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SFAS 157 Adoption Impacts

by Rony Sleiman and Tricia Matson

Disclaimer: The authors are not CPAs and are not purporting to give accounting advice. They are describing a developing area of interest and concern for actuaries as identified by the American Academy of Actuaries' Life Financial Reporting Committee (LFRC). Companies should seek advice from their accountants in the application of all FASB standards.

Statement of Financial Accounting Standards (SFAS) 157, *Fair Value Measurements,* became effective Jan. 1, 2008. The Financial Accounting Standards Board (FASB) issued the standard on Sept. 15, 2006, and encouraged early application. The standard does not provide new accounting guidance on assets or liabilities that should be measured at fair value; rather, it prescribes the methodology to be used to fair value any items currently reported at fair value under existing US GAAP guidance. It defines fair value as an exit price—"the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date."

A typical balance sheet has relatively few line items that are fair valued using an actuarial analysis; therefore SFAS 157 had a relatively limited impact on actuarial valuation. The actuarially-related area most significantly affected relates to fair value of derivatives embedded in annuity contracts. More specifically, under SFAS 133, *Derivative Instruments and Hedging Activities,* equity-indexed annuities and certain guaranteed living benefits offered in conjunction with variable annuities fall into this category.

SFAS 157 is designed to answer the question of how to fair value an asset or liability. The following items are key requirements that are now explicit in fair value models under SFAS 157.

One of the requirements is that when directly observable prices are not available, the valuation should consider and include an adjustment for risk

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(risk margin) if market participants would include one in pricing the asset or liability. Although SFAS 157 does not specifically provide guidance as to how a risk margin should be determined, some guidance is provided in the International Actuarial Association paper, "Measurement of Liabilities for Insurance Contracts: Current Estimates and Risk Margins."

SFAS 157 also requires that fair valuation techniques maximize the use of observable inputs, defined as "inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity."

Unfortunately, there are limited observable inputs from the market to assist in fair valuing insurance contracts. The majority of inputs to the valuation of insurance contracts are unobservable, and SFAS 157 states that, "unobservable inputs shall reflect the reporting entity's own assumptions about the assumptions that market participants would use in pricing the asset or liability (including assumptions about risk)." Therefore, assumptions should consider both the best estimate assumption that would be used by a market participant as well as an additional margin that market participants would add to the valuation as compensation for the risks associated with that assumption.

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Another key requirement introduced by SFAS 157 is that the fair valuation of a liability should consider and include non-performance risk, an adjustment for the issuing entity's own credit. SFAS 157 states, "A fair value measurement assumes that the liability is transferred to a market participant at the measurement date (the liability to the counterparty continues; it is not settled) and that the nonperformance risk relating to that liability is the same before and after its transfer. Nonperformance risk refers to the risk that the obligation will not be fulfilled and affects the value at which the liability is transferred. Therefore, the fair value of the liability shall reflect the nonperformance risk relating to that liability. Nonperformance risk includes, but may not be limited to, the reporting entity's own credit risk. The reporting entity shall consider the effect of its credit risk (credit standing) on the fair value of the liability in all periods in which the liability is measured at fair value."

As mentioned previously, the application of SFAS 157 was meant to clarify the definition and methods used to measure fair value. In practice, SFAS 157 has proved challenging to companies and their accountants and actuaries on how to value certain types of contracts for which there is limited observable data. There is also a range of practice regarding the level of disclosures about valuation practices, and many other issues. Financial institutions and accounting firms faced significant challenges in implementing SFAS 157, and although SFAS 157 has been adopted, accounting professionals are still finding their way as they put it into practice.

The challenges in implementing the guidance and the relatively wide variation in results is, in some respects, illustrated by the adoption impacts disclosed in the first quarter Form 10-Q filings. For several large VA writers with similar blocks of business, the disclosed impact on embedded derivatives as of Jan. 1, 2008 varied by as much as $200 million.

There are a number of factors contributing to the wide range of adoption impact. Based on a recent informal survey with participants from several insurance companies that issue annuity contracts with embedded derivatives, the following results may be of interest to professionals who are closely involved in the fair value of embedded derivatives and in particular variable annuity Guaranteed Minimum Withdrawal Benefits (GMWB) and Guaranteed Minimum Accumulation Benefits (GMAB).

The informal survey was divided into four main areas:

1. Risk margin, and its impact on results.

2. Method used to include own credit risk.
3. Use of market prices, namely reinsurance information.
4. Implied volatility input parameters.

RISK MARGINS

When asked if the original SFAS 133 model (pre-FAS 157 adoption) incorporated conservatism, (which would be considered providing for some risk margin, and if so to what degree), the majority of survey participants indicated best estimate assumptions (no conservatism) were used. Some indicated the inclusion of implicit margins, while others included explicit margins on market assumptions and on non-market assumptions. The impact in basis points (change in SFAS 133 liability divided by account value) for companies using both implicit and explicit margins was mostly in the 0-15 bps range with a small number of participants estimating the impact to be greater than 15 bps.

There was a relatively wide range of impact from the addition of risk margins in the SFAS 157 valuation compared to the pre-SFAS 157 fair valuations. Of those participating in the survey,

- Approximately 40 percent indicated a 0-5 percent increase.
- Approximately 10 percent indicated a 5-15 percent increase.
- Approximately 15 percent indicated a 15-25 percent increase.
- Approximately 35 percent indicated a 25 percent-plus increase

Those on the lower end of the range tended to correspond to those companies who had included conservatism in the original valuation.

OWN CREDIT RISK

The discussion that has taken place within the accounting profession indicates a diversity of views as to how this should be applied. The responses from the survey supported this view and indicated a wide variety of data sources used in practice to adjust liabilities for own credit risk. Some survey participants indicated using published historical default rates based on credit ratings, others used market observable credit spreads such as those evidenced by Credit Default Swaps (CDS) issued by the parent company. (These were sometimes further adjusted to reflect credit spreads on GICs issued by the insurance entity). Some used market credit spreads observed on debt issued by similarly rated companies. There were also some companies who did not make a company-specific adjustment, and used an industry-wide credit spread implied by the LIBOR swap curve. As a result, the impact of adjusting liabilities for own credit risk ranged from negligible to significant reductions.

Generally speaking, credit adjustments could be divided into two general approaches. One is to use broad industry data, based on the possible argument that there is limited to no observable data on a specific company's nonperformance risk. Even CDS and GIC spreads are limited because they: (1) may be issued by a different legal entity, with a different risk profile, within the overall organization; and (2) frequently have a much shorter term than the embedded derivative liabilities. The other general approach is to use available company specific data despite its limits, based on the possible argument that it is observable and though imperfect, should be considered to the extent feasible.

Although not a specific survey question, there is also considerable variation in how credit adjustments are applied to the valuation. Most companies apply the credit adjustment as an increase in the discount rate, though a small number make adjustments to actual cash flows to reflect the default risk. Some companies apply the adjustment only to the claim payment component of the valuation, since it is the claims, not the policyholder payments that are subject to the risk of insurer nonperformance. Other companies argue that the policyholder will not pay the fees if a default occurs, and therefore apply the adjustment to all cash flows. Lastly, there are companies that only apply the adjustment to the valuation if the embedded derivative is in a net liability position.

MARKET PRICES

Companies were asked whether they have entered into discussions with reinsurers or other counterparties

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for all or a significant portion of the risks comprised in their products, and if so, to what extent they have considered these reinsurance discussions in their SFAS 157 valuation. About half of the participants indicated that no discussions had taken place. Some are in early stages with no pricing indication. Survey participants with evidence of market prices due to reinsurance (i.e., those that were in the final stages of a reinsurance transaction) indicated that significant consideration to reinsurance has been given in the valuation. However, there were only a small number of companies in this situation. Most other respondents did not consider reinsurance pricing in the valuation, though a few gave reinsurance quotes some consideration.

In light of the SFAS 157 requirements that any observable market data be considered in determining fair value, it appears that the reinsurance market is a potentially important source of market data for embedded derivatives in insurance products. Though quotes are not necessarily indicative of an exit price, deals that are near final or actual transaction prices, generally must be considered. In addition, most reinsurance transactions are done via coinsurance, which is not the same as a sale. It will be interesting to see what impact reinsurance prices have on valuation results as the reinsurance market for some of these benefits becomes more robust.

VOLATILITY PARAMETERS

When asked about implied volatility parameters used in the SFAS 157 valuations, survey participants indicated numerous methods. The majority of respondents indicated use of 10-15 year implied volatilities, at least for the S&P index, which is typically the longest period for which observable data is available. Practice after the 15-year period varied, with some companies grading to a long-term historical volatility, and others extrapolating the implied volatility (typically by holding the 10- or 15-year volatility constant thereafter). It appears that use of a long-term historical volatility would require some additional risk margin component, since it is not reflective of observable data. However, no matter what method is used, the company needs to support its assumption and demonstrate that it is indeed market-consistent.

Though not part of the survey, another area of diversity is the extent to which local volatility, or volatility that varies depending on the index level, is used in the valuation. Some companies assume volatility that varies only by term, and therefore does not incorporate local volatility. Others use a full volatility surface, considering both term and index level. It appears that use of the term structure only would require some additional risk margin component.

CONCLUSION

Based on the results mentioned above, the survey showed that companies adopted diverse practices in the following key areas:

- Risk margin.
- Adjustment for own credit.
- Use of market prices (namely reinsurance).
- Approach to implied volatility.

This is further illustrated by one question from the survey. When asked about the impact on the ascribed fee (the portion of contract fees allocated to the embedded derivative such that the embedded derivative liability at issue is zero), for the most recent cohort, pre-SFAS 157 and post SFAS 157, the range of impact was dramatic, particularly for GMABs. Responses ranged from a 5-40 percent increase for GMWBs, and from a 15-350 per-

cent increase for GMABs (results were skewed by one respondent). This wide range of impact is related to all the issues discussed above.

Interpretations of the standard and its application can have a significant affect on the financial results for companies. Subtly different interpretation may result in materially different financial results, and therefore consistency of interpretation is important to provide useful information to shareholders. Fair value of insurance cash flows is limited to only a few areas of companies' balance sheets today, but this will change dramatically with the planned movement to IFRS, which seems to be headed to a fair value-like framework.

Financial institutions may benefit from additional disclosure related to assumptions used in the determination of the fair value of liabilities, and discussion of management's process to confirm these values. This may lead to a higher level of financial statement precision, increased consistency and comparability in fair value measurement, and may give analysts and investors a higher level of confidence in reported balances. ■

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Rony Sleiman is a senior manager at Deloitte Consulting LLP in New York. He can be reached at rsleiman@deloitte.com.

Tricia Matson is a principal at Deloitte Consulting LLP in Hartford, Conn. She can be reached at pmatson@deloitte.com.