



An Economic Analysis of Equity-Indexed Annuities

September 10, 2008

Submitted to the North American Securities Administrators Association (NASAA)

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Executive Summary

The Securities and Exchange Commission has proposed to clarify an exemption from the federal securities laws to exclude from the exemption equity-indexed annuities that expose investors to stock market risk.

Equity-indexed annuities are complex contracts that pay investors part of the capital appreciation in a stock index and provide illusory but superficially appealing benefits including minimum value guarantees.

Equity-indexed annuities' issuers obfuscate investment risks by repackaging what is actually a simple underlying investment in securities and in the process deny investors the protections federal securities laws provide other investors.

A direct consequence of the lack of SEC oversight is that investors in equity-indexed annuities cannot determine the true costs they incur when purchasing equity-indexed annuities relative to alternative investments such as stocks, bonds and mutual funds. Investors are also exposed to an inadequately regulated, highly incentivized and frequently unscrupulous sales force as a result of the lack of effective SEC oversight.

The SEC's Rule Proposal is an important step towards providing truthful, complete disclosure and protection from sales practice abuses to investors who are currently investing \$25 billion per year in unregistered securities.



I. Introduction

A. Rule Proposal

On June 25, 2008 the Securities and Exchange Commission issued a rule proposal that would clarify the annuity contract exemption from the federal securities laws to exclude equity-indexed annuity contracts whose payoffs are more likely than not to exceed the amounts guaranteed under the contract.¹ All existing equity-indexed annuities would meet this criterion and so the rule would require that they all be registered under the Federal securities laws. The rule would therefore provide investors who purchase equity-indexed annuities with the full protections provided to investors who purchase economically equivalent investments.

B. Equity-Indexed Annuities

Equity-indexed annuities are contracts offered by insurance companies that pay investors part of the capital appreciation in a stock index and guarantee a minimum return if the contract is held to maturity. Since their introduction in the U.S. in 1995, sales of equity-indexed annuities have grown dramatically. Although good data is not available, commentators have estimated that \$25 billion in equity-indexed annuities were sold in 2007.² Sales have increased because equity-indexed annuities limit downside risk, offer some participation in stock market gains and generate extraordinary commissions to salesmen and profits to issuers. Despite the growth in sales, merits of equity-indexed annuities have remained obscured by their complexity and abusive sales practices targeting the least sophisticated and most vulnerable investors have flourished.

¹ Securities and Exchange Commission *Indexed Annuities and Certain Other Insurance Contracts*, SEC Release Nos. 33-8933, 34-58022, File No. S7-14-08 ("SEC Rule Proposal")

² See <http://www.indexannuity.org>



C. Securities Litigation and Consulting Group, Inc.

Securities Litigation and Consulting Group, Inc. (“SLCG”) is a financial economics consulting firm based in the Virginia suburbs outside of Washington, DC founded in 2000. SLCG’s employees hold PhDs in finance, economics, mathematics and statistics. SLCG circulated a preliminary working paper which described the stylized features of equity-indexed annuities and explained how they can be modeled and evaluated in January 2006.

II. Rule Proposal

A. Clarification of Regulation

Annuity contracts which meaningfully transfer risks from investors to issuers are exempt from federal securities laws. The SEC rule proposal would clarify the definition of an annuity contract for determining this exemption to exclude from the exemption contracts issued by insurance companies which expose investors to significant investment risks. Existing equity-indexed annuities superficially appear to protect investors from these investment risks but, in fact, do not. The investment risks to which investors are exposed are virtually identical to the risks of investing in mutual funds and variable annuities.³

³ “Individuals who purchase indexed annuities are exposed to a significant investment risk – i.e., the volatility of the underlying securities index. ... Thus, these purchasers obtain indexed annuity contracts for many of the same reasons that individuals purchase mutual funds and variable annuities and open brokerage accounts.” SEC Rule Proposal, page 5.

“Individuals who purchase such indexed annuities assume many of the same risks and rewards that investors assume when investing their money in mutual funds, variable annuities, and other securities”. SEC Rule Proposal, page 6.

“By purchasing this type of indexed annuity, the purchaser assumes the risk of an uncertain and fluctuating financial instrument, in exchange for exposure to future, securities-linked returns. The value of such an indexed annuity reflects the benefits and risks inherent in the securities market, and the contract’s value depends upon the trajectory of that same market. Thus, the purchaser obtains an instrument that, by its very terms, depends on market volatility and risk.” SEC Rule Proposal, page 26.



Equity-indexed annuities are quite similar to equity-participation securities, which are traded on the American Stock Exchange under various brand names. Equity-participation securities guarantee that investors will receive the initial face value of the security plus part of the increase in the value of a stock or stock index. The payoffs to equity-participation securities can be determined using participation rates, caps or annual spreads just like equity-indexed annuities. Insurance companies add trivial insurance benefits, disadvantageous tax treatment and exorbitant costs to equity-participation securities, mix in complex, arbitrary return calculations and sell the resulting contracts as equity-indexed annuities. The repackaging of equity-participation securities as equity-indexed annuities and aggressive anti-regulatory position taken by issuers has heretofore exempted equity-indexed annuities from effective securities regulation.

B. Coverage Criterion

The rule proposal would apply to any annuity contract whose payoffs to investors vary significantly with stock market returns.⁴ Although the rule proposal is not definitive on the point in time at which the payoffs' sensitivity to stock market returns should be assessed, the end of the surrender period is reasonable as proper product design would not include surrender periods which were intended to extend beyond the expected term of an investment.⁵ In what follows, I assess the impact of the proposed rule's

⁴ "When the amounts payable by an insurer under an indexed annuity are more likely than not to exceed the amounts guaranteed under the contract, the majority of the investment risk for the fluctuating, equity-linked portion of the return is borne by the individual purchaser, not the insurer. The individual underwrites the effect of the underlying index's performance on his or her contract investment and assumes the majority of the investment risk for the equity-linked returns under the contract." SEC Rule Proposal, page 6.

⁵ Surrender periods designed into EIA products could extend beyond when investors are expected to receive payoffs from contracts but such a design should raise serious consumer and investor protection questions and is ignored in this paper.

coverage criterion if applied at the end of surrender periods. All existing equity-indexed annuities I am aware of would unambiguously be covered by the proposed rule.

C. Need for Regulation

Federal securities laws protect investors by requiring full and fair disclosure of all material facts by issuers and non-abusive sales practices by brokers and agents. The clarification proposed by the SEC is needed because issuers of existing equity-indexed annuities obfuscate the investment risks to which investors are exposed by repackaging what is actually a simple underlying investment with a layer of virtually worthless bells and whistles.⁶ This superficial repackaging exposes investors who purchase equity-indexed annuities to the same risks as investors who purchase stocks, bonds and mutual funds while denying them the full protections of federal laws afforded other investors.⁷

A direct consequence of the lack of SEC oversight is that investors in equity-indexed annuities cannot determine the true costs they incur when purchasing these investments and cannot effectively compare equity-indexed annuities to alternative investments such as stocks, bonds and mutual funds. Equity-indexed annuities' unregistered status also severely limits the recourse available to victims of sales practice abuses.

⁶ For example, consistent with issuers' underlying investment portfolios, academics model equity-indexed annuities as equivalent to portfolios of low risk bonds and call options on stock indexes. See Zvi Bodie and Dwight B. Crane, *The Design and Production of New Retirement Savings Products*, Harvard Business School Working Paper #98-070 January 28, 2008. Issuers obscure the simple economics of this investment by making it superficially extraordinarily complicated.

⁷ "The Federal interest in providing investors with disclosure, antifraud, and sales practice protections arises when individuals are offered indexed annuities that expose them to securities investment risk. Individuals who purchase such indexed annuities assume many of the same risks and rewards that investors assume when investing their money in mutual funds, variable annuities, and other securities. However, a fundamental difference between these securities and indexed annuities is that – with few exceptions – indexed annuities historically have not been registered as securities. As a result, most purchasers of indexed annuities have not received the benefits of federally mandated disclosure and sales practice protections." SEC Rule Proposal, page 6.



If federal securities regulation is necessary to protect investors who purchase stocks, bonds, mutual funds and variable annuities then such regulation is also necessary to protect investors who purchase equity-indexed annuities. The interpretive loophole through which equity-indexed annuities have heretofore evaded effective disclosure requirements and sales practice abuse prohibitions explains the growth in equity-indexed annuities which neither the target audience - nor the sales force - can adequately evaluate.

III. Equity-Indexed Annuities

Equity-indexed annuities' notional (as opposed to real, spendable) account values are determined by a set of features including stock market returns, term to maturity, crediting method, participation rate, caps, spreads, bonus credits, guaranteed premium base and minimum rates of return applied to the evolution of a stock index over the life of the investment. Payoffs before the end of quite lengthy surrender periods depend on the substantial surrender charges applied to interim accumulated account values. In addition to the characteristics that define payoffs, the contracts have features which include provisions for modest withdrawals without paying surrender charges, death payments, annuitization options and guaranteed minimum values.

A. Account Value or Accumulation Value: Company Scrip, Not Cash.

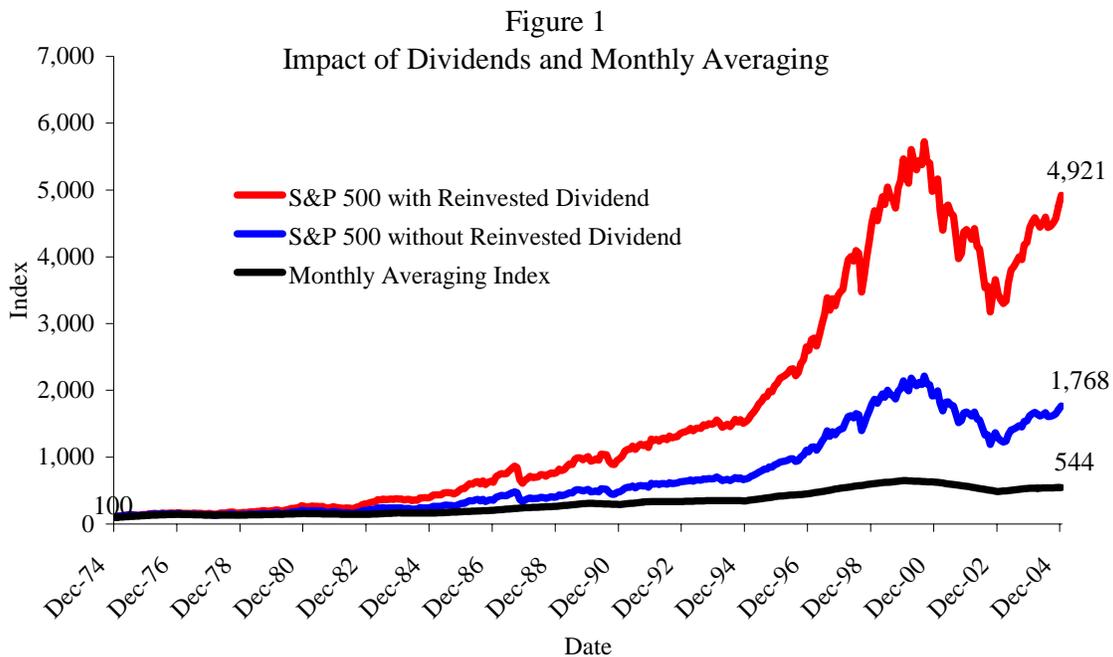
An equity-indexed annuity contract has a notional value – as opposed to a cash value – called an *account value* or *accumulation value*. This notional value changes once a year on the contract purchase date's anniversary as that contract year's returns are credited to the previous anniversary's scrip value. If the investor wants to realize value from an equity-indexed annuity they are likely to receive substantially less than this notional value because of the application of surrender charges described below.

The account or accumulation value is economically quite similar to scrip which has been used infamously in lieu of cash wages in some industries and can only be spent at company stores at inflated prices. In what follows, I will refer to equity-indexed annuities' account or accumulation value as *scrip* value to differentiate it from the cash value which could be realized by investors.

B. Stock Index

Equity-indexed annuities credit investors with a return based on the change in the level of a stock price index. Most equity-indexed annuities are linked to the level of the S&P 500 Index; a few equity-indexed annuities are linked to other indices. The indexes used are price appreciation indexes and so changes in the level of the indexes do not include the dividends investors would receive if they owned the underlying stocks or stock mutual funds. Dividends have historically accounted for 20% of the returns investors have earned in the S&P 500 stocks and so exclusion of dividends causes the changes in the S&P 500 Index level used in equity-linked annuities to significantly understate the returns earned by investors in the S&P 500.

Figure 1 illustrates the impact of excluding dividends from the calculation of stock index returns from 1975 to 2004. On December 31, 1974 the S&P 500 closed at 68.56. The top line shows the value of the S&P 500 over time with reinvested dividends. The second line from the top shows the level of the S&P 500 index excluding dividends. Excluding dividends reduces the return over the 30 year period by 64%.



C. Term to Maturity

One-tier equity-indexed annuities pay out after the end of lengthy surrender charge periods without additional penalties. That is, after the end of the surrender period the scrip value equals the cash surrender value. It is common to refer to the end of the surrender charge period as the maturity of the contract.⁸ The equity-indexed annuity payout is a function of the general level of price appreciation in the stock market at, or shortly before, the contract is wholly or partially liquidated. Other things equal, equity-indexed annuities with longer surrender periods provide less value to investors than annuities with shorter maturities.

Unlike one-tier annuities, the cash surrender value of a two-tier equity-indexed annuity never equals the scrip value. Two-tier annuities require that investors annuitize at disadvantageous rates of return over long periods of time to apply the scrip value. If investors don't annuitize a two-tier equity-indexed annuity they suffer significant losses even if they have held the investment for many years. For instance, the Allianz MasterDex 10 annuity is a two-tier equity-indexed annuity that offers a 10% premium credit that it is forfeited unless the contract is held for at least 5 years and is then annuitized for at least 10 years at what must then certainly be disadvantageous annuitization rates.

D. Crediting Method: How Changes in the Stock Index are Measured

There are two general formulas - called indexing methods - used to calculate changes in the index level. The *point-to-point method* measures the increase in the index level between two points in time without incorporating dividends, calculated at regular intervals, usually the contract's anniversary dates. This point-to-point increase in the index level is then reduced through one or more gimmicks and the resulting credit is applied to the previous contract anniversary's scrip value. The change in the scrip value from year to year cannot be negative. That is, the scrip value will stay constant rather

⁸ Maturity is sometimes a defined term in the contracts specifying a date in the future well beyond when any investor will still be alive.

than decline if the credit calculated according to the contract's formula is negative. This is sometimes described as a *reset* or *ratchet* feature. Some point-to-point indexed annuities have a look-back feature, rather than an annual ratchet, whereupon if the index level is lower at the end of the contract than it was on some earlier reset date, the crediting feature will record an increase that is greater than under the simple point-to-point method, everything else held constant.

The *averaging method* calculates the difference in the index level from a starting date – either the contract purchase date or a subsequent anniversary – to the daily or month-end average value over some subsequent period.⁹ In its most common form, the averaging method calculates the difference between the index level at the beginning of a contract year and the average monthly anniversary date closing levels during the contract year. As with the point-to-point method, the percentage difference in the month-end average level during the contract year from the level at the beginning of the year is reduced by one or more gimmicks and the resulting credit, if positive, is applied to the prior anniversary's scrip value.

Yet more complicated monthly averaging equity-index annuities include a look-back feature which yields the highest average month-end index level over sub-periods starting from the initial investment. For example, Sun Life's Keyport MultiPoint annuity is a monthly averaging equity-indexed annuity with look back to high water mark. It uses the highest average monthly index level from the purchased date to each anniversary to calculate index changes.

The Keyport annuity's value at maturity can be written as:

⁹ Some equity-indexed annuities average daily index values instead of monthly index values. Our discussion and examples focus on the monthly averaging method. Daily averaging makes evaluation computationally only slightly more difficult than for monthly averaging and doesn't change any qualitative conclusion.

$$\text{Eq. 1) } V_T = V_o \times \max \left[1 + \alpha \left(\frac{\max \left(I_0, \frac{\sum_{n=1}^{12} I_n}{12}, \frac{\sum_{n=1}^{2 \times 12} I_n}{12}, \frac{\sum_{n=1}^{3 \times 12} I_n}{12}, \dots, \frac{\sum_{n=1}^{T \times 12} I_n}{12} \right) - I_0}{I_0} \right), \beta(1 + \gamma)^T \right]$$

Where,

V_T = value of annuity at maturity,

V_o = premium paid at initial purchase,

α = participation rate,

$AI_t = \frac{\sum_{n=1}^{t \times 12} I_n}{12}$, is the arithmetic mean of monthly index level from the start of the term to the

t^{th} anniversary.

I_0, I_n = index level at purchase date and at n^{th} month, respectively,

β = fraction of initial premium earning guaranteed return,

γ = guaranteed return, and

T = initial term to maturity in years.

A Sun Life Keyport MultiPoint contract was sold to an elderly widow on December 12, 2003 for \$50,126 after she had been convinced by a salesman to liquidate substantially all of her meager liquid assets which had previously been invested in mutual funds. This contract's crediting formula is virtually impenetrable and could not be effectively evaluated by the customer or the salesman. Without effective annual expense ratio disclosure, the only way to determine what the annual cost of the Sun Life Keyport MultiPoint contract – or any other equity-indexed annuity – is to value the contract. The level of sophistication required to value the annuity described by Eq. 1 is staggering. As we will see below, this complexity is a façade laid over the top of a simple investment for which a simple, informative, investor-friendly annual expense disclosure could be made.

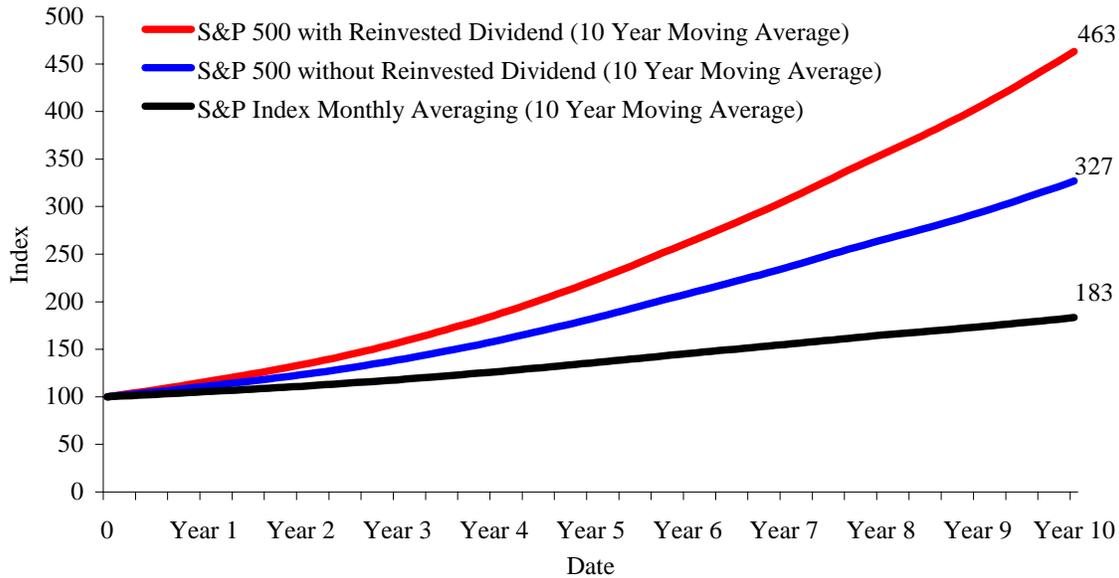
Advocates for equity-indexed annuities claim that the monthly average return method makes the resulting calculated index level changes less volatile and that this reduced volatility allows the industry to offer investors a higher participation rate on



annuities which use monthly averaging. Such statements are misleading since the volatility relevant to the cost of the guaranteed minimum return is the volatility of the underlying stock index. Instead, monthly averaging systematically understates the increase in the level of the index compared to point-to-point indexing. The expected index change with monthly averaging will be roughly half the expected change calculated by the traditional point-to-point method. Thus, with the monthly averaging method insurance companies can claim to pay 100% participation of the calculated index level change while only paying 50% of the actual change in the index level. The lowest line in Figure 1 above shows the value of the S&P 500 Index calculated by applying the monthly averaging with annual reset method. Monthly averaging further reduced the change in the price level of the index by 70% over 30 years.

The impact of monthly averaging is not a phenomenon of the time period covered. I constructed 241 10-year periods by rolling 10 years of data forward one month at a time from 1975 to 2004. The first months' returns, second months' returns and so on were then averaged across the 241 periods. The impact of dividends and monthly averaging on these average returns is illustrated in Figure 2. Excluding dividends reduces the average return over 10-year periods by 29%. Monthly averaging reduces the change in the level of the index by a further 44%. Unsophisticated investors might believe that they will get 100% of the increase from 100 to 463 when in fact they receive only 23% of this increase.

Figure 2
Impact of Dividends and Monthly Averaging (10 Year Moving Average)



E. Participation Rate: The Fraction of the Index Change Credited

A fraction, called the participation rate, of the change in the stock index calculated according to one of the methods described above is used in determining the additional return, if any, over and above the guaranteed minimum return an investor will receive. Participation rates vary significantly, and are easy but misleading to compare; a higher participation rate may not mean higher payouts to investors. Other things held constant, the higher the participation rate an equity-indexed annuity pays, the more valuable it is. However with equity-indexed annuities all else is seldom held constant; a 100% participation rate in a monthly averaging equity-indexed annuity is comparable to a 50% participation rate in a point-to-point equity-indexed annuity.

F. Spreads or Index Margins and Caps

The gross credit calculated by multiplying the index change by the participation rate is then sometimes further reduced by an amount called a spread or an index margin that can be as great as 3% or 4%.



The index-based additional return credited to an investor may be further limited by a monthly, annual or lifetime cap. For example, the increase in a contract's index value under the point-to-point method with annual resets might be capped at 8% meaning that the contract's index value will increase by only 8% in years when the index level increases by more than 20% or 30%. The effect of caps is dramatic because the average long run return to stocks is heavily influenced by years with unusually high returns. For example, the annualized price appreciation in the S&P 500 from 1975 to 2004 was 10.0%. If the yearly increase is capped at 14%, the resulting series has an annualized appreciation of only 5.5%. The index-based returns credited to an investor's contract are dramatically reduced as a result of the application of spreads and caps. The impact of caps and spreads is not readily apparent and two contracts linked to the same index, with the same indexing method and the same participation rate can have significantly different net returns.

G. Bonus Credits

Bonus premium credits are offered on some equity-indexed annuities. The bonuses are sold as a free "kicker", available to offset surrender charges on existing variable annuities and equity-indexed annuities or contingent deferred sales charges on mutual funds. These credits are superficially appealing but are illusory. Other features of the bonus annuities negate the premium credits as the premium credits are fully offset by higher surrender charges, longer surrender periods and larger pricing spreads. For example, Allianz has offered both the PremierDex and the PremierDex 5 distinguished primarily by a 5% premium bonus. The PremierDex 5 has a 15% surrender charge instead of a 10% surrender charge and its surrender period lasts 10 years instead of 7 years.

H. Surrender Charge Schedules

Equity-indexed annuities have surrender charges which usually decline over a period of years. The average surrender period is 10 years but some annuities, such as the Bonus Gold annuity issued by American Equity have surrender charges which last for 17

years. The surrender charges are frequently 10% or 12% but can be as high as 25%. The Bonus Gold's surrender charge in the first year is 20%; even after 10 years the Bonus Gold's surrender charge remains 12.5%.

I. Market Value Adjustments (MVA) or Interest Adjustment (IA)

In addition to the surrender charges many equity-indexed annuity charge investors a disguised surrender charge in the form of the Market Value Adjustment or Interest Adjustment. Equation 2) is an example of a typical MVA

$$\text{Eq. 2) Market Value Adjustment} = \left[\frac{(1 + i_0 - .005)}{(1 + i_i)} \right]^T$$

where

i_0 is the current interest rate on the fixed option when the annuity is purchased,
 i_1 is the current interest rate on the fixed option when the annuity is surrendered,
 T is the remaining whole and partial years remaining to end of surrender period.

The equity-indexed annuity's scrip value is multiplied by the Market Value Adjustment factor before the surrender charge is applied to determine the amount an investor receives if they surrender an annuity. Table 1 illustrates the impact of various changes in interest rates after 1 year of the Interest Adjustment on an annuity with 10-year surrender period and an initial interest rate of 4%.

Table 1
Market Value or Interest Adjustment Factors
Impose Additional Surrender Charges

	Change In Interest Rates						
	-1.5%	-1.0%	-0.5%	0.0%	+0.5%	+1.0%	+1.5%
Interest Adjustment	9.1%	4.5%	0.0%	-4.2%	-8.3%	-12.1%	-15.8%
Bond Price Change	12.0%	7.8%	3.8%	0.0%	-3.7%	-7.2%	-10.5%
Additional Surrender Charge	-2.9%	-3.4%	-3.8%	-4.2%	-4.6%	-5.0%	-5.3%



The Market Value Adjustment causes the cash value of an equity-indexed annuity to fluctuate like the price of a bond but with a significant bias. If interest rates are unchanged and the contract is surrendered after one year, the investor will pay a 4.2% penalty in addition to the explicit surrender charge as a result of the Market Value Adjustment. In contrast, the value of a 4.0% coupon bond issued at par one year earlier with nine years remaining would be unchanged if the yield remained at 4%. The 4.2% penalty is the additional surrender charge if interest rates are unchanged.

The Market Value Adjustment is applied to the entire scrip value, not just the portion allocated to a fixed interest option. The Market Value Adjustment introduces substantial interest rate risk into equity-indexed annuities and adds a hidden surrender charge that starts out at over 4% and declines along with the disclosed surrender charge over the surrender period.

J. Guaranteed Cash Surrender Value

Equity-indexed annuities guarantee that investors will receive a minimum rate of return – typically from 1% to 3% on between 75% and 100% of the initial investment. Due to steep upfront loads and surrender charges, the guaranteed cash value is substantially less than the original investment for many years after a purchase. The guaranteed rate of return is typically much less than the risk free rate of return offered on US Treasury securities with the same maturity as the annuity. On some contracts, no interest is credited unless the annuity is held to maturity.

This guarantee can be easily misunderstood to be the equivalent in value to that of the US Treasury but it is in fact only as good as the credit quality of the insurance company issuing the annuity. While Standard and Poors rates Jackson National Life and Jefferson Pilot AAA, it rates RBC Insurance A- and American Equity Investment Life only BBB+. State guarantee funds provide some protection but they are severely limited and the credit quality of state guarantee funds is not as good as that of the US Treasury.



IV. Other Features

A. Penalty free withdrawal

Issuers of equity-indexed annuities and their sales force touts claimed penalty-free annual withdrawals - whether pursuant to the 10% annual allowance or to a nursing home or terminal illness-rider. It is false and misleading to refer to these withdrawal options as penalty-free since investors typically forgo index-related returns for the partial year already passed whenever they die or surrender a portion of their account value. Since this partial return cannot be negative, losing this partial year return is clearly a penalty. Also, investors who purchase registered securities have substantially higher risk-adjusted expected returns and greater liquidity. It is false and misleading for issuers to tout their withdrawal features as valuable benefits without disclosing that these features are only beneficial to the extent they allow investors to avoid the draconian illiquidity and ongoing, annual expropriation of investors' wealth.

B. Death benefit

Most equity-indexed annuity contracts waive surrender charges upon death. This "benefit" cannot be added to the value of future maturity payoffs without also deducting the expected harm caused by steep, long-lasting surrender charges. The death payment provision accrues only to investors' beneficiaries and does not mitigate the illiquidity burden on investors.

The death payment provisions can be valued by projecting the expected excess of the equity-indexed annuity's scrip value over the values of alternative portfolios of stocks and bonds, weighting these expected excesses, if any, by the probability of death in that year and discounting the result to the present. I have performed this analysis and determined that the value of the death benefit is less than 10 basis points per year – a small amount in comparison to the 275 to 300 basis points implied annual cost of equity-indexed annuities.

C. Annuitization Options

Equity-indexed annuities typically provide contractual rights to annuitize but often only at annuitization rates as low as 1%. This right would be valuable if the future interest rates were reasonably likely to be less than the rates specified for annuitization. The Federal Reserve Board reports the lowest observed daily 5-year and 10-year constant maturity Treasury yield since the start of this data in 1962 are 2.08% and 3.13%. Thus, the probability that the annuitization option provided by equity-indexed annuities with a 1% annuitization guarantee would be in the money is essentially zero¹⁰

The annuitization provisions of some equity-indexed annuities are even less valuable. Some specify annuitization interest rates ranging from 1% to 3% but investors have no right to annuitize until the end of a 14-year surrender period or, in some cases, age 115. Seniors who purchase such annuities thus have no right to receive the guaranteed annuitization rates until a date that approximates or exceeds their life expectancy. Those who do survive long enough to obtain the specified rate will receive the benefit for only a short time and - as illustrated in the Federal Reserve Board data - any rare benefit realized is likely to be small.

V. Underlying Economics

A. American Equity's Form 10-K Tells a Story¹¹

American Equity's status as a publicly traded company and its focus entirely on the business of issuing equity-indexed annuities allows us a revealing glimpse into the underlying economics of the equity-indexed annuities industry. American Equity tells the Securities and Exchange Commission, stock market investors and Wall Street analysts that issuing equity-indexed annuities is a simple, low-risk business.

¹⁰ Even if prevailing interest rates were to approach such unprecedented levels, the increased value of the bond-related component of a diversified alternative investment would more than offset the value of the specified annuitization rate.

¹¹ The following section is based on American Equity's Form 10-K filings with the Securities and Exchange Commission and its transcribed conference calls with analysts.



American Equity pays big commissions to motivate aggressive sales practices. The assets gathered – largely from unsophisticated senior citizens – are invested in bond portfolios and a small amount is set aside and invested in stock index options. Whatever happens to the bond portfolio and whatever happens in the stock market American Equity is protected because the full risks on the stock and bond market are passed on to the unsophisticated investors who buy equity-indexed annuities. Even if American Equity gets the risk transfer wrong they are only going to be slightly wrong and only for a short time. With investors locked into long surrender periods, American Equity can use its virtually unfettered discretion to retroactively impose whatever small interest rate or stock market-based loss it might otherwise have borne onto investors.

American Equity refers to the fraction of investor's purchase payments it will take for itself to recoup the commissions it has paid, cover its other costs and achieve its desired profits as its "investment spread." American Equity subtracts this investment spread from the expected return on its bond portfolio to determine the returns it will credit to investors. American Equity refers to the returns it intends to credit to investor as the "cost of money." For example, if the expected return on the bond portfolio is 6.5% and American Equity decides to take a 3% investment spread to recoup commissions, cover its costs and generate profits, it will credited 3.5% on average to investors.

If an investor chooses the fixed option within an equity-indexed annuity, American Equity credits the investor the 3.5% cost-of-money in our previous example as an interest rate fixed for one year. American Equity resets the fixed rate offered from time to time in response to changes in the expected yield on the bond portfolio so that, whatever the yield on the bond portfolio, American Equity will get the pricing spread 3.0% in our example to cover its costs and make a virtually riskless profit.

If an investor chooses an indexed option, American Equity will credit the investor with the payoffs from options that can be purchased with the 3.5% cost-of-money which would otherwise have been credited as a fixed interest rate. That is, American Equity determines how much it is willing to spend on options and then adjusts the participation



rates, caps and asset fees to align the credits it might have to give investors under the index options with the payoffs from the options which can be purchased with the interest that it would otherwise credit to the fixed account. On average and over time, the credits to investors who chose the index option will be less than the cost of the options and therefore less than the fixed interest credited to investors who choose the fixed rate option.

The expected return on portfolios of corporate bonds varies a little but the bond portfolio American Equity invests customer premium dollars in had an average net annual investment return of 6.34% from the beginning of 2002 through the end of 2007. American Equity has passed this 6.34% per year return on to purchasers of its equity-indexed annuities after deducting an average annual pricing spread of 2.81% to cover the commissions it pays agents and cover its other costs and to generate profits. See Table 2.

Table 2
American Equity Charges Expense Ratios
Between 2.6% and 2.9% on Equity-Indexed Annuities

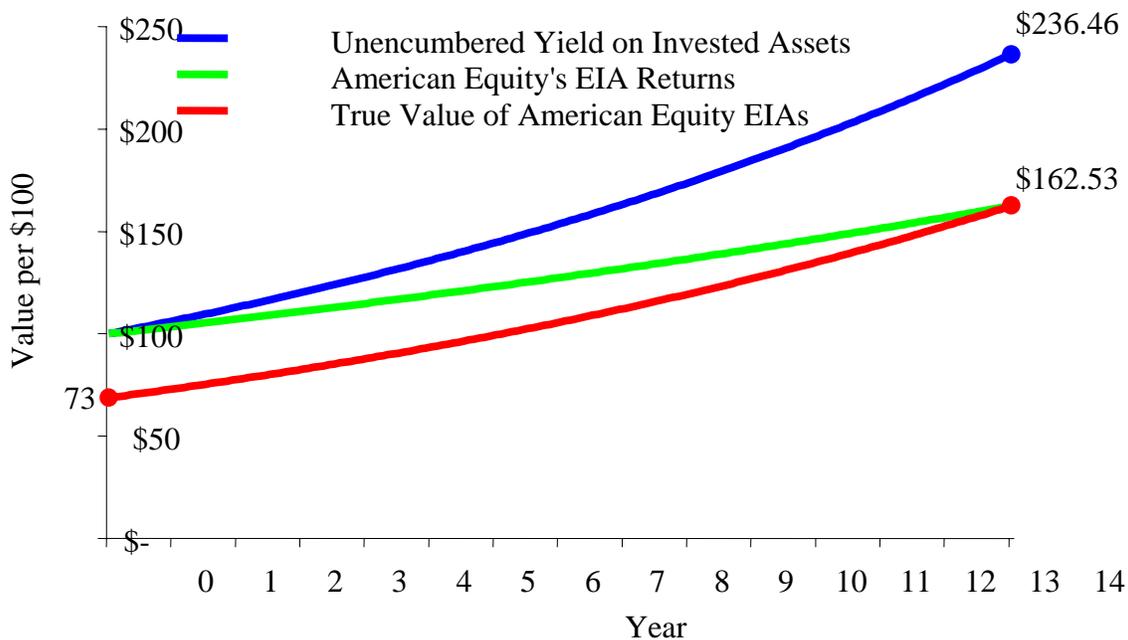
	2002	2003	2004	2005	2006	2007	Average '02-'07
Yield on Invested Assets (Gross Returns)	6.91%	6.43%	6.28%	6.18%	6.14%	6.11%	6.34%
Investment Spread (Expense Ratio)	<u>2.72%</u>	<u>2.97%</u>	<u>2.91%</u>	<u>2.80%</u>	<u>2.86%</u>	<u>2.60%</u>	<u>2.81%</u>
Cost of Money (Net Returns)	4.19%	3.46%	3.37%	3.38%	3.28%	3.51%	3.53%

Thus investors in American Equity's equity-indexed annuities over time are certain to receive the return on a bond portfolio less a pricing spread of 2.6% to 3.0%. American Equity provides this information to sophisticated Wall Street analysts but refuses to provide this simple, revealing truth to unsophisticated investors.

Figure 3 illustrates the impact of American Equity's costly equity-indexed annuities. \$100 will grow to \$236.46 in 14 years at the 6.34% average yield to the

portfolio of bonds American Equity invests the money it receives from purchasers of equity-indexed annuities. After American Equity deducts its 2.81% annual expense ratio, the same \$100 will only grow to \$162.53 in 14 years. It only takes \$68.73 – not \$100 – to grow to \$162.53 at the yields on the investments American Equity buys with its customers’ money. Thus, American Equity only needs to invest \$68.73 on average for each \$100 a customer gives American Equity. This allows American Equity to pay commissions as high as 16%, incur overhead and still make a substantial profit.

Figure 3
American Equity’s Form 10-Ks
Implies Its EIAs Worth Less Than \$0.70 Per \$1.



American Equity’s investment spreads are not compensation for bearing interest rate risk, credit risk or stock market risk. American Equity is able to pass on virtually all such risks to investors since - as it tells Wall Street – it can alter the fixed rate and the index credit parameters which determine its cost of money (i.e., returns to equity-indexed annuities investors) over time to efficiently manage its pricing spread (i.e., shift all investment risk to its customers). The interest rate risks and credit risks in the bond



portfolio are borne by purchasers of American Equity’s equity-indexed annuities whether they choose the fixed rate option or the indexed option. Stock market risk is borne by purchasers who choose indexed options since the stock market risk in American Equity’s promised payments is funded by the options purchased with the returns investors would otherwise earn if they had chosen the fixed account option.

American Equity “investment spreads” are annual expense ratios as that term is used in the investment management industry. Just like the annual expense ratios in a mutual fund levied by fund companies, the investment spread is a charge levied by American Equity to pay for commissions, overhead and profit.

Fundamentally, on a risk-adjusted basis, American Equity over the past six years has been investing the proceeds from the sales of its equity-indexed annuities into a bond portfolio and then deducting a 2.81% annual expense ratio before passing the returns on to investors. This process is not meaningfully different from what mutual fund companies do with the proceeds from the sale of mutual fund units except that American Equity and the other equity-indexed annuities issuers deduct ten times as much from the gross returns of the investment portfolio before passing the returns on to retail investors. Table 3 summarizes the disclosures American Equity makes to Wall Street in its Form 10-K about what it charges retail investors but which it will not make to the unsophisticated investors its highly-incentivized sales force targets.

Table 3
American Equity Average Expense Ratio is 2.81%
 Average '02-'07

Yield on Invested Assets (Gross Returns)	6.34%
Investment Spread (Expense Ratio)	<u>2.81%</u>
Cost of Money (Net Returns)	3.53%

Broad bond market portfolios that provide investors with the same gross returns as American Equity earns on its bond portfolio are widely available to investors. These



funds are highly liquid, completely transparent and provide investors the same downside protection at less than 1/10th of the cost of American Equity's equity-indexed annuities. For instance, Vanguard's Total Bond Market Fund has gross returns which are similar to American Equity's bond portfolio, but passes its returns to investors with only about 0.20% in annual charges rather than the 2.81% American Equity charges investors.¹²

B. The net effect of equity-indexed annuities' gimmicks is to provide returns below those of Treasury securities while exposing investors to stock market risk

The complex crediting methods, participation rates, caps, and spreads presented to potential purchasers mask simple underlying economics. The spurious nature of equity-indexed annuities' complex crediting methods can be illustrated with the Bonus Select equity-indexed annuity issued by American Investors Life.

The Bonus Select has at least four superficially different crediting methods. The 1-year Point-to-Point ("1YP2P") method credits investors' account values with the percentage increase in the S&P 500 index on each contract anniversary subject to a 6.5% annual cap. The 2-year Point-to-Point ("2YP2P") method credits investors' account values with the percentage increase in the S&P 500 index at every second contract anniversary subject to a 13.0% bi-annual cap on the two-year credit. The 1-year Monthly Cap crediting method adds up the 12 monthly changes in the S&P 500 index during a contract year, subject to a 2.35% monthly cap. The 1-year Average S&P Index Up Strategy credits a fraction of the percentage difference in the average of the 12 monthly anniversary S&P 500 index levels and the index level at the start of the year less an index margin or spread.

I summarize the results of these four superficially quite different crediting methods in Table 4. The four methods each reduce the 12.1% average stock market returns to within a very narrow range, i.e. from 4.6% to 4.9%.

¹² See for example, Vanguard's 2003 prospectus for its Total Bond Market Fund at www.sec.gov/Archives/edgar/data/794105/000093247104000512/bondindex485b.txt.



Table 4
Bonus Select 1
Annualized Returns from 1990 to the Present

Crediting Method	Average Annual Return	Accumulation of \$100 for 10 Years
Simple Securities		
S&P 500 with dividends	12.1%	\$313.37
S&P 500 without dividends	9.8%	\$254.70
10-Year Treasury Bonds	5.7%	\$174.08
American Investors Life's Bonus Gold		
One Year, Point to Point	4.9%	\$161.34
Two Year, Point to Point	4.9%	\$161.34
Monthly Cap	4.7%	\$158.29
S&P Index UP (monthly averaging)	4.6%	\$156.79

\$100 invested for 10 years at the average return on the S&P 500 since 1990 would grow to \$313.37. Even excluding dividends, \$100 invested in the S&P 500 for 10 years would grow to \$254.70. In fact, despite the fact that purchasers of American Investors Life's equity-indexed annuities are exposed to substantial market risk, the likely returns are less than what would be earned on a portfolio of truly riskless Treasury securities. Since January 1, 1990 the average yield on 10-year treasury securities was 5.7% and so on average during this same period \$100 invested in truly risk-free US treasury securities would have grown to \$174.08. In contrast, the illiquid, complex, opaque Bonus Select would have grown to between \$156.79 and \$161.34 depending on which of the superficially different but in reality virtual identical crediting methods were chosen. Thus the equity-indexed annuities produce lower returns than US Treasury securities despite being illiquid and exposing investors to stock and bond market risk.

This is a recurring theme in equity-indexed annuities. There is an enormous amount of complexity designed into the product but ultimately the complexity is a smoke screen designed and managed to provide investors with substantially the same miniscule



returns regardless of which index option is chosen. The resulting investor returns equal the returns on a bond portfolio less a 2.5% - 3.0% annual expense ratio.

C. Issuers' Discretion to Change Contract Parameters Significantly Further Reduces Their Annuities' Value

Issuers retain discretion to lower participation rates, caps and credited interest rates and to increase index margins in such a way as to significantly reduce the value of contracts ex post, limited only by relatively insubstantial contractual guarantees. This discretion has significant value to the issuers because it gives them the flexibility to set initial parameters without concern for long run profitability while guaranteeing that they will earn its desired profits in the aggregate. The issuers' extraordinary discretion imposes significant uncertainty and costs on investors.

The issuers' ability to change parameters is similar to - but much more extreme than - the ability an issuer of callable bonds has to reset the interest rate it pays to investors. If an issuer issued an 8% coupon bond when the current yield on its 10-year debt was 6%, the bond would sell for approximately \$115. If the issuer could, at its discretion, redeem or call the 8% coupon bond after 1 year and thereafter pay 6% on newly issued debt, the 8% coupon bond would only be worth about \$102. If investors had purchased the bond for \$115 they would stand to lose more than 10% of their investment value upon exercise of that discretion to call the 8% bond. If the issuer could reduce the coupon rate on the 8% bond described above to 3% after the first year without having to redeem the bond for \$100, the issuer could reduce the value of the bond investors paid \$115 for at issuance to only \$83. Issuers are able to accomplish exactly this sort of expropriation as a result of its discretion to alter contract parameters and the profits received.

As these examples illustrate, issuers of equity-indexed annuities have the ability to dramatically expropriate an investor's wealth after the investor is committed to a long-term, high-cost investment. I am not aware of any other product sold with this extraordinary feature for the obvious reason that no one would buy such a product except



at a substantial discount which adequately reflected the risk of future discretionary adjustments undermining the value of the asset.

Even these examples don't capture the cost to investors of issuer's virtually unfettered discretion to change the parameters determining the value of the investor's asset. An investor in a callable \$100 face value bond will typically receive more than \$100 for a called bond. Unlike investors in callable bonds, investors in equity-indexed annuities cannot liquidate their annuities for face value or more in response to a change in the parameters which would substantially reduce the value of the annuity. Instead, investors must pay significant surrender charges to get out of poor investments made worse by issuers' extraordinary discretion.

The cost to investors of the issuers' ability to alter contract parameters is directly related to the difference between: (1) the value of contracts when issued if issuers had no such discretion; and (2) the value issuers will pay investors in order to achieve their profit goals. Thus, the more facially attractive an equity-indexed annuity appears at issuance in relation to market conditions or other investments without the discretionary adjustment options, the more costly is an issuers' ability to alter contract parameters thereby reducing that apparent value.¹³

VI. Valuations and Comparisons

Equity-indexed annuities can be valued using standard, scientific methodologies. Issuers have sophisticated internal models to control the liabilities they incur to investors to ensure the issuers a virtually risk free profit. These issuers know precisely the effective annual cost to investors of their equity-indexed annuities offerings. American Equity is the only issuer I am aware of that comes close to disclosing the annual costs but does so only in conference calls with Wall Street analysts and buried in the fine print of its Form 10-K and Form 10-Q filings with the SEC.

¹³ This is directly analogous to the cost of the embedded call option in a callable bond. The greater the difference between the callable bond's coupon rate and the market yield on similar debt, the more costly the embedded option.



American Equity’s SEC filings show that it sets the parameters used to determine investor’s returns to achieve an investment spread (“investment spread” to American Equity, “expense ratio” to investors) of approximately 2.8% per year. Assuming American Equity’s investments are efficient, a 2.80% spread per year over a 7-year term would imply a value at issuance of \$0.82 per dollar paid by investors (irrespective of the other excessive internal costs), over a 10-year term would imply a value at issuance of \$0.75 per dollar paid by investors and over a 14-year term would imply a value of \$0.67 per dollar paid by investors.¹⁴

A balanced assessment of the costs and benefits of any equity-indexed annuity requires a comparison of the annuity’s likely returns on alternative investments under reasonable assumptions. Consider, as an example of such a comparison, an S&P 500 index annuity with point-to-point option with an index margin of 4% for the first year, a premium bonus of 11%, a minimum guaranteed interest of 2%, and a surrender period of 14 years purchased on September 29, 2004. I created a comparison of this annuity to a portfolio of Treasury bonds and a stock mutual fund. This would be a typical comparison a financial expert giving un-conflicted, objective investment advice would have created. The comparison portfolio consists of \$7,000 (70% of the \$10,000 assumed investment) invested in 14-year, zero-coupon Treasury bonds maturing on September 29, 2018 and \$3,000 invested in a low cost S&P 500 Index fund.

The S&P 500 Index closed on September 29, 2004 at 1,114.80. On September 29, 2018 the \$10,000 investment in the annuity will return the greater of \$13,195 (i.e. 100% of \$10,000 accumulated at 2% interest rate for 14 years) or an Accumulation Value calculated using the annual point-to-point method. The Accumulation Value depends not

¹⁴ To accurately value any individual equity-indexed annuity at any point in time, one would need to apply an appropriate discount for the issuers’ discretion, incentives and demonstrated behavior. Any such discount should reflect the valuation implied by issuers’ managed average gross margins. Given American Equity’s discretion, incentives and demonstrated behavior the true value of its products is undoubtedly considerably less than these values.



only on the level of the S&P 500 on September 29, 2018 but also on the path of annual index levels on the way to September 29, 2018. Our simulation results below take this path dependency into account.

On September 29, 2004, \$7,000 would have purchased 14-year, zero-coupon Treasury bonds with a face value of approximately \$13,326. The \$7,000 Treasuries investment will therefore be worth approximately \$13,326 on September 29, 2018 regardless of the level of the S&P500.¹⁵ The remaining \$3,000, from the \$10,000 total initial investment, invested in the S&P 500 Index mutual fund will be worth more or less than \$3,000 depending on the total return on the fund. I assume that the expected total annual return on the S&P 500 Index of companies is 12.5%. I assume that the stocks in the S&P 500 index have an average dividend yield of 2.5% and the fund has an annual expense ratio of 0.25%.

I performed a Monte Carlo simulation to generate likely future values of the annuity and of the Treasury bonds and stock mutual fund based on reasonable assumptions. Except in extremely rare cases, the annuity pays investors much less than a simple portfolio of risk-free Treasury bonds and large-cap stocks. In fact, 99.8% of the time the investor would be better off with the Treasury securities and stocks than with the equity-indexed annuity if we assume the 4% monthly cap during the first year was not increased during the rest of the term. That is, investors who were sold the annuity would be worse off 99.8% of the time, even if they held the annuity for 14 years and it performed exactly as designed.

Moreover the benefit from having bought the annuity in the extremely unlikely event that the market suffers catastrophic losses over a 14-year period is tiny compared to the cost of having bought the equity-indexed annuity the vast majority of the time. After 14 years, the expected value of the \$10,000 invested in Treasury bonds and stocks on

¹⁵ The yield to maturity on 14-year zero-coupon Treasury bonds on September 29, 2004 was 4.65%.



September 29, 2018 is \$28,442 and the expected value of the equity-indexed annuity is only \$19,735. The \$8,707 equity-index annuity shortfall can be broken down into a \$8,725 expected cost for when the Treasuries and stock would have been worth more than the EIA (99.8% of the time) versus a \$459 expected benefit when the annuity would have been better (0.2% of the time). The expected cost/benefit ratio is thus a staggering 9,485 to 1. That is, the investor pays \$9,485 in costs for every \$1 in benefit from the downside protection relative to the Treasuries and stock portfolio.

There is currently no disclosure of the effective cost of owning an equity-indexed annuity analogous to the annual expense ratio in a mutual fund or the annual expenses of a variable annuity. Such a disclosure is necessary for investors and salespeople to evaluate the financial ramifications of an investment in equity-indexed annuities and to understand the serious risks, limitations and expenses in the product.

According to the Investment Company Institute, in 2004 the average annual expense for stock mutual funds was 1.19%, for bond funds was 0.92% and for money market funds was 0.42%. In contrast, the expense ratios implied by the structure of equity-indexed annuities is between 2.7% and 3.0%. This cost is not disclosed in any materials I have reviewed (except American Equity's 10-Ks); I was only able to determine it after extensive analysis of the product including computer modeling.

VII. Specific Comments on the Proposed Rule

A. Should the proposed rule apply to other products?¹⁶

The proposed rule would provide federal investor protections to purchasers of equity-indexed annuities that expose investors to stock market risk. Equity-indexed universal life (EUIL) contracts are growing in popularity and should be covered by the rule also. These contracts have the same relationship to equity-indexed annuities that variable universal life contracts have to variable annuities. In fact, the structure on a

¹⁶ SEC Rule Proposal, page 29.

EUIL is virtually identical to that of an equity-indexed annuity. EUILs expose investors to stock market risk in exactly the same way equity-indexed annuities expose investors to stock market risk. Federal investor protections should be extended to purchasers of EUILs.

B. Should the proposed "more likely than not" test be modified?¹⁷

The proposed rule would exclude any equity-indexed annuity whose payoffs were “more likely than not” to exceed the minimum amounts guaranteed in the contracts from the annuities contracts. In our previous work, I determined that for all practical purposes the minimum guarantees in current equity-indexed annuities would never be binding. That is, despite their featured prominence in marketing and efforts to forestall effective regulation, issuers set minimum guarantees so low that the amounts paid at the end of surrender periods would exceed the minimum guarantees more than 99% of the time. As such most any threshold other than the “more likely than not” for the likelihood that the payouts would exceed the minimum guaranteed amounts would also be triggered.¹⁸

C. Should the issuers’ determination be conclusive? and Should the testing procedures be mandated?¹⁹

The Commission proposes to allow issuers to determine whether a particular contract’s payouts are “more likely than not” to exceed the minimum guarantees. Essentially 100% of the time, the payouts to current equity-indexed annuities will exceed the truly trivial minimum guaranteed amounts. Issuers routinely assess the likelihood that they will have to pay out the minimum guaranteed amounts using well established finance and actuarial models. Consistent with our findings, the issuers have determined that the probability that the minimum guarantees will be paid is 0%. Issuers will not be

¹⁷ SEC Rule Proposal, page 34.

¹⁸ The only way to design an equity-indexed annuity that would not trigger such a test would be to increase the minimum guarantees dramatically or reduce the already dismal expected returns.

¹⁹ SEC Rule Proposal, page 41.



able to excuse themselves from coverage of this rule in good faith. The only way issuers could determine that their equity-indexed annuities are not covered would be to adopt non-standard methodologies purely for the purpose of continuing to game the regulatory system.

VIII. Summary

Equity-indexed annuities are products which survive in the market place only because of the lack of effective investor protection regulation.

To summarize:

- Existing equity-indexed annuities are too complex for the industry's sales force and its target investors to understand the investment.
- This complexity is designed into what is actually a quite simple investment product to allow the true cost of the product to be completely hidden.
- The high hidden costs in equity-indexed annuities are sufficient to pay extraordinary commissions to a sales force that is not disciplined by sales practice abuse deterrents found in the market for regulated securities.
- Unsophisticated investors will continue to be victimized by issuers of equity-indexed annuities until truthful disclosure and the absence of sales practice abuses is assured.