Understanding Stable Value Investment Strategies

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Summary: Understanding the Risk/Reward Profile of Stable Value Funds in Retirement Investing

In the last issue, we presented the initial results of an ongoing financial analysis that New York Life is conducting which seeks to establish *quantitatively* the benefits and optimal use of stable value investing in defined contribution plans. The results discussed in that issue demonstrated that stable value (as an investment class) produces the least investment risk, as measured by standard deviation, in a typical defined contribution plan's range of investment options. A well-structured defined contribution savings plan offers a full spectrum of investment options which allow participants to build a portfolio according to their risk-tolerance, return and liquidity requirements, as shown in figure 1 [include Figure 1 investment option spectrum, from the last issue]. Our goal in that part of the research was to concentrate on the role a stable value fund plays in the investment allocation decisions made by participants.

Not surprisingly, our first calculations showed that the Stable Value Fund, which received the lowest standard deviation, and the S&P 500 Index, which achieved the highest average return are two investment alternatives that would represent significant components of any optimal portfolio. After running this result through an optimization model, we determined a specific optimal portfolio comprised of stable value and the S&P 500 Index. The inclusion of other investment alternatives produced sub-optimal results and were therefore discarded.

This research identifies *quantitatively* many of the benefits that stable value offers to retirement investors, which supports what many plan participants may have believed *intuitively* all along: the risk/reward characteristics of stable value investing offer a sound foundation on which to build a well-diversified retirement investment portfolio. Participants have become more knowledgeable about investing in general and their allocations indicate that they are more and more comfortable with riskier equity investments. For those who want to optimize the risk/return potential of their portfolio, an investment option that best counters the risks of equities is clearly an important choice.

In our last newsletter, we focused on stability of returns as one of the key criteria in delivering a successful stable value fund to plan participants. This was accomplished through comparing return volatility of stable value funds to other investment offerings that are typically found in savings programs. Since attractive stable crediting rates are critical to delivering a successful stable value option, we will continue to focus on return volatility in this article. However, by no means is this the only objective in producing a successful program. Other key objectives that must be achieved are: preservation of invested principal and credited interest, tracking market interest rates and providing book-value liquidity for employee benefit needs.

Our initial return volatility analysis looked at stable value from a stable value investor's perspective by contrasting different fund options and their overall risk-return characteristics. The results of this analysis indicated that a risk-averse investor could optimize their investment portfolio by including stable value as a risk reducing element. We will now fine-tune our analysis of stable value and take a stable value manager's view by investigating return volatility associated with using different investment strategies.

Before analyzing investment strategy differences, we would like to point out that one relative-value decision regarding investment fund offerings within a defined contribution plan has already been made by a plan sponsor. This decision is to offer a stable value fund as part of the plan's investment lineup. We assume that the inherent return advantages over alternative short-term investment offerings (along with book-value accounting[1]) are features perceived by the plan sponsor to add value to retirement plan investors.

Once the decision to offer a stable value fund is made, the plan sponsor would next determine which investment strategy offers the best prospects of meeting the objectives of the fund. This strategy can be based on one, or a combination of, two common practices: a laddered strategy, or an actively managed strategy (a.k.a. constant duration or evergreen). Upon this determination, the next step would be to find the most effective products available for use within the chosen strategy. There are various products to choose from within each strategy.

Any product with a defined maturity date or dates can be used within a laddered strategy. This would include:

- Insurance company-issued GICs
- Bank-issued BICs
- Buy and hold synthetics
- Wrapped immunized bond strategies
- GIC 'look-alike synthetics'
- Actively managed strategies with a fixed maturity date

However, there are only a limited number of non-participating (for investment and withdrawal experience) fixed rate/fixed maturity products that offer no fluctuation in returns, no variation in maturity amounts nor uncertain maturity dates. These products consist of GICs, BICs, and GIC "look-alike synthetics". With a constant duration strategy, products can be actively or passively (index funds) managed in combination with a book-value wrapper.

Understanding Stable Value Investment Strategies

This article examines the differences in rate reset experience, along with total return of four portfolios. In this study, two of the portfolios are evergreen structures and two are laddered GIC structures. The four portfolios are comprised of:

Two Evergreen Strategies:

1. An evergreen portfolio simulating an actively managed strategy. Net returns (net of all investment management, wrapper and custodian fees) are based on the return of the Salomon Brothers Medium Term ("BIG/MED") Index which maintained an average modified duration of 3.51 years over the timeframe measured. Rates are reset quarterly. All gains and losses are amortized over the modified duration of the index portfolio to equate book and market value.
2. An evergreen portfolio simulating an actively managed strategy. Net returns (net of all investment management, wrapper and custodian fees) are based on the return of the Salomon Brothers Broad Investment Grade ("BIG") Index which maintained an average modified duration of 4.75 years

[1] The ability of a participant to get his/her money (invested amount plus accrued interest) for plan benefits, regardless of market conditions.

over the timeframe measured. Rates are reset quarterly. All gains and losses are amortized over the modified duration of the index portfolio to equate book and market value.

Two Laddered Strategies:

3. A blended rate, laddered portfolio of 5 year GICs. Contract net rates are based on historical 5 year GIC rates offered by high quality issuers at the time of investment.
4. A blended rate, laddered portfolio of 7 year GICs. Contract net rates are based on historical 5 year GIC rates offered by high quality issuers plus .05% at the time of investment.

For reference purposes, the results of these four portfolios have been contrasted to the 5 year spot rate treasury as of the end of each quarter.

Reasons for Selection of Portfolios:

An actively managed strategy based on the "BIG" investment index and a blended rate, laddered 5 year GIC strategy were selected for this study since these strategies are representative of generic investment strategies used most often in the stable value market. Despite their popularity, these two strategies have different profiles when it comes to average life and ultimately, natural cash liquidity.

For a proper comparison of average life and natural cash liquidity, we introduced into our study an actively managed strategy based on the "BIG/MED" investment index and a 7 year laddered GIC portfolio. These two portfolios are comparable with respect to the average time it takes to return invested principal to the investor, averaging about 3.5 years.

Timeframe:

For our modeling we used historical data for the horizon that spans from March 31, 1980 through December 31, 1998.

Deposits:

- For the 5-Year GIC comparison, two model portfolios started investing a net plan cashflow of $10,000,000. One began on March 31, 1980 and the other on March 31, 1985, both continued to receive deposits at the end of each quarter for 5 years. For the 7-Year GIC comparison, the same variables, $10,000,000 deposits on March 31, 1980 and March 31, 1985 respectively, were used to create model portfolios and they continued to receive deposits at the end of each quarter for 7 years.
- After the end of the applicable deposit periods, it is assumed that all contributions and withdrawals offset one another, resulting in account growth based on earnings alone.
- The GIC portfolios assume a reinvestment of quarterly maturities at prevailing rates.
- The constant duration portfolios continually earn the index return for the quarterly period.

Summary:

This model was compiled to illustrate the rate reset and tracking elements of four different hypothetical portfolios. A comparison of the portfolios efficiencies were made based on a total return and volatility (standard deviation) of the total return over the stated horizon[2]. Those two criteria were combined in

[2] from March 31, 1980 through December 31, 1998.

the Sharpe ratio (return over standard deviation). The tables below show the results of historical simulations for two data periods. Total return, volatility and Sharpe ratio for each of the portfolio comparisons was calculated from the date when the portfolios were on a fully invested basis: December 31, 1984 and 1986 for the 5 and 7 year portfolios, respectively, when measured from a March 31, 1980 inception date and December 31, 1989 and 1991, respectively, when measured from a March 31, 1985 inception date.

Table 1 (inception 03/31/1980)

		5 Year GIC	7 Year GIC	5 Years MED	7 Years MED	5 Years BIG	7 Years BIG	5 Year Treasury	7 Year Treasury
85-99	*Average*	8.86%	9.70%	9.30%	9.15%	9.67%	9.50%	7.10%	7.22%
85-99	*Volatility*	0.12%	0.08%	0.45%	0.45%	0.44%	0.44%	0.65%	0.65%
85-99	**Sharpe Ratio**	**72.96**	**126.02**	**20.51**	**20.17**	**22.23**	**21.77**	**10.90**	**11.18**
87-99	*Average*	8.29%	9.14%	8.78%	8.67%	9.22%	9.06%	6.85%	6.99%
87-99	*Volatility*	0.08%	0.08%	0.45%	0.44%	0.42%	0.42%	0.61%	0.60%
87-99	**Sharpe Ratio**	**103.02**	**112.80**	**19.73**	**19.51**	**21.75**	**21.45**	**11.28**	**11.69**

Table 2 (inception 03/31/1985)

		5 Year GIC	7 Year GIC	5 Years MED	7 Years MED	5 Years BIG	7 Years BIG	5 Year Treasury	7 Year Treasury
85-99	*Average*	7.96%	8.37%	7.90%	7.84%	7.84%	8.11%	8.06%	6.36%
85-99	*Volatility*	0.07%	0.05%	0.39%	0.38%	0.38%	0.36%	0.36%	0.59%
85-99	**Sharpe Ratio**	**114.65**	**157.74**	**20.46**	**20.46**	**20.46**	**22.47**	**22.49**	**10.84**
87-99	*Average*	7.63%	8.01%	7.54%	7.48%	7.48%	7.82%	7.76%	5.96%
87-99	*Volatility*	0.07%	0.05%	0.41%	0.41%	0.41%	0.38%	0.38%	0.62%
87-99	**Sharpe Ratio**	**106.76**	**173.07**	**18.40**	**18.26**	**18.26**	**20.34**	**20.20**	**9.63**

Based on the results of this study, the 7-year laddered GIC portfolio produced the optimal profile from a risk and return viewpoint over all timeframes. However, depending on the timeframe modeled, the calculation of the total returns could have different outcomes and quite possibly produce a scenario where the BIG active strategy results in the best return. During the timeframes measured in this research, the risk-return characteristics for the 7-year laddered GIC portfolio are superior and the 5-year laddered GIC portfolio are quite competitive (at a much shorter average life).

Our findings **do not** indicate that a laddered strategy is unconditionally superior to an actively managed strategy under all conditions. They **do** demonstrate, *quantitatively*, the superior risk-return characteristics that a laddered strategy offers a stable value fund. These clear quantitative results could be used to make the argument that a laddered strategy with its stabilizing effects and its natural liquidity benefits should be a meaningful segment of every stable value fund.

As mentioned earlier, an active strategy may produce superior total returns in certain environments. In looking strictly at the total return aspects of the different management strategies, an advantage to active management is the potential for additional value to be added through portfolio management. For example, potential yield enhancements may be obtained by introducing a high yield component, an allocation to private placements or taking some convexity risk through the use of mortgage backed securities.

An additional important point to consider is the potential for variability in crediting rates. Through our research, the laddered strategy produced crediting rates that were more stable than the active

alternatives. Any strategy that results in more volatile crediting rates may introduce participant dissatisfaction during certain periods. Note that this analysis assumed no withdrawals in excess of contributions and no additional contributions. If a participating wrapper arrangement was introduced in conjunction with the actively managed strategies, then all withdrawals would be experience-rated through a reset rate methodology which would additionally factor into the crediting rates.

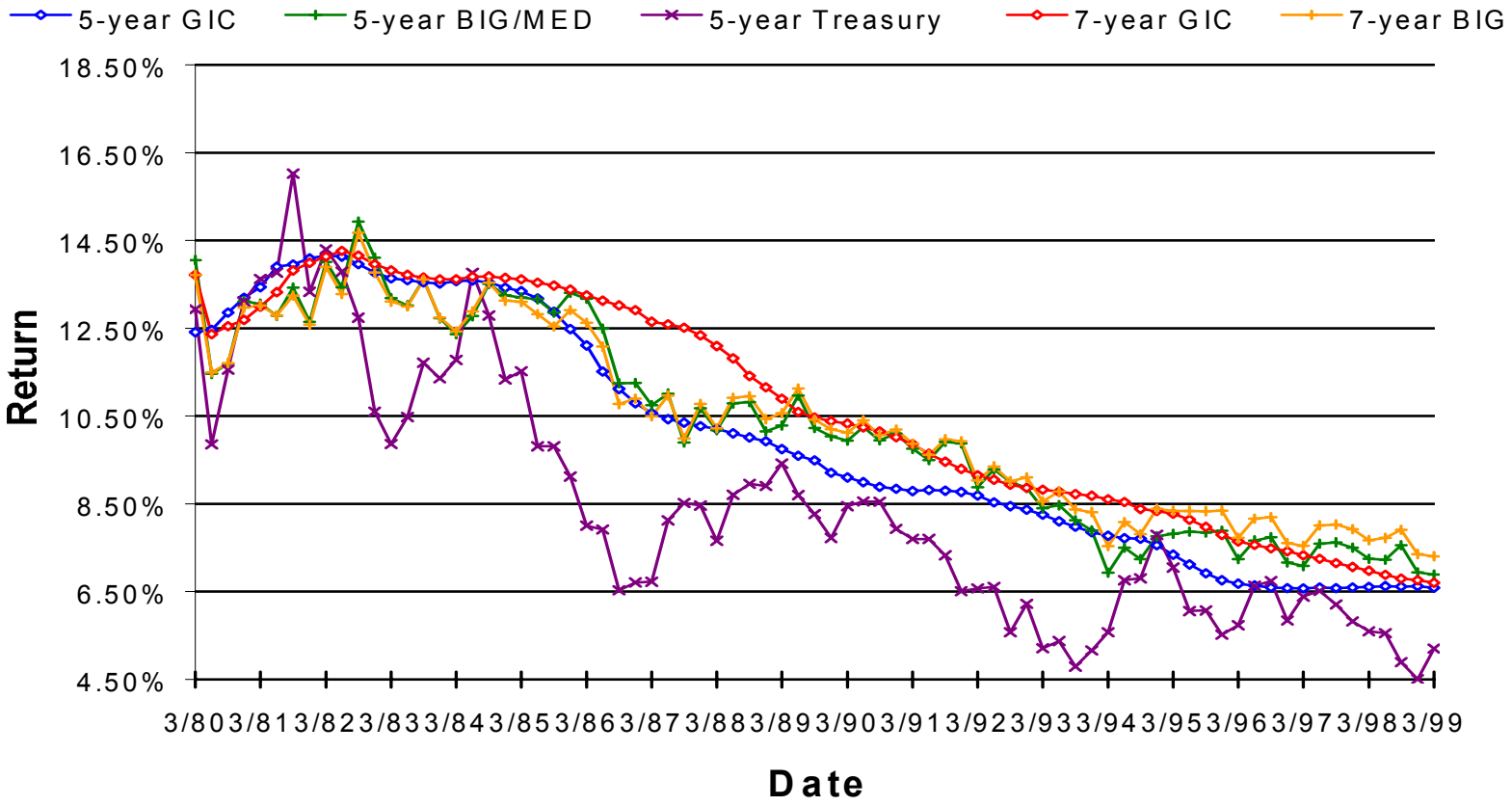
Although this modeling resulted in specific quantitative outcomes, it does not take into account the qualitative factors associated with stable value investing that plan sponsors must contend with, i.e., participant satisfaction. It is our contention that this information should be used in conjunction with actual plans' experiences and historical returns of varying portfolios which have been tested over time to determine appropriate strategies for specific stable value account objectives. Individual plan characteristics, employee demographics, account objectives and many other factors should be considered when establishing any stable value investment strategy.

NOTES:

1. This modeling was done based on a specific timeframe and using specific assumptions. Using data from other time periods, in different interest rate environments and with varying assumptions may produce very different results. Thus, future performance cannot be guaranteed.
2. Source for all charts and graphs is New York Life.
3. "BIG" refers to the Salomon Broad Investment Grade Bond Index, an unmanaged index that is considered representative of the U.S. bond market.
4. "BIG/MED" refers to the Salomon Broad Investment Grade Medium Term Bond Index, an unmanaged index that is considered representative of the U.S. Intermediate bond market.

Historical Crediting Rates For Different Stable Value Strategies

Graph 1—Portfolio inception date: 3/31/1980



Historical Crediting Rates For Different Stable Value Strategies

Graph 2—Portfolio inception date: 3/31/1985