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# RISK-BASED CAPITAL: HEALTH ORGANIZATIONS

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Recorder: DARRELL D. KNAPP

*This panel will discuss the current status of NAIC activities with respect to risk-based capital (RBC). The potential impact on financial reporting with respect to health products, specifically, indemnity, HMO, disability, and nontraditional products will also be covered.*

MR. DARRELL D. KNAPP: Bob Wilcox, the Utah insurance commissioner, is the chairperson of the NAIC Health Organizations Risk-Based Capital Working Group. Bob will discuss the overall goals of the NAIC's formula as well as bring us up to date on the work that's been done and on what the NAIC is looking for in the future. Steve Lippai and I were on an AAA committee that worked under the direction of the NAIC to try to develop an RBC formula. Steve is with Combined Insurance Company. He will discuss some of the issues and some of the modeling that was done for nontraditional products. I will discuss some of the unresolved issues and where the Academy task force sees itself going from here.

Before we get started, I'd like to recognize the Academy task force participation including the more than 15,000 hours of effort that went into the document that was presented to the NAIC on behalf of the Academy. One of the things that was unique was that the effort went beyond the actuarial profession and involved other organizations, including the Group Health Association of America, the Blue Cross/Blue Shield Association, and nonactuaries from other HMOs and insurance companies. An interesting amalgamation of people worked on this project.

When we are dealing with RBC, we are attempting to find the level of capital necessary to support the risk taken in the insurance product. The goal isn't to identify the total amount of capital that would be necessary, including vitality surplus, opportunity capital, and a number of other purposes for capital. In fact, a Salomon Brothers report showed that the average life company has an RBC ratio of around 3.5.

We also need to establish a definitional working base for classifying risk. Research has put risk into four different types. C-1 is primarily asset depreciation risk or the risk that an asset will lose its value. C-2 is pricing risk. For health organizations, we found that the C-2 risk was the primary risk, and the Academy's task force focused almost exclusively on the C-2 risk. The C-3 risk is the interest rate change or disintermediation risk. This is primarily a risk that shows up on long-term, high-interest-rate-guarantee-type products, such as GICs or annuities. C-3 risk is minimal or nonexistent for health organizations. The C-4 risk is a general risk and includes the general business risk as well as a guaranty fund assessment risk.

MR. ROBERT E. WILCOX: When we originally started on this project, we were looking at a Clinton version of health care reform. Included in that was a charge to the NAIC to develop solvency standards for nontraditional health carriers that could be implemented in a very short time frame had that particular vision of health care reform gone forward.

Obviously, the immediacy of that need passed, but the real reasons for developing RBC requirements for nontraditional health carriers remain as important and, perhaps even more important, as we look down the road. We now have a new application for RBC. Included in part of the current proposals for reforming Medicare is a proposal to license some new kinds of provider-based health organizations that haven't really existed up until now. These would be licensed through the federal government rather than through the state government. I'm sure they will be looking at the work that has been done for health organization risk-based capital (HORBC) as a resource as to how to regulate these new organizations with regard to solvency. When the NAIC asked the Academy for assistance on this project, we had a number of discussions about what the scope of the project ought to entail and how it ought to be approached. I told the Academy task force members that they should approach this on a theoretical basis and develop a formula that was as correct as it could be rather than deal with the practical aspects, indicating that we would do that as a follow-up. The result of this process was that the report that came back from the Academy included a rather involved, complicated formula. I will get into that for a few minutes and you'll see that it is rather involved and complex.

We've had RBC in a simplified form in Utah for about a decade now. I happened to serve on the commission that was recodifying the state insurance code and which was involved in setting the rules and statutes for that RBC requirement. It is the epitome as to economy. The formula for health insurance is 10% of in-force premium. That was a compromise. I wanted 15%, the industry wanted something less than that, and we ended up at 10%. The other lines have formulas that are not a great deal more complicated. Life insurance RBC is set at $0.50 per $1,000. The C-2 risks are rather uncomplicated. Similarly, the other parts of the formula are not terribly complex and covariance is nonexistent. It has worked well for the purpose for which it was intended. That formula is probably too simplistic for where we want to be, but we do need to have something simpler than what I will show you. We have already asked the Academy to help with the next phase—to take the complex formula that was developed and simplify. The data elements that do not currently exist in the annual statement also need to be identified so that we can come down to a formula that works. In order to have an RBC formula that is effective, the data must be available and they must be auditable. If those elements are not there, the formula will not succeed.

There are some ancillary issues regarding the different regulatory environments in which the nontraditional carriers operate and the different approaches to financial reporting that are associated with those environments. In a number of states, the reporting of HMOs is not to the insurance department, but to some other branch of state government. Those other branches of state government may well be competent and capable, but they're generally outside the network of insurance regulation. They're not members of the NAIC and do not regularly participate in the debate at the NAIC of how this information should be gathered. They're not part of the group that is involved in developing annual statement standards. It will be necessary to codify statutory accounting as it applies to health organizations, including the nontraditional health organizations.

All of this will take a great deal of effort and cooperation. Fortunately, most of the entities that are involved have been very cooperative and see the desirability of an even playing field, a common standard of financial reporting, a common standard of RBC and ultimately, a common approach to guaranty funds. Everyone who is a player in the market can participate in the guaranty mechanisms associated with health organizations.

Some of the new entities emerging from the provider market do not necessarily find it desirable to participate on an even playing field. They don't always understand the principles of risk and insurance. They don't always understand the need for adequate capital structure in what they're doing. Sometimes they need to be pulled along in this process of coming to a common approach toward solvency regulation, including the standards of RBC.

In developing the RBC formula, the Academy task force did some things that had not been done with regard to RBC before. Certainly, the other formulas are considerably more complex and the result of a great deal more research than the 10% formula that I told you about, but the work that was done on this project, based on some statistical modeling techniques and a great deal of underlying data, has raised the standard with regard to the development of RBC. This gives us a great deal more insight into where the pricing risks come from and how they should be dealt with. Some of those areas that have been raised are problematic, in some instances, for regulators to deal with. They present some challenges to companies in terms of even having the data to support the formula, let alone having it reported in an annual statement format that will work effectively.

I will now go through the formulas without full details because this will be codified and condensed down into a simpler form before anyone will actually apply it.

The C-2 calculations cover these basic areas—medical coverage, alternative funding methods, other health coverages, some limits on premium movements, some things on the reinsurance credit, a charge associated with certain claims reserves, and treatment of rate stabilization reserves, dividends, and retrospective contracts.

There is a relative value (RV) factor in the formula. We have not yet fixed the actual level of the RBC formula. That will be done as we move through the simplifying process. We didn't think that it was appropriate for the Academy to set that relative value. The Academy can provide us some guidance of where it ought to be, but it's important to understand that it's not the intent of this process to be disruptive to the factors that have already been developed and are in place in the life company RBC formula. That's not to say that there won't be changes, but if there are changes, it will be because there were identified, specific areas in which there needed to be some shift in those factors to adequately recognize the risk that was involved. You will see a factor of "I." It represents an index adjustment for those items that are subject to inflationary trends. Generally, they have been indexed with a CPI medical component index that moves on an annual basis.

On medical coverage, including deductibles up to $2,500 (deductibles of more than $2,500 are treated as stop loss), a retained risk element requires the smaller of $1.5 million or two times the maximum retained risk on any life. An incurred claims element is 1 minus the total managed care component factor times RV times the incurred claims. Incurred claims are to be not less than half a million dollars. The managed care credit will be 0–50%, based on the level of managed care that's involved. Specifically, using fixed fees produces a managed care credit of 15%. Withholds or bonuses can produce a credit of up to 25%. Capitation payments can be up to 40%. Noncontingent salaries and similar kinds of arrangements have a credit of 50%. If you don't have any of those managed care components, then it is 0%. In the managed care component, we're looking at the risk element associated with managed care and the ways in which managed care can actually

reduce the risk as opposed to produce other kinds of benefits, such as cost savings or quality control.

We have specific treatment in the formula in alternative funding methods, including direct, specific stop-loss medical coverages, direct specific stop loss other than medical, aggregate stop loss, minimum premium, administrative service, and cost-plus contracts. Direct, specific medical depends on the attachment point and whether the plan has hospital benefits. If the attachment point is less than $100,000 and it has hospital benefits, the factor is 1.67 RV. If it's more than $100,000 with hospital benefits, the factor is 2.78 RV. Without hospital benefits, it's a lower factor to reflect the reduced risk.

On direct, specific stop-loss coverage of other than medical, the attachment point is compared with a multiple of the average expected claims per member. If there are ten or fewer claims per member, the factor is 1.11 RV. If it's more than ten, it's 1.85 RV.

There is a little more complexity in the formula for aggregate stop-loss. The attachment point is expressed as a multiple of the expected claims divided into three categories based on the number of lives in the group. It's a more complex formula. I'm sure this is one of the areas where there will be some simplification in the final analysis.

For dental insurance, there is a flat factor of $125,000 indexed and then a factor of 0.78 RV minus the same total managed care component factor discussed previously. Medicare supplement has a factor of 0.855 RV for the first 5,000 lives and 0.684 RV for the excess over 5,000 lives applied to the earned premium.

For disability income and long-term care, if the maximum benefit period is more than two years, the RBC is 25% of earned premium for the first 25,000 lives and 10% of earned premiums for the excess over 25,000 lives. If the maximum benefit period is fewer than two years, 75% of factors for the benefit period over two years is used. There is no RV factor for disability income and long-term care.

For accidental death coverages, there is a charge of the smaller of $300,000 or three times the maximum retained risk plus 0.56 times the relative value for the first $6,000,000 of earned premium and 0.11 RV for the earned premium over $6,000,000. For accident only other than accidental death, the factor is 0.5 RV times the earned premium.

For credit disability income, the factor is 1.26 RV. For specified disease policies, the factor is 1.65 RV for the first 5,000 lives and 0.78 RV for the excess. For hospital and intensive care daily indemnity contracts, the factor is 1.2 RV for the first 5,000 lives and 0.78 RV for the excess.

For all other coverages, the factor is 1.5 RV for coverages that are inflationary and 0.78 RV for coverages that are not subject to inflation. This reflects the lack of the ability to adequately predict pricing when inflation is a factor.

For administrative service and cost-plus contracts, the factor is 0.056 RV times the actual premium or premium equivalent. This is about 5% of the factor for a full medical contract.

Two items were considered with respect to limits on premium movement. A factor was recommended for rate filing and process adjustment to reflect the fact that if you have to go through a rate filing and approval process, the time that's required to get the rates approved results in some additional risk. As you might guess, some of my friends in other insurance departments had concerns about this item. Utah happens to be a file-and-use state, so it was not really an issue in our case, but for some states it was a major issue.

There is an additional factor for medical, dental, Medicare supplement, and other contracts that have inflationary exposure based on the length of a premium guarantee. In addition, nonmedical coverages with guaranteed premiums for five years or more have additional capital requirements.

For performance guarantees outside an insurance policy, the capital requirement is 30% of the amount at risk. Some have expressed concern about the magnitude of that particular factor. Apparently, a number of plans, HMOs, and others make some rather substantial performance guarantees. However, they don't ever guarantee anything that they don't expect to be able to meet easily, so even though something is theoretically at risk, they think that a 30% charge is quite high for the performance guarantee.

For quota share reinsurance, the credit is based on the charge that would otherwise be made by the share of the risk that's reinsured and that's reflected in each of these categories. It is important to note that the contracts have to be valid contracts according to the NAIC reinsurance definition. There can't be contractual limits on the obligation of the reinsurer. The direct writer has to be able to renew the coverage for the duration of the basic policy to get the credit for the reinsurance.

For credit disability and long-term-care Exhibit 9 and Exhibit 11 claim reserves, the capital requirement is 10% of the claim reserves on the first 300 disabled lives and 4% of the claim reserves on the excess of 300 lives.

If rate stabilization reserves are set up that are fully available to apply against any policy or any line, then 100% of the reserve can be taken as an offset. If the reserve is for a specific policy or group of policies, the offset is policy- or group-limited to the amount of capital for that specific policy or group, less a factor based on the size of the group. Retrospective contracts in which the premiums are self-supporting and secured by a letter of credit or deposit are treated in the same fashion.

Finally, some C-4 risks were adjusted. An adjustment for growth was included. If the growth rate exceeds 20%, 50% of the C-2 RBC in excess of 20% is set up as a C-4 risk factor. For guaranty fund assessment risk, if the total RBC within the jurisdiction falls below the 200% authorized control level, then each carrier within that jurisdiction would be required to set up its share of deficiencies below the 200% authorized control level.

Note that the C-1 risk was not addressed. There are definitely scenarios in which the C-1 risk needs to be addressed, including for assets used in the delivery of health care. One of the things that must be fully developed and in place before the HORBC formula is utilized is how to treat the valuation for assets used in the delivery of health care. It's clear that a hospital that is used to deliver care is not the same as a home office that is used by an insurance company. A hospital can be used to meet policyholder obligations unlike the ability to use a home office building. But, a hospital may be the least liquid asset that an

insurer could own. With the excess of hospital beds, there is not a ready market for hospital facilities.

MR. STEVEN E. LIPPAI: When I was asked to speak, the caller said the topic was credit risk capital. Not being an investment actuary, I couldn't understand how anyone would want to know the little I knew about credit risks. Later in the conversation it became apparent that the topic was RBC for credit insurance and other nontraditional products. I'm not currently a credit actuary either, but I spent a few years working with credit insurance and became involved in the model because it appeared that I had more background than the other members of the Academy task force. I also had access to both the credit staff of a sister company and very knowledgeable consultants.

I'll review the proposed RBC formulas for credit insurance, briefly discuss the modeling process, and illustrate the process with the work we did on credit insurance. The current formula for credit insurance considers it the same as other disability coverages. The proposed formula is based on earned premium similar to the disability line. The factor, however, is lower. For single-premium contracts, an offset recognizes the exceptionally large redundancies that exist in the unearned premium reserve. The claim reserve element is the same as all the other types of disability coverages.

Next, I'd like to describe the models used to develop the proposal. The purpose was to determine the probability of ruin for a company in a single line of business over a five-year period. The modeling process did not attempt to consider the interdependencies among lines of business or the ability of a company with many products to support ones that had significant problems.

Two basic challenges were probably more difficult than the many others I will not mention here. First, a single model was used to obtain the desired consistency among different types of coverages. Not everyone on the task force thought that using one model was the best way to achieve consistency. However, in the end, the vast majority agreed with the one-model approach.

As you might imagine, there were many areas in which it was difficult to agree that the model's structure would fit the wide range of products offered by the broad spectrum of health organizations. The model was vigorously tested by various teams of people, and it received a considerable amount of change after testing revealed it did not do an adequate job on the fixed indemnity coverages that existed in disability insurance and in many of the supplemental products. One of the basic concepts of the model was then restructured and retested.

The second major challenge was an attempt to model the very complex businesses involved. Within each product line, different health organizations use very different approaches to control morbidity levels. Management reacts differently in terms of both speed and type of action when correcting an experienced problem. Often the approach taken depends on the type of company, the size of that company, the importance of the product line within the company, and the dominance of the company within the marketplace. It also varies, depending on the nature of the market being served, the distribution system involved, as well as on the ability to control rates. When you think about the problem with developing a model from the perspective of these different challenges, or if

you start remembering how much you enjoyed studying ruin theory, you can easily develop a mental picture of an extremely complicated model.

A model was designed with several key features to handle this in a generalized way that would be applicable across all product lines and across all health organizations. It was important to be able to include the statistical fluctuations that can randomly occur in any insurance portfolio. One of the assumptions was that the model should assess the risk for a stable block of business. However, even stable blocks of business are impacted by random fluctuations. As you can see from the proposed formulas shown earlier, RBC requirements for many product lines include a size adjustment. The example for credit insurance will illustrate how the statistical variability was included.

The second key feature includes the variability of loss ratios. The model needed some way to incorporate how morbidity levels have actually fluctuated in the past. Loss ratios were a good substitute for morbidity levels and management's reactions to changes in those levels. This was thought to be a good way to reflect the historical variety of approaches taken by the different health organizations. As you probably realize, historical variations in the loss ratio also include random statistical fluctuations described earlier. These were removed from the data by using statistical techniques. Some lines of business were also adjusted for the general overall trend in the industry loss ratio. It was not a perfect measure, but it appeared to be a reasonably good approach, both theoretically and in practice.

It was also obvious that the model would need to be based on assumptions for profit targets, surplus targets, and the responsiveness of product lines to changes in price. For example, group and medical prices can be changed relatively rapidly. Individual products require a longer time period due to regulatory filings. For some products, such as noncancellable disability income (DI) or single-premium credit, a change in price can only affect new issues.

As mentioned earlier, the model was designed to evaluate the probability of ruin over a five-year period. If you start with a given surplus level stated as a percentage of premium, the results of each year then are obtained by adding net gains or losses after dividends. Net gains after dividends were based on the morbidity experience, the premium responsiveness, profit targets, and the dividend amount. The morbidity experience had the greatest impact. Premium responsiveness depended on the type of products and the rate guarantees. There are adjustment factors in the proposed RBC formula for rate guarantees. Profit targets were based on a consensus from people working with the respective products. The amount of dividends was one of the dynamic features of the model. It varied with the accumulated surplus. In each Monte Carlo simulation, if a company was beginning to fall below its targeted surplus levels, the dividends were reduced.

In the credit example, morbidity was based on two factors. Statistical fluctuations developed by starting with a claim distribution for various sized blocks of business. For credit insurance, we used blocks of 10,000, 50,000, 100,000, 200,000, and 400,000 insureds. We also started with a severity table based on more than 150,000 claims and a frequency rate developed from the consensus of actuaries in this business. By using a Monte Carlo simulation approach, the model would look at each insured in the block, determine if they had a claim, and determine the severity of the claim. Doing this for each of the 100,000 insureds, for example, resulted in one iteration of the portfolio. The study

involved a minimum of 1,000 iterations for each block of business. The result was a claim distribution for each block of insureds. As you might suspect, there were only very minimal differences among the largest groups.

The actual work process created some very interesting challenges for the computer power of our department's personal computers. We had only 486 machines, a variety of 386s, and we were able to borrow a Pentium from the marketing department. The 386s were just too slow. We set one up to run the 100,000-life portfolio for a different product line. It started late Friday and finished about 3:00 P.M. on Tuesday. It takes a long time to generate 100 million random numbers.

The second morbidity factor was a variance in the loss ratio. For credit disability, it is possible to obtain company statutory loss ratios because they are published data. We started with the premium data for the top 20 credit writers in 1993. We collected the premium written information going back to 1986. We reviewed the data and eliminated companies that did not appear to have at least five consecutive years of reasonably steady premium production. In other words, if there were very dramatic changes in volume from one year to the next, we did not consider it to be a stable block. We ended up with 127 data points—8 years of data from 14 companies and 5 years of data from 3 companies. This was a fairly good amount of data because any one fluctuation in the loss ratio would not have a significant impact on the overall result.

Once we knew the acceptable years, we collected the loss ratio data. For each company, the variation in each year's loss ratio from the average loss ratio for that company was computed. The data were compiled into a distribution of loss ratio variances.

The financial model could then be used. This was the five-year model that tracked the accumulated surplus for a line of business. We started by picking a target surplus. For each of the five years, the Monte Carlo simulation would randomly choose both the statistical fluctuation and the loss ratio variance. Those two fluctuations would impact that year's morbidity. By completing 5,000 iterations, we could determine the proportion of failures (when surplus becomes negative). This was the probability of ruin. By computing the probability of ruin for three different starting surplus levels, there were enough data to interpolate to determine the surplus needed to have a 5% probability of ruin under the model.

This example contained a few simplifications. A couple other little things made it a little bit more complicated. However, it provides some insight as to how the model was used for credit insurance.

MR. KNAPP: Similar processes were used for all the other lines, so a great deal of technical actuarial modeling went on as part of the overall project. We also ran into a number of issues. We ran out of time developing a model that we were comfortable with, and we were unable to develop a model on covariance, especially covariance with a subsidiary.

A covariance adjustment in life and health formula basically attempts to reflect reduced overall surplus needs because of the independence of various risks. We found some problems with the life and health formula as well as the property and casualty formula.

The life and health covariance formula is:

$$C4 + \sqrt{(C2)^2 + (C1 + C3)^2}$$

The property and casualty formula is considerably more complex.

One key assumption to that formula is that the key variability statistic is the standard deviation. This is essentially a normal distribution assumption. The variance of the sum of two independent variables (A and B) is the variance of A plus the variance of B. The standard deviation is then the square root of the variance or the square root of the sum of the squared standard deviations for each variable.

The life and health formula covariance adjustment assumes that the C-4 risk and all other risks are perfectly correlated and that the C-1 risk, the asset depreciation risk, and the C-3 risk, the disintermediation risk, are perfectly correlated. It also assumes that the C-2 risk and either the C-1 or C-3 risk are totally independent variables. This is a fairly significant simplifying assumption.

When we started looking at the covariance formula, we had quite a few questions. The first one was whether the normal distribution is appropriate. To be candid, we either ran out of time or ran out of interest to try to answer that question. We left it in our report to the NAIC as a question and as a need for further research as to whether a normal distribution is actually a relevant distribution when looking at the probability of ruin under a number of scenarios.

The second question that we had was whether the correlation assumptions are appropriate. There are a number of specific issues here. When we have inflation-based products, such as medical, is there some correlation between certain assets or even between the disintermediation risk and the probability of ruin under the pricing risk? Namely, if conditions exist that drive inflation up and result in losses on the C-2 risk side, will that solidify some of the C-1 risk? This would give some offset in RBC and perhaps we should not assume that those two are totally independent.

In addition, within the risk category is there an appropriate correlation that should be reflected? An example would be whether you could reasonably expect real estate and bonds to deteriorate simultaneously, or would you expect real estate to go up in value with inflation and bonds to go down? Likewise, will medical, disability, group life, and credit insurance all deteriorate simultaneously, or are there fundamental independencies or even a negative correlation?

We did not come up with strong answers to any of these questions. We did, however, come up with one other issue on the covariance regarding how a subsidiary corporation with cross guarantees (the parent stands behind the subsidiary and the subsidiary stands behind the parent) should be aggregated. Under the life formula, it defines the RBC of the subsidiary as a C-1 risk. The property/casualty formula deals with this a little differently. (I mention the property/casualty formula because although there are not many, there are a few Blue Cross/Blue Shield plans as well as a few other organizations that are actively selling health insurance as property and casualty carriers.) The property/casualty formula adds the RBC of the subsidiary outside of the radical, assuming that the RBC of the subsidiary is perfectly correlated with the parent. For health organization RBC, we

proposed a third alternative that would roll up the individual C-1, C-2, C-3, and C-4 elements of both the parent and the subsidiary prior to applying the covariance adjustment. Therefore, if a parent was heavily into an asset risk and a subsidiary was heavily into a pricing risk, there would be some reflection of the independence of those two risks in the aggregate risk-based capital.

A couple examples will illustrate these differences. The first example (Table 1) shows a parent that is a typical life company with primarily C-1 risk, a limited amount of C-2 and C-3 risk, and very limited C-4 risk, and a subsidiary HMO with almost no C-1 risk, significant C-2 pricing risk, no C-3 risk, and a little C-4 risk. Under the three different formulas, the life formula produces an RBC of $1,389, the property/casualty formula produces $1,392, and HORBC produces $1,145. The property/casualty formula is slightly greater than the life company formula because the life formula will calculate the RBC of the subsidiary and consider that C-1 risk. A small amount of this risk is then reduced in the covariance of the life formula, as opposed to the property/casualty formula that will calculate the RBC of the subsidiary and add it to the RBC of the parent. The HORBC formula has a significantly lower capital requirement because it reflects the fact that the C-2 risk in the subsidiary is somewhat independent of the asset risk in the parent.

TABLE 1
COVARIANCE AND SUBSIDIARIES

| Risk | Parent (Life Company) | Subsidiary (HMO) |
|---|---|---|
| C-1 | $850 | $ 20 |
| C-2 | 150 | 400 |
| C-3 | 100 | 0 |
| C-4 | 10 | 20 |

Note—The life formula produces an RBC of $1,389; the property/casualty formula produces $1,392; and the HORBC produces $1,145.

Table 2 illustrates that if we flip this situation around with the exact same corporations, the HMO as the parent and the life company as the subsidiary, the life capital goes from $1,389 to $1,089. It drops 22% solely because of the corporate organization. This is due to the RBC of the subsidiary now being C-1 risk for the parent HMO and that RBC is largely canceled out in the covariance formula as opposed to the C-2 risk. The property/casualty formula and the health organization formula stays the same.

TABLE 2
COVARIANCE AND SUBSIDIARIES

| Risk | Parent (HMO) | Subsidiary (Life Company) |
|---|---|---|
| C-1 | $ 20 | $850 |
| C-2 | 400 | 150 |
| C-3 | 0 | 100 |
| C-4 | 20 | 10 |

Note—The life formula produces an RBC of $1,089; the property/casualty formula produces $1,392; and the HORBC produces $1,145.

Table 3 shows a multiline parent with a subsidiary HMO. Again, the property/casualty formula is at the high end and the health organization formula is lower, recognizing the independence of some of the risks.

TABLE 3
COVARIANCE AND SUBSIDIARIES

| Risk | Parent (Multiline) | Subsidiary (HMO) |
|---|---|---|
| C-1 | $500 | $ 20 |
| C-2 | 300 | 400 |
| C-3 | 50 | 0 |
| C-4 | 10 | 20 |

Note—The life formula produces an RBC of $1,026; the property/casualty formula produces $1,057; and the HORBC produces $933.

Another open issue is relative value determination. We see the relative value determination largely as being a policy decision. The product price and regulatory intervention must be balanced with solvency concerns. If a higher level of RBC is required, it will result in a higher product price as well as in more frequent regulatory intervention. This policy decision highlights the very difficult role that all our insurance commissioners have in trying to balance their two constituencies of the price of the product to the public and the solvency of the insurance company.

The final issue is where we will go from here. As Commissioner Wilcox mentioned, the NAIC has come back to the Academy and asked us to provide some additional assistance. That assistance includes determining what modifications to the reporting formula are necessary to calculate the HORBC using data that is both available and auditable. This requires us to examine what information is on the blank to ensure that there is consistency in accounting policy across the various health organizations that the formula is to apply to.

The second area of assistance is simplification. We will assume that the Academy formula presented initially was correct, but recognize that it is much too complex and look at the simplification both in terms of what we can simplify and what the impact of that simplification will be.

In the discussions that we've had so far on reconvening the Academy task force, we talked about what simplification would mean. We came to the idea that simplification could have two different alternatives. The first alternative is to go through and try to simplify the calculation to cut certain elements out and reduce the complexity of the calculation. That will logically have the disadvantage of sacrificing precision. The second alternative is to come up with some sort of an alternative pass/fail calculation. One alternative would be that the actuary would certify that the surplus is greater than $x$ times the RBC according to the formula allowing the actuary to make whatever shortcuts are appropriate in developing that opinion. One of the problems that we found when suggesting that the company take shortcuts in the complex formula is the realization that the RBC has become a published figure for many companies and is a marketing and quality issue for companies. One way to avoid this is to not publish an RBC, but to have the actuary certify that the RBC meets the minimum standard and if it's below that minimum standard, to go through the more complex calculation.

A second concept of pass/fail simplification would be to have a basic formula, such as 10% of premium. If you meet that level, then you don't have to go through the rest of the calculation. Again, if you fail that first level, then you have to complete a more detailed calculation. The pass/fail simplification alternative seems to have a few very significant advantages. It eliminates some of the RBC comparisons that are happening. In addition, it allows the actuary or other members of the company that are calculating RBC to apply judgment in determining where to simplify the formula. The disadvantage, of course, is that it reduces the auditability of the actual calculation. Instead of having a specific calculation, we have a statement that the company meets minimum standards. We reduce auditability.

MR. JAMES N. ROBERTS: My question is for any of the three panelists. In the health organization formula approach, a credit is given for capitated arrangements. My question relates to that kind of credit and the solvency of the entity receiving the capitation. I believe that issue is partially covered in that the actuarial opinion is supposed to consider the solvency of any kind of downstream organization taking risk and therefore sort of a notional credit in liability. In terms of looking at it from a solvency standard point of view, how will that be handled?

MR. WILCOX: The credit only comes for a capitation rate that is directly assumed. If it's a pass-through capitation, then it doesn't create the credit. I think that's the primary control that comes in that capitation element. There's obviously a concern about the solvency of the downstream provider and that's why if that downstream provider is covering the cost of someone else, then you don't get the credit for it.

MR. JAMES A. GEYER: I'm impressed with the amount of work done and the amount of detail and credits for different considerations. I guess I'm somewhat surprised that you did not appear to give any credit for different levels of basic reserve conservatism. In particular, a company that has fairly conservative claim reserves, refund reserves, and pended insurance reserves, may already be holding reserves at a 90% or 95% adequacy level and should have far less surplus required than a company that's holding very thin reserves. Would someone care to comment?

MR. KNAPP: That was an area of contention among the Academy's working group members. However, it was thought that we couldn't consistently measure excess claim reserves. There is a credit if there is a refund liability that's actually due to the policyholders. However, in terms of margins in claim reserves, we had many debates and even discussed the flip side of additional capital being required for a carrier that doesn't hold margins in its reserves. I think that the result got down to two things. We would have a hard time measuring it and a carrier could move the margin significantly from period to period.

MR. WILCOX: One thing we did include is the difference between a Section 7 and a Section 8 opinion. That is one thing that is measurable. You get back to the valuation actuary's responsibility with margins. The valuation actuary is saying that the reserves are adequate and is not attaching any additional quality assigned to that particular aspect. It seems to me that to be using a different RBC charge associated with some other arbitrary reserve level measurement would be trying to second-guess the valuation actuary, which would be inappropriate.

FROM THE FLOOR: Given that you're not particularly happy with the covariance formula for either the life or the property and casualty formula, it's not clear to me how you intend C-1 through C-4 risk to flow into the life RBC or even worse the C-0 to C-8 risks of the P&C companies. Would you like to comment on that?

MR. KNAPP: The formula that the Academy proposed would use the life and health formula with the exception of the way it treats subsidiaries. The exception is that we recommend the C-1 of the subsidiary to be added to the C-1 of the parent and likewise for C-2, C-3, and C-4 before the application of the covariance formula.

MS. DOROTHEA D. CARDAMONE: Could you explain what relative value you were using when you calculated the HORBC? Obviously, you couldn't have done it without some kind of assumption.

MR. KNAPP: We attempted to do all the models at a 5% ruin level under the type of data modeling that Steve illustrated. A 5% ruin got a relative value of approximately 0.09. However, the calculation is fairly simplified from what we think actual operations would be.

MR. LIPPAI: As you look at that probability of ruin, that's the probability of ruin over a period of years in which things start to go bad, you just continue to let the model work. In the model you don't take the necessary actions that would appropriately be taken to prevent the company from insolvency.