–liability insurance market is subject to particularly severe shortcomings. The rate base chosen, which is likely to be accounting net worth, may diverge significantly from economic net worth for many companies, especially those with substantial intangible assets that reflect the value of investments in distribution systems, product development, claims facilities, and human capital. The amount of net worth necessary to write a given level of insurance also must be specified. Any fixed norm will be likely to distort supply in a number of ways. Low norms will produce lower premiums but will give insurers incentive either to exit or to reduce net worth and thus increase insolvency risk. It also is necessary to allocate an insurer's net worth by line and by state for insurers that write multiple lines in multiple states. This allocation has no compelling theoretical basis and the use of norms fixed by line and by state is likely to cause undesirable fluctuations in the supply of coverage. For example, a norm that allocates less (more) net worth than an insurer feels is necessary to write a given level of coverage will cause the insurer to contract (expand) supply or perhaps reduce (increase) quality for that line of business.

Rate of return regulation for utilities commonly is based largely on historical costs of providing services, along with specified procedures for allowing for future increases in labor and fuel costs. Insurance rate-making is not amenable to these simple procedures. The magnitude of insurance claim costs generally is much less certain than utility costs,

and the magnitude of costs becomes known much more slowly than for utilities, especially for long-tailed liability lines. Moreover, considerable heterogeneity in expected claim costs often exists among insurers that write business in a given line or state. Attempts to use fixed formulas and procedures to forecast losses under rate regulation again would be likely to lead to serious distortions in supply, and they would have an unequal effect across companies. Attempts by regulators to conduct detailed analyses of the anticipated loss experience for each company and line of business would lead to costly duplication of insurer activities. They also would be likely to produce unresolvable disputes about various factors that could affect future costs.

Price regulation also tends to reduce the incentive for companies to adopt efficient innovations over time. If, for example, an insurer were limited to a specified rate of return on net worth, the potential for increased profits from the development of new procedures that reduced operating expenses would largely disappear. As a result, the insurer would be less likely to fund a given investment, and expenditures for research on cost-saving or service-enhancing innovations would be expected to decline.

All of these problems with rate of return regulation might be necessary evils for natural monopolies. Rate of return regulation for property–liability insurers can only be justified if the policy objective is to have prices determined by political pressure rather than competition.

The Antitrust Exemption

The McCarran-Ferguson Act, which was enacted by the Congress in 1945, endorses the primacy of state regulation of insurance and provides the industry with an exemption from federal antitrust law for activities that are subject to state oversight and that do not involve boycott, coercion, and intimidation. A number of cooperative activities have developed under this exemption, most importantly the development of policy forms and estimation and dissemination of "prospective loss costs" by industry advisory organizations. Advisory organizations have also promulgated "advisory rates" that included expense and profit loadings, but this is being phased out.[17] Some form of cooperative development of policy forms and sharing of data on paid claims would be likely to survive antitrust scrutiny. Advisory organization estimation of ultimate costs for claims already incurred (known as loss develop-

[17] The original version of this paper stated that advisory rates had already been discontinued. In his comments on the paper, J. Robert Hunter pointed out that this was not the case.

ment) probably would survive; forecasting of costs for future claims (known as trending) almost certainly would not. Legislation has been introduced in the U.S. House by Rep. Jack Brooks (D., Texas) that would virtually repeal the insurance industry's antitrust exemption.[18]

Rationale for the Antitrust Exemption

The cost of insurance rate-making for any of the hundreds of lines and sublines of coverage is largely fixed. Loss forecasting involves the estimation of ultimate claim costs on claims already incurred, using data on paid claims, and prediction of claim costs for new and renewal coverage using this and other information. Advisory organizations pool information from a large number of insurers and forecast losses, and make the results available to companies at cost for use as they see fit. It is argued that this process lowers the cost of rate-making, reduces entry barriers, and increases forecast accuracy (and thus lowers insolvency risk), especially for small insurers with few data of their own. Cooperative development of policy forms also reduces fixed costs, facilitates comparisons of price and quality of service by consumers, and helps make claim cost data comparable across companies.

Centralized production of information by advisory organizations obviously is much less costly than if the same activities were duplicated by many firms. Whether the development of prospective loss costs by advisory organizations yields significant efficiency gains depends on their value in improving individual insurer forecasts. This in turn depends on many factors, including the extent to which firms can infer information of other firms from their behavior or from prices. If the information provided by advisory organizations has significant value, its availability at low cost is likely to increase its use and to reduce forecast error variance and thus capital requirements. The result would be lower prices for any given level of insolvency risk. Of course, this result assumes that the cooperative activity does not produce active or tacit collusion.

The Antitrust Exemption in Practice

Dramatic growth in commercial liability insurance premiums between 1984 and 1986 produced allegations that insurers were colluding to raise rates above costs and calls for the Congress to modify or repeal the McCarran-Ferguson Act (Angoff 1988). A 1988 federal antitrust suit

[18] The bill includes safe harbors for sharing of data on paid claims and estimation of costs for claims already incurred. It would not protect estimation of future costs following a transition period. No safe harbor is provided for development of policy forms.

by the attorneys general of many states, alleging collusion in conjunction with changes in the principal general liability insurance coverage form, was subsequently dismissed but generated substantial negative publicity for the antitrust exemption.[19]

A large amount of research dealing with causes of the mid 1980s liability insurance crisis concludes that collusion is an implausible explanation and suggests a variety of economic factors that led to these problems (Clarke et al. 1988; Harrington 1988; Harrington and Litan 1988; Winter 1988; Priest 1987; and Cummins and Danzon 1990). In general, the industry is ill-suited for cartel behavior given its competitive structure, heterogeneity, and multiplicity of product lines. There is no evidence that modern advisory organizations attempt to compel the use of prospective loss costs (or advisory rates). Moreover, commercial liability insurance pricing is characterized by substantial flexibility, including the widespread use of individual risk rating, which is prima facie inconsistent with price fixing. In auto insurance, most of the major insurers file their own rates as opposed to using advisory organization data (Danzon 1983; Eisenach 1985).

The outlook for changes in the McCarran-Ferguson Act is uncertain. Support for curtailment or elimination of the antitrust exemption has come from consumer groups and from persons with strong faith in the efficacy of antitrust law. It is likely that some supporters of federal insurance regulation favor change in the Act because it will erode the primacy of state regulation. Insurers and trade groups are divided on the subject. Some insurer trade groups apparently are willing to compromise and accept some change in the exemption. Other insurers are willing to repeal the exemption in exchange for an exemption from state rate regulation.

Substantial change in the McCarran-Ferguson Act's antitrust exemption almost certainly will not enhance the affordability and availability of coverage. At worst, it will produce higher prices and less stability. The only certainty is that a significant change (such as enactment of the Brooks bill) will produce a large amount of uncertainty about what is legal and the possibility of substantial litigation. The likely result is a significant transfer of resources to the legal profession.

[19] A similar state antitrust suit in Texas was settled in 1991. Ayres and Seligman (1989) and Priest (1989) provide opposing economic views of the antitrust suit. Priest presents a compelling case that the anticompetitive story of Ayres and Seligman is without significant merit.

Conclusions

The case for federal regulation of insurance company solvency is not compelling. Federal intervention could set the stage for significant, inefficient expansion in government guarantees of insurer obligations. What would promote efficiency is the greater reliance on market discipline that would be induced by reducing guaranty fund protection for commercial insurance buyers. Holding the line on guaranty fund protection, and, if possible, reducing its scope, is probably the single most important step that can be taken to ensure the financial integrity of the insurance industry.

Additional government control over insurance rates is not needed. It would be likely to produce significant inefficiency, including higher claim costs. Instead, rates should be deregulated, and insurance affordability problems should be addressed by measures that reduce claim costs in efficient ways. Finally, changing the insurance industry's antitrust exemption will not reduce insolvencies, make insurance more affordable, or dampen volatility in prices and availability. It could make these problems much worse.

References

Angoff, Jay. 1988. "Insurance Against Competition: How the McCarran-Ferguson Act Raises Prices and Profits in the Property–Casualty Insurance Industry." *Yale Journal on Regulation*, vol. 5, pp. 397–415.

Ayres, Ian and Peter Seligman. 1989. "The Economics of the Insurance Antitrust Suits: Toward an Exclusionary Theory." *Tulane Law Review*, vol. 63, pp. 971–97.

Clarke, Richard N., Frederick Warren-Boulton, David K. Smith, and Marilyn J. Simon. 1988. "Sources of the Crisis in Liability Insurance: An Empirical Analysis." *Yale Journal on Regulation*, vol. 5, pp. 367–95.

Consumer Federation of America et al. 1989. "Reducing Auto Insurance Rates: A Comprehensive Program." Washington, D.C.: Consumer Federation of America.

Crocker, Keith J. and Arthur Snow. 1986. "The Efficiency Effects of Categorical Discrimination in the Insurance Industry." *Journal of Political Economy*, vol. 94, pp. 321–44.

Cummins, J. David and Patricia M. Danzon. 1990. "Price Shocks and Capital Flows in Liability Insurance." Working Paper, Department of Insurance and Risk Management, The Wharton School, University of Pennsylvania, Philadelphia, PA.

Cummins, J. David and Sharon Tennyson. 1991. "Controlling Automobile Insurance Costs." The Wharton School, University of Pennsylvania.

Dahlby, Bev and Douglas S. West. 1986. "Price Dispersion in an Automobile Insurance Market." *Journal of Political Economy*, vol. 94, pp. 418–38.

Danzon, Patricia M. 1983. "Rating Bureaus in U.S. Property–Liability Insurance Markets: Anti- or Pro-Competitive?" *Geneva Papers on Risk and Insurance*, vol. 8, pp. 371–402.

Dingell, John D. Chair. 1990. *Failed Promises—Insurance Company Insolvencies*. Report by the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, U.S. House of Representatives.

Eisenach, Jeffrey A. 1985. "The Role of Collective Pricing in Auto Insurance." Ph.D. thesis, University of Virginia, and Staff Report, U.S. Federal Trade Commission, Bureau of Economics.

Finsinger, Jorg and Mark V. Pauly. 1984. "Reserve Levels and Reserve Requirements for

Profit-Maximizing Insurance Firms." In Bamberg, G. and K. Spremann, eds., *Risk and Capital*. Berlin: Springer-Verlag.

Grabowski, Henry W., Kip Viscusi, and William N. Evans. 1989. "Price and Availability Tradeoffs of Automobile Insurance Regulation." *Journal of Risk and Insurance*, vol. 56, pp. 275–99.

Harrington, Scott E. 1988. "Prices and Profits in the Liability Insurance Market." In Robert E. Litan and Clifford Winston, eds., *Liability: Perspectives and Policy*. Washington, D.C.: The Brookings Institution.

———. 1990. "Competition and Regulation in the Automobile Insurance Market." Paper presented at American Bar Association National Institute on Insurance Competition and Pricing in the 1990s, Baltimore, MD, June 2–3.

———. 1991. "Regulation of Insurance Company Solvency." *Regulation: Cato Review of Business and Government*. In press.

Harrington, Scott E. and Patricia M. Danzon. 1991. "Price Cutting in Liability Insurance Markets." Paper presented at annual meeting of American Law and Economics Association, Champaign, IL, May 24–25.

Harrington, Scott E. and Robert E. Litan. 1988. "Causes of the Liability Insurance Crisis." *Science*, vol. 239, pp. 737–41.

Insurance Services Office. 1989. *1988 Insurer Financial Results*. New York, NY.

Joskow, Paul. 1973. "Cartels, Competition, and Regulation in the Property–Liability Insurance Industry." *Bell Journal of Economics and Management Science*, vol. 4, pp. 375–427.

Keeton, William R. and Evan Kwerel. 1984. "Externalities in Automobile Insurance and the Uninsured Driver Problem." *Journal of Law and Economics*, vol. 27, pp. 149–80.

Klein, Robert W. 1989. "Competition in Private Passenger Automobile Insurance: A Report to the Personal Lines (C) Subcommittee." National Association of Insurance Commissioners.

Kunreuther, Howard, Paul R. Kleindorfer, and Mark V. Pauly. 1983. "Insurance Regulation and Consumer Behavior in the United States." *Journal of Institutional and Theoretical Economics*, vol. 139, pp. 452–72.

McCauley, John J. and Alan Siemek. 1990. "The P/C Industry—Next on the Bailout List?" *Best's Review, Property-Liability*, vol. 91, October, pp. 17–18, 20, 108.

Munch, Patricia and Dennis Smallwood. 1981. "Theory of Solvency Regulation in the Property and Casualty Insurance Industry." In Gary Fromm, ed., *Studies in Public Regulation*. Cambridge, MA: MIT Press.

National Association of Insurance Commissioners. 1990. "State Actions to Improve Insurance Solvency Regulation." Kansas City, KS: NAIC.

Priest, George L. 1987. "The Current Insurance Crisis and Modern Tort Law." *Yale Law Journal*, vol. 96, pp. 1521–90.

———. 1989. "The Antitrust Suits and the Public Understanding of Insurance." *Tulane Law Review*, vol. 63, pp. 999–1044.

Romer, Thomas and Barry R. Weingast. 1990. "Political Foundations of the Thrift Debacle." Paper presented at CEPR Conference on Reform of Deposit Insurance and Regulation of Depository Institutions, Washington, D.C., May 18–19.

Rottenberg, Simon. 1989. "The Cost of Regulated Pricing: A Critical Analysis of Auto Insurance Premium Rate-Setting in Massachusetts." Boston, MA: Pioneer Institute for Policy Research.

Shavell, Steven. 1979. "On Moral Hazard and Insurance." *Quarterly Journal of Economics*, vol. 93, pp. 541–62.

Stevenson, Merril. 1990. "A Question of Balance: A Survey of American Insurance." *The Economist*, October 27, pp. S5–S20.

Winter, Ralph A. 1988. "The Liability Crisis and the Dynamics of Competitive Insurance Markets." *Yale Journal on Regulation*, vol. 5, pp. 455–99.

Discussion

*J. Robert Hunter**

The positions expressed in Scott E. Harrington's paper represent an effort in what I would term forensic scholarship. His point of view is similar to the positions taken by his insurance industry clients. Consider, for instance, how Harrington strains to make points favorable to long-standing positions held by insurers:

(1) He writes that "efficiency would be served by deregulation of rates," and at the same time suggests maintaining the antitrust exemption. What could be nicer for insurance companies than deregulated cartel pricing? What could be worse for America's insurance consumers?

(2) He finds that solvency is adversely affected by insurance "uncertainty," totally ignoring the fact that studies of the riskiness of property–casualty insurance reveal average risk. Indeed, although insurers claim below-average returns over the last two decades, the property–casualty insurer stock index rose more than twice as fast as the Dow Jones Industrial Average.

(3) He writes that "allegations that property–liability insurer insolvencies are due mainly to incompetence and moral turpitude are exaggerated and incomplete." Yet, elsewhere he notes that the Dingell report concluded that some insurers pursued "high-risk strategies," they were led "to 'go for broke'," that insurers engage in "deliberate understatement of reserves," and that some general liability insurers deliberately and massively understated loss reserves.

*President, National Insurance Consumer Organization.

(4) Harrington writes, "Based on theory, it is highly probable that guaranty funds contributed to the increased frequency and severity of insolvencies in recent years," noting that "large commercial buyers" are better able to assess the financial strength of low-cost insurers. Why would a sophisticated buyer with millions at risk for liabilities to third parties want a $300,000 cap from a guaranty fund? Not to mention all the wait and hassle to collect property claims from a guaranty fund?
(5) Harrington finds a competitively structured market for property–liability insurance, but ignores the serious blocks to competition that a study of insurer conduct reveals: the antitrust exemption; the anti-rebate laws (a type of fair trade law, where the retail-level or agent price can be set and enforced by the wholesaler or insurer); and the anti-group laws (whereby people are not permitted to join together to buy insurance). He makes passing comment on the total barrier to bank entry, but not on the severe economic barrier to entry into direct writing of insurance, where the real competition for personal lines insurance occurs. He mentions, but fails to explore, the information barriers people face in trying to find the proper price/service information on insurers. He fails to mention the fear that consumers have of moving from insurer to insurer, because of the total freedom of underwriting and cancellation during the first 60 days of coverage with a new insurer, in most states.

In this discussion I hope to disabuse Harrington of the recommendations that I believe to be anti-consumer, namely, those that would:

(1) Maintain the status quo as to state regulation of solvency, and decrease the coverage of the guaranty funds, particularly for commercial risks;
(2) Deregulate rates; and
(3) Maintain the antitrust exemption. (Harrington opines that freeing insurers from the cartel might produce even higher prices and less stability.)

Solvency/Guaranty Fund Issues

The real reason for the recent increase in insolvencies was the property–casualty insurance cycle, which bottomed in the mid 1980s and which I believe was itself caused by greed and/or incompetence of managers and incompetence of state regulators. Harrington lists the cycle only third among possible culprits. He believes that the first cause was reserve shortfall, and shows an exhibit (Harrington Figure 2) that indicates that in the early 1980s reserves were short by $1 billion to $4 billion, yet he does

not comment on the $1 billion to $2 billion reserve excess since 1985. This is simply classic cyclical behavior: keep reserves low when your profits fall, jack them up when they are great. Harrington's chart demonstrates that the cycle was a primary reason for the shortfall.

His second point, that bonds were down when interest rates were high, is interesting but also shows a misunderstanding of the property–liability business. Bonds are carried on the books at amortized value and are well matched with the "tail" of expected payouts. Thus, bond prices are, for most insurers, irrelevant to solvency.

The cycle was the culprit, driven by greed and mismanagement. As the head of American International Group (AIG) put it, if the insurers hadn't cut prices "to the point of absurdity," there wouldn't be "all this hullabaloo" about tort reform (Greenwald 1985).

State regulation has not worked well in the area of solvency. It has been too slow, and the problem with the guaranty associations is not that they cover too much, but too little.

As a 1991 study by the General Accounting Office found (p. 3):

> Insurance regulators were typically late in taking formal action against financially troubled companies. . . . There are many possible reasons for regulatory delay. Among them are reliance on untimely or unverified information, lack of legal or regulatory standards for defining a troubled insurer, and a vague and unspecific statutory definition of insolvency.

I believe the case for federal minimum standards for solvency regulation is compelling. That the feds might set standards does not mean I favor a federal takeover of solvency regulation. I do not. I would hope that all states would meet the minimum standards and fully retain state regulation, except for areas that states may be unable to regulate, such as alien reinsurance and alien surplus lines markets. In these cases only, direct federal regulation may be necessary.

Relative to the guaranty associations, the coverage for personal lines and small ("ma and pa") commercial insurers should be expanded, not weakened. Harrington's call for elimination of commercial coverage should never extend to small business. Further, his lack of concern for the victims of corporate wrongdoing is alarming. Consider his suggestion of no coverage for commercial risks. Suppose the insurer of a product manufacturer fails. Assume further that the product is one like the Dalkon Shield, and that many women have been seriously injured by the product. I personally do not mind if large commercial enterprises such as A.H. Robins (the manufacturer of Dalkon) are liable in the event the insurer fails. But what if A.H. Robins also goes under? Should the women have no claim even then against the guaranty fund? Why further victimize them because both the insurer and the manufacturer failed?

Deregulation of Rates

If Harrington would agree to eliminate all of the anti-competitive forces at play in the property–casualty insurance markets (the antitrust exemption, the anti-rebate laws, the anti-group laws, the barriers to entry for banks, the information gap, the underwriting selection problem, at least for risks with good records, and the like), I could then agree that regulation of prices could be eased, even phased out. If the full forces of competition were at work, I would see no need for much rate regulation. But the quality of competition should be tested.

It is vital to repeal the McCarran-Ferguson Act's antitrust exemption, in order to start a process whereby states can choose to deregulate by eliminating their local anti-competitive rules, by establishing computerized price and service information, and so on. Alternatively, a state could choose to regulate, but the standard by which the courts would test the efficacy of regulation would be the state action doctrine rather than the non-standards of the McCarran-Ferguson Act.[1]

If regulation is chosen, it should be real. As the National Association of Insurance Commissioners has found:

> The (NAIC) Task Force concludes that total return ratemaking methodologies are the most appropriate . . . for states that choose to regulate rates.[2]

Years of state coddling under weak to useless regulations, coupled with no antitrust enforcement, have produced what we would expect, an amazingly inefficient, fat industry. Andrew Tobias, a financial author, put it this way (1982, pp. 24–25):

> Roots of the industry's inefficiency are manifold. The fire insurance business grew up as a massive exercise in price-fixing. . . . One might expect the marketplace to impose its own economic discipline—it is competition based on price that has always been the surest spur to efficiency—but insurance prices . . . are notoriously hard to evaluate, leaving consumers unable to spot the best values and insurers under little pressure to provide them. Federal regulation and antitrust statutes largely exempt the insurance industry; state regulators are anxious to keep even inefficient companies profitable. . . .

If the market were truly competitive, good service would be expected to cost more, not less. Yet, when *Consumer Reports* listed the

---

[1] Under the McCarran-Ferguson Act, any law purporting to regulate insurance—even if unenforced—is sufficient to oust antitrust scrutiny. Under state action, the quality of regulation can be challenged by an abused consumer.

[2] The full NAIC adopted this report on June 6, 1984.

best service insurers for auto insurance,[3] the top five and their 1989 expense ratios were:

Company	1989 Expense Ratio (Percent)
Amica Mutual Insurance Co. (Best Ranking)	36.5
United Services Auto Assn.	26.0
USAA Casualty	32.0
Auto-Owners Insurance Co.	36.7
Cincinnati Insurance Co.	42.9
Average	34.6

And the bottom five and their 1989 expense ratios were:

Company	1989 Expense Ratio (Percent)
Hanover Insurance Company (Worst Ranking)	47.3
General Accident Insurance Company of America	36.5
Metropolitan Property & Liability	39.0
Liberty Mutual Insurance Company	26.9
Travelers Indemnity	45.4
Average	39.0

Here are the top five homeowners insurance writers in service according to *Consumer Reports*,[4] and their 1989 expense ratios:

Company	1989 Expense Ratio (Percent)
Amica Mutual Insurance (Best Ranking)	31.7
United Services Auto Association	34.0
Erie Insurance Exchange	28.5
State Farm Fire and Casualty	41.3
California State Auto Association	27.9
Average	32.7

[3] *Consumer Reports*, October 1988 edition. The 1989 expense ratio is for private passenger auto liability insurance, taken from *Aggregates and Averages*, A.M. Best & Co., 1990 edition. The ratio includes loss adjustment expense.

[4] *Consumer Reports*, September 1989 edition. The 1989 expense ratio is for homeowners' insurance, taken from *Aggregates and Averages*, A.M. Best & Co., 1990 edition. The ratio includes loss adjustment expense.

And the bottom five and their 1989 expense ratios:

Company	1989 Expense Ratio (Percent)
Metropolitan Property & Liability (Worst Ranking)	39.4
Prudential Property & Casualty	42.0
Travelers Indemnity	47.8
Allstate Insurance	37.4
Fireman's Fund Insurance	61.9
Average	45.7

Based on reviewing this sort of information for many years, looking at complaint ratio information from many states, and 30 years of study of the markets for insurance, I find no evidence that enough people know which are the low-cost, good-service insurers to justify the heroic conclusion that competition can regulate price in insurance. In fact, since the lower-cost insurers probably produce higher service satisfaction overall than the high-cost insurers, you would expect the latter to be long out of business, but they are not.

The high cost and the inefficiency of insurers are now getting national attention. The monopoly rents this industry has enjoyed can be found in its fat and waste. The insurance industry is headed for a tough period as it adjusts to either a properly regulated or a properly competitive market, following the coming repeal of the antitrust exemption, the onslaught of foreign competitors, and the inevitable entry of banks.

The Antitrust Exemption

Harrington fails to point out that after extensive review, the U.S. Department of Justice under President Ford and President Carter's Antitrust Commission both recommended repeal or amendment of the McCarran-Ferguson antitrust exemption. His paper alleges that rate bureaus no longer produce final rates. This is incorrect. We have only just begun the promised change to "prospective loss costs." In some lines of insurance, final rates are still filed everywhere.

Even if this promise to go to "prospective loss costs" comes to fruition, it will not end the joint speculation about things like next year's inflation rate and other key future factors that should be estimated on a company-by-company basis, if this market is ever to become fully competitive.

Background of the ISO Change

The Insurance Services Office, Inc. (ISO) traditionally has provided insurers with "advisory" rates made up of two parts: pure premiums (or projected loss costs) based on a complex equation formula that incorporates factors such as trending, loss development, inflation, and the like—this represents about 60 percent of the final premium—and a factor to load in expenses and profits representing about 40 percent. The latter factor is determined as a simple single "multiplier" by which the expenses and profits are loaded into the pure premium.

Why the ISO "Change" Is Meaningless

ISO promises to provide only the complex 60 percent part, the pure premium or prospective loss costs. It will provide all the data and calculations except the multiplier to factor in the final 40 percent. But ISO will "help" insurers fill in this one missing blank in the equation by providing training and a circular (a sort of "cookbook") that describes for insurers precisely how to convert the prospective loss cost data into a final rate. Significantly, the one-step multiplication factor used for this purpose means that insurers will continue to rely on ISO trend and loss development data, the key to price-fixing practices. Critical components of the ultimate premium, which should be calculated independently by insurers based on their individual judgment and experience, will continue to be formulated by ISO. Those components include, for example, labor costs, inflation factors, loss adjustment expenses, and so on. Thus, significant price-fixing would continue even under the new ISO approach, even if the insurers do not adopt the method and data needed to calculate the ISO final rate.

In 1985, the *National Underwriter* noted the end of the soft market by reporting that [in general liability] "what has occurred . . . is a return to basic ISO rating subject to a minimum 20 percent surcharge. . ." (pp. 8, 82).

Harrington argues that there is no evidence that the antitrust exemption and the availability of jointly set prices had any impact on the industry relative to the so-called "liability crisis" of the mid 1980s. He is mistaken. As the New York Attorney General testified before Congress on June 3, 1991, evidence exists of collusive price-fixing during that period, but the Attorney General cannot file a lawsuit simply because of the McCarran-Ferguson exemption. Mr. Sampson said:

> Our two-year investigation revealed an industry in which collusion is the norm, not the exception. We found numerous anticompetitive acts that would have invited criminal prosecution in any other industry. These included price-fixing schemes of all varieties, market allocation agreements between competitors, and tying arrangements that forced unwilling insurance buyers to purchase unwanted coverages in order to get the coverage

they needed. We could have included these allegations in our lawsuits, and would have done so were it not for the futility of doing so in the face of the McCarran-Ferguson Act.

The climate of collusion we found was a major contributing factor to the insurance crisis of 1985–86. The sharp swings within the industry as a whole were not the result of mere coincidence, but rather evidence of a lockstep mentality and an absence of real competition. Although there were thousands of insurance carriers across the country, the direction of the market was set by precious few companies, the same companies which dominated the industry trade association.

Smaller carriers blindly followed the price hikes and market withdrawals of their largest competitors, emboldened by their trade association leadership who was constantly calling on its members to raise their prices "for the good of the industry." These factors transformed a gentle swing in the pattern of prices within the industry to an avalanche of destructive pricing conspiracies.

It is of little solace to insurance consumers who were victims of these price-fixing conspiracies that the Attorneys General were finally able, after several years of investigation, to bring antitrust actions alleging boycott, coercion and intimidation. Were this any other industry, without this exemption, we could have also brought price-fixing actions (which are easier to prove than boycott cases), thereby providing consumers with full relief for all of the injuries they suffered. The McCarran-Ferguson Act effectively handcuffs our offices, taking away a large part of our antitrust arsenal.

Because they believe that competition is weakened when price-fixing is allowed, a number of groups support McCarran-Ferguson reform.[5] Even parts of the insurance industry have decided to work for some changes in the broad exemption to the nation's normal business rules. The American Insurance Association has shown flexibility and has proposed a safe harbors approach. The Alliance of American Insurers has shown some softening on this issue.

Harrington claims that repeal of the antitrust exemption will not

[5] These include Small Business Legislative Council; Consumers Union; National Federation of Business and Professional Women's Clubs (BPW/USA); National Council of Senior Citizens; U.S. Public Interest Research Group; American Federation of Labor—Congress of Industrial Organizations (AFL-CIO); Consumer Federation of America; American Association of Nurse Anesthetists; Texas, Colorado, and Illinois Associations of Nurse Anesthetists; National Insurance Consumer Organization; Consumer Bankers Association; American Association of Retired Persons; Amalgamated Transit Union; Environmental Policy Institute; Environmental Action; Public Citizen's Congress Watch; National Association of Women Business Owners; Women's Equity Action League; American Nurses Association; Association of American Physicians and Surgeons; National Association of Attorneys General; American Bankers Association; Business and Professional Women; Citicorp; American Association of University Women; National Women's Health Network; Federal Trade Commission; American Association of Colleges of Nursing; American Society for Medical Technology; Automotive Service Association; Citizen Action; American Bar Association; Society of Collision Repair Specialists (SCRS); and Older Women's League.

lower insurance prices. He goes so far as to say that "At worst, it will produce even higher prices." It appears that Harrington has found the secret to lower prices that has eluded all others since Adam Smith—create cartels to lower prices. But, again, he is in error. As the GAO found in 1986 in looking at the results of introducing competition into workers' compensation insurance markets (p. 32):

> Four states—Michigan, Illinois, Minnesota, and Oregon—prepared reports on the impact of competitive rating. Each of these states reported substantial declines in the cost of workers' compensation.

References

A.M. Best & Co. 1990. *Best's Aggregates and Averages: Life-Health*. Oldwick, New Jersey.

———. 1990. *Best's Aggregates and Averages: Property-Casualty*. Oldwick, New Jersey.

Consumer Reports. October 1988 and September 1989 editions. Consumer Union of U.S., Inc., Mt. Vernon, N.Y.

General Accounting Office. 1986. *Workers' Compensation: Initial Experiences with Competitive Ratings*. December.

———. 1991. *Insurance Regulation: State Handling of Financially Troubled Property/Casualty Insurers*. May.

Greenwald, Judy. 1985. "Insurance Must Share Blame: AIG Head." *National Underwriter*.

National Association of Insurance Commissioners. 1984. *NAIC Study of Investment Income*. Supplement to the Proceedings of the NAIC, Vol. III.

Sampson, George W. 1991. Statement of George W. Sampson, Assistant Attorney General of the State of New York before the Subcommittee on Economics and Commercial Law of the U.S. House of Representatives Committee on the Judiciary, June 13. In Report to the Chairman, Subcommittee on Entrepreneurship and Special Problems Facing Small Business, Committee on Small Business, United States Senate.

Tobias, Andrew. 1982. *The Invisible Bankers: Everything the Insurance Industry Never Wanted You to Know*. New York: The Linden Press/Simon & Schuster.

Discussion

*Robert E. Litan**

Scott Harrington has provided an excellent overview of what is, for the most part, the consensus view among academic scholars on the subjects of solvency and rate regulation of the property–liability insurance industry. I agree with most of what he has to say. But I disagree with Harrington's rejection of a role for federal solvency regulation. I also draw some broader lessons from the S&L crisis than Harrington provides in his paper.

State vs. Federal Solvency Regulation

Harrington is generally comfortable with continued state regulation, noting that between 1984 and 1989 guaranty fund assessments totaled less than one-half of 1 percent of nationwide premiums. He also suggests that the four large property–liability insurer failures discussed in Representative John Dingell's *Failed Promises* report may have been due as much to unexpected increases in claims costs as to deliberate under-reserving and underpricing. Accordingly, Harrington apparently finds little fault in state regulation in these cases.

I disagree. In my view, the Dingell report makes a persuasive case that these insurers did understate their loss reserves and did engage in reckless patterns of expansion, activities that state insurance regulators should have caught. The fact that A.M. Best had given these companies high ratings up to the time that regulatory actions were taken is cause

*Senior Fellow, Economic Studies Program and Director, Center for Economic Progress and Employment, The Brookings Institution.

for criticizing the rating agency, not for excusing state regulators. The same point goes for the accountants who audited these insurers. With the level of losses these insurer failures will ultimately entail, someone in the regulatory agencies had to be asleep at the switch.

In addition, while I agree with Harrington that the insurer insolvency problem is currently not alarming—at least when compared to insolvency costs in the banking and thrift industries, which over the past decade have probably exceeded $250 billion—by historical standards, the numbers of insurer failures and their costs during the past several years are up sharply. While the general economic climate in both segments of the insurance industry has not been favorable, state regulation cannot escape its share of responsibility for the insolvencies. It is well known that failed insurers generally were poorly managed and apparently in many cases were looted by their managers or owners. At the very least, the regulators could have been far more aggressive in limiting the growth of the "problem" insurers on their watch.

The National Association of Insurance Commissioners (NAIC) has effectively admitted as much and is now implementing an accreditation program for state insurance departments. Although Harrington believes the evidence is unclear, there is no doubt in my mind that the spectre of federal regulation that Dingell has made so real accounts for the NAIC's sudden "religion" on solvency matters.

Harrington apparently believes that the NAIC's efforts will prove to be sufficient. The General Accounting Office has recently reached the opposite conclusion, pointing to the weak power the NAIC has over individual state regulators. Dingell apparently agrees, because he is promoting a plan that would require state insurance regulators to meet minimum federal standards. Little support appears to exist, however, for totally replacing state insurance regulators with federal regulators.

I do not advocate such an extreme step either, but I see much more merit in allowing insurers to *choose* federal regulation. Specifically, much as banks have the choice whether to be chartered and regulated by the states or the federal government, insurers could be given a choice whether they want to be regulated, for solvency purposes only—consumer protection would remain with the states—by the states or by the federal government. If they chose the federal option, insurers would join a national guaranty fund system. Equally significant, by choosing the federal option insurers would be free from state rate regulation. And if the McCarran-Ferguson Act has not yet been repealed for all insurers, then the antitrust protection provided in McCarran-Ferguson would not apply, outside of some "safe harbors" for data collection and trending, for federally regulated insurers.

Such an option has at least two important advantages. First, it recognizes what both the NAIC's accreditation program and Dingell's minimum standards proposal ignore: the critical link between rate regulation and solvency. Somewhat incredibly, a state can get a sterling

solvency accreditation from the NAIC even though it may have a highly restrictive regime of rate regulation that limits the profitability of all insurers and conceivably forces some to lose money.

The Department of Insurance in California—home to what is to date the largest insurer insolvency in U.S. history, Executive Life—has recently proposed, for example, that property–liability insurers in that state be limited to earning a "reasonable rate of return" on surplus only up to some specified ceilings (set on a line-by-line basis). In testimony that I have just given on behalf of State Farm, I calculated that if applied on a nationwide basis, the California ceilings would mean that the property–liability insurance industry collectively could not earn a market rate of return on approximately $50 billion of its $139 billion in surplus. At a time when the public is concerned about the sufficiency of capital in its banking, thrift, and—yes—insurance industries, it is somewhat incredible that any state, let alone the largest one in the country, can even be thinking about adopting policies that would discourage insurers from being well capitalized. And to make this effort even more bizarre, it comes at a time when California's insurance commissioner has asked the federal government to help rescue policyholders of Executive Life who reside in California.

Given the public concern over mounting insurance costs, it would be surprising if more states did not follow the lead of California and New Jersey and attempt to impose restrictive rate regimes, notwithstanding the criticisms that Harrington and other economists have effectively marshalled against such an approach. Not only will additional rate regulation aggravate the insurance availability problem and contribute to the growth of residual markets, but carried out long enough and on a sufficiently large scale, it will lead to more insurer failures. Such an outcome can be prevented by using the availability of a federal solvency option, coupled with preemption of state regulation, to discipline states that have not yet understood that rate and solvency regulation ultimately are inconsistent.

Second, the national guaranty fund that would be created as part of a federal solvency regulatory scheme would provide more effective protection for policyholders of failed companies. Under the current system, policyholders in each state must look only to the guaranty funds in their states, whose annual assessments on the insurers doing business there are capped, generally in the neighborhood of 1 percent of premiums collected in the state. As a result, state guaranty funds can face significant cash flow constraints when honoring claims of large failed insurers, limitations that can force claims payments to policyholders to be stretched out over time.

A national guaranty fund, even with the same annual assessment caps, would be better able to handle the costs of large insurer failures because it would have a much larger assessment base. While I agree

with Harrington that guaranty fund protection should be curtailed for many commercial policies, I do not see any case for opposing devices that would better ensure that personal policyholder claims are paid on a timely basis rather than spread out over many years.

Admittedly, a significant "adverse selection" problem may occur with a federal solvency option. Other things equal, it would be likely to attract the largest nationwide insurers least in need of the McCarran antitrust protection for joint data collection. The withdrawal of the large companies from the state guaranty funds would leave those funds more exposed to cash flow and perhaps ultimate funding constraints, in the event of large failures of insurers still belonging to the state systems. Over time, as consumers learned of the greater dangers associated with state insurers, business would gravitate to the federal insurers, leaving the states with dwindling regulatory responsibilities.

This pessimistic scenario need not occur, however, if the states fight back by convincing consumers that they, too, have strong solvency regulatory programs. In the process, the states would learn that rate restrictions are antithetical to ensuring solvency. And that is precisely why a federal solvency option might be just the thing that induces the states to avoid or repeal any rate regulation.

Forcing the states to compete with the federal government in regulating insurer solvency might also induce them to look for other, more productive ways to reduce insurance premiums. Specifically, I have in mind proposals for true no-fault auto insurance, which I believe could significantly lower auto insurance premiums, coupled with selective tort reforms that have already lowered liability insurance premiums in the states that have adopted them, as Blackmon and Zeckhauser (1991) have demonstrated.

Broader Lessons from the S&L Crisis

Most reporters, it seems, cannot write about the recent upturn in insurer insolvencies without drawing a comparison to the savings and loan disaster. Similarly, the *Failed Promises* report by the Oversight and Investigations Subcommittee of the House Energy and Commerce Committee begins with a warning that federal policymakers not let happen to the insurance industry what happened to thrifts. Harrington, too, draws a lesson from the S&L crisis: that regulatory forbearance considerably raised the cost of resolving the thrift mess and therefore should not be repeated in the case of insurers.

Ironically, however, Harrington's recommendation that guaranty funds continue to stick with the post-insolvency assessment method of finance could in fact facilitate the forbearance policy he elsewhere abhors. It is true in theory that requiring healthy insurers to pay for

failed insurers after the fact may give them strong incentives to pressure regulators to close or merge troubled insurers on a timely basis. But in fact, as a recent General Accounting Office report (1991) documents, many state insurance regulators have been late closing insolvent insurers, suggesting that the incentives are not as strong as Harrington and others may postulate. One reason why is that, as I have already indicated, the post-insolvency assessments on insurers are capped, typically at 1 to 2 percent of premiums.

Another potentially more important reason, however, is that precisely because insurers' post-insolvency assessments are highly dependent on the pace of insurer closures, state insurance departments that may otherwise be too close to the insurers they regulate may hesitate to close troubled insurers too quickly, for fear of unnecessarily increasing the assessment costs incurred by healthy insurers. If insurers paid fixed assessments on a pre-insolvency basis, like banks, then guaranty funds could build up positive balances and insurance regulators could then proceed to close troubled insurers, safe in the knowledge that the costs of doing so would not change the costs of healthy insurers in that year. Indeed, the reason why thrift regulators engaged in forbearance was that they had insufficient funds to do otherwise. Insurance regulators are in an even worse situation: they have no funds at all unless they raise them after the fact, and even then their annual assessments on healthy insurers are capped by statute.

Of course, I recognize the strong countervailing reasons for continuing with the post-insolvency assessment system. Among them is the danger that guaranty fund surpluses will be raided by state governments eager to avoid running deficits. But if this is the problem with pre-funded guaranty systems, it can be cured by creating a federal guaranty program. Until recently, the FDIC has had ample reserves, invested in Treasury securities to be sure, but still worth 100 cents on the dollar. The same cannot be said of state governments that may raid their insurer guaranty funds and stuff them with state government bonds which, as events are demonstrating, can trade at prices well below 100 cents on the dollar.

Much broader lessons can be learned from the thrift crisis, however, which are not discussed in Harrington's paper but which I believe are central to any effort to prevent future insurer insolvencies. As a number of observers have pointed out, the thrift crisis of the 1980s was, in significant part, the product of major policy errors of the 1970s. Specifically, had Congress adopted the recommendations of the Hunt Commission in the early 1970s to lift deposit interest rate ceilings then and to permit thrifts to extend adjustable-rate mortgages, thrifts would have been far better positioned to have avoided the huge "interest rate shock" of the late 1970s and early 1980s. Rather than being stuck with low-interest fixed-rate mortgages when deposit interest costs soared, thrifts would have had mortgage portfolios with yields much closer to their actual deposit costs.

And by largely avoiding the "maturity mismatch" of the early 1980s, many fewer thrifts would have had their capital depleted, the situation that gave rise to massive "gambling for resurrection" during the rest of the decade when Congress and the Administration failed to provide sufficient funds to close down insolvent institutions.

In short, the thrift crisis was far more than a failure of adequate supervision, or what I would call the "green eyeshade" aspect of solvency regulation. The S&L disaster had its roots in the flawed institutional design of the thrift industry itself—the requirement that thrifts borrow short and then lend long at fixed rates—that cracked when the macroeconomic environment produced double-digit interest rates.

Similarly, I find that much of the current discussion about insurer insolvency is of the "green eyeshade" variety: that we need better supervisors and more of them, and that perhaps the federal government rather than the states should be in charge of supervision. And so on.

Don't get me wrong. All of these issues are important; after all, I have spent most of my discussion time on them. But ultimately, the gravest dangers to insurer solvency in my view come not from flaws in the supervisory structure, but from major exogenous events for which we as a society—and the insurance industry in particular—are ill-prepared.

One such event is a massive earthquake—with far greater destructive power than the Loma Prieta quake that hit California nearly two years ago—that scientists project is quite likely to strike at some point in the next several decades, not necessarily in California but perhaps near Memphis, Seattle, or any number of other locations around the country. By various estimates, the insured losses from such an event could rise as high as $50 billion, or enough to wipe out more than one-third of the capital in the property–liability insurance industry.

The second event could be even more devastating: a series of court rulings holding insurers responsible for potentially hundreds of billions of dollars in costs for cleaning up hazardous waste sites. Thus far, insurers appear to have won most of the cases that have been brought on this subject, with courts holding that the "sudden and accidental" exclusion in the general commercial policy means what it appears to say—that commercial policies do not cover continued releases of hazardous substances over many years. Nevertheless, a sufficient number of court rulings go in the other direction to raise the spectre that insurers will have to honor very large environmental claims costs that they surely did not think they were covering when they wrote those policies many years ago.

It is tempting, of course, to say that insurers or policymakers can do nothing now to prevent either of the events I have just described. In a limited sense that is true. No one can prevent the next earthquake. And who knows what juries and judges will decide in future environmental litigations?

Nevertheless, policymakers can take steps now that would substan-

tially minimize insurers' exposure to these events and that are also in the wider public interest. As to earthquakes, policymakers could adopt a federal reinsurance program that primary insurers could use for their exposures to large catastrophic risks, such as a major quake. Such a program could be set up on a fully "pay-as-you-go" basis, although if a quake struck in the early years, the federal government would have to be prepared to lend sufficient funds to the reinsurance corporation to honor claims, with repayment by the insurers required thereafter over an extended period. In addition, earthquake damage costs themselves can be reduced by cost-effective mitigation efforts, which both the states and the federal government can and should encourage.

Meanwhile, for the environmental risks I am sympathetic with the American International Group proposal that would eliminate litigation over responsibility for cleanup of past hazardous waste by establishing a much larger cleanup fund than currently exists. The fund would be financed with a small annual premium tax on all commercial insurance policies and on businesses that self-insure. Such a program would dramatically reduce both the high transactions costs and the long delays that have plagued the hazardous waste cleanup effort for over a decade. In the process, it would also remove the threat of tens (if not hundreds) of billions of dollars of cleanup claims that now hangs over the insurance industry like a Sword of Damocles.

In sum, ensuring solvency in the insurance industry is a task too important to be left just to the auditors and the actuaries. Policymakers, especially those at the federal level, must uncharacteristically think far enough ahead to establish an institutional environment that will allow insurers to remain solvent even in the face of costly adverse events. Failure to do so, I am afraid, may mean far more insolvencies and stranded consumers at some point in the future.

References

Blackmon, Glenn and Richard Zeckhauser. 1991. "State Tort Reform Legislation: Assessing Our Control of Risks." In Peter H. Schuck, ed., *Tort Law and the Public Interest.* W.W. Norton and The American Assembly.

Dingell, John D., Chair. 1990. *Failed Promises—Insurance Company Insolvencies.* Report by the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, U.S. House of Representatives.

General Accounting Office. 1991. *Insurance Regulation: State Handling of Financially Troubled Property/Casualty Insurers.* May.

Discussion

*Richard E. Stewart**

Scott Harrington's paper on "Public Policy and Property–Liability Insurance" addresses two important subjects—rate regulation (including the McCarran-Ferguson Act) and insolvency. I will outline briefly the major issues I see involved in rate regulation, and then focus my remarks on the question of the solvency of casualty insurance companies.

Rate Regulation

While solvency is often considered to be the chief goal of insurance regulation, rate regulation is the subject to which, for over a century, we have actually devoted the most attention. It covers such matters as whether to suppress, tolerate, or encourage competition; whether to allow, support, enforce, prohibit, or have government take over and perform standard development of policy forms, statistics, and rates; and how to balance efficiency and fairness in rate regulation, including questions of cross-subsidy and residual markets.

Today's debates revisit those questions and add others. We are struggling a bit, both because the questions are difficult and because no one brings a broad balance of theory, analysis, history, and explicit social policy. Today's formulation of the rate regulation problem raises several questions.

*Chairman of Stewart Economics, Inc.

How Much to Rely on Competition

This requires that we define the term "competition" and develop a way to measure it. Then we must also decide:

(1) Whether to expect and allow competition itself to take care of pockets of insufficiency;
(2) How much to defer to cost-based pricing and whether to defer to industry definitions and categories of cost;
(3) Whether to discourage certain kinds or amounts of expense by not allowing them in a regulated rate;
(4) How, if at all, to deal with ability to pay, especially for a line of insurance that is a necessity and whose pricing is regressive; and finally,
(5) How to think about and deal with the side-effects of rate regulation, such as effects on availability, solvency, and claims.

How to Deal with the Underwriting Cycle

No agreement has been reached among experts about whether or not the underwriting cycle is natural and even inherent in the business. Any determination about this will affect our attitudes about:

(1) How much interference in the cycle is desirable, manageable, or even possible;
(2) What to do, at the next cycle turn, with the array of rebound-suppressants now in place, including flex rating laws and multiple-lines joint underwriting associations; and
(3) What, if anything, can and should be done to bring within prevailing policy about the cycle the impressive array of devices for opting out of conventional insurance and regulation, including self-insurance, captives, and the non-admitted market.

How to Resolve Current Legal Questions

Several major legal questions now command our attention and action, including:

(1) McCarran-Ferguson Act modification or repeal;
(2) The federal-state split of responsibility for regulation; and
(3) The state action doctrine, calling for more intensive rate regulation if McCarran is no longer a basis for state jurisdiction.

Solvency

To an audience of central bankers I would recommend three initial thoughts regarding property–liability or casualty insurance company

insolvency. All three have to do with something's not being something else. First, an insurance company is not a lesser form of bank. Dr. Johnson said a long time ago that being in a ship was like being in prison with the added chance of drowning. Being a casualty insurer is like being a bank with the added chance that your liabilities will get you, too. The second thought follows from the first: When you look at trouble in casualty insurance, it is not really an asset problem. The weakest assets on the balance sheets for casualty insurers are not invested assets; they are trade assets, such as reinsurance recoverables and agents' balances. If you see a casualty insurer with weak invested assets, probably you are looking at a casualty insurer that years ago realized it was in some other kind of trouble and decided to try to break its way out by shooting craps on the left-hand side of the balance sheet. The third initial thought is that the future is not going to be like the past, which is probably a good thing.

With those preliminaries out of the way, I would like to reflect on three large questions still open for discussion in the area of casualty insurance company insolvency: Is insolvency natural or is it culpable? What is the duty of the regulator? And who are the victims and what are we going to do about them?

Insolvency: Natural or Culpable?

It is quite the fashion in financial institution insolvency circles these days to speak in terms of villains. And it is not hard to see why. We are all gardeners, and it is nice to say that everything was fine in the garden until the snake showed up. But it leads to a lot of interesting consequences. One is that everybody close to the situation feels ashamed of it, and another is that an endless circle of recrimination can get started, because a perpetrator can always be found. But in the line of insurance most threatening to the solvency of insurance companies these days, general liability, the threats are indeed systemic.

Think about it for a second. This industry has a large number of participants and used to have, but does not have any longer, a lot of price structuring and support. In some lines, suppression of rates and underwriting can lead to catastrophes on the sales or revenue side. Furthermore, this industry's liabilities are far out in the future, and nearly impossible to estimate for pricing or reserving purposes. The industry's prediction requirements have a lot more in common with long-range weather forecasting than with something simple like predicting interest rates over a five-year period. This leaves the industry susceptible to catastrophes on the liability side. Moreover, the casualty corner of the insurance industry is intensely competitive, usually on price, and buyers have developed an impressive array of ways to opt out

of the conventional insurance and regulatory system whenever they think it is in their business interest to do so.

All this is a recipe for a type of insurance that is going to get in a lot of trouble. The industry is selling a tremendously valuable contract, essentially an open-ended "we will pay you if you are liable" contract. The incentives and rewards for buyers, brokers, and regulators are concentrated on the front end of the insurance transaction, availability and price at the point of sale. At the same time, the pressures on the industry are shifted to the back end of the scale, the willingness and ability to pay claims. In our complex society, from time to time some liability that nobody foresaw comes in over the transom and hits grievously, right across the industry. The hit is essentially nondiversifiable and too late to get into prices. It is very hard to avoid the conclusion that insolvency is a natural outcome of having a private and competitive business handle this kind of activity.

When we think about any industry other than the one we work in, we tend to think that insolvency is a desirable incentive to efficiency, and purgative of those less able to serve the needs of customers. In other words, we think insolvency is a good thing—not fun to have it happen to you, but a good thing that makes the whole show work better. That being said, I believe the whole emphasis needs to change away from the villain theory, not because there are no snakes but because the snakes do not really cause the problem.

The Duty of the Regulator

Our attitude toward insolvency in turn affects how we approach the second question, the duty of the regulator. You would think we would know what it was, but I used to be one, and I was not sure. Here are the competing possibilities. First, it is the duty of the commissioner to prevent insolvencies. That is the usual formulation. But by saying that while at the same time saying that insolvency is a natural, not a culpable outcome, look what happens: you have given the regulator a duty that essentially he cannot perform. It is akin to saying, if a company goes insolvent on your watch, fella, you are probably one of the snakes. Early detection and swift action to take failing companies out of the market are best in principle, but hard to do in individual cases. It is not too hard, however, to avoid recognizing insolvency if the problem is coming from a kind of insurance with a 10- or 20-year time dimension and highly inexact estimates of losses and therefore liabilities. It is no great trick to maneuver over, say, a five-year span when a company is going to go in any event, which normally means your successor will be in office. We should not surround public servants, or private servants for that matter, with that kind of incentive unless we expect them to respond to it.

So, if the duty of insurance regulators is to prevent insolvency, but

in a circumstance where they no longer can do so, since the future is not going to be like the past, we are just asking people to forbear, to put off the recognition of the bad news. And in the later years of a failing insurance company, the risks go up rather like the mortality curve in life insurance, because management has to bet in worse and worse games.

Aid for the Victims

A third open question worth our attention is the action to aid the victims of insurance insolvency. In the United States, we have decided to run a large part of our system of financial compensation for accidents through an insured civil liability system: a bad idea or good idea, but we have chosen it. And people all over the place rely on it. Some of them are the buyers of insurance who pick the insurance company and rely on it for indemnity from the liability that the law places upon them. But our society also includes a large ring of other people who did not know any of this was going on and who ended up the victims of some mishap, call it asbestosis, for which our legal system says that they have redress, against somebody. Those people are widely dispersed, but in a society whose rules include product liability, pollution liability, directors' and officers' liability, and a lot of other kinds of liability, a single policyholder can have a single course of conduct with a hundred thousand injured people. That means that a group of diffuse and somewhat invisible and unorganized people can be terribly hurt by the insolvency of an insurer, on whom part of this system depends. It is inherent in the dual role of our liability insurance system, indemnity and compensation. It just has to be faced. It is not just major corporate America that we would be socking it to if we withdrew one or another protection surrounding the insurance system.

In the past, the big decisions about risk and resource allocation in insurance were made by executives, bureaus, state legislatures, state regulators, and private forums such as arbitration. Today authority is dispersed, and the decision-makers include lawyers, courts (setting limits on rate regulation and making financial failure a new prima facie tort), consumers (especially political constituencies and corporate risk managers), and federal officials (both making markets easier and expressing alarm about solvency). This means that decision-making forums with divergent methods and objectives will compete to make the big decisions about insurance resource allocation (including insolvency risk), with the outcome unclear and perhaps out of control for a long time. Two groups stand to suffer most if we take no action now to deal with the current situation: first, the victims of mass torts who have legal claims against an insured person; and second, the small insurance companies, which will be least able to keep customer confidence during

a substantial period of uncertainty about whether the whole insurance market can be relied upon.

In the past three years our firm has written two reports on this subject.[1] Both consider the causes of insolvency, and the second one gets into what we think should be done about it, specifically in the design of guarantees. Our own view is that, in an imperfect world, where we have inherited most of our private and governmental institutional arrangements from the past but must deal with the present, the best thing to do obviously is to change some of these perceptions about natural or culpable insolvency and the duty of the regulator. If the duty is to take the dangerous person off the street like a cop, not to hold him in your arms like an emergency physician, then the duty of the regulator is early detection and swift action to take the failing company out of the market. That duty would include protecting innocent victims with a limited system of guarantees.

We believe further that the first two, detection and action, can be done well by the state regulators of insurance, and they will be doing it better as they pursue the changes that they are embarked upon now. About the third, liquidation and guarantees, for general liability insolvencies of the magnitude that generate victim suffering of the sort I was describing—insolvencies that are large, complex, time-consuming and certainly national—we believe they should be managed at the national level. But whatever we do, we ought to be clear about what it is that we are doing, and we ought to be reasonably quick about it.

---

[1] Stewart Economics, Inc. "Managing Insurer Insolvency" (1988) and "Insurance Insolvency Guarantees" (1990).

About the Authors . . .

JOSEPH M. BELTH is a Professor of Insurance in the School of Business at Indiana University (Bloomington) and editor of *The Insurance Forum*, a newsletter that received the 1990 George Polk Award in the special publications category. The author of several books, Belth received the 1966 Elizur Wright award for "outstanding original contribution to the literature of insurance." Early in his career, Belth was an insurance agent for Continental American Life Insurance Company and he is a past president of the American Risk and Insurance Association. He received his B.S. from Syracuse University and his Ph.D. from the University of Pennsylvania.

GERARD M. BRANNON is a Consultant to the American Council of Life Insurance on such matters as the application of the value-added tax to the financial sector, and revenue estimating. He was also the 1990–91 President of the National Tax Association–Tax Institute of America. Brannon is the author of several books and numerous articles on tax policy. He is a member of the Intergenerational Wealth Study, an Advisory Group to the Research and Statistics Division of the Internal Revenue Service. A former consultant to the U.S. Treasury, Brannon is the author of its report on "Life Insurance Segment Balance." He has taught at Boston College, Notre Dame, and Georgetown. He received his B.A. and M.A. from Georgetown University, and his M.P.A. and Ph.D. from Harvard University.

JEFFREY COHEN is a Vice President in the Investment Research Department at Goldman, Sachs & Company. He is President of the Association of Insurance and Financial Analysts and a member of the New York Society of Security Analysts. Before joining Goldman, Sachs in 1986, Cohen followed the insurance industry at other investment firms, including Paine Webber, Dean Witter Reynolds, Smith Barney, and Harris Upham. After receiving his B.F.A. from the California Institute of the Arts, Cohen did graduate work at the Massachusetts Institute of Technology and received his M.B.A. from New York University.

J. DAVID CUMMINS is the Harry J. Loman Professor of Insurance and Risk Management at The Wharton School of the University of Pennsylvania. Cummins is also Executive Director of the S. S. Huebner Foundation for Insurance Education and the Director of Wharton's Center for Research on Risk and Insurance. Cummins has written numerous books, articles, and reports on the subject of insurance; he currently is co-researching several projects, one of which focuses on the property–liability insurance underwriting cycle and is sponsored by the National Association of Insurance Commissioners. A graduate of the University of Nebraska, Cummins received his M.A. and his Ph.D. in Managerial Science and Applied Economics from the University of Pennsylvania.

SCOTT E. HARRINGTON is Professor of Insurance and Finance and Francis M. Hipp Distinguished Faculty Fellow at the College of Business Administration at the University of South Carolina. Harrington writes extensively on auto insurance rate regulation and liability insurance and is co-editor of a forthcoming

book on insurance economics. He is the 1991 recipient of the Insurance Educator of the Year award from the Professional Insurance Agents Foundation. Harrington has also taught at the University of Illinois and at The Wharton School of the University of Pennsylvania. He received his undergraduate degree in economics and his M.S. and Ph.D. in finance from the University of Illinois at Urbana-Champaign.

J. ROBERT HUNTER is President of the National Insurance Consumer Organization. He is a Fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries. Hunter has over 25 years of experience in insurance work, including 10 years in the private sector. Formerly he served as Administrator and Chief Actuary of the Federal Insurance Administration. Hunter received his bachelor's degree in physics from Clarkson University.

ROGER S. JOSLIN is Senior Vice President, Treasurer, and board member of State Farm Mutual Automobile Insurance Company. In addition, he is Chairman of the Board of State Farm Fire and Casualty Company, and a director and executive of numerous other State Farm companies and funds. Joslin has also served as chairman of the board of the Taxpayers' Federation of Illinois. Among many other professional affiliations, Joslin is a member of the American, Illinois, and McLean County Bar Associations and of the Illinois Society of Certified Public Accountants. He received his B.Sc. in business from Miami University at Oxford, Ohio and his J.D. from the University of Illinois College of Law.

SOTIRIOS KOLLIAS is Head of the Financial Integration and Capital Movements Division of the Directorate General for Economic and Financial Affairs, at the Commission of the European Communities in Brussels. Previously Kollias served as an advisor to the Ministry of National Economy in Athens and as head of the Capital Markets Division for the EC Commission. He has been an advisor to Governor Zolotas at the Bank of Greece in Athens, and before that was a Senior Lecturer for the International Monetary Fund Institute in Washington, D.C. He received his B.Sc. in economics from the Athens Graduate School of Economics and Business Studies, M.Sc. degrees in economics and in econometrics from the London School of Economics, and a master's degree in mathematics from Georgetown University.

RICHARD W. KOPCKE is a Vice President and Economist in the Research Department of the Federal Reserve Bank of Boston. Kopcke writes extensively in the fields of debt and equity financing, inflation, taxes, and interest rates. He co-edited the Bank's conference volume, *Are the Distinctions Between Debt and Equity Disappearing?* He is currently studying the rate of return on corporate equity since the 1950s. Kopcke has taught economics at several universities including La Trobe University in Melbourne, Harvard University, Brown University, and Boston University. A graduate of the University of Michigan, Kopcke received his Ph.D. from Harvard University, where he was a Woodrow Wilson Fellow.

TERENCE LENNON is Assistant Deputy Superintendent & Chief Examiner with the New York State Insurance Department. Previously, Lennon was

appointed to the Life Insurance & Companies Bureau after serving as Chief of the Audit & Regulatory Information Bureau. Lennon has also served as Chief of the Data Processing Bureau and as a member of a special Task Force to study the impact of electronic data processing on the insurance regulatory process. He began his career in the Life Bureau where he became increasingly involved in the problems related to the examination of companies with sophisticated computer systems. Subsequently, he participated in a special experimental project focusing on developing and using computer programs in the field examination of life insurers. Lennon is a graduate of Fordham University.

ROBERT E. LITAN is a Senior Fellow in the Economic Studies Program of The Brookings Institution, where he is also Director of the Institution's new Center for Economic Progress and Employment. Litan's current research focuses on the problems in the banking and thrift industries, the administration of the unfair trade practice laws, and U.S. productivity growth in the 1990s. Among many other books and articles, Litan is the author of *What Should Banks Do?* and co-editor and co-author of the 1991 Brookings study *Corporate Cold Feet? The Impact of Liability on Safety and Innovation*. He has been in private law practice and was the regulatory and energy specialist for President Carter's Council of Economic Advisers. A graduate of The Wharton School of the University of Pennsylvania, he received his Ph.D. and J.D. from Yale University.

THOMAS E. MOLONEY is Senior Vice President and Controller at John Hancock Mutual Life Insurance Company, where he is responsible for management of the corporate accounting and treasury functions for John Hancock Financial Services. Moloney is on the board of several divisions of John Hancock and he chairs the Tax Committee of the Life Insurance Association of Massachusetts. During his career, he has also served as Second Vice President overseeing corporate tax planning, policy, and administration of financial services. Moloney began his career at John Hancock as an accountant in the Controller's Department. He is a graduate of Bentley College.

HENRY G. PARKER, III is a Senior Vice President and Managing Director of Chubb & Son Inc. His corporate responsibilities include Chubb's new ventures overseas, relationships with insurance companies managed by Chubb, and relationships with foreign governments. Parker serves as a Director and member of the Executive Committee of the National Foreign Trade Council and is Chairman of the International Insurance Council of the United States. He is also a Board member of the Industry Sector Advising Committee on Services of the U.S. Department of Commerce and a member of the New Jersey Governor's Commission on International Trade. Parker is a graduate of Princeton University.

KENNETH J. H. PINKES is Vice President and Director of Financial Institutions and Sovereign Research Group at Moody's Investors Service, Inc. During his career, Pinkes has served as Vice President and Director of Industrial Research. He has also served as Associate Director. He began his career at Moody's as a Senior Analyst in the Commercial Paper Division. Before joining Moody's, Pinkes was a lending officer at Chase Manhattan Bank. He received his B.A. in

anthropology and political science from the State University of New York at Stony Brook, and his M.B.A. from Harvard University.

EARL R. POMEROY is in his second term as North Dakota Insurance Commissioner, an elected position. He has also served as President of the National Association of Insurance Commissioners and has chaired two NAIC committees addressing health policy issues. Prior to his terms as Insurance Commissioner, Pomeroy was an attorney in private practice and served two terms in the North Dakota House of Representatives. A graduate of the University of North Dakota, Pomeroy attended graduate school at the University of Durham in England and obtained his J.D. from the University of North Dakota School of Law.

RICHARD E. RANDALL is a Vice President in the Research Department of the Federal Reserve Bank of Boston. Randall concentrates his research on financial industries, and his most recent published article focused on protection of depositors of large banks. Currently, he is studying the credit problems of large banks over the past decade and the role of supervisory intervention. An earlier article focused on whether the market can evaluate asset quality exposure in banks. Prior to his appointment to Vice President, Randall was Assistant Vice President in the Loan and Credit Department. He began his career at the Fed as a Bank Examiner. A graduate of the University of Vermont, Randall received his M.B.A. from Babson College.

ROBERT E. SCHNEIDER is Executive Vice President and Chief Financial Officer of The New England, where he is responsible for the supervision of the accounting, actuarial, audit, and tax planning functions for the parent company and three insurance subsidiaries. Previously, Schneider served as Senior Vice President and Chief Actuary, supervising several lines of business including individual life insurance, annuities, disability income, group life and health, and group pensions. In 1984, Schneider was appointed Vice President and Chief Actuary. Prior to that appointment, he was a product development actuary. Schneider is a Fellow of the Society of Actuaries and the Canadian Institute of Actuaries, and he is a member of the American Academy of Actuaries. Schneider is a graduate of Middlebury College.

STEVEN S. SKALICKY is Assistant Vice President and Deputy Comptroller of American International Group, Inc., an international insurance organization that provides services in approximately 130 countries and jurisdictions. His responsibilities have included analysis of international candidates for mergers and acquisitions and the overall structure of international operations. Before joining American International Group, he was a Director with the Insurance Industry Practice group of Coopers & Lybrand. Skalicky received his B.A. and his M.B.A. from St. John's University and is a Certified Public Accountant.

RICHARD E. STEWART is Chairman of Stewart Economics, Inc. Previously, Stewart served as Senior Vice President and Chief Financial Officer of The Chubb Corporation. He has been a Senior Vice President and General Counsel of First National City Bank and its parent First National City Corp., now Citibank and Citicorp, and a Director of General Reinsurance Corporation. He is

the author of several books including, most recently, *Insurance Insolvency Guarantees*. From 1967 to 1970, he was Superintendent of Insurance of New York State, and later became president of the National Association of Insurance Commissioners. He graduated from West Virginia University, was a Rhodes Scholar at Queen's College, Oxford, and is a graduate of Harvard Law School.

JAMES M. STONE is the President and founder of Plymouth Rock Assurance Corporation. Stone has written extensively on insurance, finance, and economics and is the author of a book on the securities industry. Through the Harvard Institute of International Development, Stone has been a financial advisor to the Minister of Finance of the Republic of Indonesia since 1980. He served as Commissioner of Insurance for the Commonwealth of Massachusetts from 1975 to 1979, when he was appointed Chairman and Commissioner of the Commodity Futures Trading Commission. Stone received his B.A., M.A., and Ph.D. degrees, all in economics, from Harvard University.

FREDERICK S. TOWNSEND, JR. is President of The Townsend & Schupp Company, a specialized insurance service firm that rates life insurance companies. Townsend represented the American Academy of Actuaries liaison committee with the American Institute of Certified Public Accountants in developing Generally Accepted Accounting Principles for the life insurance industry. He has 35 years of experience in the insurance industry as a life insurance actuary for Prudential, Berkshire Life, and Valley Forge Life, and as a principal in a New York Stock Exchange member firm. Townsend received his B.A. in actuarial science from Lehigh University.

MARY A. WEISS is an Assistant Professor of Risk Management and Insurance at Temple University and the book review editor of *The Journal of Risk and Insurance*. In past years she has taught finance at Rider College and the University of South Carolina. She writes extensively on the property–liability insurance industry, and her most recent article "Efficiency in the Property–Liability Insurance Industry" is forthcoming in the *Journal of Risk and Insurance*. Weiss was a member of the nominations committee for the American Risk and Insurance Association and she is included in *Who's Who of American Women*. She received her B.S. from Quincy College and M.S. and Ph.D. in managerial science and applied economics from The Wharton School of the University of Pennsylvania.

WARREN R. WISE is Executive Vice President and General Counsel of the Massachusetts Mutual Life Insurance Company. He is an active member of a number of life and health insurance trade association committees and a member of the Torts and Insurance Practice Section of the American Bar Association. Wise is the author of *Business Insurance Agreements*, prepared to assist lawyers in drafting business insurance agreements for Massachusetts Mutual policyholders. Before joining Massachusetts Mutual, Wise was associated with the U.S. Department of Justice. He graduated from the University of Nebraska with degrees in accounting and law and received his master's degree in law from Georgetown University Law Center.

KENNETH M. WRIGHT is an economic consultant at Wright Economics, following his retirement from the position of Vice President and Chief Economist of the American Council of Life Insurance. At the ACLI, Wright focused on economic issues in the life insurance business, ranging from fiscal and monetary developments to the outlook for business activity and interest rates, to the integration of financial services across institutional boundaries. As a financial economist, Wright has specialized in money and capital market conditions and the investment of life insurance funds. He was a Vice President of the Irving Trust Company, senior economist at Citibank, and an economist at the Federal Reserve Bank of New York. Wright received his B.A. from the College of Wooster in Ohio and his Ph.D. in economics from Columbia University.

Conference Participants

VERNE S. ATWATER, Pace University
CARLISS Y. BALDWIN, Harvard University
STEVEN BAVARIA, *Investment Dealers Digest*
JOSEPH M. BELTH, Indiana University (Bloomington)
ZVI BODIE, Boston University
JOAN T. BOK, New England Electric System
JAMES L. BOTHWELL, General Accounting Office
CAROLYN A. BOYER, Health Insurance Association of America
GERARD M. BRANNON, Consultant
ROGER E. BRINNER, Data Resources, Inc.
TIMOTHY R. CAMPBELL, The Travelers Corporation
WILLIAM F. CARROLL, Life Insurance Association of Massachusetts
THOMAS E. CIMENO, Federal Reserve Bank of Boston
LAWRENCE D. CLUFF, General Accounting Office
JEFFREY COHEN, Goldman, Sachs & Company
MAX COOPERMAN, The Prudential Insurance Company of America
ANTHONY T. COPE, Wellington Management Company
ALBERT B. CRENSHAW, *The Washington Post*
J. DAVID CUMMINS, University of Pennsylvania
JOHN M. DAVIS, JR., Federal Reserve Bank of Cleveland
JOHN C. FOSTER, Pension Benefit Guaranty Corporation
DAVID R. FRANCIS, *The Christian Science Monitor*
DANIEL GOGGIN, Boston Mutual Life Insurance Co.
JOHN F. GUTHRIE, JR., The New England
SCOTT E. HARRINGTON, University of South Carolina
LORRAINE R. HART, IDS Financial Services, Inc.
EDWARD A. HJERPE, III, Federal Home Loan Bank of Boston
EVERETT B. HORN, JR., Boston Mutual Life Insurance Co.
J. ROBERT HUNTER, National Insurance Consumer Organization
ROGER S. JOSLIN, State Farm Mutual Automobile Insurance Company
MICHAEL W. KERAN, The Prudential Insurance Company of America
SOTIRIOS KOLLIAS, Commission of the European Communities
RICHARD W. KOPCKE, Federal Reserve Bank of Boston
ORIN S. KRAMER, Kramer Associates
EDWARD H. LADD, Standish, Ayer & Wood, Inc.
JUDY E. LASTER, Massachusetts Special Commission on Financial Services
RICHARD N. LATZER, Transamerica Investment Services
TERENCE LENNON, New York State Insurance Department
MARC LEVINSON, *Newsweek*
PAUL C. LIPSON, Federal Reserve Employee Benefit System
ROBERT E. LITAN, The Brookings Institution
ALFRED L. MALABRE, *The Wall Street Journal*
CHARLES McCORMICK, Massachusetts Department of Insurance
WILLIAM N. McDONOUGH, Federal Reserve Bank of Boston
DAN M. McGILL, University of Pennsylvania (emeritus)
STEPHEN K. McNEES, Federal Reserve Bank of Boston
CATHY E. MINEHAN, Federal Reserve Bank of Boston
THOMAS E. MOLONEY, John Hancock Mutual Life Insurance Company
LORE MONNIG, James D. Wolfensohn Incorporated
ALICIA H. MUNNELL, Federal Reserve Bank of Boston
CHRISTOPHER R. NELSON, Federal Reserve Bank of Kansas City
GUY W. NICHOLS, Woods Hole Oceanographic Institution
BARBARA N. OPPER, The World Bank
M. LAVONNE PADEN, General Accounting Office
HENRY G. PARKER, III, Chubb & Son Inc.
RICHARD E. PAULSEN, Paulsen, Dowling Securities, Inc.

NICHOLAS S. PERNA, Shawmut National Corporation
KENNETH J. H. PINKES, Moody's Investors Service, Inc.
EARL R. POMEROY, North Dakota Insurance Commissioner
JOAN T. POSKANZER, Federal Reserve Bank of Boston
MICHAEL J. PRELL, Board of Governors of the Federal Reserve System
RICHARD E. RANDALL, Federal Reserve Bank of Boston
PAUL A. REARDON, American Council of Life Insurance
STEVEN A. SASS, Federal Reserve Bank of Boston
ROBERT E. SCHNEIDER, The New England
DAVID A. SCHUPP, The Townsend & Schupp Company
RALPH F. SCOTT, John Hancock Mutual Life Insurance Company
GORDON H. SELLON, Federal Reserve Bank of Kansas City
WALTER SHUR, New York Life Insurance Company
STEVEN S. SKALICKY, American International Group, Inc.
WILLIAM B. SNYDER, GEICO Corporation
NEAL M. SOSS, The First Boston Corporation
RICHARD E. STEWART, Stewart Economics, Inc.
JAMES M. STONE, Plymouth Rock Assurance Corporation
RICHARD F. SYRON, Federal Reserve Bank of Boston
S. ANDREW THOMPSON, JR., Federal Reserve Bank of Kansas City
FREDERICK S. TOWNSEND, JR., The Townsend & Schupp Company
SHEILA L. TSCHINKEL, Federal Reserve Bank of Atlanta
CHARLES W. VERNON, III, Pension Benefit Guaranty Corporation
FRANCIS M. VITAGLIANO, State Street Bank and Trust Co.
DAVID WARSH, *The Boston Globe*
WARREN R. WISE, Massachusetts Mutual Life Insurance Company
KENNETH M. WRIGHT, Consultant
ANDREW M. YUENGERT, Federal Reserve Bank of New York

THE FEDERAL RESERVE BANK OF BOSTON CONFERENCE SERIES

No. 1	Controlling Monetary Aggregates	June 1969
No. 2	The International Adjustment Mechanism	October 1969
No. 3	Financing State and Local Governments in the Seventies	June 1970
No. 4	Housing and Monetary Policy (out of print)	October 1970
No. 5	Consumer Spending and Monetary Policy: The Linkages	June 1971
No. 6	Canadian–United States Financial Relationships	September 1971
No. 7	Financing Public Schools (out of print)	January 1972
No. 8	Policies for a More Competitive Financial System	June 1972
No. 9	Controlling Monetary Aggregates II: The Implementation	September 1972
No. 10	Issues in Federal Debt Management	June 1973
No. 11	Credit Allocation Techniques and Monetary Policy	September 1973
No. 12	International Aspects of Stabilization Policies	June 1974
No. 13	The Economics of a National Electronic Funds Transfer System	October 1974
No. 14	New Mortgage Designs for Stable Housing in an Inflationary Environment	January 1975
No. 15	New England and the Energy Crisis (out of print)	October 1975
No. 16	Funding Pensions: Issues and Implications for Financial Markets	October 1976
No. 17	Minority Business Development	November 1976
No. 18	Key Issues in International Banking	October 1977
No. 19	After the Phillips Curve: Persistence of High Inflation and High Unemployment	June 1978
No. 20	Managed Exchange-Rate Flexibility: The Recent Experience	October 1978
No. 21	The Regulation of Financial Institutions	October 1979
No. 22	The Decline in Productivity Growth	June 1980
No. 23	Controlling Monetary Aggregates III	October 1980
No. 24	The Future of the Thrift Industry	October 1981
No. 25	Saving and Government Policy	October 1982
No. 26	The Political Economy of Monetary Policy: National and International Aspects	July 1983
No. 27	The Economics of Large Government Deficits	October 1983
No. 28	The International Monetary System: Forty Years After Bretton Woods	May 1984
No. 29	Economic Consequences of Tax Simplification	October 1985
No. 30	Lessons from the Income Maintenance Experiments	September 1986
No. 31	The Merger Boom	October 1987

THE FEDERAL RESERVE BANK OF BOSTON CONFERENCE SERIES

No. 32	International Payments Imbalances in the 1980s	October 1988
No. 33	Are the Distinctions between Equity and Debt Disappearing?	October 1989
No. 34	Is There a Shortfall in Public Capital Investment?	June 1990
No. 35	The Financial Condition and Regulation of Insurance Companies	June 1991