

**1992 VALUATION ACTUARY
SYMPOSIUM PROCEEDINGS**

SESSION 2

Rating Agencies/Risk-Based Capital

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RATING AGENCIES/RISK-BASED CAPITAL

MR. PETER B. DEAKINS:

Risk-Based Capital – Issues

- **C-1 Risk**
 - **Junk bonds**
 - **Real estate**
 - **Mortgages**
 - **Equities**
 - **Other risky assets**
 - **Size adjustments**
 - **Concentration factors**
 - **Relationship to asset valuation reserve (AVR)?**

- **C-2 Risk**
 - **Health insurers**
 - **Life insurers**
 - **Structured settlements**
 - **Size**

- **C-3 Risk**
 - **Surrender charges**
 - **Structured settlements**
 - **Benefit hedging**
 - **Mismatches and convexity**
 - **Relationship to valuation actuary**
 - **Relationship to interest maintenance reserve (IMR)?**

- **Possible Refinements**

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- Collateralized Mortgage Obligations (CMOs)
 - Interest only (IOs)
 - Other risky tranches

Industry Reaction to Risk-Based Capital (RBC)

The desired ratio of capital to RBC is determined by the industry average and industry median. There has been a generally favorable response to RBC. It is better than previous even with its quirks. There is a desire for refinement which is offset by a desire for stability.

Rating Agency Reaction to RBC (Excluding A.M. Best)

Most rating agencies don't consider RBC to be a major factor. RBC will not replace existing agency formulas. An additional benchmark may create potential publicity. Maximum leverage is an issue in addition to RBC-type ratios. Any required capital formula is just one factor along with competitive position, regulatory issues, and stability.

Managing RBC

Incremental returns are required to buy riskier assets. The formula for the required incremental return is attached if a company manages to a percentage of RBC. There are also concentration and C-3 risk factors.

Formula for Incremental Required Returns to Justify Assets with Higher RBC

$$\{R - [i_1 \cdot (1 - TR)]\} \cdot \Delta \text{ Capital} = \Delta \text{ Spread} \cdot (1 + \text{Capital}_2) \cdot (1 - TR)$$

$$\Delta \text{ Spread} = \frac{\{R - [i_1 \cdot (1 - TR)]\} \cdot \Delta \text{ Capital}}{(1 + \text{Capital}_2) \cdot (1 - TR)}$$

Where:

R is after-tax required return on invested capital.

i_1 is the pretax earnings rate net of defaults and investment expenses on the asset with lower RBC.

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TR is the marginal tax rate.

Δ Capital is the difference in required capital between the two assets including the impact of target RBC ratios.

Δ Spread is the required incremental pretax spread, net of defaults and investment expenses.

Capital₂ is the required capital on the asset with higher RBC, including the impact of target RBC ratios.

Note: Marginal calculation only

Sample Calculation

7.5% Pretax earnings rate on NAIC 1 bond

15% Aftertax required return

34% Tax rate

.30% RBC factor₁ (NAIC 1)

4.00% RBC factor₂ (NAIC 3)

125% Target ratio

.375% Required capital₁

5.00% Required capital₂

4.625% Capital

$$\Delta \text{ Spread} = \frac{[R - [i_1 \cdot (1 - TR)]] \cdot \Delta \text{ Capital}}{(1 + \text{Capital}_2) \cdot (1 - TR)}$$

$$\Delta \text{ Spread} = \frac{[15\% - (7.5\% \cdot .66)] \cdot 4.625\%}{1.05 \cdot .66} = .67\%$$

The required pretax return net of default and investment expense is 8.17% for the NAIC 3 Bond.

**125% Target Capital to RBC Ratio
Required Pretax Returns Net of Defaults on Investments
Given a 7.5% Return on NAIC 1 Bonds**

	RBC Factor	-----Target After Tax Return-----			
		<u>9.00%</u>	<u>12.00%</u>	<u>15.00%</u>	<u>18.00%</u>
NAIC 1	0.30%	7.50%	7.50%	7.50%	7.50%
NAIC 2	1.00	7.55	7.59	7.63	7.67
NAIC 3	4.00	7.77	7.97	8.17	8.37
NAIC 4	9.00	8.10	8.54	8.99	9.43
NAIC 5	20.00	8.71	9.60	10.50	11.40
NAIC 6	30.00	9.16	10.38	11.61	12.84
Preferred in Good Standing	5.00	7.84	8.09	8.34	8.59
Preferred Not in Good Standing	30.00	9.16	10.38	11.61	12.84
Common Stock -- Unaffiliated	30.00	9.16	10.38	11.61	12.84
Common Stock -- Affiliated Foreign	100.00	10.90	13.42	15.93	18.45
Real Estate (not in satisfaction of debt)	10.00	8.16	8.65	9.14	9.63
Real Estate (in satisfaction of debt)	15.00	8.45	9.15	9.86	10.56
Mortgages -- Farm	5.00	7.84	8.09	8.34	8.59
Mortgages -- City	0.10	7.48	7.47	7.46	7.45
Mortgages -- Residential	2.00	7.63	7.72	7.82	7.91
Mortgages -- Other	3.00	7.70	7.85	8.00	8.14

Note: Marginal calculation assumes a 34% tax rate.

**175% Target Capital to RBC Ratio
Required Pretax Returns Net of Defaults on Investments
Given a 7.5% Return on NAIC 1 Bonds**

	RBC Factor	-----Target After Tax Return-----			
		<u>9.00%</u>	<u>12.00%</u>	<u>15.00%</u>	<u>18.00%</u>
NAIC 1	0.30%	7.50%	7.50%	7.50%	7.50%
NAIC 2	1.00	7.57	7.63	7.68	7.74
NAIC 3	4.00	7.87	8.15	8.42	8.70
NAIC 4	9.00	8.31	8.91	9.50	10.10
NAIC 5	20.00	9.07	10.23	11.39	12.55
NAIC 6	30.00	9.59	11.14	12.69	14.24
Preferred in Good Standing	5.00	7.96	8.31	8.65	9.00
Preferred Not in Good Standing	30.00	9.59	11.14	12.69	14.24
Common Stock -- Unaffiliated	30.00	9.59	11.14	12.69	14.24
Common Stock -- Affiliated Foreign	100.00	11.39	14.28	17.16	20.04
Real Estate (not in satisfaction of debt)	10.00	8.39	9.04	9.70	10.36
Real Estate (in satisfaction of debt)	15.00	8.75	9.68	10.60	11.53
Mortgages -- Farm	5.00	7.96	8.31	8.65	9.00
Mortgages -- City	0.10	7.48	7.46	7.45	7.43
Mortgages -- Residential	2.00	7.68	7.81	7.94	8.07
Mortgages -- Other	3.00	7.78	7.98	8.18	8.39

Note: Marginal calculation assumes a 34% tax rate.

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MR. MICHAEL ALBANESE: In order to cover the broad range of issues surrounding RBC in a concise format, I felt it would be best to highlight some of the more important points concerning Best's view of leverage and capital adequacy; provide a comparison of our RBC model and that of the NAIC; discuss some of the items incorporated in our review that go "behind the annual statement"; and finally outline what we perceive as some of the more important industry impacts of RBC and its implications on Best's rating assignments.

What Is Leverage and Why Is It Important?

I have decided to begin this presentation with a general discussion of Best's leverage analysis in order to highlight the importance of capital adequacy in our review process. I would point out that many of the items and concepts that have been included in our traditional leverage measures are also incorporated into Best's RBC analysis.

We define leverage to be the relationship of overall insurance and investment risk to permanent capital and surplus funds. This is perhaps the most important objective area for us in determining the appropriateness of a rating. All companies must meet capital adequacy requirements, based on a substantial number of factors, in order to qualify for a particular rating class before we will consider all other operating areas.

In addition to the quantitative nature of RBC, our leverage analysis essentially focuses on the quantity and quality of risk-adjusted capitalization, and the degree of access which a company maintains to capital generation and preservation. A strong capitalization position provides for a cushion against adverse events. Conversely, while increasing leverage may contribute to greater long-term gains, a company's short-term flexibility may be severely limited due to unforeseen events. This is particularly true for companies that have limited access to additional capital -- either from the financial markets, from parents or affiliates, or from strong operating earnings.

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Items which may impact a company's leverage position and Best's view of its risk-based capital needs are the composition and level of liabilities; growth in insurance writings or exposure; concentrations in lines of business or investment practices; and the level quality and purpose of reinsurance.

Balance sheet risk or fluctuations in the market value of common stock, speculative fixed-income investments or delinquent and nonperforming loans and real estate are all factored into our leverage and RBC analysis.

Specific adjustments are also made to surplus under our leverage and RBC analysis to account for the disparity in the levels of conservatism used in reserving among companies. Voluntary reserves such as those backing specific investments or other special reserves, may also be considered as part of surplus. On the other hand, off-balance-sheet items, such as commitments or guarantees to affiliates or outstanding litigation, debt service requirements and surplus debentures, may not be included as permanent surplus under Best's leverage and RBC analysis.

A.M. Best Use of RBC

The RBC concept integrates many of the items that have traditionally been incorporated into the A.M. Best review process. However, many of these components have historically been viewed separately under our profitability, leverage, and liquidity analysis. Since RBC encompasses many of the specific elements reviewed in these areas, a capital adequacy model, which is similar in many respects to that of the NAIC, has been added as an additional tool as part of our objective review process. I would caution, however, that while our RBC model is designed to be more responsive to the current changes in the life/health insurance industry and financial markets, our other profitability, leverage, and liquidity measures will continue to be utilized in order to round out our comprehensive quantitative review of a company.

Depending on the appropriateness of its use for particular companies, RBC may be given varying weightings during our rating analysis. For example, RBC will carry more weight for our analysis of a relatively large company that has a significant amount of accumulation

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business due to the skewing of RBC requirements toward asset default and interest rate risks. For smaller companies, (especially accident and health carriers) other leverage measures may be given equal if not more weight than RBC.

Analysis of RBC (A.M. Best compared to the NAIC)

The A.M. Best risk-based capital formula follows closely the NAIC calculation, and utilizes the C-1 through C-4 risk classifications. Like the NAIC model, our formula also contains a covariance adjustment. However, since I could spend the better part of the day addressing each weighting factor, I would like at this point to highlight some of the more significant differences that exist between the A.M. Best and NAIC RBC formulas.

C-1 Size Factors -- Although Best's C-1 risk classification structure is roughly the same as that of the NAIC model, a significant difference arises in regard to the treatment of a company's spread of asset risk. As you are all well aware, the NAIC model utilizes a size factor to account for the spread of risk that arises as a company distributes its bond holdings among an increasing population of issuers. Under this concept, a company is allowed to maintain incrementally less surplus based on gradually reduced factors as the number of bond issues are increased. However, the A.M. Best model utilizes a size factor that is intended to account for risk spread among all major asset classifications, and not limited solely to bond issues.

Consequently, Best's size factor (or spread of investment-risk adjustment) is based on the amount of all nonaffiliated investments made in bonds, common and preferred stocks, mortgages, investment real estate, and cash and short-term investments. Since it is extremely cumbersome to ascertain a unit count of some of the invested asset classifications, our size factor is based on an assumption that, as holdings increase, a distribution within a particular classification occurs. While this assumption serves as a starting point, the default factors that are utilized may be adjusted based on our qualitative review of the underlying asset portfolios. If distributions within the particular asset classes remain relatively concentrated, size factor is adjusted accordingly.

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Single Concentrations -- It should also be noted that, concentrations of particular holdings are accounted for in our application of a single investment limit. Historically, 20% of cash and securities (including MSVR) has served as our single investment limit. Concentrations in individual securities that exceed this limit receive additional capital requirements. Consideration is being given at this time to reduce the 20% threshold, and a range in the 10-15% range will most likely be adopted.

Best's single investment adjustment contrasts with the NAIC's concentration factor, which is established for a company's ten largest investments. As you are probably aware, the NAIC model exempts class 1, 2 and government-backed bonds, common stock, properties occupied by the company and policy loans. Under the A.M. Best model, all assets with the exception of government-backed issues, home office buildings and insurance affiliates are subject to a single investment factor.

Although the capital requirement for holdings above the single investment limit are doubled at the rate required for the respective asset class, the additional requirement applies to amounts in excess of the single investment limit. Unlike the NAIC's largest asset factor, Best's single investment requirement is not capped at a maximum 30%. It should be noted, however, that Best's analysts may adjust the single investment factor or exempt issues which marginally exceed the investment limit based on a review of the quality of the underlying security.

Mortgages -- Another difference in C-1 risk (as compared to the NAIC model) lies in our treatment of mortgages, as compared to the NAIC model. Due to limitations that existed prior to the currently proposed change in the annual statement blank, mortgages under the A.M. Best calculation were originally given default factors based on insured versus noninsured designations. Although this has served as a starting point, substantial supplemental information is requested and obtained from virtually all companies with significant exposures in this area in order to provide more precise weighting factors. In fact, Best's analysts spend a substantial amount of time in this area adjusting for the specific characteristics of companies' mortgage portfolios.

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Naturally, our model will be updated as additional disclosure becomes available on the annual statement blank. However, I would point out that in instances where additional information is not provided, Best's default factors are generally more conservative than those utilized by the NAIC. I will touch more specifically on some of the items on which our mortgage factors are adjusted when I discuss Best's evaluation of the "numbers behind the annual statement."

Other Invested Assets -- Another area of note in our C-1 analysis relates to the treatment of "other invested assets" (schedule BA holdings). We utilize generally conservative default requirements that are consistent with the NAIC model. However, factors are adjusted according to a qualitative review of the underlying holdings. For example, securities such as small business loans (which are government backed) as well as speculative real estate or energy-related joint ventures may both be carried in this schedule. It would be inappropriate for us to assign the same weighting factors to these securities that have substantially different risk characteristics.

CMOs -- Finally, in the area of C-1 risk, we are not ignoring risks associated with the prepayments of CMOs. Although we are still considering the feasibility of applying standard adjustments for such risks to all companies, due to the lack of appropriate disclosure relating to the myriad of risk profiles that exist; particular adjustments for these securities are presently qualitative in nature. We do intend to request additional information pertaining to CMOs as part of our supplemental information requests, with the intent of making more quantitative adjustments for CMO risks in the near future.

C-2 Risk -- Moving on to C-2 risk, only minor differences exist between the A.M. Best model and that of the NAIC -- especially as applies to mortality risk.

For morbidity risks, our model also closely tracks the NAIC formula. I would point out, however, that in the absence of revisions to the NAIC blank, the NAIC factors are based on information concerning accident and health product risk characteristics that are supplied by the companies. At A.M. Best, we have traditionally requested specific accident and health product

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information in a format similar to schedule H as part of our supplemental questionnaire requests. It is from this material that we assign differentiated weightings for morbidity risk characteristics.

In general, in the area of C-2 risks, A.M. Best may utilize additional differentiation in our weighting factors that reflect a review of a company's specific product risks, its underwriting practices and its distribution methods. We do attempt to treat risks among companies, on an adjusted basis, with greater differentiation than C-2 risk classifications on the surface might suggest.

C-3 Risk -- Although the A.M. Best treatment of C-3 risk is also similar to the NAIC model, we utilize four risk categories rather than the three classes incorporated in the NAIC model. While the range of factors between our highest and lowest weightings do not materially differ with those of the NAIC, the extra classification provides some additional differentiation of C-3 risks under the A.M. Best model.

I would point out that the factors we use as a default are derived from information concerning the withdrawal characteristics of products found on page 17b of the annual statement. The factors are then adjusted based on a qualitative analysis of all items that might have a bearing on disintermediation risk, such as liquidity profile, distribution channels, size of contracts, asset/liability management practices and general policyholder confidence issues. Our analysts spend a considerable amount of time in this area. A detailed discussion of the specifics involved with our evaluation of disintermediation risk will be discussed later in this presentation.

C-4 Risk -- Finally, in the area of C-4 risk, we do utilize the NAIC charge for guarantee fund assessments as a starting point. However, additional requirements may also be included at varying levels based on qualitative assessments of off-balance-sheet items (such as guarantees to affiliates or other commitments or contingent liabilities), debt service requirements,

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outstanding financial reinsurance and/or the anticipated recapture of financial reinsurance, or any other items that might encumber a company's surplus growth or preservation.

As pointed out during the discussion of the various factors that are reviewed under Best's leverage analysis, many of the items and concepts that are standardly applied to our traditional leverage measures are carried over to our RBC analysis. Consequently, surplus is credited for conservative reserve bases, voluntary reserve items and a portion of dividend liabilities. Also consistent with the standard adjustments under our traditional leverage analysis, surplus is reduced for such items as surplus notes and expected debt service requirements. While we do not utilize standard sensitivity tests as does the NAIC model, our RBC analysis is done in an interactive mode by our analysts, who adjust RBC requirements based on various scenarios.

One of the scenarios that I will specifically reference regards our treatment of by-line-of-business losses. Due to the limitations associated with virtually all objective measures, RBC inherently does not account for the prospective treatment of continued losses (or future operating profits for that matter) in its derivation of capital needs. As a result, for those of you who are familiar with our traditional gross and net leverage calculations, it is also common for our analysts to reduce capital for by-line-of-business losses, either in whole or in part, under a stress-test analysis.

Evaluating the Numbers Behind the Statement

The RBC concept represents a significant departure from the previous fixed capital regulatory surveillance mechanism. Unfortunately, the financial disclosure needed to accomplish the goal of accurately assessing a company's risk-adjusted capital posture is not currently met through the annual statement.

In order to overcome the constraints and limitations of the annual statement, we have historically requested that companies supply us with supplemental information concerning virtually all of the major areas of their operations. In addition, we try to maintain ongoing dialogues with company managements in order to understand their companies' operations and

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the numbers behind their statutory filings. The information that we request and discuss has been extended to cover much of the additional information necessary for us to conduct an informed RBC analysis.

The supplemental information upon which our quantitative and qualitative adjustments are based may be obtained from several sources: supplemental questionnaires that are sent to each company requesting supporting information on the specific products written, investments made, and or reinsurance arrangements that exist; state insurance examination reports; CPA audit reports; SEC filings; annual stockholder and policyholder reports; business plans; meetings and correspondence with managements; and asset/liability reports.

The following are some of the "numbers behind the statement" that are compiled for each company where significant (Table 1).

TABLE 1
RBC By Line of Business

<u>Provident Mutual</u>	<u>Percentage</u> <u>Total</u>	<u>Percentage</u> <u>Company</u> <u>Surplus Formula</u>
Individual Life	8%	11%
Pensions	18	58
Individual Annuities	28	92
Group Life & Health	9	52
Individual Health	8	61
Corporate Investments	35	128
	100%	61%

It is generally through this data, and discussions with management, that we may then make appropriate adjustments to a company's risk-adjusted capital requirements:

1. Less than investment grade bonds -- For companies that maintain exposures in this area, we are interested in reviewing the maturity schedules, subordinated or secured credit status and call provisions of both publicly traded and privately placed noninvestment-grade bond holdings.

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2. **Mortgages** -- In addition to the information obtained from the annual statement, we review the loan types (office, retail, industrial, apartment, residential, hotel, and miscellaneous), seasoning, sizes, geographic dispersion, loan to current market value, underwriting procedures, debt coverage requirements, scheduled balloon payments, restructure and foreclosure practices; and rates of return received on nonperforming loans. In addition, an important area that we consider is companies' experience and capability to manage their portfolios, particularly in instances where emerging or ongoing problems exist.
3. **Disintermediation risk profile** -- This applies to total reserve and deposit fund liabilities. In this area, we are interested in evaluating all reserves and deposit-type funds as to risk classifications. As discussed earlier, since information provided on page 17b of the general interrogatories serves as our starting point for C-3 risk analysis, we do attempt to classify all pertinent risks with greater differentiation than is available solely from information contained in the annual statement.
4. **Annuity reserve breakout** -- Where appropriate, a profile of annuity reserves is normally compiled that compares annuity reserves on a postsurrender basis with the outstanding reserve. This information generally provides a better picture of annuity reserve conservatism than is available from exhibit 8 part b of the annual statement.
5. **Asset/liquidity profile** -- In addition to the normal liquidity tests that are run for each company, we are interested in ascertaining the level of immediately liquid assets that are held. We do not expect a company to maintain an ability to liquidate its investment portfolio overnight, but we are interested in evaluating the amount of liquid assets that are maintained in relation to surrenderable liabilities, and to other companies with similar product risk profiles.
6. **Product breakdown and distribution** -- We find it useful to review business production and performance by product line and by distribution channel (i.e., we want to know what

products are sold through what distribution systems. In connection with this review, we are interested in understanding a company's average policy sizes and target markets/niches).

7. **Reserve Basis** – In addition to material pertaining to new product reserving methods, specific information is requested as to the credited versus earned rates of annuity business.

Finally, the review of a company's strategic business plans is of great importance in understanding the numbers behind the statement. For example, numbers that are produced by a company that is prudently growing its business and building values for the future will be viewed differently under our analysis than is a company that is in a contractionary mode and merely running off its existing book of business. Strategic plans also enable us to anticipate a company's capital needs on a prospective basis reflecting its business growth objectives, and its ability to sustain or support its plans through operating earnings or other abilities to access capital. Finally, understanding target pricing margins and the assumptions that a company includes in its strategic planning process are also important to us in assessing its potential capital needs.

Companies' Reactions to Real and Perceived Capital Adequacy Problems

As companies adjust to the significant changes in the regulatory environment, plan their activities around RBC requirements, and adjust to market and consumer pressures with regard to real and perceived capital adequacy problems, we have seen many company managements pursue various steps in order to improve their public perception and to remain viable long-term players.

Many companies have abandoned the quest for increased market share at any cost, as they have found financial strength is an essential element in today's competitive environment. Due to the increased costs associated with RBC requirements for certain lines of business and for higher yielding or more speculative investments, companies have sought to restructure investment and

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product portfolios to free up capital. In addition, affiliated structures have been reevaluated, and the consolidation of operating entities among organizations has also been pursued – particularly, as additional capital charges are assessed for affiliated holdings. Reinsurance strategies have also been reviewed, not only due to higher costs associated with reinsurance, but also to be in compliance with pending regulation and perceptions concerning abuses in this area.

Also, growth plans have been rethought. Expense management and reduction has remained a continued focus. Product lines, blocks of business and operating units are being sold, and strategic relationships, joint ventures and consolidation are being sought at an accelerating rate.

Industry Impacts

RBC and its implications will be substantial and will result in broad changes throughout the life/health insurance industry. The following are among some of the more significant effects that we expect to arise from the regulatory transition from fixed-capital minimums to RBC requirements:

- Requirements may perpetuate the "flight to quality." RBC will provide additional motivation for life/health insurers to restore consumer confidence, by reducing leveraging or speculation on company balance sheets. The increased risk tolerance which was evident as companies have competed for investable consumer dollars has been substantially reduced. As a result, we have seen increased efforts by company managements to maintain profit margins by maintaining realistic interest crediting rates.
- Requirements may raise the previous fixed-capital requirements. These vary by state from \$500,000 to \$6,000,000. Generally, these fixed requirements are utilized regardless of specific risks maintained by individual companies.
- RBC thresholds will likely produce lower levels of required capital than are maintained by prudently managed and highly rated companies, based on quantitative as well as qualitative factors such as business plans.

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- Capital raising efforts may become more difficult and expensive as the attractiveness of life/health companies is diminished from an investment perspective. RBC may limit the availability of dividend payments and reduce stockholder returns on equity.
- New product design and future liability structures will be reexamined. RBC will be an additional incentive above and beyond actions already taken in response to policyholder runs. Since higher risk charges are associated with more immediately surrenderable contracts, many product designs will involve less risky liability characteristics. We have already seen a movement by many of the larger companies to variable or participating pensions, or fee-based management-type contracts.
- Resurrect the contradictory federal taxation and solvency legislative agendas. As RBC raises surplus requirements, there is a real potential for companies with RBC levels well in excess of the minimum threshold to be viewed as "overcapitalized." While this may not be as dramatic as the California Proposition 103 rate rollback legislation on property/casualty insurers, taxation proposals similar to the \$8 billion tax burden levied on life/health insurers in 1990 may resurface. Consequently, RBC may have an unintended effect of weakening certain strongly capitalized companies. This may become particularly acute for accident and health companies, which generally run higher ratios than accumulation companies -- and are in the midst of substantial federal regulatory scrutiny of their loss and expense postures as to the contribution to the national health care crisis.
- Restructurings of investment, reinsurance or affiliated arrangements may be sought to circumvent the formula. As can be expected with any large population, there will always be a select segment that will go to great lengths to beat objective formulas.
- RBC will contribute to the accelerating trend in consolidation. With approximately 2,000 licensed life/health insurers, there is a tremendous amount of capacity available. Increased sales of companies and blocks of business,

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mergers and liquidation activity will result as companies fall near or below heightened capital requirements.

- RBC can play a role in reducing the costs of failures by providing an enhanced mechanism of detecting weakly capitalized companies. RBC will provide a considerably enhanced means by which a more effective structure of solvency regulation can be based, particularly when combined with other NAIC efforts such as the state accreditation program and enhanced financial reporting efforts.
- However, RBC by itself is not sufficient for preventing all potential life/health failures. There is no entirely effective safeguard for abuse and mismanagement, and RBC by itself does not supplant the need for adequate funding, personnel requirements and the necessity for the effective use of state insurance department resources in order to keep up with the evolving complexity of the life/health industry.

A.M. Best agrees with the industry work group that RBC by itself is insufficient and inappropriate for use as a rating or ranking system. As is the case with any purely objective formula, RBC does have certain limitations. As such it would be inappropriate to conclude that ratings assigned by the A.M. Best Company, which are based on a full complement of quantitative as well as qualitative considerations, will correlate to their respective RBC ratios.

It is important to point out that capital adequacy, and the use of RBC as part of leverage analysis, are important to the A.M. Best rating process. However, leverage targets in most cases serve solely as an objective hurdle that companies are required to meet in order to qualify for a particular rating range. It is the integration of all of the qualitative factors that are considered during our review process, with the objective standards, that serve as the basis for our rating decisions.

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MR. DAVID N. INGRAM: In honor of the 500th anniversary of Columbus' voyage, I want to start off with this story:

Christopher Columbus was stranded in Jamaica and needed supplies. He knew that an eclipse was to occur the next day. He told the tribal chief, "The God who protects me will punish you. Unless you give me supplies this night, a vengeance will fall upon you and the moon shall lose its light!" When the eclipse darkened the sky, Columbus got all the supplies he needed.

In the early 1900s, an Englishman tried the same trick on a Sudanese chieftain. "If you do not follow my order," he warned, "vengeance will fall upon you and the moon will lose its light." "If you are referring to the lunar eclipse," the Sudanese chieftain replied, "that doesn't happen until the day after tomorrow."

It hasn't been 400 years that rating agencies have been assessing insurance companies, but if you don't realize that their level of sophistication has risen sharply, you are in for the same kind of shock that the Englishman got.

Before I get to the topic at hand, let me give a brief overview of what I believe the rating agencies are looking for from a company.

At the simplest level, this can be summed up with two words: vitality and stability. By vitality, I mean that the company has the marketing capability to grow successfully for the foreseeable future and that it can produce real, sustainable profits at the same time. For stability, the ability to weather adverse times is desired. This is measured in terms of balance sheet quality, balance sheet strength and asset/liability matching.

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Balance sheet quality has been the major focus of attention for the past several years. Everyone has spent long hours poring over statistics on his own and others' bond ratings. Mortgage loan and real estate quality is much harder to assess. Do you have a story that you can tell about why your mortgage portfolio is of better quality than the industry or of other top-rated companies? Even if you can tell a convincing story, we end up with a situation like Garrison Keillor's town where the children are all above average.

Hidden assets are a great thing to have now. A convincing hidden asset can lend an aura of conservatism to your balance sheet. However, realizing the value at a later date can be read as a sign of deterioration.

The last quality issue is liability quality. Few raters have traditionally taken the time to fully understand this issue. However, rating agencies are beginning to employ actuaries who are starting to probe this issue with some degree of insight. The key question here is the degree of conservatism in your reserves. More pointedly, even if your reserves are higher than the minimum, are you able to realize that difference in adverse times or is the "conservatism" only able to be released as the business goes off the books? Your discussion of this needs to be short, simple and coherent. I believe that an explanation of the differences among your statutory, GAAP and tax reserves can be used as a basis for this discussion.

That's the context in which I'll move on to our topic. I call the issue balance sheet strength or surplus adequacy.

This issue must be addressed three ways: in terms of risk-based capital, rating agency formulas and company formula for "required surplus."

First, a quick status report on risk-based capital. Risk-based capital is expected to be officially effective for the 1993 annual statement. However, for many practical purposes, it is effective now. For any large transactions requiring state insurance department approval, regulators are asking for pro forma risk-based capital calculations before and after the transaction. Reinsurers

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are asking to see risk-based capital calculations for transactions with significant financial components. Organizations doing due diligence for insurance company clients are asking for it and rating agencies are asking for the calculations. Issues that I've heard raised so far include questions about the lack of special treatment of collateralized mortgage obligations and mortgage-backed securities, a feeling that small companies look great in general, a feeling that C-1 risks are hammered while C-2 and C-3 risks were treated lightly, and a squeezed feeling by mid-sized companies compared to large companies.

Risk-based capital, with its very high concentration on C-1 risk, is already having a significant impact on company investment decisions regarding allocations to asset types and quality as well as concentration. Investment bankers are making the rounds, proposing complex financial instruments that haven't yet hit the risk-based capital lists yet and would entail taking on significant C-3 risk that isn't directly penalized in the risk-based capital.

One more item on risk-based capital. I was asked by my management to recommend if a review of the risk-based capital formula suggested any changes to our company target surplus formula. Clearly, there were pluses and minuses but the risk-based capital formula, in total, was lower. I decided to look at the results by line of business (Table 1). To do the allocation, I subtracted the risk-based capital surplus adjustment for dividends from the risk-based capital to match what we do on our internal formula, directly allocated all the direct factors and proportionately allocated the indirect factors. (The combination of risks was directly calculated with a balance proportionately allocated.) This showed that the risk-based capital formula seems to highly favor participating individual life. The unfavorable individual annuities result was high due to a high concentration of mortgages in the annuity portfolio. The corporate investments category also showed a large disparity due to the equity and joint venture investments held there. Our conclusion was to leave the line of business target surplus alone and to develop a regimen to evaluate our investments, then look again at our target surplus formula for certain asset classes.

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The second leg of the "balance sheet strength" stool was rating agency formulas. The only thing that I can clearly tell you is that they all use the same general information and they give very diverse signals. To illustrate that point, I'll tell you a little about a study performed by a group from the Philadelphia Actuaries Club in 1991. We looked at 11 surplus formulas for 29 companies based on the 1990 annual statements (Table 2). These companies were chosen based solely on the interests of the participants. They included about 20 of the top companies as well as several small companies and a couple that failed in 1991. Table 3 shows results that the average ratio of target surplus to actual surplus was consistently higher for some formulas. Looking at the standard deviation shows that some formulas are better discriminators than others. The Townsend and Schapp line is not a surplus ratio. It shows the ratio of "high risk assets" defined as junk bonds and distressed mortgages plus real estate acquired in satisfaction of debts to surplus plus mandatory securities valuation reserve, as reported by Townsend and Schapp.

TABLE 1
Risk-Based Capital by Line of Business

<u>Provident Mutual</u>	<u>Total</u>	<u>Company Surplus Formula</u>
Individual Life	6%	11%
Pensions	18	58
Individual Annuities	26	92
Group Life & Health	9	52
Individual Health	6	61
Corporate Investments	35	128
	100	61

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TABLE 2

1990 Study

<u>29 Companies</u>	<u>Average Ratio</u>	<u>Standard Deviation</u>
Conning	100	38
New York	109	44
Minn	94	91
Lincoln National	135	89
Moody's	96	41
Weiss I	88	45
Weiss II	152	125
Ward	147	86
S&P Max	86	48
S&P Min	46	25
T&S	162	287

TABLE 3

1991 Actual

<u>Provident Mutual</u>	<u>Ratio</u>
Conning	82%
New York	112
Minn	75
Lincoln National	70
Moody's	74
Weiss I	84
Weiss II	121
Ward	134
S&P	29
Risk-based capital	57
Company formula	70
T&S	53

Note that the Lincoln National formula result is probably off due to an error in one company's calculation. One conclusion I reached from this study is that it is very difficult to get this right for another company without its active cooperation. That means that, if you are not reviewing the rating agency's calculation for your company, the agency may well have it wrong.

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Just to illustrate the diversity of conclusions another way, I calculated the surplus ratios for my own company under all of the formulas for 1991, as well as our own formula. Moody's went so far as to publish the limitations that it sees.

For some of the same reasons that outside formulas are limited, an insider formula is an important part of presenting your balance sheet strength. The formula must show that some care was taken to reflect differences from average risks and/or finer gradations in risk categories. It can also use nonpublic information to do that. You must also show how this formula is used in your company's pricing, risk management, capital budgeting and valuation actuary processes.