On August 9, 2011, SCOR SE, a global reinsurer with offices in more than 31 countries, acquired substantially all of the life reinsurance business, operations and staff of Transamerica Reinsurance, the life reinsurance division of the AEGON companies. The business of Transamerica Reinsurance will now be conducted through the SCOR Global Life companies, and Transamerica Reinsurance is no longer affiliated with the AEGON companies.

While articles, treaties and some historic materials may continue to bear the name Transamerica, AEGON is no longer producing new reinsurance business.

Archive Materials

Longevity - The Next Growth Market

Reprinted from the July 2010 Messenger newsletter

Without a doubt, demand for living benefits will be substantial. The macroeconomic factors driving this – demographic shift, steady increase in life expectancies, rising sovereign debt and corresponding uncertainty with public programs – aren’t news. What may be news is that U.S. consumers and private industry are increasingly valuing longevity protection, and sales are beginning to develop.

Life insurers are well positioned to gain from growth in this market given their actuarial expertise, willingness to assume long term guarantees, and existing mortality business that provides a natural hedge against longevity risk. In the wake of the financial crisis, this may prove to be one of the few areas capable of generating meaningful growth that the industry needs to offset the impact of low interest rates on asset yields. The scale of the opportunity is vast. In 2009, Americans held $16 trillion in retirement assets in private-sector defined benefit plans, government pension plans, defined contribution plans, annuities and IRAs.¹

Lessons from the UK

In Britain, retirement is funded largely through employer defined benefit pensions with estimated liabilities of $2 trillion. Pensions must measure their funding requirement every three years and arrange for full funding over 3-5 years, and funding is strictly enforced.

Additionally, international accounting standards now require mark-to-market valuation on the balance sheet. Even before the financial crisis, some U.K. companies had pension plan deficits that exceeded their total annual earnings, introducing bottom line volatility that was completely extraneous to their core business. As a result, addressing the risks associated with pensions, including longevity risk, is now a key corporate agenda item.

Buy-outs and buy-ins. Solutions for managing these risks have evolved over the years, reflecting both the changing needs of the market and greater innovation on the part of insurance companies and pension sponsors.
The original way pension sponsors transferred longevity risk was with a pension buy-out, whereby 100 percent of the pension liabilities were ceded to an insurer through a bulk annuity. But affordability has been a big issue with buy-out solutions, and pension sponsors facing large funding deficits cannot always afford the cost to transfer the full amount of risk.

For such companies, another solution – the pension buy-in – provides a measure of de-risking at a lower cost. With a buy-in, plan sponsors purchase an insurance contract that guarantees a portion of the benefits for a subgroup of the participants. This contract becomes an asset of the pension fund.

Swaps and synthetic buy-ins. More recently, new structures have emerged that hedge specific risks – longevity swaps and synthetic pension buy-ins. In a longevity swap, the seller (private pension sponsor) makes payments based on life expectancy (LE) assumptions for the pension lives, plus a risk premium of approximately six percent, roughly a one-year increase in LE. In return, the buyer (insurer) makes payments based on the actual experience of the lives in the plan.

Figure 1 - Types of Transactions and Market Evolution

The seller now has a fixed and known cash flow liability, and the buyer assumes the LE volatility. Only the net difference in payments changes hands.

Longevity swaps are an attractive alternative to pension buy-ins, because they require lower up front capital. Also, by locking in LE, the duration of the longevity risk is fixed. This paves the way for the development of synthetic buy-in structures that enable the transfer of other market risks (e.g., investment risk and inflation) to different buyers, generally the capital markets.

Market interest in longevity swaps is taking hold. In 2009, £4.1 billion of longevity risk was transferred through swap transactions. Activity is projected to more than double – £10 billion is anticipated in 2010. Still, demand for longevity swaps is twice as large as the supply of capacity for these transactions. The range of solutions allows market participants to choose risks within their appetite and budget. Longevity swap structures in particular are now being adopted worldwide with transactions completed in continental Europe, Asia and Latin America.

While the U.S. has been slower to follow the U.K. market, discussions are underway and longevity swap transactions are expected to be completed by early 2011. Even if just a small portion of the U.S. $3 trillion corporate pensions market transfers its longevity risk, the opportunity will be significant.

Understanding Life Expectancy

The LE estimate can be broken into two components: the base table and the LE improvement assumption. The base table is the starting assumption – what LE is today for the consumers of a given product. The LE improvement assumption is a forecast of how longevity will change over the likely duration of the liability.

Base table assumptions. Developing the base table is a challenge, especially since longevity risk products (i.e., individual annuities, pensions, long term care) are not individually underwritten in the U.S.

No one doubts that medical-related factors are a big driver of longevity. Less obvious, though perhaps just as important, are lifestyle factors. Recognizing this, market participants in the U.K. have developed a proxy for lifestyle using postal codes. While U.S. zip codes are less effective as lifestyle predictors, this type of segmentation may become essential for the development of competitive base tables.
The effect of anti-selection is an important consideration in the development of base tables. Buyers of individual annuities are healthier and longer lived than participants in group pensions. Moreover, Boston University scientists recently announced the discovery of 150 genetic markers associated with extreme longevity. Sooner than many expected, insurers may need to develop ways to contain anti-selection based on consumer’s knowledge of their own genetics.

**LE improvement assumption.** The LE improvement assumption is even more difficult to set than the base table due to the duration of guarantees. Looking back, we have seen improvements in LE from non-smoking, treatment of diseases, changes in diet and advances in medicine. Yet, over the past several decades LE improved faster than the industry expected, and recent findings suggest further improvements are likely.

A 2007 British study compared population experience from seven developed countries for LE causality. While Japan is the longest-lived of the major developed countries, the study finds that residents of the island of Okinawa have even longer LE than the rest of the Japanese population despite negative lifestyle factors such as low income and a high rate of smoking. Analysis indicates that 93 percent of this difference can be explained by diet. Using simple extrapolation, if Americans did nothing more than alter their diets, life expectancies could potentially improve five or more years.

An enormous amount of data is needed to observe LE differences and isolate for causality. The Society of Actuaries is beginning to gather industry and population data from countries around the world. Once available this data should improve understanding of the differences in LE and support development of base tables and LE improvement scenarios going forward. The industry data in particular could begin to shed some light on the selection effect.

Ultimately, future longevity improvements cannot be predicted accurately by trending historical data. In general, medical advancements will likely be the primary drivers of change in LE.

Improving confidence in assumptions will require analysis of current causes of death, the likelihood of cures being developed and determining the revised LE based on the new causes of death (substitution). There is little market consensus on ultimate LE. Some believe obesity, infections, lifestyle and economics will lead to shorter LE while others believe medical advancements will lead to longer LE. Ironically, both may be right!

**The Life Insurer Advantage**

Life insurers have a competitive advantage in providing longevity risk solutions because of their large blocks of business with mortality risk. Some basis risk will always exist, because the lives are different and the product cash flows perform differently. But the long mortality positions held by U.S. companies provide a partial offset to unfavorable experience on the longevity side and vice-versa.

This implicit hedge makes insurers natural buyers. Understanding the sensitivity of the combined blocks of business (mortality and longevity) to LE assumptions – and how this affects cash flow – will help determine the volatility and, in turn, risk appetite and capacity.

Market demand for longevity risk protection is also beginning to arise directly from consumers. Unlike in the U.K. where payout annuities have been the product of choice, U.S. consumers likely will still favor variable annuities where they can retain control of their assets.

However, following the financial crisis, consumers are placing greater value on guarantees including life contingent coverage. Per recent studies, about two in three participants in defined contribution plans would prefer an option to annuitize their assets.²

401(k) plans have responded by introducing living benefit wrappers (riders); as of year-end 2009, 22 percent of employers offering defined contribution plans now offer annuities options, and another 10 percent are considering doing so.³ Introducing annuities to 401(k) plans could increase retail sales by as much as $1 trillion.⁴ Based on what consumers are saying and what 401(k) plans are providing, demand for longevity solutions will increase quickly.
As top-line pressure increases, will life insurers be disciplined and recognize the inherent risks of these long-term agreements? In addition to longevity uncertainty, these contracts will require companies to hold long-term assets, which could complicate asset liability management.

Uncertain fund values and duration in variable annuities will make asset-liability management even more difficult, and indexing can leverage risk further. Liquidity could be critical to pricing, particularly if contagion effects are considered. If negative experience emerges without provisions for adverse deviation, the present value of an assumption change over a 50-year contract will be costly. Lastly, insurers must not assume that consumers will make poor choices and lapse at inopportune times.

Demand for longevity risk solutions outstrips capacity to provide them. Market participants holding risk (pensions/specialists) are advocating new entrants to improve this trade imbalance. Two potential arenas being pursued are government and capital markets. However, governments are already financing long-term living benefits through Social Security, public pensions and health care programs. Capital markets, in addition to lacking diversification, do not support long-term illiquid assets effectively. Life insurance companies are likely the only natural buyer.

Insurance companies need to value what they bring to the table and not be blinded by the “pot of gold” that the retirement market represents. Rational pricing will benefit not only stockholders but consumers as well, because companies that get their LE assumptions right are more likely to be around in 50 years to pay the benefits.

Endnotes