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Article from:

# The Financial Reporter

September 2008 – Issue No. 74

# A Change in Own Credit Risk

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Since the adoption of FAS 157, there has been much concern about the use of own credit risk in the valuation of liabilities. The biggest concern seems to be the effect of a change in credit standing on the value of liabilities. It is believed that, for example, if a company's rating declines, the discount for risk would increase, thereby reducing the value of liabilities and giving the appearance of increased strength. Or, a credit upgrade would result in lower discounting and higher liabilities, thus giving the appearance of decreased strength.

In principle, I think our discussion to date has oversimplified the issue. If we broaden our thinking, we may find that the effect is often not as significant as we have believed. And, we might find situations where a downgrade results in higher liabilities or an upgrade in lower liabilities. However, we might also find that the effect, for some products, is even greater than we have believed.

Even as I explain these conclusions, I recognize that actuarial research to-date may be inadequate for our need to include own credit risk in the valuation of liabilities. As we see greater emphasis on fair value reporting, we will need to focus more research on the new demands of this framework.

## A HISTORICAL PERSPECTIVE

For hints at how this could happen, let's take a closer look at FAS 97. Although FAS 97 is not a fair value calculation, it does have some common or similar elements, including best estimate assumptions and own credit risk. Own credit risk has always been implicit in FAS 97 valuation of both the benefit reserve and the deferred acquisition cost asset. And, in principle, a change in own credit risk should alter the net GAAP liability—increasing it for a downgrade and decreasing it for an upgrade. In practice, I doubt whether this actually happens concurrent with a change in credit standing. Perhaps that's where FAS 157's focus on a reference company will come into play.

Consider a reasonably strong company. It can and does promote itself and its products on the basis of its financial strength. Yes, it must offer a competitive product, but its financial strength is itself an element of its competitive position. For a given set of product features and a given interest crediting rate, this company will be at a competitive advantage over its not-so-strong competition and at a disadvantage to its stronger competition.

To illustrate my point, I'll look at a simple fixed annuity product and limit this discussion to two approaches for recognizing relative competitive positions of companies with different strength ratings—interest crediting and termination rates.

## SAMPLE COMPETITIVE STRATEGY—VARIED INTEREST CREDITING

Let's look first at interest crediting. All else being equal, our hypothetical company can maintain its competitive position while crediting a lower interest rate than its weaker competition but must credit a higher rate than its stronger competition.

Under FAS 97, the benefit reserve is just the account balance that has accumulated on the annuity contract. But it can also be viewed prospectively—as the present value, discounted at the interest crediting rate, of future cash flows to the policyholder and charges to the policy. In our hypothetical competition, the interest

crediting rate reflects the credit standing of each company. Hence, discounting the liability at the interest crediting rate also reflects own credit standing.

Also under FAS 97, the deferred acquisition cost (DAC) asset reflects own credit standing in the same way, by discounting at the interest crediting rate.

Now, let's look at the principled effect of a change in credit standing.

If our company's standing is downgraded to match what was its weaker competitor, then the company must increase its crediting rate to maintain its competitive position. This has no immediate effect on the benefit reserve. Even when we look at it prospectively, the company now projects higher benefits but discounts at a higher rate, with a precise offset between the two. DAC, however, immediately declines with this change in competitive characteristics. Because the interest rate was increased, there was no effect on expected termination rates, but expected interest margins are reduced. Furthermore, remaining margins are discounted at a higher interest rate. Both effects cause a lower present value of expected gross profits and, consequently, an immediate reduction in the DAC asset.

So, in a market that reflects relative credit standing by the level of interest credited on a contract, a decline in credit quality results in a higher net GAAP liability under FAS 97.

### **SAMPLE COMPETITIVE STRATEGY— MATCHED INTEREST CREDITING**

Next, let's consider a market where interest crediting rates are insensitive to financial strength. Here, a company's strength is reflected in termination rates, with stronger companies experiencing lower surrenders. Since my focus is on the value of existing liabilities, I ignore the fact that a stronger company also has an advantage in the market for new sales.

Here, too, there is no difference in the benefit reserve among our three competitors. It's not that they expect the same cash flows. Rather, the stronger a company is, the more time it expects to pass before it pays

benefits. With additional interest credited over that time frame, it will pay greater benefits, but the effect on the reserve is exactly offset by discounting for a longer period of time. Here, own credit standing does not affect the discount rate, but it is reflected in the current liability by differences in termination rates.

Once again, DAC reflects differences in credit standing in the same way as the benefit reserve, in the different termination rates. Now we need to look at the effect of a change in credit standing in this simple world.

If the credit rating of our company is increased to match that of its once stronger competitor, it should expect its termination rates to decline. This has no immediate effect on the benefit reserve. The delayed benefit payments will mean higher benefit payments but at a later date, with the two effects exactly offsetting because benefits are discounted at the same rate at which they grow. DAC will immediately increase with this improvement in credit standing. Because expected surrenders are delayed, the company expects to earn margins on the business for a longer period of time. Even after discounting, these additional margins result in a higher present value of expected gross profits and an immediate increase in the DAC asset.

### **FAIR VALUE**

Having looked at the principled effects of own credit risk changes on an FAS 97 balance sheet, let's turn to a fair value balance sheet.

Here too, there is more to a company's own credit risk than the interest rate it uses to discount cash flows. As under FAS 97, the company's strength is expected to have an effect on its cash flows. A strong company may expect to pay higher benefits but at a later time, resulting in a comparable or lower value of the current liability. Upon losing strength, it would lose those advantages. Staying within the simplified world described above, either the company would have to accelerate the payment of benefits or increase the amount of benefits it expects to pay without increasing the time it has to discount those higher benefits. Even if it is now discounting at a higher rate of interest, that may not be enough to offset all of the effects of earlier or increased benefits.



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Even a typical FAS 60 product, with a fixed schedule of benefits, should expect some change in experience along with a change in financial strength. Here too, the advantage of an increased discount rate could tend to be offset by expecting to pay some benefits sooner, or having less time in which to earn profit on the business, thus reducing the value of expected profits and increasing the amount that another entity would require to assume the liability. If the product happens to have a high reserve but low cash value, a change in lapse rates might actually compound the effect of a change in discount rate.

### CONCLUSION

While this simple analysis highlights the ways in which the feared effects of own credit risk might not be as bad as we thought, putting this principle into practice will not be easy. We simply do not have good sources upon which to base the subtle alterations in assumptions that should accompany a change in credit standing. It will be

difficult to make the appropriate changes in a way that leads to an appropriate result. And, it will be difficult to know after the fact whether we have made truly appropriate changes to all elements of the valuation.

If we are to have any hope of doing this right, we need to start thinking very carefully about how we can approach this challenge. Considered in this light, including own credit risk, and changes in own credit risk, in determining the fair value of liabilities does start to make sense. The challenge for us is to make sure the results make sense.

In trying to anticipate what would make sense, my basic expectation is that a decline in credit standing (short of insolvency) will generally move fair value closer to current surrender value. For different products, that may be an increase or a decrease in the fair value of the liability. ■

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