

Analyzing the Key Components of an Equity Indexed Annuity Part 1: Understanding Volatility

By Mitchell M Maynard

EIAs derive the interest that is credited through the interaction of two primary forces: Stock Index Volatility and Interest Rates. In this article I will address a historical analysis of two indexes that can represent tangible measurements. The Stock Index Volatility is represented by the CBOE Volatility Index[®] (VIX[®]) and Interest Rates are represented by the U.S Treasury Bond Constant Maturity 10 Year Yield.

The CBOE Volatility Index[®] (VIX[®]) is a key measure of market expectations of near-term volatility conveyed by [S&P 500](#) stock index option prices. Since its introduction in 1993, VIX has been considered by many to be the world's premier barometer of investor sentiment and market volatility. For more information click <http://www.cboe.com/micro/vix/introduction.aspx>

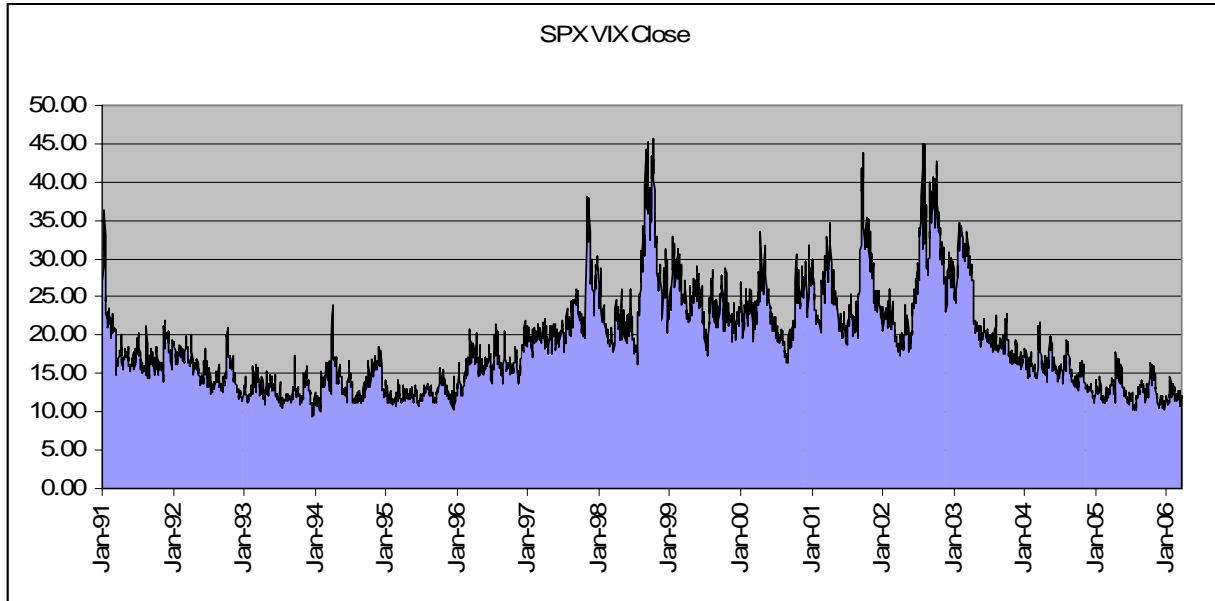
Since insurance companies do not disclose the terms of the negotiated options and the related cost, it is important for an advisor to understand whether the credit method (Option Strategy) offered is fair as compared to other credit methods strategies. For example, how would you know whether an Annual Reset Point to Point with no cap and 50% participation offers a better return potential now, versus 70% participation 5 years ago? I have been trying to bring this issue to the forefront since there seems to be much confusion (and debate) surrounding the moving parts of an EIA and what their related attributes would have been in the past.

If you look to the charts below with an eye towards their relativity, you should be asking yourself questions like: What would the participations rates have been like when volatility was X and the Interest Rates were X%? This becomes a lesson in derivatives and synthetic exposure. The key is if we earn more interest because interest rates are higher it affords the insurance companies more money for option premium, but if stock index volatility is higher then our money doesn't seem to go as far. In the future I will elaborate on the relational behaviors of derivatives but for now I am looking to introduce the concepts of how EIA Credit Methods are priced (attributes are adjusted).

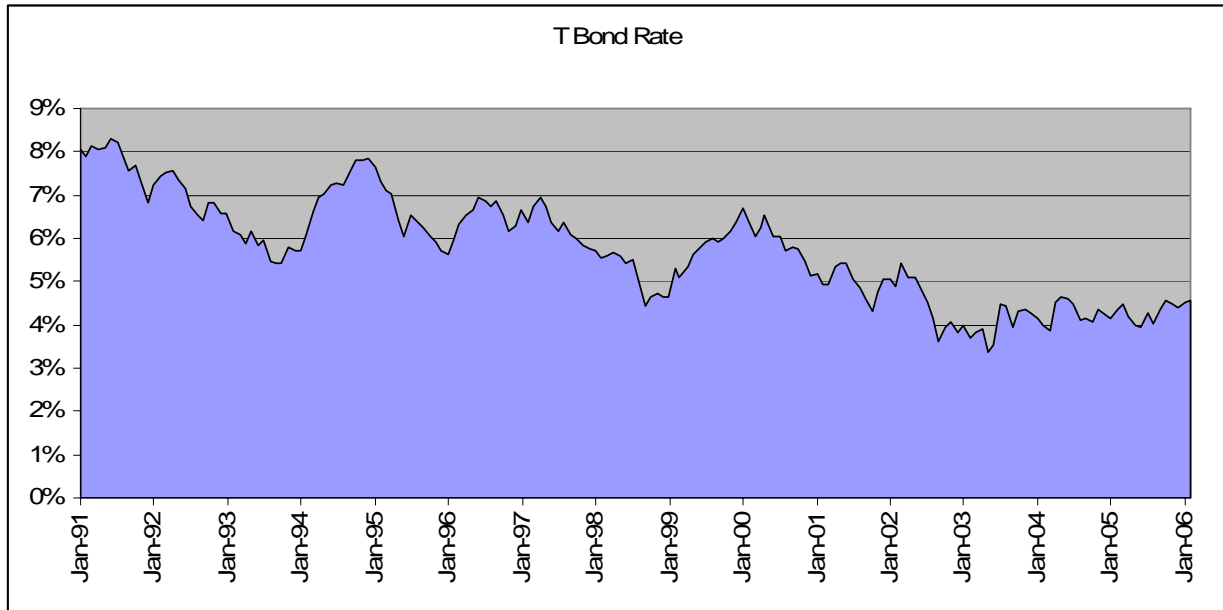
I hope that the charts and descriptions below help you to start asking more questions and not just find answers.

Charts of Historical Activity (1991 – 2006)

The chart below shows the values of the CBOE Volatility Index® (VIX®).



The chart below shows the values of the U.S Treasury Bond Constant Maturity 10 Year Yield.



Observations:

Notice at the beginning of 1995, when EIAs were released, the T-Bond rate was almost 8% and volatility was similar to now, but current interest rates are just a little over 4%. This will translate into about a 75% reduction in available money for Option Premiums. Why so little? To my knowledge, most insurance companies run annuity products with a 2% margin for administrative expenses (income to them). So currently this would leave just a little over 2% for call option premium. Whereas, when interest rates were at 8% there would have been 6% available for call option premium: 3 times as much.