

# RECORD OF SOCIETY OF ACTUARIES 1990 VOL. 16 NO. 3

## EMERGING ISSUES

Moderator: WILLIAM CARROLL  
Panelists: REED P. MILLER  
CATHY H. WALDHAUSER  
Recorder: WILLIAM CARROLL

- o The actuary needs to concern himself or herself with asset quality and investment philosophies. This session will explore new issues, of recent vintage or currently emerging, in the following arenas:
  - Regulatory developments requiring the actuary's attention
  - Industry developments
  - Capital market developments
  - What the actuary should do and prepare for in meeting these developments

MR. WILLIAM CARROLL: I'm employed as an actuary by the American Council of Life Insurance where I work in government relations. And apropos to this session, my responsibilities include financial reporting, statutory financial reporting, valuation of assets, and some traditional valuation issues. The program says that the actuary needs to concern himself or herself with asset quality and investment philosophies. This session will explore new issues and issues of recent vintage that are currently emerging. We plan to bring all this together by focusing on a central theme; specifically the question "Solvency: Is there really a crisis?"

Reed Miller is Vice President and Corporate Actuary at Lincoln National Corporation where his responsibilities include review of pricing and valuation of liabilities in the business units, capital surplus, target and allocation for the enterprise, and financial planning for the corporation. Cathy Waldhauser has similar responsibilities at IDS. They include asset liability management, annuity and product development, and monitoring of various business units. Cathy has also been a member of the Board of the Minnesota Life and Health Guarantee Association since 1983. Incidentally, I first met Cathy when we were each members of the Product Development Section Council.

I'll set the stage for our discussion by reviewing some of the things that I think happened in the 1980s that led to our being where we are today. New products and investment strategies were developed to cope with rising inflation and increased volatility of financial markets. Our industry continued to stress the investment aspects of its products. We saw declines in our surplus ratios. As we entered the 1990s, a *Washington Post* writer observed that three hallmarks of our 1980 lifestyle all fell simultaneously on hard times. The Perrier water was removed from the shelf. We laughed. Donald Trump experienced family and financial difficulties. And Drexel and its star performer fell from grace. With this, the junk bond market plunged. A large insurer here on the Pacific rim appeared to be troubled. Newspapers and magazines suggested that our industry may be on the verge of insolvency. We were compared to the savings & loan industry. Our regulators, both in Washington and in the various state capitals, expressed their concern and began to take various kinds of action directed at the question of

## PANEL DISCUSSION

stronger solvency regulation of our industry. One company, IDS, wrote a paper asking whether the U.S. life insurance industry will keep its promises. This is a serious question which needs to be addressed in a serious and sober manner.

Cathy Waldhauser will present the IDS paper, and then Reed Miller will provide a critical response. Following that, I will report on some specific NAIC actions taken last week, and mention some open NAIC agenda items.

**MS. CATHY H. WALDHAUSER:** "Will the U.S. life industry keep its promises?" That was the title of a position paper that IDS issued in March 1990. The paper presented three conclusions. First, that in the event of a severe and prolonged economic downturn, 20% of the country's large life insurance companies would be at significant risk of becoming insolvent. Second, current regulation of the life industry is not adequate to prevent such insolvencies. Third, the existing guaranty system is inadequate to handle these insolvencies and may actually contribute to the problem.

I'd like to tell you why we wrote the paper. That seems to be one of the first things people always ask. Then I'll go through the paper's main points, reactions we've received to it, and where we at IDS would like to see regulators and our colleagues in the industry go from here. First, I'll go quickly through some of the history that Bill already did a very nice job on.

### **EVENTS LEADING TO PAPER**

One of the biggest news items in the U.S. last year was the thrift debacle. Its cost to U.S. taxpayers is now estimated at something over \$400 billion. That's \$2,000 for every man, woman and child in the country, and it may be higher before it's over. At the same time, the property/casualty insurance industry has been receiving quite a lot of attention. This was due initially to the high cost and unavailability of certain coverages, and more recently because of rapidly mounting insolvencies, including two large reinsurers. Reports on financial regulation of the insurance industry were issued by the Consumer Insurance Information Group, the General Accounting Office, the National Association of Independent Agents, and most recently the Oversight and Investigation Subcommittee of the House Energy & Commerce Committee -- John Dingle's committee. All of these reports derived their conclusions primarily from experience in the property/casualty industry. We were concerned that general statements were being made about the insurance industry, and solutions necessary to improve regulation of the entire industry, based on experiences very different from those on the life insurance side.

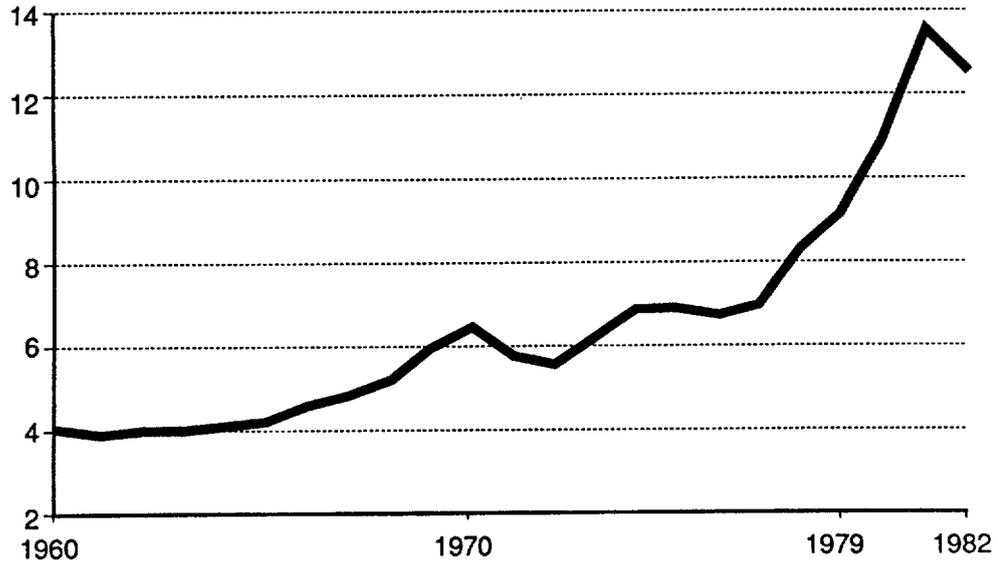
The primary financial risks identified on the property/casualty side were inadequate loss reserves and weak links in the reinsurance system. We did not feel these were major issues for the life insurance industry. We believed that one or more major life insolvencies would most likely be caused by mismanagement of the investment side of our business. Growing problems in mortgages, real estate, and junk bonds seemed to bear this out.

As Bill said, the genesis of the savings and loan debacle and many of our own problems began in the early seventies and continued through the early eighties. As Chart 1 shows, interest rates rose from 7-14% over just three years, from 1978 to 1981.

# Long-Term Interest Rates

## 30-Year Treasury Bonds

Percent



Source: Data from Federal Reserve Bulletin, H. 15

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This resulted in intense rate competition, lower product margins, more investment-oriented products, and more aggressive investment practices in an effort to regain profitability. Profits declined anyway.

Chart 2 shows profit margins on individual life insurance, with and without annuities. We are all familiar with the causes of this rapid decline. The product revolution of the early to mid-eighties resulted in massive replacements. Another bellwether of profitability, shown in Chart 3, is return on equity for stock life insurers. You will notice that 1984 is quite high. That is an aberration due to write-downs of deferred tax under the fresh start rules of the 1984 Tax Act, but the trend prior to that and since has been steadily down, dropping from 12% in 1985 to around 9%. The last measure we looked at, in an attempt to include mutual companies, was statutory operating gains as a percent of assets. As Chart 4 shows, that ratio has declined as dramatically as return on equity, although it appears to be improving in the last couple of years. Nevertheless, return on assets is down significantly from the early 1980s.

Chart 5 shows the trend in the number of insolvencies have grown from roughly five per year in the 1970s to 22 through the first eight months of 1989, when we completed our research for the paper. Chart 6 shows that assessments have grown even faster than the number of insolvencies. There was a marked jump in assessments in 1984 and 1985 following the demise of Baldwin United, but in 1987, 1988, and 1989 assessments have again increased dramatically. We didn't see any end in sight to the competitive pressures that had begun in the early 1980s, and major investment markets including bonds, mortgages and real estate all seemed to be increasingly volatile and unpredictable.

At the end of 1988, Jim Mitchell, President of IDS Life, decided that managing our own financial position was not adequate. If a savings and loan goes broke, the taxpayers pay any cost not covered by FSLIC or FDIC premiums and reserves. If a major insurance company goes broke, other insurance companies including IDS Life will pay. We had a significant and growing off-balance-sheet liability for the insolvencies of other insurers, and we were doing little to manage that risk. Furthermore, the risk did not seem to be apparent to others in the industry or to many regulators. Therefore, in the summer of 1989, we decided to raise awareness of the potential for a solvency crisis in the life insurance industry and stimulate discussion of potential solutions by issuing a position paper.

However, we needed to answer three questions: What is the likelihood of a financial crisis in the life insurance industry? Is existing regulation adequate to prevent such a crisis? How well would the guaranty present system handle it?

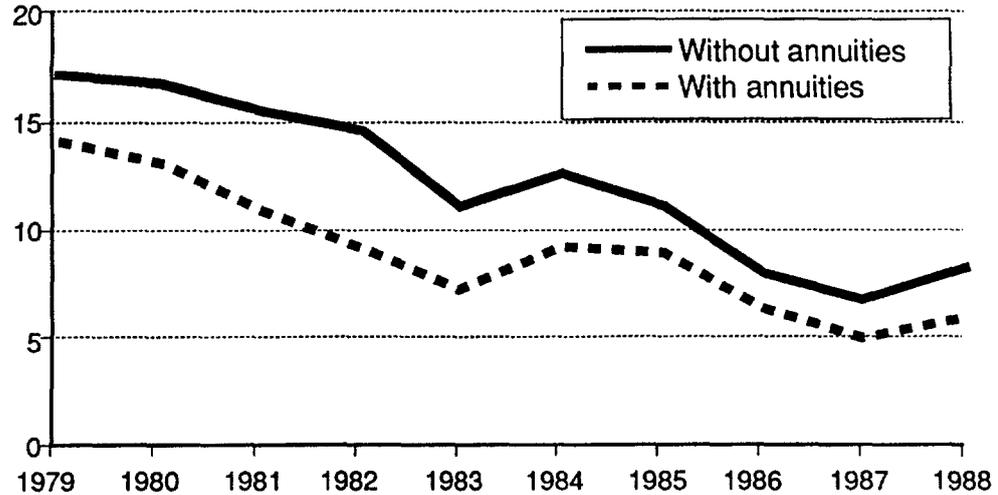
### **PROBABILITY OF A CRISIS**

First we confirmed that the life insurance industry was in fact in far better financial condition than the thrift industry. The quality of our assets was far superior, our business was more profitable, we had done a better job of managing the asset/liability risk, and our capital position was much stronger. That gave us some comfort, but we knew that industries don't go broke, companies do. The life industry's balance sheet looked relatively strong, but not every company is average.

# Total Ordinary Life Industry Profitability\*

Pretax, After Dividends

Profit Margins, % of Premiums



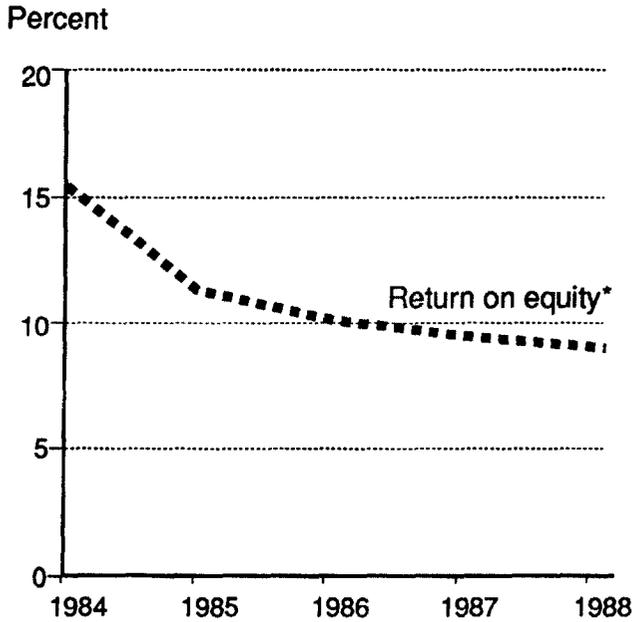
\*Ordinary life, supplemental contracts and ordinary variable life

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PANEL DISCUSSION

CHART 3

**Life Insurance Industry Profitability**



\*Net income including capital gains divided by beginning equity for publicly traded stock life companies

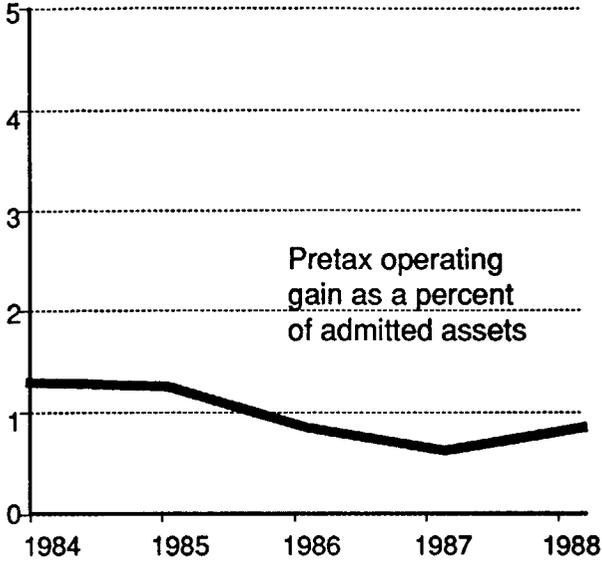
Source: Data from *Forbes*, 36-40th Annual Report on American Industry, 1/84-1/88, New York, NY.  
Data from *1989 Life Insurance Fact Book Update*, American Council of Life Insurance, Washington, D.C.

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CHART 4

**Life Insurance Industry Profitability**

Percent

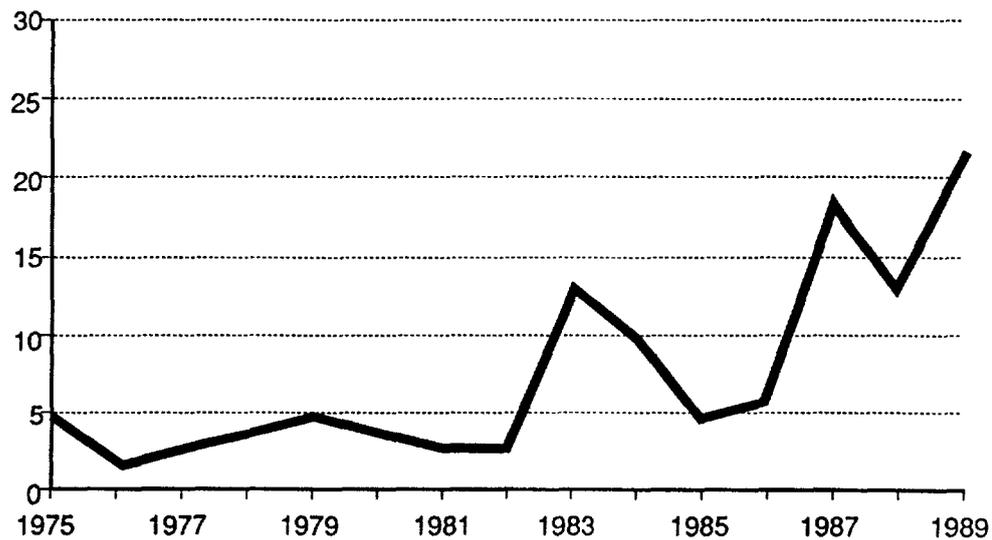


Source: Data from *1989 Life Insurance Fact Book Update*, American Council of Life Insurance, Washington, D.C.

## Life Insurer Insolvencies

1975 — August 1989

Number of Insurers



Source: IDS analysis, August 1989

# Life and Health Insurance Guaranty Association Assessments 1975 — 1988

Assessments (\$Millions)

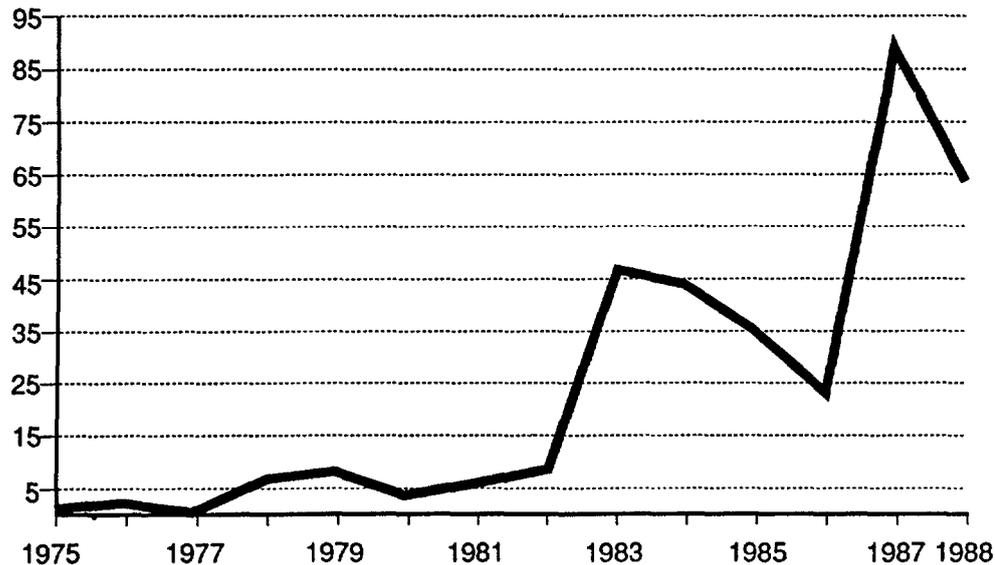


CHART 6

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Next we decided to see what we could learn from individual company insolvencies. We researched 48 insolvencies occurring from 1985 through the middle of 1989. Certain characteristics kept recurring.

Rapid growth in new lines of business that companies were not experienced in managing, especially hospital/medical and indemnity coverages, was common. Seventy percent of the insolvent companies were primarily health writers. Thirty of the 48 had a compound annual growth rate in excess of 30%. They had jumped into new lines of business with both feet and pricing was clearly inadequate. A typical health insurance loss ratio was between 90% and 100%.

There was also a common theme of imprudent and illiquid investments, especially given the liquidity requirements of the business these companies were writing. High concentrations reappeared in common stock, real estate and affiliate investments. Granted, the companies involved were usually small, single-state or regionally-based -- assets averaged only \$13 million per company -- but the average size had grown considerably in the last two years. And there had been an increasing number of life and annuity writer insolvencies.

The last warning flag was frequent changes in management. Twenty-six of the 48 companies studied had changed hands at least once within the 10 years prior to insolvency.

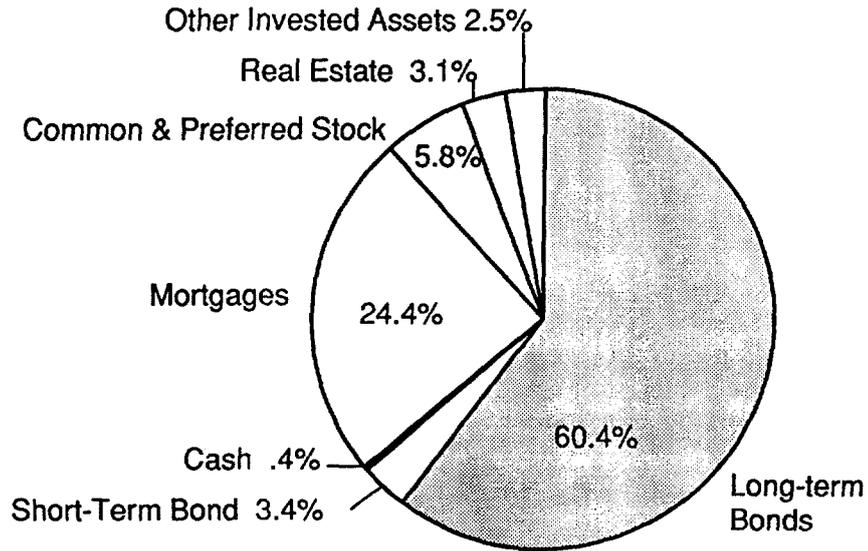
Looking at all of this, we didn't see many likely causes of a large insurer insolvency, except investment mismanagement. Large insurers are by definition in the investment management business. Therefore, we believed that poor investment management would be the most likely cause of a large insurer insolvency. I would also include management of the asset/liability risk for interest-sensitive business in the general category of investment management.

Chart 7 shows that the investment portfolio of the industry is reasonably well diversified: 64% of total cash and invested assets is in cash or bonds, 24% is in commercial mortgages, and the remaining 12% is split between stock, real estate and "other assets." "Other assets" are primarily partnerships, joint ventures and surplus notes from subsidiaries. Included in total bonds is the junk bond exposure of the industry, at roughly 6% of cash and invested assets. We didn't believe however that the only issue was junk bonds. We felt that other illiquid assets -- mortgages, real estate, subsidiary investments, partnerships and joint ventures -- also warranted concern. It is the combination risks from all illiquid or volatile investments that we believe must be better regulated, not each one separately.

Next we tried to assess the financial strength of the 100 largest life insurers. If an insolvency was going to shake public confidence and strain the guaranty system, it would be a large insurer that would do it. We took a balance sheet approach to assessing financial strength. We looked at the assets on the balance sheet, the liabilities and the type of business each company was writing, and tried to assess the adequacy of their surplus position.

# Life Insurance Industry/Distribution of Investments for the General Account

1988 Cash and Invested Assets, Excluding Policy Loans



Source: Data from Best's Aggregates and Averages, Life/Health, 1989  
Data from 1989 Life Insurance Fact Book Update, American Council of Life Insurance, Washington, D.C.

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The panelists in a previous session on managing capital and surplus did a very nice job of explaining how to develop a target surplus formula for your company and how to use it.

Our primary source of company data was the 1988 A.M. Best tapes. They provide rather limited information however and hence the formula we used is limited in the same fashion. Below-investment-grade bond information was added based on data published by Conning and Company and Townsend & Shupp.

The target surplus formula we used is probably not too different from others you've seen or that you have used in your own work. We used 0.5% of cash and investment grade bonds, 7.5% of low-grade bonds as identified by the NAIC, 5% of unrated bonds, 2.5% of all mortgages and preferred stock, 33% of common stock excluding affiliates, 33% of surplus invested in separate accounts, and 5% of all real estate and "other" invested assets. On the liability side of the balance sheet, we applied 1% to what we estimated was representative of deposit funds and GIC contracts, and 3% to life and annuity reserves excluding policy loans. We also provided for 15% of expected death benefits and 15% of health insurance premiums. The target surplus related to insurance risk was a relatively small part of the total for most of the top 100 companies. Lastly, we adjusted the reported capital and surplus for each company by adding the mandatory securities valuation reserve (MSVR) and deducting half of all investments in affiliated companies. Other formulas might build a percentage risk factor into target surplus for affiliate investments. More often, they will either ignore affiliates or they will deduct 100% of affiliates. Our approach was basically a compromise because we didn't know very much about the specific affiliate investments or how capital was being used by subsidiary insurers.

After calculating the target surplus amounts and adjusted surplus, we calculated the ratio of adjusted surplus to the target. Table 1 shows the distribution of the top 100 companies along a continuum from the highest ratio of actual to target surplus to the lowest. The lowest 20% of the companies had an average actual to target surplus ratio of just 55%. These are the companies that we felt would be at serious risk of insolvency if any of the major investment markets were to crash. The 40% of the companies in the middle hovered around 100% of the target. Another 40% of the companies clearly had more than adequate surplus to withstand the conditions we tested against.

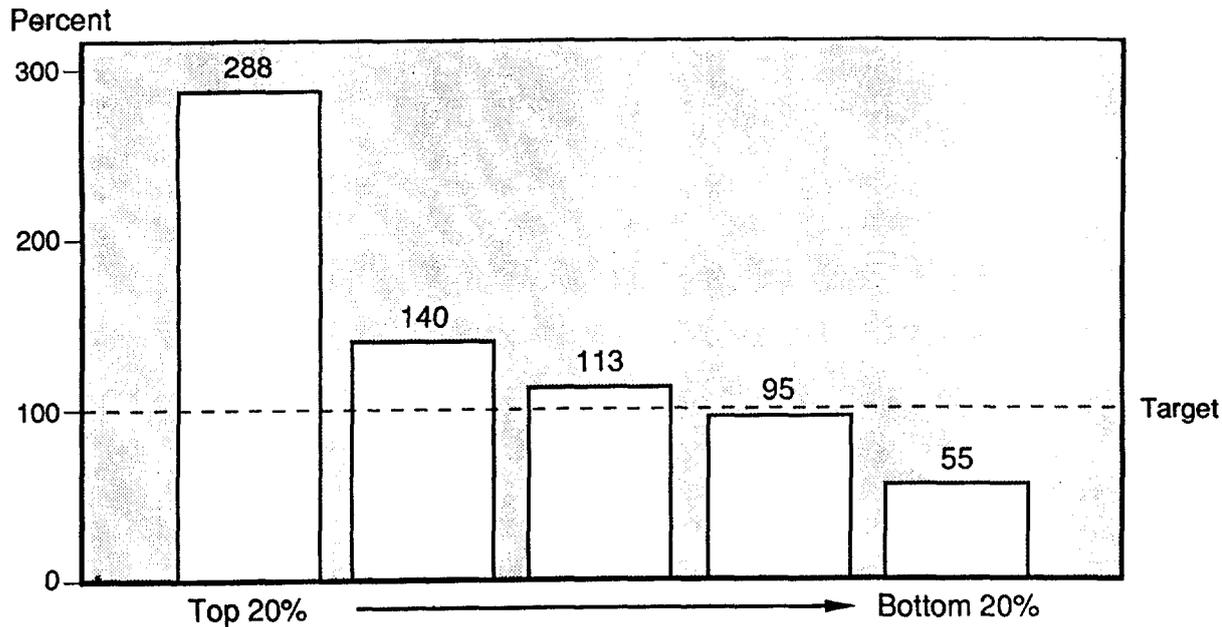
The next step was to double the level of risk assumed for junk bonds. Finally, we doubled the level of risk attributed to junk bonds, mortgages, real estate and "other" investments. We would hope that these are worst case scenarios. For example, you would realize a 15% loss from junk bonds if 30% of your junk bonds defaulted and you recovered 50% of the book value of the defaulted securities. A 30% default rate would require 10% annual defaults for three years, or 6% annual defaults for five years. That's the kind of time frame we would be looking at. The three loss scenarios applied are summarized in Table 2.

What we found as we increased the level of risk for the various investment categories was obviously that the number of companies identified as vulnerable to insolvency went up.

# Risk-Adjusted Surplus Ratios

100 Largest U.S. Life Insurance Companies

1439



Source: IDS analysis

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TABLE 1

## PANEL DISCUSSION

TABLE 2

Investment Loss Scenarios  
Percent of Assets Held in Each Category

|  | Moderate | Moderate Plus<br>High Junk Bond | Severe |
|--|----------|---------------------------------|--------|
| Junk Bonds                                 | 7.5      | 15.0                            | 15.0   |
| Unrated Bonds                              | 5.0      | 5.0                             | 5.0    |
| Mortgages                                  | 2.5      | 2.5                             | 5.0    |
| Real Estate and<br>"Other" Invested Assets | 5.0      | 5.0                             | 10.0   |

The 18 companies shown in the pie chart in Chart 8 are those that had an actual-to-target surplus ratio below 80%. We used an 80% cut-off because we knew that there wasn't a high degree of accuracy in our calculations and there was a lot we didn't know about these companies. Also, there seemed to be a significant break in the distribution of companies around that level. For these bottom 18 companies, the total surplus shortfall from target was \$3 billion. When we doubled the level of junk bond losses, the number of vulnerable companies increased by six for a total of 24, and a total surplus shortfall of \$4 billion -- not a large increase. When we increased the level of loss for real estate, mortgages and "other" investments however, ten more companies fell below 80% of target surplus and the total shortfall was over \$11 billion. Junk bonds clearly were not the only investment area worthy of some attention. It was also interesting that the percent of total top 100 assets represented in each grouping closely followed the distribution by number of company.

It may be comforting to see that we're only talking about billions of dollars here and not hundreds of billions. We've estimated however that IDS Life's share of a major insolvency would be 3%. Three percent of one \$4 billion assessment would wipe out an entire year's statutory earnings for us. You might want to estimate your own company's exposure to a large scale insolvency.

Obviously, numbers comparing actual to target surplus are not an accurate measure of what the actual cost of any insolvencies would be. Many of the companies identified as vulnerable would not actually become insolvent. Often however, the cost of an insolvency is greater than what you would have estimated from looking at a recent statutory balance sheet. Also, we're only including the top 100 companies in these figures. By the time a major insurer became insolvent, a larger number of small companies would probably go down as well. What we concluded from all this was that there are plausible scenarios that could trigger major insolvencies in the life insurance industry.

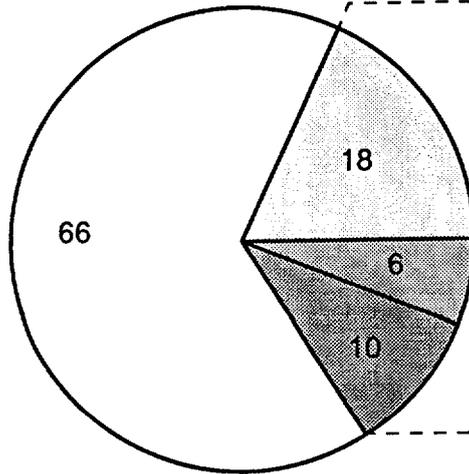
### ADEQUACY OF REGULATION

Second, we looked at how solvency is regulated and concluded that current regulation is not adequate to prevent the potential problems we had identified. The industry is regulated by 50 individual states, each with their own capital and surplus requirements, their own investment restrictions, and their own variations on a standard guaranty system. The process of legislating change in each of 50 states is cumbersome and slow.

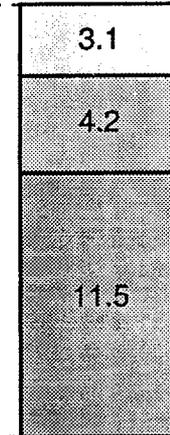
# 100 Largest U.S. Life Insurance Companies

Distribution by Risk-Adjusted Surplus Ratio

100% = 100 companies



Potential Loss  
(\$ Billions)



Loss Scenarios

Moderate

Moderate Plus  
High Junk Bond

Severe

Source: IDS analysis

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There is also no coordination between investment standards and policy reserve standards except in New York, where Regulation 126 requires asset/liability testing as part of the actuarial certification of reserves. Neither is there any correlation between investment standards and surplus requirements, except for the MSVR.

To illustrate a couple of the nonsensical things you find when comparing state regulations -- New Jersey limits real estate and mortgages to 60% of assets while three states, Michigan, Florida and Texas, have no limit at all. Also, minimum capital and surplus requirements are meaningless for all but the smallest companies. They range from \$200,000 in many states to a high of \$5 million, regardless of company size or type of business. Some states have higher surplus requirements for stock companies and others have higher requirements for mutuals. A \$2 million requirement, which is on the high end of the range, divided by \$2 billion of assets, representing the smallest of the top 100 companies, is only .1% of assets! Only Utah and Wisconsin are using risk-based surplus requirements.

Finally, very few states are equipped to enforce the standards they do have. Staffing levels, training and experience are often lacking. Most don't have adequate computer systems or expertise, and often they don't have adequate authority to step in and do what needs to be done to prevent insolvencies.

Our recommendations are that investment regulations be updated, and that reporting standards and loss reserving for mortgages and real estate, junk bonds and affiliate investments be reviewed. We believe that there should be increased disclosure and regulation of the asset/liability risk on insurers' books, that surplus requirements should be dynamic and risk-based, and that state surveillance and audit systems need to be improved.

An option we would like to see given consideration is increasing the role of the NAIC central office. A good example would be to have an experienced NAIC staff review asset/liability filings for all states, thereby allowing states to share expertise in an area where it would be very difficult for them to staff individually. The industry might also form a self-regulatory organization, along the lines of the National Association of Securities Dealers (NASD). Reconsideration should also be given to state versus federal regulatory options. We believe that the state system has many positive attributes and that it can be improved upon. However, individual companies might be allowed to choose between a state or federal system.

### **GUARANTY SYSTEM**

Third, we reviewed the present state guaranty system. We believe the guaranty system may actually contribute to the risk of insolvencies and would certainly be hard-pressed to handle one or more major insolvencies.

Guaranty coverage varies from state to state. There are still five states plus the District of Columbia that have no guaranty system. Coverage is unclear to policyholders. It is often unclear to the guaranty associations themselves! The events that trigger regulatory intervention also vary from state to state. Finally, the system has limited capacity. We haven't really tested that yet. Most insolvencies to date have been relatively small.

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We estimated the annual capacity of the current guaranty system to be about \$4 billion as shown in Table 3. We calculated that amount based on a level 2% of premium assessment, assuming that all states had guaranty systems that could assess at that level. That's equivalent to about one-third of the entire industry's pretax statutory earnings for one year, or two Baldwin Uniteds in today's dollars.

TABLE 3

Life and Health Guaranty Fund Capacity  
(\$ Billions)

|                           | Covered Premiums* | 2% Maximum Assessment | Pretax Gain From Operations |
|---------------------------|-------------------|-----------------------|-----------------------------|
| Life Insurance            | 65                | 1.3                   | 6.8                         |
| Annuities & Fund Deposits | 80                | 1.6                   | 2.5                         |
| Health Insurance          | 55                | 1.1                   | (.2)                        |
| Other                     | --                | --                    | .9                          |
| <b>Total</b>              | <b>200</b>        | <b>4.0</b>            | <b>10.0</b>                 |

\* 1988 premiums adjusted to exclude variable annuity and variable life premiums

Source: Data from *Best's Aggregates and Averages -- Life/Health*, 1989.

Early estimates were that the Baldwin companies asset shortfall versus liabilities was \$800 million. If Baldwin had continued to grow at a 20% annual rate, that cost would now be \$2 billion. So had a workout plan not been put together and worked as well as it did, Baldwin United would have used up 50% of the guaranty system's capacity for one year and taken a significant bite out of the industry's total statutory earnings.

Another problem inherent in the current guaranty system is unfair distribution of cost between companies. For instance, next to Baldwin United, our largest assessment to date was for a company named Life of Montana. It was not a large company and did not operate nationally, but we happened to be the only other major annuity writer in the state of Montana. So we basically paid for their insolvency. We don't have an answer for how to fix that, but there are clearly inequities in the state-by-state assessment mechanism.

I also personally object to assessing for all lines of business based on a percent of premium receipts. Both the risk and revenue source for most investment-oriented business is assets or reserves, not premiums. A premium-based assessment for such business penalizes smaller, more rapidly growing companies to the advantage of more established ones.

Our last concern regarding the guaranty system is that independent agents not affiliated with one company and consumers have little incentive to consider financial management

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in choosing a company to do business with. They are generally insulated from the effects of insolvencies.

We would like to see the guaranty system standardized by adoption of the current Model Act by all states. We would also like to see a risk-based system if we could devise a way to do that without accumulating large prefunded claims reserves that could be tapped for general revenue purposes. Finally, we would like to see the role and responsibility of the individual consumer and the independent agent in selecting their insurer increased.

### REACTIONS TO PAPER

The paper was distributed to a considerable number of industry people, regulators, consumer organizations and the financial press. Industry reactions have been mixed. Most people have said that it was beneficial to pull all of these issues together in one place. There is divided opinion however, as to whether it was useful to publish the paper in the manner we did. There is also divided opinion on the extent, nature and seriousness of the solvency issue.

Regulators, who could have been very defensive about some of our conclusions, have been positive. They appreciate any contributions the industry is willing to make to improve regulation. They would genuinely like our help. We have received no feedback from consumer organizations.

Financial media have appreciated the paper primarily for its educational value. They claim not to have understood life insurance industry finances, and it was helpful to them in that respect. Their reporting of the issues raised has been fair once you get beyond the headlines. Articles in the general press, which has received the paper only by request, have focused on what consumers can do to protect themselves rather than the regulatory issues.

Federal regulators and legislators have received the paper indirectly. The Office of Management and Budget, the Federal Reserve Board and most recently, John Dingell's committee have reviewed the paper but have not given us their reactions.

### WHAT'S NEXT?

Commissioner Earl Pomeroy, president of the NAIC, is one of the people who reacted favorably to our paper. He has made solvency his No. 1 priority. I know Bill and Reed will be telling you more about developments at the NAIC later. The process of change within the NAIC is still slow however. We may need to invent new ways to accelerate that process and to get more people involved.

Minnesota is doing just that. Commerce Commissioner Tom Borman and the Minnesota Insurance Federation formed a task force just last month to examine insurer solvency issues. The task force includes ten CEOs from Minnesota companies and four members of the Minnesota Commerce department. The Commissioner has requested a report by October 1, 1990 and plans to propose a comprehensive legislative program to improve solvency regulation in 1991. The task force agenda covers property/casualty as well as life insurance. Specific items to be covered include: investment restrictions and diversification requirements, reserves, surplus requirements, asset/liability management,

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the guaranty system, reinsurance, the examination process, and the Commissioner's authority.

It is imperative that we improve the regulation of insurance company solvency because, although we're not in a crisis now, conditions exist that could allow a crisis to develop. The two Chinese symbols that together mean crisis are danger and opportunity. While we face the potential for a crisis, we also have a tremendous opportunity to change the course of solvency regulation. But immediate action is required. The alternative could be larger insolvencies, a loss of public confidence in the life insurance industry, and a potentially damaging after-the-fact solution as is now unfolding in the savings and loan industry.

At IDS, we've identified what we would like the outcome of our efforts to be. We're focusing on decision makers, namely regulators and legislators, and we're attempting to involve other constituencies -- consumers, agents, and our shareholders -- in the discussion. The outcomes we'd like to see from a new process for maintaining effective regulation are as follows: first, consumers should take informed risks. They should know what the financial position of their insurance company is and evaluate price versus risk. We would like the marketplace to reward companies for sound financial management. We don't believe it does that today.

Second, we'd like to minimize the possibility of insolvency and eliminate it for large companies. We would like to strengthen and better define the competitive boundaries within which the life industry operates, with maximum freedom to compete within those boundaries. We also want to ensure maximum operating flexibility within the boundaries of sound financial management and minimize bureaucracy. And lastly but most importantly, the process as well as the resulting regulation should enhance public confidence in the life insurance industry and, in our ability to fulfill our promises to policyholders.

Solvency management for an insurance company includes prudent pricing, sound asset/liability management and management of reserves, surplus, credit risk, liquidity and expenses. Actuaries play a key role in the integrated management of product profitability, asset/liability risk, reserves and surplus. Actuaries also have a responsibility to educate both company management and regulators about the risks involved.

In conclusion, our purpose in publishing the paper was to raise awareness of solvency issues, and to stimulate discussion about appropriate regulatory solutions. From that standpoint, the paper seems to have done its job. We believe the issues raised should be debated vigorously and in the open, that out of such a debate will come the best solutions, consensus and support for those solutions from the industry, from consumers, from regulators and from legislators. I hope that actuaries will be involved in and contribute their expertise to, that debate. To quote Congressman Dingell from a luncheon talk he gave a couple of weeks ago, "The time to fix a leaky roof is when the sun is still shining."

**MR. REED P. MILLER:** Bill Carroll has asked me to provide a review of the IDS paper. In doing so, as I was first putting together some thoughts a few weeks ago and thinking about the nature of what he's asked me to do and the fact that Cathy was going

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to lead off in front of me, I happened to be watching a "Saturday Night Live" anniversary show. The skit of Dan Akroyd and Jane Curtin doing their "Point/Counterpoint" really stuck out as being a prime example of how we might liven up what are oftentimes rather dull discussion sessions. But, given that I had never met Cathy before, I had a real difficult time starting by labeling her in the way that Dan Akroyd labeled Jane Curtin. So I elected to not do that.

Some of the conclusions drawn in the paper are controversial, both in terms of specific content and because of the breadth of the distribution. I agree with many of the comments made in the report, but have concerns about others. The following will attempt to outline my thoughts and basically I'll try to follow the same content outline that was laid out in the IDS report: First of all, with a discussion of the financial condition of the industry, then referencing the regulatory status, and finally the guaranty fund systems. I'm not going to attempt to touch on all the different aspects of the paper because there are so many, but those that I felt were perhaps the most important.

Within the first category, Financial Condition of the Industry, there were two major areas of focus: that being first of all trends within the industry, and then second the large company analysis that Cathy referenced. Within the category of trends, there were four specific trends referenced. All of the trends referenced in the paper are real. It's hard to argue with some of the factual information provided there, but I do think it's necessary to focus on the interpretation of those trends and just exactly what they mean. Specifically, the trends within the industry included the fact that profitability has declined, the ratio of capital and surplus to assets has declined somewhat, certain insurance companies have taken on more credit risk, and finally the potential for risk associated with interest rate swings is higher.

Interpretation of the ratios of capital and surplus to assets needs to be approached with care at arriving at any conclusions. The sale of asset-intensive products, such as GICs, individual and group annuities, has been a major area of company growth over the last ten years. Those products, depending on the degree of asset liability matching and credit risk taken, may carry much less risk as a percentage of assets than the more traditional mortality and morbidity products which predominated until the mid-1970s. The decline in referenced leveraging ratio is a natural outgrowth of this change in new business mix, and is not by itself a signal of increased leveraging.

With declining profit margins, capital and surplus growth will be impeded. At a session on surplus enhancement techniques at the Hartford meeting earlier this spring, if any of you happened to be there, the ten most commonly indicated approaches were as follows: expense savings programs, contributions from parent companies, selling marginal operations, levelized commission financing, financial reinsurance, risk transfer coinsurance, joint venture partners, improved balance sheets, selling subsidiaries, forming a downstream holding company. An individual in the audience got up to ask, "Where are improved profit margins, eliminating unprofitable operations, and reducing policyholder dividends to the levels that can be supported by current earnings?" In the final analysis, the only way to ultimately strengthen the balance sheet is to strengthen the income statement. Unless we focus our attention on profitability, the result inevitably will be weaker balance sheets.

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The answer to the profitability and leverage question is contained in this simple response. All of us in the actuarial profession have a certain amount of control over the direction of these trends. At a minimum, we need to make sure that insurance company management teams are making well-informed decisions.

Increased exposure to credit risk was referenced as a disturbing trend. There are a few companies who have unreasonably concentrated their investments in noninvestment grade bonds. However, in an April news release, the ACLI reported that high-yield bonds represented only 4.6% of assets for member companies, and bonds in default represented only .2% of total assets. For the industry, this level of investing in junk bonds might well be considered prudent investment management by investment professionals. In May, the ACLI reported that the insurance industry held \$54 billion in high-yield bonds compared to \$126 billion that the 50 largest banks have in high-risk leveraged buyout (LBO) loans. Another note related to that is that the LBO debt accounts for only a small percentage of the high-yield bonds owned by life insurance companies.

The last referenced trend related to increased interest rate risk. It is true that insurers' exposure to this risk is increased, but so too has the ability to deal with the risk. The period of time leading up to high interest rates of the late 1970s and early 1980s had insurance companies investing for as long as possible. This was frequently done with little thought given to the liabilities. As a result of this policy many insurers were blindsided by the high interest rates and resulting disintermediation. Since that time, the potential for asset/liability risk is probably greater because of the products being sold and the increased economic volatility. However, much has been done to assist companies in management and control of the risk. And in fact, this may suggest that the real risk is less than it was 10 years ago.

The industry, regulators and actuarial profession have each contributed to that process. The actuarial profession has developed sophisticated modeling tools to measure and manage the risk being taken. Many of these are very similar to the option pricing models used in the investment marketplace. The American Academy of Actuaries has and is developing standards of practice for its members to deal with these product situations. The New York Insurance Department through its Regulation 126 annually requires that insurance companies doing business in that state perform multisenario cash-flow testing of virtually all annuity and single premium life insurance products. Where the projected asset cash-flows don't fully support the liability cash flows, additional reserves must be established on the balance sheet. For year-end 1989, approximately 140 insurance companies completed this process for New York. This group included more than half of the largest 100 companies. The National Association of Insurance Commissioners is currently working to finalize a revision of the Standard Valuation Law and supporting regulations which will require asset liability modeling or testing similar to that done in New York.

State-of-the-art mechanisms are in place for identifying and managing the risk. The New Standard Valuation Law and actuarial standards of practice will require that they be used. If the actuaries live up to this charge, the result could and very well should be reduced risk for the companies.

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In response to the environment of ten years ago and the knowledge gained by modeling, management of insurance companies has taken major steps to aggressively improve the cash flow match of their assets and liabilities. This can be seen in the shortened maturities in their bond and mortgage portfolios. Bond acquisitions in over-ten-year maturities fell from 85% in 1980 to 53% in 1983 to 36% in 1988. Similarly, the over-ten-year share of mortgage acquisitions fell from 95% in 1980 to 48% in 1983 to 17% in 1988. Both reflect a very dramatic shift in management philosophy and actual practice of the industry.

In addition to shortened asset maturities, companies have made product changes to limit risk, such as market value adjustments, surrender charges and the use of variable products where the contract holder bears the risk.

The extreme interest environment of the late 1970s and early 1980s caused some hardship within the industry, but the industry remained sound during this trying period. Since that time, industry, management, actuaries and regulators have all taken significant steps to greatly improve the ability of the industry to deal with a repeat experience.

My view of the referenced trends is that they could not be categorized as favorable. However, the trends don't suggest that the industry is headed for unmanageable problems either. As suggested in the IDS paper, problems could arise on a company-by-company basis, but the industry in general is sound. I guess that's the main point I want to make.

The second focus under that first major category was the large company analysis. Perhaps the most frequently quoted and controversial part of the IDS paper, Cathy already made reference to it, appears on page 2 and reads as follows:

We believe there is a significant risk that 1/5 or 20% of today's major life insurers will become insolvent should there be a severe economic downturn or decline in the major insurance markets or major investment markets. And we feel that unfavorable economic and market conditions are highly likely some time during the 1990s.

I think Cathy and others at IDS might indicate that there is a problem taking this phrase out of context. But in fact, that's what Congressman Dingell did. This is a direct quote from the letter he sent to the ACLI asking for a response, and the news media has taken that comment out of context. I think it's appropriate to at least be aware that is the principle focus that people are taking in reviewing this particular paper. Congressman Dingell and the news media have focused attention on this quote and are using it as an added reference with which to question the financial condition of our industry.

In reality, as one reads through the paper, what is really being suggested is that the degree of leveraging differs widely from company to company. Eighteen of the largest 100 companies have capital surplus of less than 80% of their referenced target surplus formula. To draw the above quoted conclusions from this, however, one must first accept that the use of a generalized surplus formula is appropriate, and second, that all categories of risk identified by their formula have disastrous results within a specified

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time frame, thereby using up all available surplus. A more appropriate conclusion is found on Page 28 of the paper and reads as follows: "From our analysis, we conclude that an insolvency of a major insurer is conceivable." I can't argue with that comment.

Because of the degree of focus on the target surplus formula, I want to spend some time on that particular topic. I have a significant amount of concern over the use of any generalized target surplus formula for arriving at any conclusions regarding the appropriate surplus needed by a specific company or the likelihood of insolvency. Various individuals from Lincoln National have talked at Society meetings and other forums about the use of target surplus formulas, and we've done this for one principle reason. And that was to raise the level of attention given to prospective, risk needs surplus analysis. Some companies reportedly still used a version of our formula published six years ago. While this might be better than not using any target surplus formula approach at all, the process of analyzing and quantifying risks needs to take place company by company. A generalized surplus formula such as that used in the IDS paper provides an interesting basis for comparing companies. It does suggest that some appear to be more highly leveraged than others, something that I would agree with. I'm now convinced that one can draw too many conclusions beyond that. IDS reflected some of those same concerns Cathy referenced in a footnote on Page 24 of that report.

Within each category of risk identified, a company's specific analysis will differ significantly. Based upon some of our experience and analysis, I offer the following examples. I want to emphasize that these are just intended to demonstrate variations in risk rather than a substitute formula. It's important that each company, as I mentioned earlier, go through this similar exercise.

The first category of risk is that of investment risk or credit risk. Investment grade bonds are lumped together for .5% surplus requirement. Historical data suggests the annual default rates range from 0% for treasuries as you might expect, to 22/100% for Baa securities, the bottom end of investment grade bonds. Our model surplus requirements, not that there's anything magic about our results, but I think it's reflective of the swing in possible risk exposure out there, range from zero to 1.8% for investment grade securities. Therefore the .5% would significantly understate or overstate results, depending on the credit quality distribution. For bonds categorized as low-grade or junk, the IDS formula suggests 7.5% for a moderate scenario and 15% for a severe scenario. Based on historical data, annual default rates are less than 1% for Ba bonds to perhaps 7% or 8% for Caa bonds. Using a statistical model we've developed for our own use, the present value of future default losses -- not just looking at one or three years, but looking over a long time horizon -- for Ba securities is 6.5% and 36% for Caa securities. These don't reflect any risk premium for expected defaults which will be paid in the form of higher investment income in the future. If they did, the resulting present value results would look more like 2.5% for Ba securities and 15.5% for Caa securities. The wide range of difference once again is the point I'm trying to make. One generalized formula applied to all varieties of companies just does not allow for drawing any specific conclusions regarding that particular company.

Bonds which are reported as unrated in the statutory statement are frequently investment grade. The unrated category represents the lag in the NAIC rating process, and

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sometimes amounts to large dollars. Using a blanket 5% factor doesn't adequately reflect the risk associated with those variations.

The risk with mortgages and real estate varies geographically, based on geographic distribution, loan to value, age of the portfolio and other factors. These differ significantly from company to company. Many collateralized mortgage obligations (CMOs) are backed by the federal government or agencies with little or no risk of default. In the specific case of real estate, the carrying value on the balance sheet of the insurance company is initial cost less depreciation. Significant unrealized capital gains are often present in different company portfolios.

The next category of risk referenced in the report is that of asset/liability or interest rate risk or the C-3 risk, depending on how you want to phrase that. This risk is totally dependant on the degree of matching of assets and liabilities of the company. A fully matched or immunized portfolio will require little surplus. The degree of match or mismatch and the risk quantification requires significant level of knowledge about both the liabilities and the assets, neither of which can be captured by a generalized formula.

From our own analysis, a case could be made that the IDS surplus factors for life and annuity reserves (3%), and deposit funds (1%) should be reversed. The magnitude also differs greatly by product. The typical annuity reserve is not subject to disintermediation risk. Reinvestment and mortality improvement are the principle risks present. Our assessment of this risk is less than 1% rather than the 3% present in the formula.

For traditional deposit funds and book value guarantees with no market value withdrawal, a risk factor of 2-3% is within reason. More could be required if attempts aren't made to match assets and liabilities. Deposit funds, where withdrawals are market value adjusted, effectively transfer all the investment risk to the contract holder. GICs represent fixed liabilities for which matching is more clear cut. Immunization will rarely however, be perfect on the asset side, and risks such as call or yield curve shifts could not be fully protected against.

The third category of risk referenced in the report is that of insurance risk or the mispricing risk from a mortality and morbidity perspective. The report suggests that insurance risks are considered to be relatively minor for most major insurers. I'm not sure I agree with that conclusion, and the use of a 15% factor for health premiums and life claims doesn't support that conclusion either. These are significant amounts of surplus. Depending on the nature of the product in each category, the 15% factors are arguably too high or too low. The margin cushion of statutory reserves significantly differs by product and in some cases may be minimal. The difference in underwriting practice and ability, especially for AIDS, will create risk variation. So will the ability to reprice or change dividend scales. Size and diversity of each company influence the magnitude of the risk for all these risk categories.

The purpose of the above comments is to identify areas or reasons why I'm uncomfortable with the use of a generalized target surplus formula to either draw conclusions as to the solvency, or as a basis for regulated surplus requirements. There's no way that one formula can be appropriate for generalized use to arrive at valid conclusions. Even if

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one accepts the use of a generalized formula, I have a problem with any suggestion that any company carrying a surplus of less than 80% of the formula runs a significant risk of insolvency. Certainly that risk is greater the more highly leveraged a company becomes. This becomes more the case where the risks taken are not diversified; that is, if a company only deals with one product or line of business.

Where multiple lines of business exist, a variety of risks are present and the likelihood that all categories of risk experience severe results is highly unlikely. Even where a company deals with annuity products only, it's possible to reduce risks with complimentary liabilities. For example, long-tail annuity reserves and shorter deposit funds can be combined to minimize the asset liability risk. They react in opposite directions to changes and interest rates. Because of negatively correlated or independent risk, the total target surplus would very rarely be called on at the same time.

Related to this are the referenced exposures of state guarantee funds; \$3.1 billion in the moderate scenario running to \$11.5 billion in the severe scenario. These are based on the difference between 100% of the target surplus formula and the actual surplus of the companies represented. These levels also suggest the use of all categories of risk surplus. The assumption that all categories of risk fail is highly unlikely and grossly overstates the magnitude of any potential problem. The economics that would create such a calamity would create other problems that would dwarf those of our industry.

The second major area of focus deals with regulatory status. I agree with IDS that some aspects of state regulation have lagged the fast paced developments in the industry over the last 10-15 years. All too many insurance departments are hampered in their efforts to strengthen technical staff and systems support by lack of funding. The three areas of regulatory lag referenced in the IDS paper are reserve liabilities, investments and their valuation, and capital and surplus. It was suggested that only one of these three categories appears to be adequate; that being regulation for policy reserves. I would argue that this category is not totally adequate, but that the other two are headed in the right direction. Regulation of investments can never fully address the rapid flow of new investment vehicles. Use of specific regulation is helpful in containing the ability of a company to totally bet the future on one or a few categories of investments.

As the IDS paper points out, New York has placed a 20% limit on junk bonds, and other states are following. Within some broad limitations, companies should be allowed a certain amount of investment freedom. Along with this investment freedom should be an appropriate level of investment reserves in the form of MSVR. The need to improve the MSVR was addressed a year or two ago by the Special Advisory Committee on the valuation law, commonly referred to as the Tweedie Committee on which I participated. The MSVR was not specifically part of the charge of this group but the need to better address the C-1 risk was viewed as inseparable from the broader valuation issue. This was particularly true where capital gains were needed to support reserve increases. In its final report completed more than a year ago, the Tweedie Committee included recommendations for a framework to deal with the MSVR as a supplement to its report. Since that time, an advisory committee, chaired by Bill Ward of the Aetna, has been formed to deal with this issue. Also this spring, work has been done under the direction of Terry Lennon of the New York Department which is intended to strengthen MSVR

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requirements for bonds. Six bond categories will replace the current four, maximum reserve levels will be modified somewhat, and the funding period will be shortened. This is expected to take effect for year-end 1990. Bill Ward's committee will deal with the bigger issue of how the MSVR functions and the inclusion of more categories of investment, such as mortgages and real estate.

The proposed changes to the Standard Valuation Law to include the valuation actuary concept should improve the valuation process for policy reserves and better deal with the asset liability issue. At the June 1990 meeting of the NAIC Life/Health Actuarial Task Force in Baltimore, modifications to the Standard Valuation Law were approved for exposure with expected adoption at the NAIC meeting later this year. Supporting model regulations are also in the works. These are essentially following the recommendations of the Tweedie Committee.

The valuation actuary concept is a form of dynamic valuation. It's becoming increasingly clear that the traditional formula-driven valuation standards cannot deal with the many variations and products, and the pace and development of new products. This has become more obvious to me over the last year as I've chaired a joint industry task force addressing reserves for nonlevel premium and benefit policies, sometimes referred to as Guideline XXX. The valuation actuary will be charged in the new Valuation Law with reflecting all insurance and investment risk in setting valuation reserves. To the extent the MSVR adequately reflects the C-1 risk, the valuation actuary can rely on it.

Detailed regulation and regulatory oversight are only part of the answer of solvency surveillance. The changes to the MSVR and the Valuation Law referenced above will provide a good regulatory framework. A very important complimentary answer though, is a significantly increased reliance on the valuation actuary to measure and monitor the risks being taken, and establishing adequate reserves, all of which will be reported or supported by an actuarial memorandum. To make this concept work, standards of practice must be acceptable to the regulators and the actuarial profession -- and I emphasize the need to satisfy the regulators just based on comments that Bob Callahan has made about the lack of comfort that he and maybe other regulators have and the adequacy of the current standards of practice and the disciplinary process. But the regulators and the actuarial profession are going to have to deal with defining the standards of practice, and along with that, make sure that appropriate disciplinary remedies are in place for anyone failing to comply.

To a certain extent, the ball is on our court. And by that I mean the membership of the American Academy of Actuaries and the Actuarial Standards Board. On the issue of regulating capital and surplus requirements, I don't believe that a regulated target surplus formula is workable for the reasons stated above. Any fixed formula cannot adequately deal with risk differences between companies and could be subject to manipulation, just as has been the case with minimum reserve formulas. This is another area for which the valuation actuary may be part of the solution.

The third major area of focus of the paper dealt with state guaranty funds. Once again, many of the suggestions or arguments regarding the guaranty system have merit. Consistent implementation of guaranty funds by all states would certainly improve the

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effectiveness of the system. The IDS discussion includes reference to the moral hazard issue. Cathy didn't get into that, but basically what that's all about if you haven't seen the paper, is it deals with the concern just like in the S&Ls where there was very little downside risk to the management of companies who take extra risk. They take the risk; the company fails; they move on to another venture or another opportunity. That's happened over and over again in the S&L industry.

The discussion of the moral hazard issues, the fairness of who pays for losses, and the idea of prefunding creates an internal conflict in my mind, between what is right and what is workable. Clearly the most equitable answer would call for those taking the greatest risk to pay for those risks. This would require a prefunding insurance type arrangement. However, advanced funding arrangements like this at the state or federal level are simply not feasible politically. In addition, I believe they're unwise. Available, spendable funds are a tempting target for legislators and may breed complacency among regulators.

As to the capacity of the guaranty funds, there's no doubt in my mind that levels of loss at the magnitude referenced in this document and the IDS paper specifically, are beyond what these funds were intended to cover. As previously stated, I believe that the levels of loss are significantly overstated. The system did work in the case of Baldwin United with industry support, and this was also a good case study of how the responsibility for insolvency was shared among insurers, policyholders, independent distributors and regulators. This is one of the areas of concern and not something that I necessarily disagree with in the IDS paper.

Insurers paid a share of the loss through guarantee fund assessments. A voluntary industry group contributed \$50 million. Policyholders shared through the reduced level of investment income, and lack of access to funds for a three-year workout period. The independent distributors or brokers shared in the form of payments in excess of \$170 million, resulting from a law suit. And finally, the regulators share through the premium tax offsets to the guarantee fund assessments. Clearly as the paper points out, the best defense against inadequate guarantee funds is effective regulation.

Finally, I want to offer some conclusions to try to summarize my thoughts on this particular issue. First of all, the IDS paper raises many valid points needing attention. In many cases, trade associations and NAIC task forces are currently dealing with these issues. This has been a major focus of what I tried to concentrate on. Few if any of the critical issues are being ignored. Commissioner Pomeroy has committed to pursuing his solvency policing agenda which gets at many of the concerns identified in the paper. The ACLI has a board level task force which specifically has been addressing the issue of industry solvency.

The next conclusion I have: I do believe that certain companies within our industry are operating with less surplus than many of us would deem appropriate. However, I don't feel that there is adequate support in the paper for anything near the magnitude of the problems suggested. Some strengthening of investment limitations may be acceptable, but a better solution would be to allow for some insurer flexibility, but with an MSVR

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that better reflects the risks of all the various investment categories. The work of Terry Lennon and Bill Ward's committee should improve on this.

There is room for improvement in the state regulatory process. I'm not in favor of more regulation, but rather better regulation and the funding necessary to accomplish it. State regulators of the NAIC can't possibly provide the regulatory oversight that would be adequate and is reflected in Cathy's comments without adequate funding. Federal regulation has been found in multiple situations to be much less effective than our current state regulation. The new standard valuation law should be adopted, thereby opening the door for increased valuation actuary involvement and responsibility. The Actuarial Standards Board should step up the pace of providing guidance to the actuary and should work with the regulators in monitoring compliance. This process should help deal with flaws in reserving and standards, and ensure modeling of assets and liabilities.

Use of a regulated target surplus formula is not appropriate because it cannot adequately deal with the variations in risk among companies. What might be appropriate however, is the use of a target surplus formula as part of the early warning process, or the insurance regulatory information system (IRIS). Where surplus falls below a risk-based target formula level, additional surveillance and oversight should take place. This additional analysis is the only way to identify if a problem is developing. That conclusion cannot be made from the target surplus comparison, and therefore the target level surplus should not be viewed as a surplus floor.

Finally, I agree that the recommendation for greater guarantee fund uniformity among all states is an appropriate step. The system of guarantee funds isn't perfect, but it provides a process which promotes some of the self-policing within our industry to limit this exposure, which I think has been part of the strength of the insurance industry over time.

**MR. CARROLL:** Talking about solvency and risk and whatnot -- I planned to get to this meeting, conservatively for an hour and a half to get from my home in northern Virginia to Dulles Airport. And sure enough, I woke up about one hour before flight time, made some changes in my plans, broke a few speed limits and got to the airport in time, ten minutes early. So it is possible for people to adjust their normal mode of behavior in order to withstand crises. I hope that our industry has the same kind of resilience. I think the break is over with.

I have some comments. Some of it was covered by our previous panelists, and I will try to go over that rapidly. Some of it is news and more detailed information about what the NAIC is up to in response to this. As Cathy mentioned, Commissioner Earl Pomeroy from North Dakota, who is currently the NAIC President, has made solvency his primary agenda for his presidential year 1990. First on his docket is an audit and certification mechanism for auditing and certifying states. The idea here is that the NAIC should establish a set of laws and regulations that ought to be in place in states. It should establish regulatory practices that ought to be ongoing in states. And then it should proceed to audit those states and certify that those practices are being followed. This is a surprising move for an organization like the NAIC to exert what amounts to a bit of authority over what some people might regard as sovereign states. I personally

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applaud its efforts, and wish it well in them. The second point that it has high on its solvency agenda is to conduct a review of the state examination process. I believe it may be as many as 20 years since a very thorough review has been done.

Next I want to tell you, in more detail, about specifically one of the items that took place last week at the NAIC meeting in Baltimore. I think Reed Miller mentioned that the NAIC was planning to change its bond quality rating system, and its MSVR calculations. This happened very rapidly, but I think very thoughtfully. Beginning on April 10, the NAIC held a public meeting in Washington, DC where it announced a proposed set of changes. Interested parties, both in the life insurance industry, and securities dealers, looked at them and put together their comments. The Industry Advisory Group that Reed referred to, as chaired by Bill Ward, put together its comments. Our own ACLI committees met and discussed the proposals. The NAIC very carefully reviewed all the responsible comments and came out with, I think, a carefully measured response; and actually adopted changes at its June meeting.

There are four changes that took place in this MSVR change. First, the number of classes was expanded from four to six. Second, the annual MSVR factors were increased. There is not good nomenclature surrounding the MSVR. These factors are called the annual increment factors. The best description of them in our vocabulary might be the normal costs. These are the increases to the MSVR before you apply the multiple that takes in account whether you have a high or low MSVR, and before you make any adjustments for capital gains or losses. So these normal costs were increased, and this increase took place in a phased-in manner.

The NAIC announced and adopted plans to place greater reliance on public rating agencies, rather than on its own standard valuation office (SVO), for the rating of publicly traded issues. And more on that later.

The fourth thing the NAIC did is expand disclosure regarding bonds. This is merely a supporting change. Schedule D, Part 1A of the annual statement will show the six categories of bonds rather than the previous four.

These changes were adopted, effective for 1990. The classes are expanded from four to six. The annual normal cost is increased. There will be greater reliance on public rating agencies. And the annual statement will contain greater disclosure of bond categories and in particular will include for the first time information about publicly traded versus privately placed issues.

Before we look at the new system, we'll look at what I call here the current system (see Table 4) which is the system that was in effect in 1989. The first column, NAIC designation, shows the names of the four classes that previously existed. "Yes" means that the bond was amortizable, both by the P&C industry and by the life insurance industry. "No" means it's not amortizable, but the asterisk means "yes it is."

A quick look at the new systems -- the names are "1, 2, 3, 4, 5, 6." (See Table 5.) The previous rate designations are shown here. Under the prior system, the MSVR office had the discretion to rate bonds as it was the final authority for MSVR purposes. And

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as you can see, the "yes" category which was generally regarded as investment grade, contained B and BB as well as BBB bonds. Reed briefly mentioned that the BBB bond is generally regarded as the lowest investment grade class. And I should say that these are Moody's and Standard & Poor's designations. Reed mentioned the Moody's designation. The NAIC does not give any preference to Moody's versus Standard & Poor's versus Duff & Phelps. All three agencies are mentioned in the SVO procedures manual, but I couldn't get them all on the table. So I chose the ones with the simple capital letters.

TABLE 4

### Current System

| NAIC Designation | Rating Agency Designation         | Maximum Accumulation | Annual Accumulation | Years |
|------------------|-----------------------------------|----------------------|---------------------|-------|
| Yes              | AAA to B                          | 2%                   | 0.1%                | 20    |
| No*              | BB, B                             | 10                   | 0.5                 | 20    |
| No**             | CCC and Lower<br>(Not in Default) | 20                   | 2.0                 | 10    |
| No               | In or Near Default                | 20                   | 2.0                 | 10    |

TABLE 5

### New System

| NAIC Designation | Rating Agency Designation | Maximum Accumulation | Annual Accumulation | Years |
|------------------|---------------------------|----------------------|---------------------|-------|
| 1                | AAA                       | 1%                   | 0.1%                | 10    |
| 2                | BBB                       | 2                    | 0.2                 | 10    |
| 3                | BB                        | 5                    | 0.5                 | 10    |
| 4                | B                         | 10                   | 2.0                 | 5     |
| 5                | CCC and Lower             | 20                   | 5.0                 | 4     |
| 6                | In or Near Default        | 20                   | 5.0                 | 4     |

But the point to make is under the previous system, discretion existed and as a result of that discretion, some bonds that are generally classified as not investment grade migrated into the "yes" category. This concerned regulators and led them to move from the SVO office discretion over classification of publicly traded issues. So that when we look at the new system, we see no overlap. The SVO now does not have discretion for classification of public issues. They must begin with the highest public rating. And they do have discretion downward but not upward.

Going back again to Table 5 and the next three columns of numbers: the column called "maximum accumulation" is the maximum NAIC, reserve for a particular category. The actual maximum is by component: sum of the products of those percentages times the amount of bonds at December 31 in each category. The annual accumulation is what I call the normal cost. This is the amount that you must put up each year before making

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adjustments for the multiple, and before adjustments for capital gains. It's obtained by dividing the maximum accumulation by the number of years to reach the maximum. So that 2% divided by 20 is .1%, and so on. That's the manner in which the MSVR formula has been designed over the years.

Now when I say that this current system was changed, we call this new system the maximums, the new maximums come into being immediately. There's not too much change here. Category 4, 5 and 6 are the same as the three "no" categories. All that really has happened is that the "yes" category has been split into 1, 2, 3. The (2) or BBB part of that category remains at 2%. The better part in the table probably should have said not just AAA but AAA through A. It is reduced from 2% to 1%, and the new (3) category becomes 5%. One of the advantages of this more refined classification is it cuts down on the debate between the industry and the SVO office in the classification of private placements. Before the NAIC had only the option of putting things in the 2% category or a 10% category. So this new intermediate category which had been recommended over the past few years by an industry advisory group, creates an in-between category and may find a resting place for some bonds that are borderline.

The new maximums come in immediately (See Table 6). The number of years to accumulate, if you notice, have been drastically cut. The first three 10s were 20. So that's been cut in half. The 5-4-4s, were 20-10-10s. So the years have been quickened. This is the part of the proposal that led to possibly the most outcry of when it was initially received by the industry on April 10. And I think the NAIC has acted in a very responsible way so that what we have is a gradual grading of the number of years. You see in 1989 we see the old system. By 1995 we see the new system. What this amounts to is a five-year grading deferred one year. In 1990 is the same as 1989, and then it grades linearly from 1990-95.

What's called the annual reserve factor is the maximum. The only thing to notice on Table 7 is that the new maximums come in immediately in 1990. They are not phased in. The years are phased in, as I've described before. Table 8 is the annual or normal contribution which is the result of dividing one table by the other table. That completes my presentation of these MSVR changes, which is the only piece of real news that I have. I would add that when the NAIC adopted this, they did agree to continue to study it and make any changes that appear to be necessary.

I should have said that this MSVR change was phase one of a program to deal with high-yield securities. The next step is to consider limitations on these securities. For example, they might decide that Categories 5 & 6 should be no more than X%, and Categories 4, 5, 6 X+Y%, and 3, 4, 5, 6 X Y Z%: some kind of accumulated maximum by the categories is my guess for which way they're liable to go. Reed mentioned there are plans under way and there's an advisory committee in place to create an expansion of the MSVR into a more broad asset base reserve that will make provisions for mortgages and real estate as well as bonds, and for common stocks.

The valuation actuary process is moving along with the NAIC. A less important but still significant matter is establishing proper safeguards for the use of the constant yield

# Years

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1458

| <u>Category</u> | <u>89</u> | <u>90</u> | <u>91</u> | <u>92</u> | <u>93</u> | <u>94</u> | <u>95</u> |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| (1)             | 20        | 20        | 18        | 16        | 14        | 12        | 10        |
| (2)             | 20        | 20        | 18        | 16        | 14        | 12        | 10        |
| (3)             | 20        | 20        | 18        | 16        | 14        | 12        | 10        |
| (4)             | 20        | 20        | 17        | 14        | 11        | 8         | 5         |
| (5) + (6)       | 10        | 10        | 8.8       | 7.6       | 6.4       | 5.2       | 4         |

TABLE 6

PANEL DISCUSSION

# Annual Reserve Factor

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1459

| <u>Category</u> | <u>89</u> | <u>90</u> | <u>91</u> | <u>92</u> | <u>93</u> | <u>94</u> | <u>95</u> |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| (1)             | .02       | .01       | .01       | .01       | .01       | .01       | .01       |
| (2)             | .02       | .02       | .02       | .02       | .02       | .02       | .02       |
| (3)             | .02       | .05       | .05       | .05       | .05       | .05       | .05       |
| (4)             | .10       | .10       | .10       | .10       | .10       | .10       | .10       |
| (5) + (6)       | .20       | .20       | .20       | .20       | .20       | .20       | .20       |

TABLE 7

EMERGING ISSUES

# Annual Increment Reserve Factor

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1460

| <u>Category</u> | <u>89</u> | <u>90</u> | <u>91</u> | <u>92</u> | <u>93</u> | <u>94</u> | <u>95</u> |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| (1)             | .001      | .0005     | .0005     | .0006     | .0007     | .0008     | .001      |
| (2)             | .001      | .001      | .0011     | .0013     | .0014     | .0017     | .002      |
| (3)             | .001      | .0025     | .0028     | .0031     | .0036     | .0042     | .005      |
| (4)             | .005      | .005      | .0059     | .0071     | .0091     | .0125     | .020      |
| (5) + (6)       | .020      | .020      | .0227     | .0263     | .0313     | .0346     | .050      |

TABLE 8

PANEL DISCUSSION

## EMERGING ISSUES

method of depreciation of real estate. After that, the list gets pretty picky, so I won't mention any more of my items. I'll open it up for questions at this time.

MR. ANTHONY T. SPANO: I just wanted to report on an additional NAIC activity that's still in its early stages. Reed spent a good deal of time talking about risk-based formulas. The NAIC does have a group, Reed, that is currently studying the feasibility of developing risk-based formulas, starting first with property and casualty, and then going into life and health insurance. The expectation is that this group will indicate that yes, it is feasible to develop risk-based formulas, and then probably there would be another group that would be appointed to attempt to develop these formulas. The fourth then would be that companies would have to report in their annual statements the appropriate data going into the calculation of these risk-based formulas, and then the NAIC would provide recommendations and guidance to the individual states as to how they should proceed when companies reach a risk-based formula level that is dangerous. And how to proceed could involve at one end of the spectrum companies that just barely failed the risk-based formula guidelines, simply increased observation, and at the other end of the spectrum, companies that are considered to be in bad shape. And then a recommendation might be for example, that such companies be precluded from writing further business. But I would guess that it probably will take a fair amount of time for this group to develop the specifics, the factors going into the formulas.

FROM THE FLOOR: When I listened to Ms. Waldhauser, I began to feel that things were in a very bad state. Then Mr. Miller seemed to provide me with a lot of reassurance that things were not really that bad. And then you said that we were in a crisis. So I'm not quite sure . . . .

MR. CARROLL: Did I say *crisis*? I didn't mean *crisis*.

FROM THE FLOOR: You used the word *crisis*.

MR. CARROLL: I didn't mean to use the word *crisis*. I'll certainly retract that. The only crisis I recall mentioning was that I had difficulty getting to the airport on time. I think I meant to . . . .

FROM THE FLOOR: Perhaps it would be better if we actually did perceive it that way, because managements tend to only deal with two kinds of problems: those they want to deal with because they've got the answer, and those they can't escape because they do perceive a crisis. I'm a little concerned perhaps that we're not giving enough attention to this. But anyway, a couple of specific comments. You mentioned that the junk bonds, Mr. Miller, were only about 5% of invested assets. But before that, you pointed out that the assets have been increased heavily because of these asset-sensitive products. It seems to me that what we really ought to be looking at is not the percentage of invested assets, but the percentage of statutory surplus because that's what we've got to work with. I'm not comforted by the 5%.

Second, the issue about setting experience on junk bonds. Most of us on the investment side feel that junk bond experience is immature and really can't be relied upon or extrapolated. We haven't been through a significant recession since 1981 or 1982, and

## PANEL DISCUSSION

junk bonds essentially are a phenomenon that has come on the scene since then. I would be very reluctant to give much significance to so-called experience with junk bond default rates.

The other point I think Ms. Waldhauser emphasized it, but Mr. Miller tended to go back to talking about the industry as opposed to individual companies. The real issue as she said is not the industry, but the individual companies. And it only takes one critical incident to damage the prime stock and trade the life insurance companies have, which is our reputation, our image, our credibility. And I'm extremely concerned that this issue could be our Achilles heel, and I'm delighted to hear the efforts that are being made to try to address it at all levels, and specifically with support, and Ms. Waldhauser's suggestion for self-regulation.

FROM THE FLOOR: I think that one of the major concerns that we have here is the investment risk, the risk of interest rate volatility causing havoc with our investment portfolio. The other consideration I believe is the profitability of the industry in general. I've looked at a lot of annual statements and found with a lot of companies, they're earning less than 75, less than 50 basis points on their total assets. I've also looked at the way smaller companies do their investments, and I don't know how they do it in big companies, and these are companies the size of Virtue which is less than \$1 billion of assets. The investment people invest the best they can. There's very little interaction between the investment people and anybody else. They have their minds set up and we're stuck with whatever investments they have. They're not considering changes in the interest curve. They're saying this is the best they can do today. One of the things I've looked at is the way interest rates have fluctuated just in the past five months. A 30-year treasury security, at one time an 8% bond, was running around par at the beginning of the year. That went down to about 88 just about a month and a half ago, and now it is back up to 94. If we had taken a look at our assets and hedging techniques to compensate for the interest volatility, I think we could have increased profitability and at the same time, eliminated some of the risk that we're taking on as far as investing out in longer-term duration contracts. This was not addressed as a way of helping both the profitability point that was brought up, as well as to eliminate the volatility of the interest rates and the impact on our concept portfolio. And I was wondering whether any of the panelists have any comments on using hedging to accomplish what we want to do as far as eliminating the impact of asset defaults on our portfolios and to invest in the best assets we can get today to compete in the marketplace. Today we have a product development process that once used the best return. And the investment people are trying to get that of course. If they try to match assets and liabilities as we're telling them, all lines of business in a mutual company have essentially all interest-sensitive products. We have dividend scales that are interest-sensitive. And if we go to asset liability matching, something's got to give, and it may be sales. And I was just wondering what your comments are.

MR. CARROLL: Does someone want to take a shot at that?

MS. WALDHAUSER: That's a pretty broad question! The volatility in rates in recent years, continuing since the early 1980s, has certainly concerned us and any other company issuing interest-sensitive or participating business. And I agree with Reed's

## EMERGING ISSUES

assessment that, on the whole, the industry is doing a much better job of managing interest rate risk than it did ten years ago. We are continuing to make progress and get smarter about it. I'd like to see regulators brought up to speed in this area however so they can help, or encourage, those companies that are not that far along in the learning curve. I'm not aware of any hedging tools that would protect companies from an underlying credit or liquidity risk. I'm referring here to the inability to sell an asset at a reasonable price if and when you do have to sell it, particularly if the credit quality has deteriorated.

MR. MILLER: I guess just a couple comments. One is, I don't know what it means to have the best yield. Is the best yield on what basis? Is it stretching for the highest current income? Is it looking for the highest total return over time? Highest current income, but subject to what risk? I think I'd be hard pressed to know what the best yield or best investment would be without a lot of further definition. So I think that's some communication that needs to take place between the actuarial side and the people doing the investing. To the extent your investment folks aren't communicating with the actuarial side, I think that's something that actuaries have an obligation to try and overcome. In fact, the new valuation law is going to require that actuaries are going to have to start doing some of the asset liability modeling along the lines of what New York currently requires. And it's going to have to do that in support of any actuarial opinion. If you don't do that type of modeling or testing, you're not going to be able to satisfy the opinion statement that is included in the new standard valuation law that all indications suggest will be in place at the end of this year. That's at the NAIC level, the model law situation. It will take a period of time, and this is part of what Cathy gets at too, that it takes a little bit of time for those things to sift down into the individual states.

In terms of use of options, I guess if you use futures or options . . . I think they're both tools that are available and not necessarily inappropriate. I'm not an investment professional, so I'm not going to get into a whole lot of discussion on that other than to state that if you know up front that you're mismatching your assets and liabilities, use of futures and options is one tool, not necessarily a riskless tool. You've got a lot of risk associated with futures. You have maybe a little less risk, more fixed cost associated with use of options. But those are tools to provide potentially a hedge where you might not otherwise be able to create a perfect match going into an investment process.

But the example you used where the bond values were changing from the beginning of the year until current time, I don't view that necessarily as a problem, if you have a reasonably matched or immunized environment. If you're in a situation where you're reasonably well matched, then presumably the value of your liabilities will change in a similar sort of way to the value of your assets. The change in the market value of that particular bond in the example you used isn't necessarily a problem. It could be a big problem, depending on the degree to which you're managing the relationship between your assets and liability.

And I think we're at a point in time where actuaries have to get involved in the investment process. I think the same is true from the reverse perspective -- investment people have to start understanding the product side much better than they have. If they don't, as a certifying valuation actuary, you are going to be real hard-pressed to certify the

## PANEL DISCUSSION

annual statement under the valuation law and within the framework of the standards of practice that the academy is developing. That just isn't an acceptable situation anymore within the industry. I don't know whether I answered all the different topics, but those are some of the things I had on my mind.

**FROM THE FLOOR:** I have a very simple question for Bill. The things that have occurred at the NAIC with regard to the MSVR -- are there other steps still that have to occur? Do these changes have to be approved individually in all the states?

**MR. CARROLL:** It's automatic. This is one area where the NAIC has power to take action, which has the effect of law in the states. Basically the state laws or regulations all say that you must file an annual statement blank, in accordance with the instructions of the NAIC. The accounting manual in many states refers to an easy document. This is a delegated power from the state to the NAIC. So that when they change the MSVR, that automatically has an effect in the states. And typically these state laws will say unless the state has some specific law to the contrary, there isn't anything to do. So this is automatic, and it's for 1990.

The next phase is more difficult. The NAIC wants to put together some guidance for the states on the maximum amount of holdings of high-yield securities. Here, they have a couple of obstacles. Number one, investment laws are state laws. There's not even an NAIC model investment law. This is very much a state's rights issue. Each state goes its own way. Not only can the NAIC not make state laws, the NAIC doesn't even have a model state investment law to amend. So one possible course of action is for the NAIC to put together what amounts to guidance and advice for individual state commissioners or even individual state legislators. They may be incrementing rights, but there's a starting point in the law. They're not going to be able to pontificate. This is my personal opinion, and they have said as much. Now if I was a very aggressive commissioner, I might try to put something in the accounting manual or in the blanks requirements that would try to have the effect of putting it in place. But I believe that would not fly with the NAIC. The industry would object, and I think many states would object to that. So I think in answer to your question, MSVR changes go in automatically. Restraint on assets is going to take state laws, and will be slow.

**FROM THE FLOOR:** Cathy, do you have any rebutting type of answer to anything that Reed Miller said? He got the last word.

**MS. WALDHAUSER:** No. I think Reed and I have discussed some of his concerns earlier. Most of them really surround how you would implement improvements, I think. When we wrote the paper, we realized we didn't have the answer, and we didn't have time to formulate answers, we weren't necessarily the best people to do that. I think we're that far apart on most of the issues that do need to be looked at. It's a matter of differences of opinion of what the potential cost is, and what solution is the best.

**MR. CARROLL:** I think that's a good note on which to end. I'd like to summarize this whole thing by saying that I think, as I said in the opening, these are serious questions which deserve serious and sober response and reflection, both on individual companies in the industry as a whole, and within the regulatory environment.