

SUBSTANDARD ANNUITIES

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EXECUTIVE SUMMARY

As demographic trends and the changing nature of current retirement systems drive a growing interest in the financial security of retired workers, baby boomers are much healthier and have longer life expectancies than any generation before them. In the United States, more than 78 million baby boomers are approaching retirement and will have to address their increasing longevity risk and need for lifetime income. Currently, the annuity is the only financial vehicle consumers can purchase to create a guaranteed lifelong income stream. Along with examining ways to enhance marketing, designs, and other aspects of immediate annuities, insurers have also considered or implemented the underwriting of immediate annuities. These “substandard annuities” are medically underwritten, impaired risk, or age-rated annuities that offer larger payouts for annuitants who are found to have shorter-than-average life expectancies. Conceivably, more attractive payout rates would bring more individuals into the market.

This report is jointly sponsored by LIMRA International and the Society of Actuaries in collaboration with Ernst & Young. It describes substandard annuities and discusses the market opportunity for them, the associated risk management issues, and the issues companies need to address when competing in the substandard annuity market. It is meant to be a resource document for actuaries, risk managers, underwriters, and other interested individuals. The project included a literature review of substandard annuities (including those sold in the United Kingdom (UK)), an industry survey of companies offering them, and interviews of both home office staff and producers.

Background

- There is an increasing need for guaranteed lifetime income for retirees due to the decreasing prevalence of defined benefit pension plans, increasing prevalence of defined contribution retirement plans, and possible cuts in Social Security benefits.
- Consumers have been reluctant to purchase immediate annuities due to a lack of familiarity with the products, unwillingness to convert liquid assets, and competition from other financial products.
- Substandard annuities are very similar to traditional immediate annuities and share many of the same advantages and disadvantages.
- Due to mandatory partial annuitization of retirement accounts in the UK, the substandard annuity market there has developed more quickly than in the United States

Market Overview

- Only nine United States companies offered substandard annuities in 2005.
- The immediate annuity market is relatively small and has been growing at only a moderate pace. Substandard annuities represented only 4 percent of total immediate annuity contracts in 2004 and have exhibited growth patterns similar to those of the overall single premium immediate annuity (SPIA) market.
- Interviews with representatives from companies selling substandard annuities indicate that the current market is very competitive in that producers will request underwriting quotes from numerous insurers. They said that only a small percentage of the quotes they provide are issued as contracts.
- Although these products were designed to provide higher income for annuitants in poor health, they have been used as part of premium financing arrangements.
- They are sold almost exclusively by career and independent agents.
- Insurers need to evaluate the financial impact on profits and premium revenue as well as the financial risks when competing in this market.

Risk Management Issues

- There are several risks that need to be recognized, measured, and effectively managed to be successful in a competitive market where substandard annuities emerge as a reasonably popular product option. The primary risk is the mortality impact of offering substandard annuities. Similar to traditional immediate annuities, interest rate risk also needs to be managed.
- Overall, corporate policies and approaches that consider the unique nature of substandard annuities have yet to emerge. They will need to if insurers are to effectively compete in this market and continue to meet customer and shareholder expectations.

Competing in the Market

- The most important function that companies need to think about before competing in the substandard annuity market is underwriting. Insurers that currently possess robust underwriting capabilities — particularly those with structured settlement operations — may have a competitive advantage.
- Because the current substandard annuity product functions the same as a SPIA once the underwriting process is complete, companies should be able to leverage their existing payout annuity systems and practices to support their substandard annuity business.

- The pricing of the current substandard annuities is very basic. Most companies collect medical information from the producer, use these data to revise the life expectancy from the underwriter, and then “rate up” the individual to the age of someone with that same life expectancy.
- The sales process is very similar to that of a standard immediate annuity except for the underwriting process. With a substandard annuity, the producer needs to submit medical information to the underwriters to obtain either an age rating or a mortality adjustment in order to produce a quote.
- Underwriting algorithms at this point remain relatively unsophisticated — an algorithm that considers not only medical information but other external data combined into an effective predictive model could prove to be a differentiator. For example, the inclusion of credit score, geography, and wealth level could all help to generate more accurate underwriting. However, companies need to be careful not to discriminate against any individuals based on these factors.
- As the substandard annuity market grows, companies will likely implement processes to take advantage of the special reserve requirements for contracts that can be shown to provide at least a 25 percent reduction in life expectancy.
- Pricing of standard SPIAs could be affected if individuals with lower life expectancy increasingly choose substandard annuities over standard SPIAs as those with shorter life expectancies become a smaller portion of the standard SPIA block of business.

Outlook for the Substandard Annuity Market

- If United States insurers could overcome consumer and producer objections to SPIAs and thereby expand this market, then substandard annuity sales would most likely grow.
- Significant growth could be driven by Social Security reform, particularly if individual accounts are adopted and some form of mandatory annuitization is required. In addition, favorable tax treatment of lifetime annuity payments could also improve sales.
- Short-term growth in this market may be driven by producers arranging premium financing deals and arbitrage structures, although this segment may be shrinking.
- If the market expands, more sophisticated approaches and processes will have to be adopted, including advanced segmentation of mortality risks (e.g., categorization specific to certain markets, such as smokers or diabetics), as currently exists in the UK
- The United States insurers can benefit from the actuarial and underwriting experience of insurers operating within the UK

- United States insurers could also try to expand sales into nonagent distribution channels (which have not seen significant sales in this market) by using independent financial planners and stockbrokers with life insurance licenses and insurance training. Banks represent a potential distribution opportunity, though underwriting requirements could hamper progress in this channel.
- Most of the companies that we interviewed indicated that insurers need to increase the marketing of substandard annuities to producers and consumers to improve awareness and understanding of these products.

BACKGROUND AND SUMMARY OF SUBSTANDARD ANNUITIES

Substandard annuities are medically underwritten, impaired risk, or age-rated annuities, in which greater payouts are given to those buyers with shorter-than-average life expectancies. Substandard annuities are sometimes referred to as enhanced or rated annuities. Some companies offer underwriting on existing SPIA products, while others have developed stand-alone substandard products.

Most insurance carriers that offer substandard annuities require the producer to collect the applicant's medical information and submit it to the company for underwriting. Based on the medical record, underwriters can either "age-rate" up the applicant's age or adjust the mortality factors according to the impaired risk. Compared with SPIA annuitants with standard health conditions, "substandard" annuitants must have demonstrable health problems that can result in shorter life expectancy.

AN INCREASING NEED FOR LIFETIME INCOME

Demographic trends and the nature of current retirement systems are driving a growing interest in the financial security of retired workers. In the United States, the oldest of the nearly 78 million baby boomers are approaching retirement. Baby boomers are much healthier and have longer life expectancies than any generation before them. At the same time, they will likely face a challenging financial situation in retirement due to a number of factors, including:

- *Decreased prevalence of defined benefit (DB) pension plans*, which usually provide benefits in the form of lifetime monthly income to the retired worker (and, if married, the worker's spouse).
- *Increased prevalence of defined contribution (DC) retirement plans* that require retirees to invest, manage, and generate retirement income from benefits usually distributed in the form of lump-sum distributions.
- *Possible cuts in Social Security benefits*. In order to maintain the solvency of the Social Security program and reduce federal debt, some reform proposals include reductions in future retiree benefits, which would further shrink the portion of retirement income that is guaranteed for life.

In order to address this increased exposure to longevity risk, providing retirees with guaranteed lifetime incomes is becoming increasingly important.

At present, annuities are the only individually marketed financial products that can provide guaranteed lifetime income. Immediate annuities, also known as income annuities, payout annuities, or SPIAs, offer periodic payments that usually begin shortly after purchase. The amount of each payment is determined based on the type of annuity purchased, the premium paid, the assumed future interest rate or rates, and the expected future mortality of the annuitant. The principal insurance role of annuities is to indemnify individuals against the risk of outliving their resources.¹ Accordingly, insurance companies — which pool mortality risk and maintain reserves to pay future benefits — are the only corporations authorized to manufacture annuities.²

For several years, industry experts anticipated the immediate annuity market to expand due to the increasing exposure to longevity risk presented by the baby boomers. However, in the United States, deferred annuities still constitute almost all annuity sales, and annuitization of these contracts is far less common than cash surrenders or withdrawals. Deferred annuities allow the purchaser to make one or more payments to an insurer and have access to an account balance. The value of the balance over time depends on premiums and withdrawals, fees, interest, and (in the case of variable and equity-indexed products) financial market performance. The owner can leave the balance in the annuity, withdraw the entire balance, or convert it to a series of payments, including lifetime income. Real sales of deferred individual annuities nearly tripled between 1988 and 2004. At the same time, annual rates of annuitization have persisted at 1.0 percent of assets or less.³

OBJECTIONS TO IMMEDIATE ANNUITIES

While there are many reasons immediate annuities have not been as prevalent as retirement plan and demographic trends would suggest, consumer objections and lack of awareness are high on the list. Many of the common objections to immediate annuities stem from lack of familiarity, which could be overcome through intensified marketing and educational campaigns.

Obstacles to Immediate Annuity Acceptance

- Unwillingness to convert liquid assets into income, since most SPIAs are irrevocable once purchased
- Unfamiliarity with longevity risk, which could lead to underuse of products that insure against this risk
- Unfamiliarity with longevity risk-transfer products. Even among individuals who acknowledge that the responsibility for generating retirement income lies on their shoulders, many seek alternatives to SPIAs, such as systematic withdrawals from savings.

¹ Poterba, James M., *The History of Annuities in the United States*, Working Paper 6001, National Bureau of Economic Research, Inc., <http://www.nber.org>

² Some charitable and other organizations do offer annuities; however, life insurers are the only broad issuers of annuities.

³ *2004 Individual Annuity Market — Sales and Assets*, LIMRA International, 2005.

- Producer reluctance due to unfavorable compensation structures
- Low prevailing interest rates, which increases the cost of future income
- Competition from other financial products, including deferred annuities. For example, an increasing number of deferred variable annuities offer guaranteed lifetime withdrawals that allow annuitants to maintain accessible account balances.

Debates over the actuarial fairness of immediate annuities have also affected the industry. Annuities are usually sold without any consideration of the health status of the applicant, in contrast with life or disability insurance policies. Rather than underwriting each individual annuitant to develop a mortality expectation, insurers generally base payments on mortality tables for males and females using only their ages to determine their payments. Purchasers of immediate annuities tend to have longer life expectancies than the overall population. This tendency is likely the result of antiselection bias. Accordingly, insurers must price their products such that payout rates are lower than would be the case if the longevity of the pool of applicants matched that of the population. This practice places a person of standard (or substandard) life expectancy at a disadvantage.

Some have argued that in order for immediate annuities to offer consumers fair value for their money, insurers need to evaluate both the age and the health of the applicant.⁴ Hence, along with examining ways to enhance marketing, designs, and other aspects of SPIA products, insurers have also considered or implemented the underwriting of immediate annuities to allow for “actuarially fair” annuities that would be based on the true mortality expectation of annuitants.

STRUCTURED SETTLEMENT ANNUITIES

In some ways, substandard annuities are similar to medically underwritten structured settlement annuities that are currently sold in the United States. Both products can involve lifetime payouts to the annuitant and both require some type of underwriting to determine the payment amount. However, there are important differences between substandard annuities and structured settlements:

- Structured settlements are not individually marketed.
- Structured settlements are generally not designed exclusively for providing retirement income.
- Structured settlement annuities are often arranged for severely injured people who have received monetary compensation resulting from legal decisions.
- All of the payments received from structured settlement annuities are exempt from federal and state taxes,⁵ whereas all or a portion of substandard annuity payments are taxable.

⁴ Turra, Cassio M., and Olivia S. Mitchell, The Impact of Health Status and Out-of-pocket Medical Expenditures on Annuity Valuation, 2004. <http://prc.wharton.upenn.edu/prc/prc.html>.

⁵ Jones, Lucretia DiSanto, “A Secure Stream: Structured Settlements May Be a Smart Approach for Clients Receiving Physical-Injury Compensation,” *Advisor Today*, February 2004.

- The average age for structured settlement recipients is much younger than that of immediate annuity recipients: Structured settlements are rarely issued on annuitants over 65.
- The age rate-up for a structured settlement annuity is often much larger than that for a substandard annuity.
- Structured settlements tend to be sold by specialists.
- Certain carriers tend to specialize in various maladies. This allows them to price these types of maladies more competitively and capture more of this business.

INTERNATIONAL SUBSTANDARD ANNUITIES

Substandard annuity products are already well established in the UK, where they are referred to as *enhanced annuities*. The enhanced annuity market in the UK has experienced rapid growth since its introduction in 1995.⁶

The UK pension environment is especially favorable for marketing substandard annuities because of tax legislation requiring that a portion of the amount that becomes available at retirement be invested in a life annuity.⁷ The UK's pension annuity or compulsory purchase annuity is bought between retirement and age 75.⁸ The enactment of this law placed those suffering from incurable diseases or with poor health at a disadvantage. To improve retirement incomes for annuitants with poor health, insurers in the UK started offering enhanced or substandard annuities. This market has matured to the point where insurers have developed many different types of substandard annuities aimed at different markets, including:

- Smokers' annuities for users of tobacco
- Unmarried persons' annuities
- Sociogeographic annuities based on occupational class and region
- Health-indicator annuities (HI annuities), which adjust mortality for medical conditions such as high blood pressure, diabetes, or obesity
- Impaired annuities for individuals with serious health impairments

⁶ Rinke, Cord-Roland, Life Well Spent Is Long — The Variability of Life Reflected in Annuity Products, Hannover Re's Perspectives — Current Topics of International Life Insurance, Issue No. 8.

⁷ Hamdan, Samiera and Cord-Roland Rinke, Enhanced Annuities in the United Kingdom, Hannover Re's Perspectives — Current Topics of International Life Insurance, Issue No. 2.

⁸ Rinke, Cord-Roland, Life Well Spent Is Long — The Variability of Life Reflected in Annuity Products, Hannover Re's Perspectives — Current Topics of International Life Insurance, Issue No. 8.

These annuities can be broken down into various underwriting methods: single-class, multiclass, and individual underwriting.⁹ The single-class underwriting process determines whether a set of parameters is within a certain range for single-issue use (e.g., tobacco) and, if they are, the insurer will take on the risk. The multiclass underwriting process includes more than one issue, using the same set of parameters (e.g., occupation and region). Individual underwriting evaluates specific medical information on an individual. All of the substandard annuities described above fall into the single or multiclass underwriting class, except for the impaired annuities. The single and multiclass underwriting typically use questionnaires to assess the risk, with no medical exam required. The impaired annuities require medical evaluations to determine life expectancy on an individual basis.

The sales and marketing of all immediate annuities in the UK, including substandard annuities, is therefore much different from the United States marketplace. UK insurance carriers do not need to convince people to purchase immediate annuities, and they are exposed to very little antiselection. This immediate annuity market is similar to the automobile insurance market in the United States, where individuals who drive are required to have liability insurance, and insurers are offering products to meet this requirement.

Most of the substandard insurers in the UK expect that sales of substandard annuities will grow and become a much larger proportion of the total annuity market. Sales of impaired life annuities increased 44 percent from the first to the fourth quarter of 2004, representing one in five annuities sold in the UK.¹⁰ GE Life estimates that nearly 40 percent of individuals currently buying annuities are eligible for enhanced annuities and that fewer than 15 percent of annuities written in 2003 actually had any health or lifestyle enhancements.¹¹ In interviews with 210 people, GE Life found that 75 percent were unaware of enhanced annuities for those who smoke or are in poor health. As a consequence, pensioners could lose around £277 million of annual income by failing to benefit from enhanced annuity products.¹²

Examining the UK substandard annuity market reveals at least two key issues for the United States annuity industry. First, the existence of compulsory annuitization has served as a major impetus for the development of substandard annuities. By serving a large and representative segment of the population, UK actuaries price products for a wider range of expected mortality than their United States counterparts. As noted, the self-selection process in the United States leads to a preponderance of individuals with better-than-average life expectancies. Absent an expansion of the SPIA market to groups with average or lower-than-average life expectancy, United States actuaries and underwriters

⁹ Rinke, Cord-Roland, *Life Well Spent Is Long — The Variability of Life Reflected in Annuity Products*.

¹⁰ *Sales of Enhanced and Impaired Life Annuities Rise in 2004*, <http://widgeryhtml.butterworths.co.uk/dataitem.asp?ID=51385&tid=7>.

¹¹ “Investors Missing Out on AGBP230m Enhanced Annuity,” *Investment Adviser*, September 2004.

¹² “Failure to Take Up Enhanced Annuities Costing 277m’ [pounds sterling],” *Money Marketing*, October 2004.

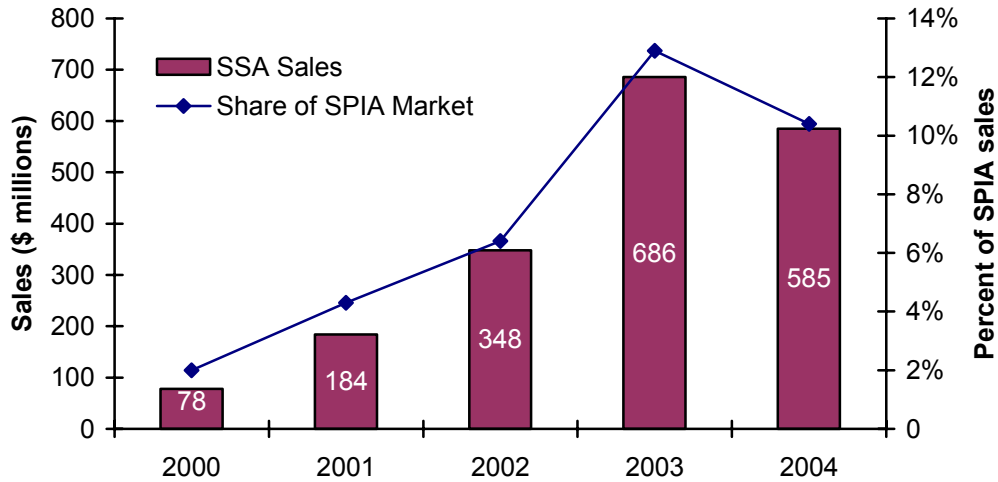
will need to make fine distinctions among current applicants' expected mortality. The market breadth also allows UK insurers to design a wide variety of substandard annuity products. Most United States companies offer only one or two versions of their substandard annuities. If the United States regulatory environment were to require people to invest some of their retirement assets in lifetime annuities, the substandard annuity marketplace would most likely expand.

Second, United States insurers can benefit from the actuarial and underwriting experience of insurers operating within the UK. In particular, the mortality experience among individuals who received substandard ratings can be compared with experience among standard annuitants. These insurers can also compare the actual mortality experience of the substandard group with the expected mortality of this same group to measure the adequacy of their pricing.

Moreover, insurers can measure the substandard annuity market's impact on the mortality patterns among standard nonrated risks. If insurers use low thresholds of impairment for determining whether to rate annuity applicants such that mild impairments are sufficient to receive substandard ratings, then the mortality experience of nonrated business could be adversely impacted. With fewer unhealthy individuals in the nonrated mortality pool, reserves could be strained as the nonrated annuitants survive longer. In light of this possibility, evaluating the substandard experience in the UK can be very useful to insurers in the United States.

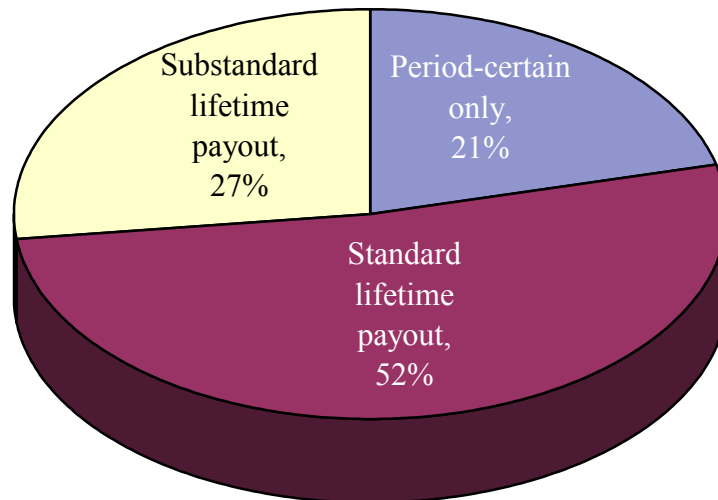
Prior to 2004, domestic substandard annuity sales grew sharply, peaking in 2003 at \$686 million and making up about 13 percent of total industry SPIA premium (Figure 1). In 2004, premiums exceeded half a billion dollars. This represented one tenth of the entire immediate annuity market that year, and 27 percent of the substandard annuity insurers' SPIA sales (Figure 2).

Figure 1
Substandard Annuity Market: Sales



Source: LIMRA International

Figure 2
Composition of 2004 Immediate Annuity Sales
Among Companies That Issue Substandard Annuities



Source: LIMRA International

In terms of individual contracts sold, substandard annuities represent a small proportion of the immediate annuity market — less than 5 percent during the years 2000 through 2004 (Figure 3). Although the number of contracts issued has remained fairly constant during these years, the average size of substandard annuity contracts has risen dramatically. On average, substandard annuity contracts in 2000 were \$118,000. By 2004, they averaged \$294,000. In contrast, across the entire SPIA industry, the average size increased from \$77,839 to \$106,284 during the same period.¹⁵

Figure 3
Substandard Annuity Market: Contracts



Source: LIMRA International

The most likely explanation for the jump in average contract size is increased mortality arbitrage and premium financing arrangements within the market. This activity, which is discussed later in this report, generally involves contracts with higher premiums than typical SPIA contracts have. Even a relatively small number of contract sales could constitute a large portion of the premium received across the industry.

Substandard annuity sales trends therefore reflect the various uses of these products, such that increased premium financing activity could significantly boost sales despite low demand for retirement income uses. However, making a quantitative distinction between the “retirement income” and “premium financing/mortality arbitrage” components of the market is a significant challenge. Insurers generally do not directly track this information, and it is debatable whether one can assume that contracts above a particular size (e.g., \$2 million) are necessarily being used for premium financing. Therefore, contract issuance may be a superior measure of the substandard annuity market’s overall growth than premiums received.

¹⁵ 2004 Individual Annuity Market: Sales and Assets. LIMRA International, 2005.

KEY ISSUES AND TRENDS

A variety of factors contribute to the current state of the substandard annuity market, and several are the focus of discussion for the immediate annuity industry.

Retirement income versus premium financing

Although designed for improving the actuarial fairness of immediate annuities, substandard annuities are also being used as part of premium financing arrangements. In such arrangements, annuity payments are used to fund life insurance premiums (e.g., for estate planning needs) or long-term care insurance premiums. They are also used as part of mortality arbitrage arrangements that take advantage of differences in underwriting, product design, and pricing across product categories.

The low-volume, high-premium nature of many premium financing arrangements can hold appeal for producers and some companies. But this activity also poses challenges to insurers. First, a small number of large-premium contracts can concentrate risk for the insurer. The profitability of the business may depend on the longevity of a few individuals rather than a large group. Second, these arrangements may detract from making immediate annuities a widespread means of retirement income, due to capacity limitations and other restrictions that some companies have imposed upon their substandard annuity business. If companies establish strict limits in order to protect themselves from the risks associated with mortality arbitrage, then market expansion to individuals using substandard annuities for retirement income could be hampered.

Competitiveness

According to companies, the current substandard annuity market is very competitive. Brokers seeking the best payout rates for their clients can submit SPIA underwriting requests to several insurers simultaneously. The insurers must then outbid one another to win the business. This bidding and underwriting process increases the spread among quotes from insurers compared with standard SPIAs. A dominant issue for companies is balancing the need to stay competitive while also maintaining (or tightening) actuarially sound criteria for qualifying applicants as substandard risks. A few companies express concerns that they provide large numbers of quotes but the corresponding sales are disappointing. An increase in the number of companies offering substandard annuities would tend to exacerbate the competitiveness, which could in turn lead some insurers — particularly those with the most conservative criteria for establishing substandard status — to exit the market.

Underwriting resources

Though the number of substandard annuity contracts issued by any insurer is relatively modest, for each contract issued, high numbers of underwriting requests are received by companies. A majority of the companies indicated that they ultimately issue contracts for only 5 percent to 10 percent of the requests for underwriting. There are a couple of reasons for this. Some of the quotes are not accepted by the clients, and in some cases client decisions are delayed, possibly because the substandard

annuity is part of other financial arrangements that may take months to process. As a result, they may need to request updated quotes. In general, insurers with larger underwriting operations may have an advantage owing to economies of scale. Having a staff experienced in structured settlement underwriting is also desirable. Still, product line profitability could be negatively affected if the ratio of sales to underwriting requests becomes too small.

Narrow distribution

SPIAs are generally sold by career agents and independent agents, such as personal-producing general agents (PPGAs) and life brokers. Agent-sold SPIAs represented 74 percent of all SPIA sales in 2004.¹⁶ Likewise, the insurers selling substandard annuities generally do so through agency channels, particularly noncareer agents. Furthermore, the proportion of producers who sell substandard annuities is small. According to five of the substandard annuity-issuing companies, only 259 producers sold substandard annuities in 2004. However, since producers often submit requests for underwriting to several insurers, many of these producers are likely counted in more than one company's response. Absent a shift toward other distributors that are less familiar with underwriting requirements — such as banks, wirehouses, and financial planners — the reach of substandard annuities will remain limited to customers who are served by insurance agents.

Interest rate conditions

A low interest rate environment can discourage some potential SPIA customers from “locking in” payout rates. Over the past several years, longer-term interest rates have stayed level, while short-term rates were lowered, then raised. Many financial experts anticipate that interest rates will finally respond to the upward pressure and rise over the next one to three years. Because of the anticipated rise in interest rates, some consumers may be delaying purchase of SPIAs, hoping rates will be higher in the future. Many producers may be delaying recommendation of the product for similar reasons.

It could also be speculated that, if interest rates increase substantially and product features become more relevant to consumers' decision making, customers may become slightly less price-sensitive. Therefore, there may be less demand for underwritten annuities. Companies could have less incentive to compete on price and more incentive to differentiate other aspects of their products (e.g., liquidity).

On the other hand, insurers have historically experienced competitive pressure on price regardless of interest rate conditions. The commoditization of SPIAs has also been accelerated due to the increasing availability of online quoting services. To the extent that they have higher payouts per dollar of premium, substandard annuities will thus likely have a competitive advantage relative to standard annuities.

¹⁶2004 Individual Annuity Market: Sales and Assets, LIMRA International, 2005.

WHY COMPETE IN THE SUBSTANDARD ANNUITY MARKET?

Although only 11 insurance companies underwrite substandard annuities in the United States, more than 100 insurers currently issue SPIAs.¹⁷ Several of these other companies could enter the market with only modest adjustments to their organizational structures, product designs, or distribution systems. This situation raises the question of whether more SPIA companies will choose to compete in the substandard annuity market. The following are some of the top issues companies intending to enter this market should consider:

Benefits of competing in the substandard annuity market

Market potential. As described earlier, a large number of individuals will be searching for ways to fund their retirements in the absence of traditional DB pensions. As the baby boomers approach retirement, the demand for guaranteed income is only going to increase. Offering a product such as a substandard annuity may allow a company to capture more of this market than it would have otherwise. Selling SPIAs has long been a difficult task for many of the reasons mentioned earlier. Introducing substandard annuities may make it easier to attract those eligible consumers, as now they will either receive higher payouts, or pay lower premiums.

Companies with successful SPIA businesses and with underwriting capacity (perhaps from their life or structured settlement operations) may seek shares of this expanding market. By keeping administrative costs low (e.g., by automating data submission) and efficiently processing medical information, a company could incorporate underwriting within its existing SPIA business.

Insurers that work with nonagent distribution channels could also extend the reach of substandard annuities. For example, independent financial planners or stockbrokers who possess life insurance licenses and training could be viable alternatives to sales by traditional agents. The various uses of premium financing could also help to increase the sales of substandard annuities. The escalation of arbitrage arrangements within the substandard annuity market tends to tax underwriting resources and push pricing to its limits, but could be incorporated by certain companies with solid financials and capital strength that can tap the experience of their actuaries and underwriters.

Finally, six out of eight companies interviewed expect more substandard annuity market entrants, as attention to substandard annuities grows and overall SPIA sales increase. This increased awareness of the substandard annuity market could lead to increased substandard annuity sales for all companies in this market.

Competitive advantage over standard-issue SPIAs. To the extent that SPIAs are viewed as commodities, such that the products with the lowest prices for the same payout amounts will be purchased regardless of other features, then companies must offer higher payouts to stay competitive. Substandard annuities could be one way to maintain or gain a competitive advantage over those companies not offering substandard annuities.

¹⁷ 2004 Individual Annuity Market — Sales and Assets, LIMRA International, 2005

Issues that could prevent insurers from entering the substandard annuity market

Low-volume business. Like overall SPIA sales, substandard annuity sales will probably remain a small fraction of the entire individual annuity market through the end of the decade. Even if substandard annuities are very profitable for insurers on a per-sale basis, top-line numbers will not rival those of deferred annuity products.

Low placement ratios. Due to the highly competitive nature of substandard annuities, the number of underwriting requests far exceeds the number of actual contracts sold. If placement ratios are low and underwriting costs are high, insurers can only profit from substandard annuities if premiums are relatively large.

Low awareness. Even among those consumers and producers who are familiar with SPIAs, very few are also aware that SPIAs can be underwritten by insurers. This is even evident in the UK where the market is much better developed. One article indicates that 75 percent of the 210 people interviewed did not know that there are enhanced annuities for those who smoke or are in poor health.¹⁸

Capacity Issues. Some companies have imposed capacity limits on the amount of risk they are willing to underwrite, especially for substandard annuities sold within premium financing arrangements, where the contracts are often very large. If prospective entrants plan to adopt similar limits, then their sales may not be enough to offset their initial start-up investments in this business.

Distributor limitations. Bank producers tend to be more transaction-oriented and may have less knowledge of — and patience with — the underwriting process. Wirehouses and financial planners with limited insurance training or experience are also not as familiar with the underwriting process and all the information required to underwrite substandard annuities.

Underwriting limitations. Experienced underwriters who are familiar with annuity products are necessary for accurately rating these contracts. The ability of these underwriters to accurately age-rate these contracts will have a direct impact on the profitability of this line.

Competition from other financial products. Recent developments within the deferred variable annuity industry have made the income features more attractive. Some variable annuities offer optional guaranteed minimum income benefits (GMIBs), which ensure that contract annuitizations will be based on amounts at least equal to premiums paid (usually with 5 percent to 6 percent annual interest applied), regardless of the performance of funds within separate accounts.¹⁹ Although the benefit can be applied only to contract annuitizations that occur after the annuity has been in force for several years, to the extent that these benefits are “in the money,” customers have less incentive to purchase substandard annuities instead of annuitizing their deferred annuity contracts.

¹⁸ “Failure to Take Up Enhanced Annuities Costing 277m’ [pounds sterling],” [Money Marketing](#), October 2004.

¹⁹ “Failure to Take Up Enhanced Annuities Costing 277m’ [pounds sterling],” [Money Marketing](#), October 2004.

Another new variable annuity feature allows owners to make lifetime withdrawals from their contracts, up to a maximum percentage per year, regardless of the performance of funds within separate accounts. These guaranteed minimum withdrawal benefits (GMWBs) for life do not obligate owners to annuitize their contracts; they can usually take withdrawals immediately after purchasing their contracts, or wait for several years, or even skip years. Importantly, these benefits allow for continued access to the account balance for taking additional withdrawals or managing investment allocation — an option that fixed SPIAs rarely provide. GMWBs for life could thus reduce the number of individuals who would otherwise consider purchasing SPIAs for retirement income. On the other hand, GMWBs for life probably do not pose a threat to the premium financing segment of the substandard annuity market.

FINANCIAL IMPLICATIONS — INSURERS

To look at the effects substandard annuities may have on an insurer, we constructed a corporate financial model using either information obtained as part of this study or assumptions reflective of the industry. Due to the nature of single premium immediate annuities, and the fact that in general, contracts do not allow for the policyholder to lapse, our primary analysis begins with a fixed population of 1,000 individuals shopping for single premium immediate annuities. This population has the following characteristics:

- Average age of 70.5, 50 percent males, 50 percent females²⁰
- Monthly payment of \$2,044²¹
- Individuals were both healthier and unhealthier than average, meaning that the average “underwritten” age was approximately equal to the average actual age of 70.5.
- 1,000 total individuals: 270 moderately substandard risks and 730 standard risks

In order to understand the potential impact of substandard annuities on the market, the population was looked at in four different ways.

²⁰ Based on a survey of 17 SPIA-selling companies, in 2000 and 2001, 50 percent of immediate annuity sales were for female annuitants in years 2000 and 2001. Average age at purchase was 70. *Annuitization Study: Profiles and Attitudes*, LIMRA International, 2003.

²¹ For life-contingent payouts, initial average monthly payments for SPIAs in 2000 and 2001 were \$2,044. *Annuitization Study: Profiles and Attitudes*, LIMRA International, 2003.

1. Entire population — typical SPIA pricing

This is the population that represents a correctly priced block of business. Some of the individuals are healthier than expected, while others are less healthy. Overall, they average to the original expectations of the company, and the risks offset one another to allow the company to achieve the target profitability. The projected financial results for this population can be seen below.

Table 2
Entire Population — Typical SPIA Pricing

Standard Count	Substandard Count	IRR	Profit per Contract	Premium per Contract
730	270	14%	\$28,268	\$273,827

2. Healthy Population — typical SPIA pricing

The “entire population” above is made up of those individuals healthier than expected and those individuals less healthy. This combination is what enables the company to meet its profit goals. The introduction of substandard annuities in the market presents the risk that the company will have only the population of healthier individuals left. The results for this population can be seen below.

Table 3
Healthy Population — Typical SPIA Pricing

Standard Count	Substandard Count	IRR	Profit per Contract	Premium per Contract
730	0	10%	\$19,028	\$273,476

The driver of these results is the mortality of the population. The annuity is being priced assuming the “average” individual is purchasing the product. However, since the below-average individuals are no longer purchasing policies from the company, the remaining population is healthier than expected. This means that on average the company will be paying benefits for more years than it originally anticipated while receiving the same premiums.

3. Unhealthy population — typical SPIA pricing

This is the other part of the initial population, containing those individuals who are less healthy than expected. They were priced using their actual ages, even though if underwritten they would fall into a category of mild impairments with age rate-ups ranging from two to seven years. Severely impaired individuals were not included, as they likely *would not* have been part of the initial population looking for SPIA products. The results for this unhealthy population can be seen below.

Table 4
Unhealthy Population — Typical SPIA Pricing

Standard Count	Substandard Count	IRR	Profit per Contract	Premium per Contract
0	270	23%	\$53,233	\$274,813

These results are better because the individuals are less healthy than the company expected. This unhealthy population is critical to a typical company being able to meet the initial pricing and profit goals. Without it the company would achieve results closer to those of the healthy population above. This case illustrates the potential risk that companies face if competition focused on the substandard market emerges and takes away members of this unhealthy population.

4. Unhealthy population — substandard SPIA pricing

If the market evolves to consistently offer substandard annuities, the individuals in the population identified above can now qualify for better rates based on their underwritten ages. The financial results for this population, when underwritten, are more in line with a correctly priced block of business.

Table 5
Unhealthy Population — Substandard SPIA Pricing

Standard Count	Substandard Count	IRR	Profit per Contract	Premium per Contract
0	270	13%	\$22,534	\$245,077

There is slightly lower profit per contract than the total population scenario, which is primarily due to the shorter lifetime and the lower investment income received by the company. Assuming appropriate pricing, companies can expect similar financial results from their substandard and standard lines of SPIA business.

The next step is to assemble the pieces shown above to illustrate the impact of companies entering the market and offering substandard annuities.

Analysis One — Typical Block

Currently, a typical block of business is one where the population on average will meet the expectations of the company’s assumptions. For SPIAs this will consist of some individuals who will exceed and some who will not exceed their expectations. In the past, there was only one class for annuities and therefore the variation among individuals was higher than for other products. Life insurance products, for example, have this same dynamic but to a smaller degree due to the multitude of different underwriting classes. If individuals appear to fall too far outside of the company’s expectations for one class, they would be moved to different ones consistent with their conditions.

The combination of the healthy and unhealthy population scenarios (populations 2 and 3) with standard pricing makes up the initial total population (population 1) and the likely financial results. For purposes of this report, this set of results is used as the baseline for a properly priced block of business. A company deciding to reprice its line of business can expect to achieve financial results consistent with this total population.

Analysis Two — Offering Substandard Annuities

Companies need to be aware of the impact that other companies offering substandard annuities can have on their SPIA business. Both the impact to the company offering substandard annuities and the impact on the company not offering them need to be understood. One thing to note is that companies offering substandard annuities to individuals with severe health impairments will likely not have an impact on the existing SPIA line. This is because these individuals qualifying for deeply substandard annuities would not be part of the initial population of SPIA customers.

For the company not offering substandard annuities, the potential impact to the profitability of the line is severe. The company may eventually be left with the standard portion of the population because substandard individuals will purchase annuities from other companies. The remaining population will behave like the healthy population described above, and the company could see profits drop by more than 30 percent from what the traditional pricing would indicate (\$19,000 profit per contract versus \$28,000). This impact does represent a worst case scenario, and depending on how efficient the consumer market is may not be as severe. However, as more people discover substandard annuities, market efficiency will increase, and the substandard risks that made up a portion of the company's total population will no longer be in that group.

A company that chooses to enter the substandard annuity market faces a similar risk to its SPIA business. Offering the substandard annuity will take away the substandard risks from the total population and lower the financial results of the existing SPIA block. These individuals will still be purchasing policies from the company, but they are now being priced accurately, and will achieve the 13 percent IRR as opposed to the original 26 percent. Because of this, the company will end up seeing lower-than-expected financial results if it does not reprice the standard block of SPIA business.

Both of these situations highlight the risk present with the introduction of substandard annuities into the market — that the mortality on the remaining block of SPIA policies will not perform as expected. This shows the importance of repricing for the remaining healthy population of SPIA purchasers to ensure that overall profitability will not significantly change. If companies do not do this, the financial performance of their existing SPIAs will fall, whether they offer substandard annuities or not. However, at the same time, if they do reprice their SPIA business and competition does not follow, the healthy risks will go to competing companies offering more competitive rates.

The extent to which this will impact future sales will depend on the level of the pricing change necessary when the population no longer includes the substandard risks. This presents an interesting trade-off to the company: whether it wants to risk poor financial performance of its SPIA line by not repricing, or whether it wants to risk losing business to competition as a result of repricing.

For more information on the modeling process, please see Appendix A.

FINANCIAL IMPLICATIONS — CONSUMERS

There are several financial benefits to consumers for purchasing payout annuities, whether they are substandard or not. The ability for an individual to guarantee that at least a portion of his or her retirement needs will be met with guaranteed cash flows is a critical component to a successful retirement plan. Offering substandard annuities could make this strategy more appealing, as individuals may qualify for better prices.

It is apparent that the financial impact of substandard annuities on a consumer is much more straightforward than it is for a company. By qualifying for a substandard annuity, the individual has two choices. He or she can either pay the same premium but receive a higher payout, or receive the same payout and pay a lower premium. Below is a simple illustration of this using a very basic pricing approach. For example, a 65-year-old male can purchase a lifetime annuity of \$8,187 per year for \$100,000. If he applied for a substandard annuity and received a five-year age rate-up, his income would be \$9,429 per year. If instead, he wanted \$8,187 income, he could pay less, or \$86,300.

Table 6
Financial Impact to Consumer of Substandard Rating

Scenario	Annual Income with \$100,000 premium	Premium for \$12,000/year
Male 65, no underwriting	\$8,187	\$158,763
Male 65, underwritten age 70	\$9,429	\$127,265
Male 65, underwritten age 75	\$11,175	\$107,378
Male 65, underwritten age 80	\$13,676	\$87,743

* For details of calculation, please see Appendix B.

Another area where traditional payout annuities have been used is premium financing for life insurance. This can either be used as a potential arbitrage opportunity, or as a way to deal with estate transfer for wealthy individuals. Either way, individuals purchase payout annuities and use the payments to fund the premiums on life insurance policies. The premium for the annuity is paid for either by the individual in estate transfer use, or by taking out a loan in the arbitrage scenario. At the time of death, the death benefit is either transferred to the beneficiaries as their estate transfers or used to repay the loan taken out to purchase the annuity. This amount is tax free, therefore giving

wealthy individuals a more tax efficient way to pass on their estates. The arbitrage case is beneficial if the death benefit received is more than the loan balance. The difference between these payouts is a profit to the individual that comes with very low risk (i.e., insolvency of the insurance company). Now, with substandard annuities in the market individuals can get better rates if they qualify. This will lead to more favorable results in premium financing agreements.

FINANCIAL RISKS OF ENTERING AND NOT ENTERING FOR THE INSURER

Financial risks of entering the substandard annuity market

Underwriting Risk The most significant risk that companies face when introducing substandard annuities is underwriting risk. Because of the different conditions they need to consider when underwriting annuities versus life insurance, companies need to take extra care when entering this market. Entering the market without having underwriting guidelines and processes established presents the possibility of giving individuals more of a discount than their health status would merit. This could have a significant impact on the profitability of the annuity line, and possibly lead to significant underwriting losses. The financial market model was used to understand the changes in profits due to underwriting error. All of the examples below assume the same age was used for pricing, but then alter the age used for experience purposes.

Table 7
Impact of Underwriting Error

Underwriting Error (years off)	PV Profits per Contract	Change from Base
0 (actual underwritten age is 60, priced at 60)	\$22,534	0
1 (actual underwritten age is 60, priced at 61)	\$18,382	-18%
-1 (actual underwritten age is 60, priced at 59)	\$26,852	19%

As is evident from the results above, errors in underwriting will have a large impact on the profits achieved. If companies are inaccurate in underwriting, it is likely that only those individuals with positive underwriting errors will purchase annuities from them, thus producing poor financial results. The company will only get the business of those individuals because of the highly competitive nature of the substandard business. Individuals who receive unfavorable underwriting results from one company are likely to seek more favorable ones from competitors.

Pricing Risk If companies do not appropriately determine purchase rates for substandard annuities, depressed financial results will emerge. Also, because this line of business is extremely competitive, if the pricing is not in line with competitors' pricing the company will find itself in a difficult situation. If the prices are lower than those of competitors, a flood of business will be sold at what likely could be the wrong price. If the prices are higher than those of competitors, there will be very low sales and the company will miss out on the premium income. Therefore, much care and time must be taken to ensure appropriate pricing.

Financial risks of not entering the substandard annuity market

Antiselection By not entering the market companies may see the demographics of their business start to change. More of the substandard risks may be going to companies offering substandard annuities. This would result in the new business of the company being healthier than expected, and present more risk to pricing and profitability. In addition, many individuals who qualify for substandard annuities at competing companies will purchase from those companies, reducing the sales for a company not entering this market. With the demand for guaranteed sources of income in retirement increasing, this could be a potentially large amount of premium. Therefore, companies need to either consider entering the substandard annuity market, or maintain a close eye on the existing SPIA block and make changes as necessary to account for the changing demographic.

Mortality Disintermediation If companies offer return-of-premium options, or some way for the policyholder to lapse his or her policy, they can be exposed to mortality disintermediation. Policyholders whose health has deteriorated since issue could lapse their existing SPIAs and purchase substandard policies. This will cause the mortality experience on the existing block of SPIA products to improve now that the substandard risks are no longer in force. Most SPIA policies are sold as lifetime contracts, so this might be only a limited issue.

There are some companies offering standard SPIAs that offer opportunities for withdrawal or lapse. More commonly such access is limited to remaining non-life-contingent annuity payments. This represents no additional mortality risk to such companies. However, a few companies offer access to some or all future life-contingent annuity payments. In such cases, the companies usually reserve the right to medically underwrite at that point to ensure that the annuitant's health has not deteriorated since issue, thus minimizing antiselection at time of withdrawal.

RISK MANAGEMENT ISSUES

ARBITRAGE

In the section on financial impacts to consumers, the existence of premium financing was discussed. This activity occurs in the payout annuity market because it presents a situation for tax efficient wealth transfer or for the potential profits for the individual with very little risk assumed. As a result, these policies are often very large in size, and can present a dilemma for the company. Individuals entering into premium financing deals are looking to take advantage of the natural arbitrage that can exist between life insurance and payout annuities. This natural arbitrage occurs because of the differences in the insurance industry between mortality assumptions for annuities and for life insurance. Most often this will occur with standard immediate annuities and healthy life insurance. With the introduction of substandard annuities, individuals have the possibility to structure the transactions at a lower cost than with standard-issue annuities. Also, they can benefit from the natural arbitrage existing between the substandard annuity pricing and table-shaved life insurance (i.e., insurance sold at standard rates to individuals who are underwritten as substandard). Because of the differences in the rating practices between companies, agents working with wealthy individuals can shop the market to find the best combination of annuity contract and life insurance contract. This shopping activity is a contributing factor to the low placement ratios experienced in the substandard annuity market.

Companies need to be aware that these arrangements exist and decide on corporate policies with respect to being parties to premium financing arrangements. Many of these issues apply to both the companies writing the annuity portions of the contracts and the companies writing the life insurance policies. Some companies interviewed have stopped writing annuity contracts if they know that they are being used to fund life insurance policies. Other companies do not have concerns related to these transactions if the underwriting risk is controlled properly. In some cases companies do not have enough information to determine that premium financing is occurring, and therefore do not have any related policies. Companies should also examine their policies regarding offering both the life insurance policy and the payout annuity to the same individual. At the very least companies should look into arbitrage structures and how introducing substandard annuities could potentially impact their results. Companies are analyzing the risks inherent in premium financing arrangements, and some have opted to leave this market.

UNDERWRITING

Underwriting is likely the single biggest risk facing insurers in or entering the substandard annuity market. A company writing substandard annuities faces a significant risk that the underwriting department will not appropriately adjust the expectation of mortality for an applicant. There could be several reasons why the underwriter's adjustments are inaccurate, including competitive pressure, a natural conservative bias (natural conservatism in life underwriting, assuming individuals have poorer health than they actually do), lack of appropriate procedures or protocols, incomplete knowledge resources, and lack of experience. Additionally, applicant behavior becomes a variable in the substandard annuity underwriting equation as the interests of the company and the applicant are not aligned as is the case when a life insurance policy is written.

APPLICANT BEHAVIOR

In this market applicant behavior can significantly affect the underwriting results, depending on the sophistication and safeguards of the underwriting process. The exposure is enhanced in this market, because there are two methods that applicants (and contract holders) can use to select against the company.

At the time of application, it is in individuals' best interest to represent that their health conditions are exceptionally poor. Most companies require medical evidence of any impairment, but even with medical evidence, there is still a risk that individuals or their agents will successfully misrepresent their health conditions. This could cause the age rate-up to be greater than would be determined using accurate information, and would lead to lower profitability and potential losses.

After the annuity is purchased, the other aspect of applicant behavior comes into play. It is human nature that individuals have some level of motivation to maintain or improve their health and prolong their lives. As noted earlier, this puts the interests of the contract holder in opposition to those of the insurance company, which is unique to this market. For an insurance company issuing a life insurance policy, an individual living longer is actually a benefit, as the company receives more premiums and holds the money longer before paying the death benefit. An individual who is rated substandard for the purposes of issuing an annuity has the same motivation to live longer as an individual who purchases a life insurance policy. However, an insurer is hurt by a similar motivation (and theoretical outcome) because it will have to pay the policyholder longer than originally expected. The insurer cannot re-rate the individual, request additional premium, or adjust its payout level, as payout annuity contracts are typically guaranteed lifetime benefits. It is primarily because of this aspect of applicant behavior that the companies interviewed as part of this study do not consider lifestyle or other nonmedical questions when making their underwriting determinations.

COMPETING IN THE SUBSTANDARD ANNUITY MARKET

UNDERWRITING

As mentioned earlier, the most important function that companies need to think about before competing in the substandard annuity market is the underwriting function. Because the current substandard annuity product functions the same as a SPIA once the underwriting process is complete, companies should be able to leverage their existing payout annuity systems and practices to support their substandard annuity business. Therefore we spend the majority of this section discussing the underwriting function as it exists in the marketplace today, and offer some questions that should be considered.

During our interviews three major steps in the underwriting process became apparent:

1. Receive required medical information on the applicant from the producer.
2. Determine a revised expectation of life and develop the equivalent age rate-up. Alternatively, develop a mortality factor to be applied to the standard mortality table used by the company.
3. Use tables developed by the pricing area to provide the distributor or applicant with a purchase rate based on Step 2 results.

All companies require that medical records accompany any quote for a substandard annuity. Companies require substantial proof of any impairments or diseases that may result in a shorter expected lifetime. Common records include APS reports (Attending Physician Statement), blood tests, and medical reports. This information is consistent with the documents required by companies when performing underwriting for life insurance and structured settlements. However, the means by which this information is collected is much different for substandard annuities and life insurance. With substandard annuities the burden of proof of below-average health is on the applicant and the producer, who submits the medical information directly to the insurer. With life insurance, the insurer usually drives the underwriting process and the medical information is often obtained via a current paramedical exam. In such cases the producer is not privy to this information.

Once the underwriters obtain the records, they review them and determine a likely impact on the individual's life expectancy. The practices for this part of the process vary widely among companies. One company relied on a subject matter expert to determine the revised expectation of life. This expert used materials such as medical journals and Internet searches to determine the impact of the specific medical conditions. Other companies have underwriting guides similar to life insurance

underwriting guides that accumulate mortality credits and determine factors. These guides, while similar in concept, have different rules and credits from the standard life insurance underwriting guide to account for the risk of living longer. In several companies, the underwriters determine a final mortality factor by mapping the outcome of the underwriting to a specified level (for example, 100 percent, 200 percent or 500 percent), while other companies don't map the outcome, and use the factor directly.

For the majority of the companies, this factor is then used to determine the revised expectation of life for the individual based on the medical information received. Notably, only one company interviewed uses the adjustment factor to determine the price for a substandard annuity, instead of simply using an age rate-up on a price developed for its standard payout annuity.

PRICING

The pricing of the current substandard annuities in the market is very basic. Most companies receive the revised expectation of life from their underwriters and use it to “rate up” the individual to the age of someone with that same life expectancy. Using its pricing mortality table, the company will match the expectation of life received from the underwriters to a specific age. For example, the underwriter may determine that an age 65 male has a revised expectation of life of 14.4 years (based on the Annuity 2000 table with 200 percent mortality factor). A male age 73 has an expectation of life of 14 years. Therefore, the rated age for the male with an expectation of 14.4 years is age 73, and the annuity will be priced at that age.

Companies also could price the substandard annuity by directly applying the mortality factor determined by the underwriters. This is done using traditional actuarial mathematics with a factor applied to the standard mortality. The table below illustrates the results of applying the two different methods to a cross-section of risks.

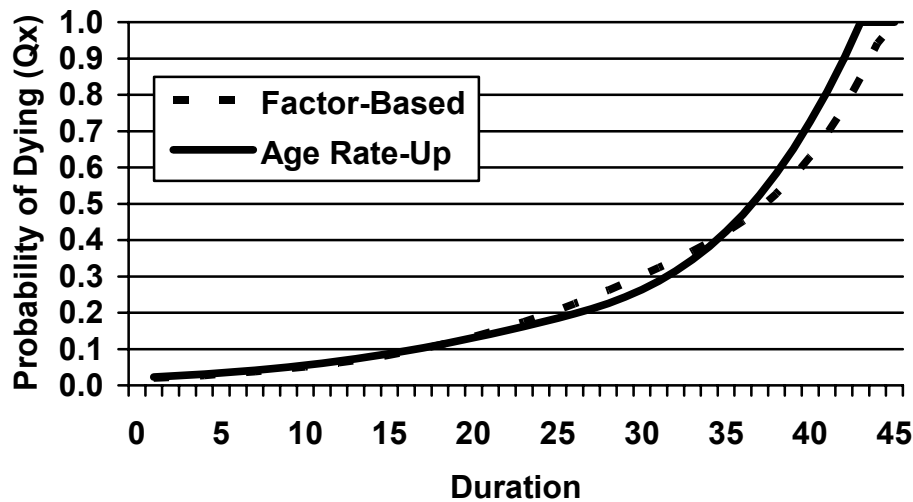
**Table 8
Factor vs. Rated Age Pricing**

Age	Mortality Factor	Rated Age	Price Using Factor	Price Using Rated Age	Difference
65	200%	73	\$988,150	\$961,250	\$26,900
65	500%	83	\$669,996	\$637,954	\$32,042
75	200%	83	\$644,194	\$637,954	\$6,240
75	500%	95	\$353,139	\$337,723	\$15,416

* For details of calculation, please see Appendix B — annual payment of \$100,000.

Some of the differences in the prices are due to the rounding of the expectation of life to match up with a whole age, although that does not account for the entire price difference. It is evident that using a factor approach is slightly more conservative (i.e., results in a higher price) than using the rated age. This is due to the slope of the mortality table, and the fact that adding on the factor preserves the shape of the mortality curve, whereas using a rated age does not. This slope of the mortality table can be seen in the graph below. As evident from the graph, the age rate-up causes the steeper slope of the mortality table to occur sooner. This leads to higher mortality than the factor-based approach, and therefore a lower annuity price.

Figure 4
Comparison of Factor to Rated Age Methods
Age 65 Male, 200 Percent Mortality Factor



In order to improve the accuracy of pricing, industry mortality tables for substandard annuities would be useful. Currently, these do not exist. By collecting data from substandard annuitants, the true shapes of the curves can be determined for various levels of impairment. This would also allow companies to measure their current practices against what is more likely to happen and enable them to make appropriate adjustments. Once this information is available, companies can determine whether to use an age rate-up, factor approach, some combination of the two, a select period, or any number of alternatives. All of these refinements will help companies properly account for the risk, and maintain the appropriate profitability while being actuarially fair to all applicants.

The annuity contracts that are offered as substandard annuities are similar, if not identical, to the traditionally available annuity contracts. As with traditional annuities, companies have maximum issue ages, often 90. Some companies also modify their adjustments to add in other conservatism to the price — for example, adjusting the rated age down a year or two from what is calculated by the revised expectation of life.

Companies also need to keep in mind the impact that offering substandard annuities will have on their traditional blocks. See the financial implications section of this paper for more commentary on this subject.

Due to the highly competitive nature of substandard annuity pricing, companies are feeling pressure from the sales and marketing departments to give the individual the lowest price possible. It is not uncommon for a producer to submit medical reports to several companies and place the applicant with the company with the lowest price. Because of this, more pressure may be placed on underwriters and actuaries to offer lower prices. These requests need to be examined carefully, and the full impact to the business needs to be analyzed before any changes are made.

SALES AND MARKETING

Target Market

The principal target market for substandard annuities is similar to that of SPIAs — the retirement income market. These products provide guaranteed income to those people who are nearing or are in retirement, particularly those around the age of required minimum distributions from qualified plans (currently age 70.5). Substandard annuities can also be marketed to people who have retired early due to disability and are seeking to boost their income streams. However, based on interviews with sales representatives and insurers offering substandard annuities, it appears as if a significant segment of substandard annuity premium comprises individuals who are using the product in premium financing arrangements.

Sales of substandard annuities have not met expectations, according to company representatives interviewed for this study. This underperformance could be due in part to consumers and many producers not being familiar with substandard annuities, which are not heavily marketed. Six out of eight companies we interviewed felt the industry needed to improve the marketing of substandard annuities to producers and consumers, and half of these companies felt the industry needed to improve the education and training these insurers provide to their producers so they better understand how these products work.

Substandard Annuity Products

All but one of the substandard annuity companies interviewed use their current SPIA products and make adjustments to reflect customer impairments. These products have been slow to change over time: Only two interviewed companies have made any significant changes to their products recently.

The company interviewed that offers a stand-alone substandard annuity designed this product specifically for funding long-term care. In its marketing materials provided for both customers and producers, the substandard annuity is described in terms of its appropriateness for individuals already receiving or about to receive long-term care services. Multiple refund and compounding annual increase options can be selected for this product.

One of the companies that uses an existing SPIA allows applicants to complete medical questionnaires, with no medical records required, and, if an applicant is approved, his or her annuity payments are increased by 10 percent. If the individual also sends in medical records, approval results in an additional 10 percent increase, ~~total~~ of a 20 percent increase in annuity payments. This product has other features, such as liquidity options (i.e., return of premium if contract is cancelled, a return-of-premium death benefit, and return of premium for terminal illness (each adjusted for payments received)), as well as a 3 percent annual increase rider and a nursing home confinement rider. This product also pays trailing commissions to provide ongoing income to the producer.

Distributors

While substandard annuities are available for sale in most distribution channels, they are predominantly sold through the career- and independent-agent channels. The concentration of substandard annuity sales within agent channels is ~~greater~~ than that of the overall SPIA market. This situation reflects the fact that the sale of substandard annuities takes more time and effort than that required for other annuities: The agent must understand the unique aspects of how substandard annuities work, and then take the time needed to explain them to the client and handle the additional administrative tasks associated with the underwriting process. Distribution channels such as banks prefer to sell more transaction-based products and do not sell many substandard annuities. In our interviews, a number of the companies and producers indicated that most clients understand the concept of substandard annuities, but usually ~~after~~ the producer takes some time to explain how they work. Some of the insurers indicated that they would like to see the substandard annuities market expand into other distribution channels.

Not all SPIA producers choose to sell substandard annuities. In fact, it appears that only a small percentage of producers sell substandard annuities, according to the insurer interviews. It could be that these producers not only understand how substandard annuities work but also are willing to take the time needed to work with clients to determine eligibility and to collect the medical information needed. Some producers are selling substandard annuities for the purpose of premium financing. If a producer is already working with a client to acquire life or long-term care insurance, the producer often already has the client's medical information, and most of this information can be used to request a quote on a substandard annuity.

All but one of the companies selling substandard annuities targets only their distributors, not consumers, when promoting these products. One company is also targeting the general public through its Web site. None of these companies promote substandard annuities to their existing deferred annuity customers, or to customers of other products (e.g., health insurance). Some of the more commonly used marketing techniques include:

- Providing producers with brochures and marketing materials
- Posting information about substandard annuities on public and producer Web sites and at marketing trade shows
- Offering training seminars (Web-based or in person) that include discussions of substandard annuities, usually in addition to discussions of regular SPIAs

Some of the insurers indicated that it has been helpful to use those producers who are familiar with underwriting insurance contracts because the process of underwriting substandard annuities will come more naturally for them. On the other hand, from the standpoint of producers and their clients, the goal in providing medical information for a substandard annuity is the opposite of the goal in providing this information for life policies: It is up to the customer and producer to prove how *bad* the customer's health truly is. Because of this difference, most companies have impairment guidelines, literature, or a list of impairments to help the producers determine who might qualify for substandard annuities. Insurers stress that these impairment guidelines do not guarantee that the applicant will qualify for a substandard annuity and that ratable impairments are not limited to the items on such lists.

Sales Process

The only significant difference in the sales process for a substandard annuity and a SPIA is the underwriting process. Typically, producers will introduce the idea of substandard annuities to their customers; rarely do clients raise the topic with their advisors. Producers will first discuss the benefits of SPIAs with clients, and then evaluate whether the client's health is impaired enough to fall within the guidelines the producer has been provided. If the producer believes the customer's condition could qualify for a substandard rating, then he or she will either complete a medical questionnaire or seek permission from the client to collect the necessary medical information, and then submit it to the insurer to be reviewed.

Different insurers have different requirements regarding what information they want to receive. Many of the insurers indicate that it is up to the producer and applicant to prove how poor the applicant's health is. One company has a simple form that the producer can complete and submit to the company. The company will review this form and then let the producer know whether the client has the potential to receive an age-rated quote.

With a SPIA, the producer could simply run a quote to determine the payment amount. With a substandard annuity, the producer needs to submit medical information to the underwriters to obtain either an age rating or a mortality adjustment in order to produce a quote. Independent agents will usually send requests for substandard annuity quotes to anywhere from two to six different insurers. They will shop to find the best available offer because the insurers are not always consistent with the age ratings they provide given individuals. Different insurers also have different requirements in

terms of the medical information they require to determine who may qualify to be medically underwritten. Some insurers may feel that the impairment is not significant enough to qualify for an age rating, while others will provide different age-rating adjustments. These insurers may also have different capacity limits, which can make it harder for some of the larger cases to get approved. In addition, some companies will not quote a substandard annuity if there is an active life insurance application on file because they wish to avoid competing with other areas of their companies.

A few producers indicate that the most efficient way to submit the medical information to insurers is to have a centralized database. By entering all of the medical information onto computerized systems and encrypting the data, they can easily email the encrypted medical information to a number of insurers for quotes. For example, one producer with a Web-based system indicated how easy it is for her to load all of the client's data into a database and then submit the encrypted data to insurers. By doing so, she felt that the remaining paperwork process was much easier to deal with. Using email will also allow producers to send data to trained underwriters anywhere quickly and efficiently. One important consideration involves the need to encrypt medical data before sending the information via email. Some producers collect and submit paper-based medical information. One producer indicated that using hard copies is necessary because the Health Insurance Portability and Accountability Act (HIPAA) privacy restrictions do not allow him to email client data. Using technology to the extent it is allowed will be critical to efficiently manage all of the paperwork that needs to be submitted.

Some companies have forms that address the age rating/underwriting issues that producers need to submit when they send in medical records. After reviewing all of the medical information sent to them, these companies will generally try to respond to producers with their age ratings or quotes within one to two days. Most of the companies interviewed will age-rate their quotes. For example, a person age 70 with a severe impairment could be age-rated to age 75 for the purpose of quoting the substandard annuity. Periodically, it can take longer to provide the age rating, depending upon how complicated the case is. A few insurers indicate that they need to be as efficient as possible when underwriting SPIAs in order to compete with other insurers that may have quicker turnaround times.

Once they have submitted the medical information and have received the age ratings, producers can then run their own quotes and discuss with their customers which product and company offering is the best. Some companies will provide the quote when they present the age rating to the producer. Most of the insurers indicated that they use the same SPIA application for both a SPIA and a substandard annuity. They will ask questions on their applications to see whether they are for substandard annuities; if so, they will ask to have the age-rated letters from the underwriters included with the applications. Despite these differences, the remaining application process is similar to that followed for SPIAs. Most insurers require special approval if the premium — which can exceed \$1 million in a substantial number of cases — exceeds certain limits.

If the requests for underwriting an annuity are denied from all companies, the producer will typically shop around for the best offer he or she can get on a standard SPIA. In our interviews, the companies stressed that producers need to be careful not to set the expectation that the client will be age rated, because receiving an age rating is not guaranteed, regardless of apparent medical conditions.

Challenges

As noted, the sales and marketing process for substandard annuities is typically built from preexisting procedures used for SPIAs, along with some additional steps that are borrowed from life insurance or structured settlement underwriting. Although the general impression is that these procedures work sufficiently for the substandard annuity market, both insurers and producers mention challenges that should be addressed.

A few of the insurers interviewed stated that they need to manage how they interact with the producers submitting so many quote requests for underwritten SPIAs. Some producers will ask for many quotes from a company but will place little business with it, thereby using a significant amount of a company's resources with little or no premium to offset the associated costs. Insurers also acknowledge that producers can select against them by deciding what information to supply in order to support their impaired cases. While producers are simply trying to find the best deal possible for their clients, their actions obligate insurers to carefully evaluate the risks that they could be taking on depending upon contract size.

Relying on old underwriting information can also lead to challenges for insurers. Oftentimes, individuals with acute conditions (e.g., quadriplegia) may have much-lower-than-average life expectancy for a certain period following the onset of the condition, leading to denial of life insurance coverage. However, if the person survives beyond this period, his or her life expectancy may improve significantly. Therefore, projections of mortality based on initial underwriting information needs to be re-evaluated at the time of annuity issue.

From the producer's perspective, the main obstacles involve the varying underwriting procedures across insurers. Some producers indicate that they would prefer to have a more standardized way to know what medical information to send in, similar to life insurance. Currently producers are not always certain what to submit, or what the resulting age rating will be, if the contract is rated at all. They suggest that insurers could offer a cover letter describing what is required for the complete underwriting process so that producers who are not familiar with substandard annuities could better understand what they need to do. It would also be helpful to have trained support areas that are familiar with the substandard annuity products when producers call with questions. In addition, producers say that insurers should offer substandard annuities with some type of bailout option or return of premium in the first year (adjusted for the payments that have been made).

ADMINISTRATION

All of the companies interviewed say that the administration process for substandard annuities is accomplished within the same system used for SPIA administration. The only additional information required to set up the substandard annuity contract is proof that it was underwritten because they need to adjust the age on the policy. As this business matures, these companies will need to continue to do experience monitoring of the substandard annuity business to evaluate the accuracy of the underwriting. This will enable them to do some additional research and statistical analysis of the data to better assess the risk when underwriting this business.

FINANCIAL REPORTING

Under NAIC Actuarial Guideline IX-C, companies that write single premium immediate annuities are allowed to hold reserves at lower levels if the mortality of individuals can be shown to lead to at least a 25 percent reduction in life expectancy. This requirement is not in place for structured settlements, so companies may need to perform additional calculations to determine whether their substandard annuities meet this requirement. If companies are able to hold lower reserves for these policies, it allows for earlier recognition of profits, as not as much of the initial premium will need to be held as reserves. However, due to the low volume of business, most companies are not yet holding the reserves with the mortality adjustments. In addition, the state of New York has not yet approved the lower reserve requirements, so companies writing in that state face additional strain. As the size of the block grows, companies will likely implement processes to take advantage of the reserve requirements for those policies that qualify.

Below is a simplified financial statement for a demonstration of this issue based on a male aged 65, with a rated age of 73, who purchases an annuity with annual payments of \$100,000. As the following chart shows, by not being able to hold a reserve based on the rated age of 73, the company would lose more money at inception. This is because it will be forced to hold a reserve calculated at the actual age of 65. On an economic basis, the company does not lose any more money, because the expectation is that the individual will live his life as if he were a 73 year old. However, when reserves need to be taken into account, there is a strain in that first year in the case where companies are not allowed to hold the modified reserves.

Table 9
Impact of NAIC Actuarial Guideline IX-C

	No Adjusted Reserve	Adjusted Reserve
Premium	\$961,250	\$961,250
Expense	(48,063)	(48,063)
Initial Reserve	(1,160,329)	(938,742)
Cash Available for Capital and Profit	(\$247,142)	(\$25,555)

Typically companies hold capital based on a percentage of reserves. Therefore, if they are allowed to hold reduced reserves for those policies that qualify, additional capital will be freed up and can be used throughout the organization. This will likely help the company to invest in areas it feels will help the broader organization.

Based on general guidance that tax and statutory reserves should be calculated using consistent assumptions unless otherwise stated, insurance companies that wish to report tax reserves using modified expectations of life may only do so if they also use statutory reserves using the same modification. That is, they cannot use modified age for statutory reserves while using actual age for tax reserves.

The impact on the GAAP financials of a company is closely related to the adequacy of the underwriting. Errors in underwriting could have two possible effects on the GAAP results. The company may determine that the mortality assumptions made do not reflect emerging experience, and make a change that will impact its financial statements. The second effect on financials that occurs from underwriting error is more subtle, and is the result of the reserves that are released over time being different from what is expected. This has a direct impact on the bottom line, as the release of reserves shows up on the income statement.

RISK MANAGEMENT PRACTICES

Because of low sales volume, we found that no companies had specific risk management practices in place to address risks unique to substandard annuities.

Monitoring

The key risk area insurers need to monitor is the accuracy of underwriting adjustments. By doing this they will be able to continually educate their underwriters and make adjustments to pricing to maintain profitability and meet other corporate objectives. All companies generally try to monitor their blocks and check the actual-to-expected mortality; however, with relatively low volumes of business the results are often deemed not credible. As the size of the block grows and ages, more data will become available to allow actuaries to closely examine the actual-to-expected deaths in the block of substandard annuities. Due to the long-term nature of these contracts, it is critical to catch any errors in the underwriting process as soon as possible, so that systematic errors are not continually propagated.

Underwriting Process and Procedures

Underwriting is the area that presents the most risk to the substandard annuity issuer. To manage this risk, companies need to take care when setting up and managing their underwriting processes. All underwriting decisions need to be based on sound medical evidence, obtained from reliable sources. Whether this includes the Medical Information Bureau (MIB), doctors' records, or subjecting applicants to physical exams is up to the company. Companies currently in the structured settlement market that enter the substandard annuity market will be able to leverage their underwriting processes and procedures, as those underwriters will already be focusing on the longevity risk of the applicant. There will need to be some additional training for those individuals experienced in underwriting structured settlements, as typically SPIA applicants are older and usually suffer from health conditions not resulting from serious accidents.

If companies are going to use their life insurance underwriting departments for substandard annuities, more work needs to be done to ensure appropriate underwriting. The underwriters will need to be trained to account for the risk of living too long, as opposed to the risk of dying early. In life insurance, the company will lose money if the policyholder dies early. In order for the insurance company to rate someone as a standard or preferred risk, the medical information gathered in the underwriting process must demonstrate that the individual is healthy. However, in the payout annuity market, the company will lose if the policyholder dies later. Therefore, to qualify for a substandard rating, the individual must provide proof that he or she is unhealthy. Because of this difference, underwriters need to be trained to look at medical conditions differently. The potential for an individual to improve his or her health and corresponding life expectancy is not something that the substandard annuity can account for. Once the contract is issued, the company does not have the ability to revise expectations. Because of this, an important distinction that needs to be made is whether the individual's condition is an acute mortality risk. An acute mortality risk may on its surface appear to be acceptable to an annuity writer, as there is a high likelihood of an earlier death. However, if the individual with an acute condition does survive past the period when the probability of death is high, it is possible he or she will live life as a standard risk would. Therefore, applying a rating based on the short-term outlook could negatively impact the company's long-term experience. It seems as though companies currently in the substandard annuity market are assuming that the impairments that applicants have will have consistent impacts on their mortality over time.

Many of the rules that companies implement for the underwriting process are an attempt to mitigate the risk of antiselection. One way to lower this risk is to not use individuals' lifestyle characteristics when determining ratings. If lifestyle characteristics were recognized, individuals would be able to present cases for why they should have higher mortality due to nonmedical conditions, such as being overweight. Then, after obtaining the policies, these individuals could take actions to reduce or eliminate the impact of the conditions on their mortality, such as dieting and exercising. The

individuals then will have standard mortality experience, but will be receiving annuity payouts based on substandard mortality. Therefore, companies should only offer substandard rates based on valid medical evidence, not lifestyle factors. However, one form of the smoker's annuity that is offered in the UK does allow annuitants who have smoked steadily in the past to continue to receive enhanced annuity rates even if they give up smoking after their annuities have begun. A similar product is offered by one company in the United States.

The reason that underwriting carries increased importance in the substandard annuity market is that the risk of changing health has a much more significant impact on substandard annuities than on standard SPIAs. For average individuals priced as standard annuities, the expectation is that they will live their lives as average healthy people do (based on the population of people who purchase annuities). More often than not, health changes will only decrease this expectancy, and therefore lead to less risk to the company. However, if an individual is rated substandard, health changes have the potential to improve the expectancy of life, and therefore be a much higher risk to the company. Because of this, it is to the individuals' advantage to make themselves appear less healthy than they actually are.

Product Design

Companies may also want to look into different policy features due to the increased uncertainty with substandard annuities. One example is limiting the payout amount on substandard policies to help lower the exposure to the risk of underwriting error. Companies can apply both minimum and maximum adjustments to the mortality of individuals. This will eliminate some of the borderline policies on the low end (those policies that are not impaired enough to warrant a rating), and limit some of the potential risk of individuals who are rated as severely impaired. There is greater risk when the difference between rated age and actual age is large. Finally, not allowing for individuals to surrender policies will eliminate the potential for mortality disintermediation, as annuitants will be forced to stick with their initial policies and not purchase new policies when their health deteriorates.

Asset-Liability Management

Due to the small size of the current substandard annuity business, companies have been managing the portfolio the same way as with traditional SPIAs. However, as the size of this block of substandard annuities grows, companies will want to start managing the block differently. Currently, there is no difference in the profit margin assumptions, duration of the invested assets, pricing yields, or any of the assumptions for substandard annuities. One example is the ALM strategy being used. Substandard annuities have shorter expected lifetimes, and therefore should be managed separately from the traditional block if they become material in size.

OUTLOOK FOR THE SUBSTANDARD ANNUITY MARKET

The substandard annuity market could grow for two reasons: 1) an increase in sales among insurers that sell substandard annuities; and 2) additional sales from new insurers that enter the market.

COMPANY PERSPECTIVE ON SALES POTENTIAL

Most companies currently offering substandard annuities believe the market should continue to develop over the next several years. Several companies point to an expanding number of retirees who will need lifetime income sources. Others mention the increasing use of mortality arbitrage / premium financing arrangements as a growth driver, though some expect these arrangements to be curtailed in the future.

As immediate annuities, the success of substandard annuities will also depend on the same conditions that impact all SPIAs, such as interest rates, demographics, and competition from other financial products. If the environment favors SPIA sales, then substandard annuity sales could also rise.

Among substandard annuity insurers, estimates of their overall SPIA annual growth range from flat to almost doubling within two years. Low interest rates were mentioned as a barrier to expansion in the short term.

Most companies believe that substandard annuity sales will increase proportionately with their nonsubstandard SPIA business; two companies feel that their substandard annuity sales growth will be slightly better than their overall SPIA growth, and one company believes substandard annuities will represent a decreasing portion of its SPIA sales.

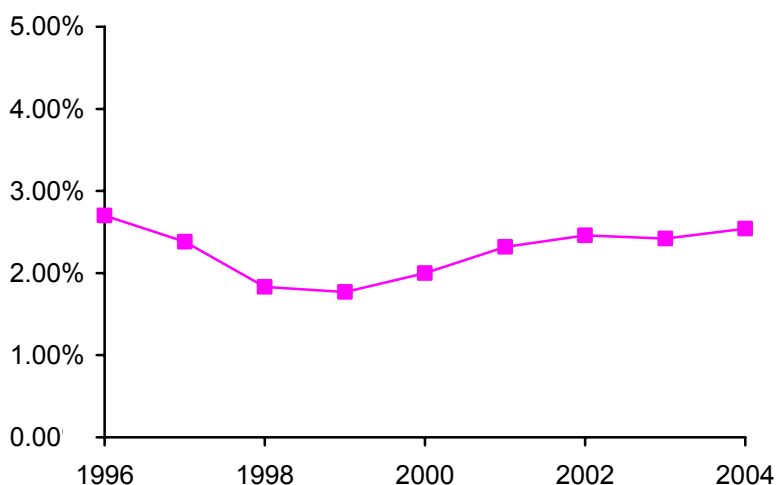
An earlier survey of insurers that issue SPIAs (including those that sell substandard annuities) found similar results.²² These companies were asked whether they believed impaired risk annuities would make up a greater proportion of SPIA sales over the next two years. While no companies felt that the share would increase “substantially,” 56 percent of companies believed the proportion would increase “modestly.” The remaining companies believe that the current substandard annuity market share will remain constant over the next two years. Notably, no responding company predicted a *decline* in the proportion of sales from impaired risk annuities.

²² “Present and Future Prospects for Impaired Risk Annuities,” *Research Briefing, No. 3*, LIMRA International, 2005.

SALES PROJECTIONS

Over the past 10 years, SPIA sales growth has closely reflected the overall growth of the individual annuity market. Immediate annuities have represented an almost constant share of all annuity sales (including deferred annuities and structured settlements) since the mid-1990s, varying between 1.77 and 2.70 percent of all sales (Figure 5).

Figure 5
SPIA Share of Individual Annuity Sales, 1996 through 2004



Source: LIMRA International

If SPIAs remain a constant or increasing percentage of all annuity sales, and if annuity sales grow over the next few years, then the SPIA market will expand also. Furthermore, if substandard annuities remain a constant or increasing percentage of this expanding SPIA market, then the substandard annuity market will increase.²³

According to sales forecasts published by LIMRA International, the United States individual annuity market is expected to grow at a 4.9 percent annualized rate from 2005 through 2009.²⁴ Using this forecast as the baseline, estimates for the growth of substandard annuities can be derived from historical market shares of SPIAs and substandard annuities within SPIAs, as well as assumptions about the components of the substandard annuity. For example, if premium financing arrangements

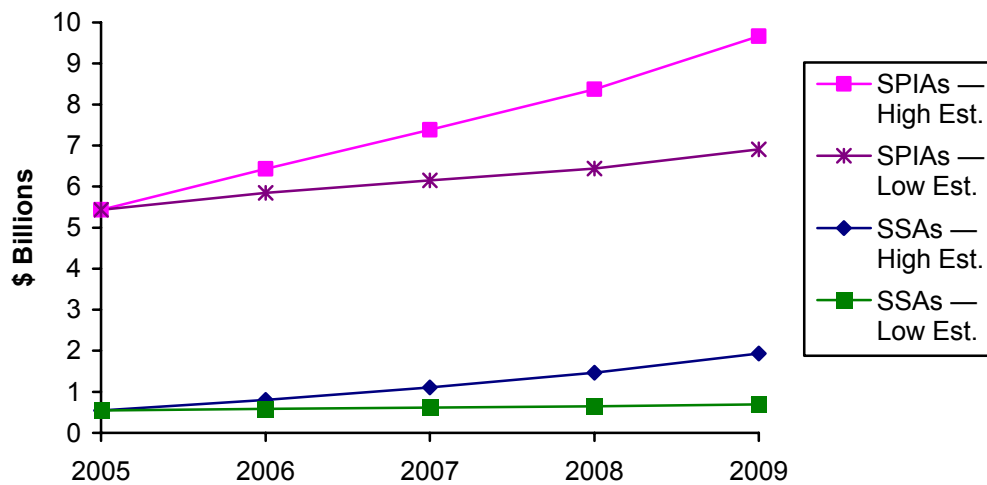
²³ One important qualification to this claim involves the source of future growth within the SPIA market. If banks were to drive SPIA sales increases, substandard annuities would likely decline as a percentage of sales. In all likelihood banks will not be active sellers of substandard annuities — at least for many years — because of the extra layer of complexity and underwriting issues associated with substandard annuities.

²⁴ *2004 Individual Annuity Market: Sales and Assets*, LIMRA International, 2005.

escalate, then the growth of substandard annuities may accelerate. On the other hand, if premium financing arrangements are assumed to decline, then sales growth would reflect demand for retirement income. In this scenario, sales growth may be meager.

Figure 6 displays projected sales based on high and low estimates of market share. For the “high estimates,” sales projections assume that a) SPIAs will represent a steadily increasing proportion of all annuity sales, from 2.5 percent in 2005 to 3.5 percent in 2009, and b) the share of SPIAs made up by substandard annuities will rise from 10 percent in 2005 to 20 percent by 2009. This sales pattern could result if premium financing arrangements continue to become more prevalent, more producers offer substandard annuities to their clients, and marketing campaigns successfully expand the reach of SPIAs to the burgeoning retiree population. There are some indications of a downturn in the premium financing market, which would decrease the likelihood of the high estimate. The “low estimates” assume that a) SPIAs will remain at 2.5 percent of all annuity sales, and b) substandard annuities will remain at 10 percent of all SPIA sales.

Figure 6
Projected Substandard Annuity and SPIA Sales, 2005 Through 2009



Note: Estimates based on analysis of substandard annuity sales trends among six insurers and LIMRA’s individual annuity sales forecasts.

By 2009, substandard annuities could approach \$2 billion, if the annuity sales forecasts and “high estimates” are accurate. In contrast, if substandard annuities’ share of SPIAs remains constant and SPIA sales grow proportionately with overall annuity sales, then annual substandard annuity sales will remain well below \$1 billion through 2009.

Substandard annuities may have appeal beyond the typical demographics associated with the SPIA market, i.e., people between the ages of 65 and 75. The fact that few people under age 65 *currently* purchase SPIAs does not necessarily mean that these people are not *potential* purchasers of substandard annuities. By definition, payouts are higher (per dollar of premium) for substandard annuities than for SPIAs. This difference could entice younger individuals who would otherwise not have considered annuities at their ages. With a great enough health impairment and high enough need for lifetime income, people in their early 60s or younger could be interested in substandard annuities.

If legislation reform occurs in the United States to require people to invest a portion of their retirement assets in annuities (e.g., in response to Social Security overhaul), then the high estimates above are possible. The SPIA and substandard annuity markets would most likely respond by developing actuarially fair annuities. This would most likely result in greater product differentiation and market segmentation. Similarly to the structured settlement market, some carriers may choose to specialize in certain impairments. Producers will come to know which companies offer the better rates and go to them for these cases. In addition, legislation has been proposed that would offer favorable tax treatment of lifetime annuity payments.²⁵ If this or similar proposals are adopted, the tax advantages could spur improved sales.

²⁵ “The Retirement Savings and Security Act of 2005” (S. 381).

PARTICIPATING COMPANIES

AIG American General

Allstate Financial

Aviva Life

Old Mutual Financial Network

Genworth Financial

Golden Rule Insurance

Jefferson-Pilot Financial

Mutual of Omaha

Presidential Life

APPENDIX A — A FINANCIAL MODEL FOR SUBSTANDARD ANNUITIES

We developed a financial model using a combination of information from interviews as well as other industry data. Although the assumptions are not representative of any single company involved in the study, they reflect the current state of the industry.

1. A population pool is created with people of different ages, with the same monthly income of \$2,044 per month.
2. A population of 1,000 individuals was randomly generated. Health status is randomly assigned to each person according to the table below. Gender is also randomly assigned to each person, with a target ratio of 50 percent male and 50 percent female.

Number of People	Mortality Multiplier
50	1.8
50	1.5
70	1.3
100	1.2
280	1.0
200	0.9
150	0.8
50	0.7
50	0.6

The resulting average actual age is 70.5. The resulting average biological age is 70.5 also.

3. All of the different combinations were examined using the following model assumptions.

Assumption		Description
Experience mortality	D/U	Annuity 2000 mortality table, with no improvement
Maintenance expense rates	D/V	\$50 annual charge per policy, assessed monthly against all policies in any status
Expense Inflation	D/I	2% annual inflation, applied to all maintenance expense rates each year after the first
Investment expenses	D/L	1 basis point of invested assets, assessed monthly at the beginning of each period
Valuation Mortality Table	D/U	Annuity 2000 mortality table, with no improvement
Valuation Interest Rate	D/L	5% all years

Assumption		Description
Tax Reserve Interest Rate	D/L	5% all years
Reserves	C	Calculated monthly as the present value of future benefits
Income Tax	D/L	35% all years
Commissions	D	4% of initial premium, assessed immediately at issue (with no additional premiums considered)
Acquisition expense rates	D/L	1% of initial premium, assessed immediately at issue
Proxy DAC Rate		1.75%
Premium Calculation		Initial reserve / (1 - expense load)
New Business Expense Load		5%
Required Surplus Amount		5% Reserves
Target Surplus Multiple		1
Underwriting Expense		\$100 at time of issue
<p>C Calculated, <i>i.e.</i>, the figure is calculated internally in the model.</p> <p>D Deterministic, <i>i.e.</i>, the assumption is set, or determined, externally by the modeler.</p> <p>I An index (see “V” previous)</p> <p>L Level, <i>i.e.</i>, the assumption is held level throughout the analysis period.</p> <p>P Projected, <i>i.e.</i>, the assumption is projected to vary in the future, generally in a manner set by the modeler.</p> <p>S Stochastic, <i>i.e.</i>, the assumption is set randomly (generally within constraints) internally by generation within the model.</p> <p>U Unprojected, <i>i.e.</i>, the assumption, even if conducive to projection, is either not projected or is projected to not change.</p> <p>V Variable, <i>i.e.</i>, the assumption is varied throughout the analysis period, generally inflated by an index derived within the model (as opposed to being input by the modeler). Note that deflation is possible, and is considered merely a subset of inflation.</p>		

APPENDIX B — ANNUITY PRICING

A lifetime payout annuity was priced using the following assumptions.

Assumption	Used
Mortality	Annuity 2000 table, no improvement
Interest Rate	5%
Expense Margin	5%
Premium	Actuarial present value/(1 – expense margin)
Annuity type	Immediate
Payment	Annual

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