



SOCIETY OF ACTUARIES

Article from:

The Financial Reporter

November 2003 – Issue No. 55

Embedded Risk in Settlement Options on Older Life and Annuity Contracts

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EXECUTIVE SUMMARY AND PURPOSE OF ARTICLE

In keeping with today's culture of risk management, an area that many life insurers should analyze is the settlement option guarantees they provide on older life and annuity products. Guarantees are typically set at what is felt to be conservative levels, but currently the adverse impact of lower investment returns and improved mortality may be putting such guarantees "in the money" relative to currently offered immediate annuity rates (i.e., the settlement option is more favorable to the insured than an immediate annuity that could be purchased in the marketplace). Withdrawal and other guaranteed benefits on recently issued variable annuity contracts have received a great deal of attention of late. However, the risks embedded in settlement option guarantees on older traditional policies may have been overlooked not only by insurers, but also by policyholders and their advisors. In this article, a comparison is made between representative current market immediate annuity rates and the option rates found in sample, vintage policy forms. The demonstration shows that in many cases settlement guarantees are "in the money" for policyholders and thus are adverse to insurers.

For specific companies, the results will vary from the analysis that follows, depending on the age and mix of their business. Both life insurance contracts and older deferred annuity contracts should be evaluated.

INTRODUCTION

Two key factors that affect the pricing of settlement options are mortality and interest rates; other factors include expenses, Federal Income Tax (FIT) and reserving requirements. The combined effect of mortality improvements and low interest rates have led to settlement option guarantees in some older products being more favorable than the incomes obtainable by purchasing an immediate annuity in the open

market. Because life insurance policies remain in force for long periods, older settlement option guarantees may be based on tables from 1937, 1949, 1971 or 1983—and tend to be outdated. Depending on the date of issue, interest rates assumed in these older options might vary from very high to modest by today's standards.

It is widely believed that mortality will continue to improve; certainly it is not projected to deteriorate. Thus, future mortality changes are unlikely to provide any relief to insurers in the future.

Any mention of the words "interest rates" in current literature is usually preceded by a phrase such as "historically low." Generally it is thought that rates will eventually increase, but questions remain as to *when* will rates increase, and whether they might decrease further. Insurers need to assess when and by how much interest rates must move to reduce the risk in the older settlement option guarantees.

DATA CHARACTERISTICS AND ANALYSIS

To evaluate current risk levels, policy forms for whole life and deferred annuity products from two insurers were selected for comparison purposes. For the whole life policy, settlement options for a 10-year certain and life immediate annuity for both males and females were compared to the same annuities calculated using current assumptions. For the deferred annuity policy, sample life annuity settlement options were compared to those calculated using current assumptions. The current assumptions are the Annuity 2000 table at 5 percent. Instead of using these proxy market rates, which our review has indicated provide reasonable representations of the pre-6/30/03 immediate annuity market, an individual company might prefer to use its own immediate annuity rates, adjusting for the effect of commissions, expenses, etc.

The ratios of settlement option incomes to current immediate annuity incomes are summarized in Table 1. Of concern to insurers are the ages where the ratios in the subsequent tables

The risks embedded in settlement option guarantees on older traditional policies may have been overlooked.

Table 1

Company A: Whole Life Guaranteed Settlement Option Income
Compared to Current Immediate Annuity Proxy

Male 120 Months Certain and Life

Attained Age	Settlement Option Guarantee	Current Basis	Ratio
50	5.43	5.25	103%
55	5.96	5.59	107%
60	6.60	6.03	109%
65	7.32	6.61	111%
70	8.07	7.32	110%
75	8.77	8.12	108%
80	9.32	8.94	104%

Table 2

Company B: Deferred Annuity Product, Guaranteed Settlement
Option Income Compared to Current Immediate Annuity Proxy

Female Life Annuity

Attained Age	Settlement Option Guarantee	Current Basis	Ratio
50	4.45	5.21	85%
55	4.86	5.51	88%
60	5.40	5.92	91%
65	6.12	6.49	94%
70	7.12	7.31	97%
75	8.56	8.53	100%
80	10.69	10.35	103%

continued on page 16

Table 3
 Company B: Deferred Annuity Product, Guaranteed Settlement
 Option Income Compared to Current Immediate Annuity Proxy
 Male Life Annuity

Attained Age	Settlement Option Guarantee	Current Basis	Ratio
50	4.86	5.46	89%
55	5.40	5.82	93%
60	6.12	6.32	97%
65	7.12	7.02	101%
70	8.56	8.01	107%
75	10.69	9.37	114%
80	13.92	11.29	123%

are greater than 100 percent. At those ages, an insurer is obligated to provide, upon request, a settlement option income more favorable than it would sell to a potential new customer.

Table 1 on page 15 demonstrates the richness of the settlement option for this particular product. The following tables demonstrate very similar results for a second insurer for an older deferred annuity settlement option guarantee for both a female and a male risk.

The settlement options available under the deferred annuity product pay a larger benefit than an annuity purchased with the same benefit under a current basis at the higher ages. The ratio tends to increase with age as the mortality effect grows. The richness of the settlement option under this product is more pronounced at younger ages for the males than for females.

The question that arises is: What led to this situation? The answer is the combination of the current interest rate environment and mortality improvements. There have been four major annuity tables in wide use over the second half of the last century. Graphs 1a and 1b demonstrate the amount of improvement from one table to the next at various older ages, first for

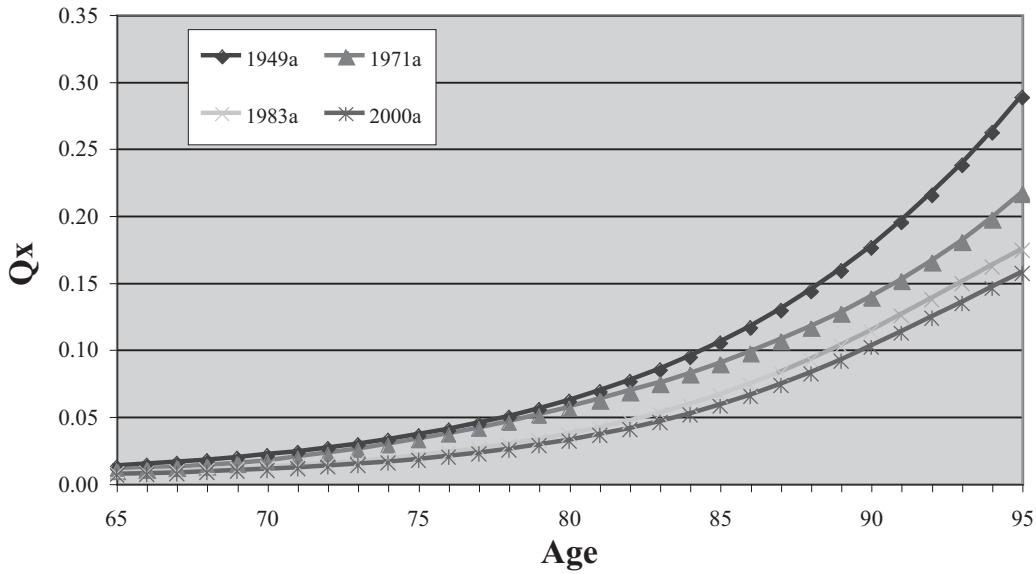
females and then for males. In these tables, a lower line shows lower mortality rates, which produce lower annuity and settlement option incomes. Most insurers have calculated settlement options using one of these tables, either with or without a projected mortality improvement. The improvement in mortality over the last half of the century has eroded much of the conservatism built into those annuity factors.

The charts on page 17 demonstrate consistent mortality improvement from the 1949 Annuity Table to the 2000 Annuity Table. The effect is most pronounced for the oldest ages, but there is improvement across all ages, as would be expected from improvements in medicine and focus on health-conscious living, including smoking cessation.

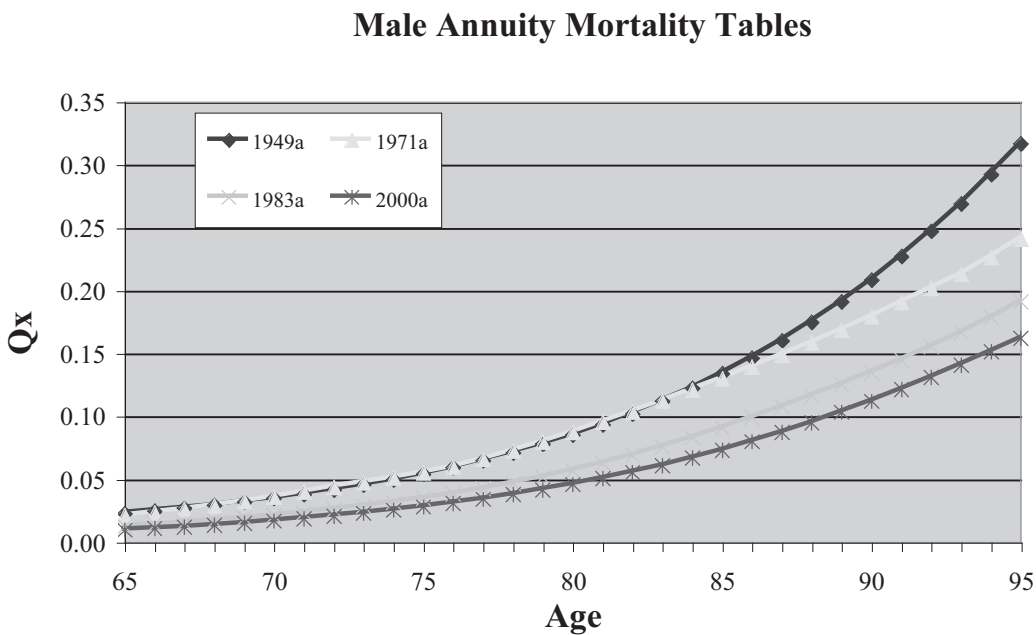
The next key factor in the pricing equation, interest rates, has decreased steadily over the last few years. Table 4 on page 18 demonstrates the movement of the 10-year Treasury rate over the past five decades, as expressed by an average, minimum and maximum, as shown for each interest rate era.

For discussion purposes, we can compare interest rates in the 1960s to current interest

Graph 1a
Female Annuity Mortality Tables



Graph 1b
Male Annuity Mortality Tables



The charts on this page demonstrate consistent mortality improvement from the 1949 Annuity Table to the 2000 Annuity Table.

continued on page 18

rates. During the 1960s, the 10-year Treasury rate reached a minimum value of 3.78 percent on April 4, 1962. That minimum value is 19 bps higher than the minimum recorded in the current era.

People in the 1960s probably did not reason, like some do today, that interest rates must increase because they can't go much lower; they had been familiar with low interest rates for over a decade. Further analysis demonstrates that the 10-year Treasury rate stayed relatively low over the three years following April 4, 1962, when the minimum value of 3.78 percent was achieved. Table 5 demonstrates the average 10-year Treasury rate over selected one-year periods following April 4, 1962.

The date of April 4, 1962 was chosen as the anchor point of this analysis simply because it was where a minimum value occurred over a lengthy analysis period. Table 5 demonstrates that it may take a long period for interest rates to increase to higher levels. *Over the five-year period from April 4, 1962 to April 4, 1967, the 10-year Treasury rate increased at an absolute rate of less than 8 basis points a year.*

This shows that interest rates have been low over an extended period of time before, and there is no reason to think that it could not happen again. Indeed, there has been recent discussion of deflation and further interest rate cuts by the Federal Reserve Board.

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Table 4
10-Year Treasury Yield Over a Number of Successive Generations

(Values Shown as Percentages)

	1960s ¹	1970s	1980s	1990s	2000s ²
Average	4.84	7.50	10.59	6.66	4.99
Minimum	3.78	5.38	6.95	4.16	3.13
Maximum	8.05	11.02	15.84	9.09	6.79

Source: Federal Reserve Statistical Release Web site of Historical Data

(<http://www.federalreserve.gov/Releases/H15/data.htm>)

Table 5
Yearly 10-Year Treasury Rates following Minimum on 4/14/1962

(Values Shown as Percentages)

	4/4/1963	4/4/1965	4/4/1967
Average	3.92	4.06	4.30
Minimum	3.78	3.78	3.78
Maximum	4.05	4.26	5.51

Source: Federal Reserve Statistical Release Web site of Historical Data

(<http://www.federalreserve.gov/Releases/H15/data.htm>)

1) The 1960 era for this paper began on 1/1/1962.

2) The 2000 era includes data from 1/1/2000 up to 8/8/2003

FINANCIAL REPORTING IMPLICATIONS

When a settlement option is elected, insurers typically reserve for it on a statutory basis using current valuation interest and mortality assumptions. This is the approach used whether it is current SPIA rates or policy guarantees that produce a more favorable result for the policyholder. For settlements from annuity contracts, this is the required approach, and for life contract settlements, it is the one usually followed. Although little or no new money is actually generated at time of most settlements, current assumptions provide a reasonable and easily administered reserve basis. The minimum statutory interest rate now reflects moving averages that lag falling or rising rates and that currently generate valuation rates of 6 percent. It is possible that some insurers would view this statutory minimum standard as liberal in today's environment. On the other hand, it has also been a conservative assumption in some prior periods.

For *unmatured* settlement options, it has long been recognized that a reserve for favorable guarantees may be appropriate. (See TSA XVI, 1964, for example, which discusses reserving for liberal guarantees by a number of the largest life insurers). Currently, under CARVM, election of favorable settlement options would be one of the paths to consider in calculating an annuity reserve; the rate of election would not be a variable in this calculation and thus in some cases this analysis would require a higher reserve.

For life insurance contracts (the primary focus of the TSA article), unmaturing favorable income option availability to policyholders and beneficiaries is a candidate for reserve analysis. Although not required, creating an incremental reserve could ensure better equity among blocks of policies. Assumed election rates and the company's view of future interest rates would affect this analysis.

Asset adequacy analysis should consider favorable settlement rates, if the volume were to become substantial. Currently, the volume may be low, but if exercise of these options is significant, in the future insurers could face the same challenges they are currently experiencing in testing immediate annuity and structured settlement blocks of business.

GAAP reporting for these options is undergoing a change. Currently GAAP does not allow for reserves for an unmaturing settlement option for a deferred annuity or a life product, since such option is not yet issued/elected. On election, however, the option is treated as if it were a new contract, and a no-profit reserve is established. The contract is subject to loss recognition testing, which, in practice, may or may not result in an additional reserve.

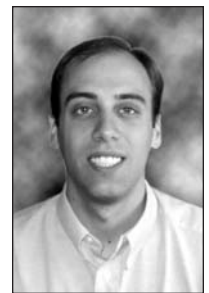
Under Statement of Position 03-1 (*Accounting and Reporting by Insurance Enterprises for Certain Nontraditional Long-Duration Contracts and for Separate Accounts*), the accounting guidance relative to annuitization guarantees is revised. This SOP is effective for financial statements for fiscal years beginning after December 15, 2003, with earlier adoption encouraged. The SOP's requirements are primarily aimed at newer types of income benefits such as GMIBs on variable annuities. However, it can be argued that the guidance is broad enough to prescribe revised treatment for settlement options in traditional life insurance and annuity contracts.

Under the provisions of the SOP, insurers must now take into account the liability associated with the guaranteed settlement option and therefore must recognize a GAAP liability for favorable *unmatured* options. The incremental reserve would be set up based on an insurer's expectation of election rates, and in most cases should be minimal. When the settlement option is *elected*, no loss recognition would be appropriate since the initial reserve already reflects potential losses.

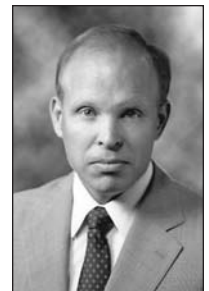
SUMMARY AND CONCLUSION

It appears that policyholders are unaware that they have a guaranteed immediate annuity built into some policies that are more favorable than current market conditions would support. They may be aware that settlement option guarantees exist, but not that it might be more advantageous to exercise them now rather than later. When annuitization is optimal (which occurs even with today's low rates), retirees can use the cash value built up in these products to produce a favorable outcome at the company's expense. ☐

Unmatured favorable income option availability to policyholders and beneficiaries is a candidate for reserve analysis.



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