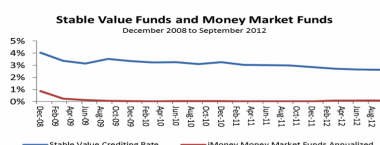# Stable Value Funds: Performance to Date – Part I

By David Babbel and Miguel Herce   *Sun, Mar 3, 2013*

If you're unfamiliar with stable value funds, you probably should learn about them. They could become a useful component of your clients' portfolios as they prepare to retire.

Stable Value Investment Funds (SVIF) are offered in almost half of all defined contribution (DC) plans in the USA, with more than $800 billion dollars worth of assets under management. Historically, they have been one of the two most popular asset classes for people enrolled in such plans.

Unlike stocks, bonds, and many other asset classes, they are generally not susceptible to large fluctuations in value, but accrue attractive interest over time while providing necessary liquidity at book value. Therefore, they may be especially suitable as people approach retirement and are also useful after retirement.

Their stable value allows a person to transition into retirement without any late-inning unwelcome market surprises that can devastate a retirement plan. After retirement, for those plans that allow participants to retain a portion of their assets in SVIF, the availability of funds at book value is important when extraordinary expenses are incurred.

In three related studies[1] conducted over the past seven years, we have examined SVIF performance relative to six other major asset classes, including U.S. large stocks, small stocks, long-term government bonds, corporate bonds, intermediate-term government and corporate bonds, and money market funds.

Our evidence suggests that going back to their inception in 1973, SVIF have dominated two (and nearly three) major asset classes based on a historical analysis and that they often occupy a significant position in optimal portfolios across a broad range of risk aversion levels.

We discuss the factors that contributed to stable value's remarkable performance and whether it can continue to maintain it into the future. Our various studies used three methods to examine historical performance:

- Mean-variance analysis
- Stochastic dominance analysis
- An enhanced multi-period utility analysis

In Part I of this report, we will briefly discuss the mean-variance results. Part II will summarize the performance results using the other methods.

What are Stable Value funds?

SVIF offer principal protection and liquidity to individual investors, and steady returns that are competitive with intermediate-term bond yields. However, over ensuing one-to-three-month intervals, the guaranteed rate of return moves much more slowly than intermediate-term bond yields.

This is achieved by having a process that allows the provider to smooth market volatility through amortizing gains and losses over the duration of the portfolio. This smoothing is effected through the rate re-set mechanism and insulates against day-to-day volatility. Consequently, SVIF provide investors with positive returns of very low volatility. This combination of bond-yield-like returns and low volatility generates contract or book value accounting of the investment.
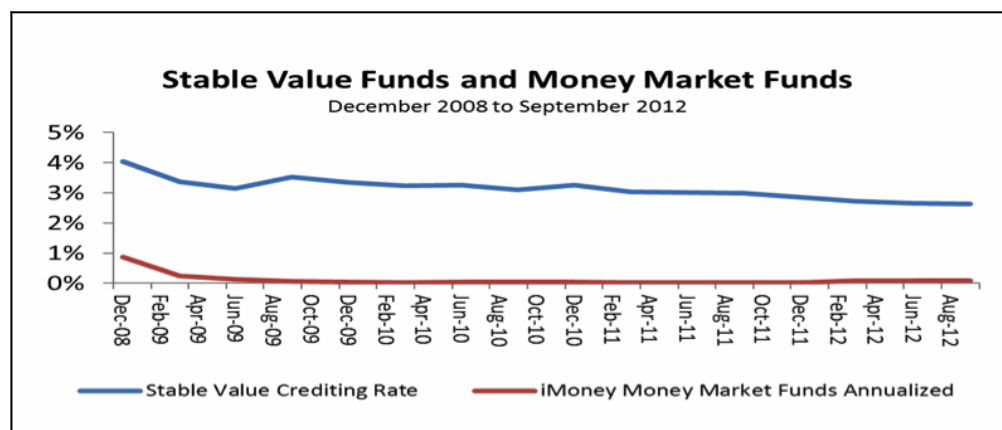
The underlying investment portfolios of SVIF are comprised of high quality, short maturity corporate and government bonds, mortgage-backed securities, and asset-backed securities. In all but a few pre-specified circumstances, investors in SVIF are able to transact (make deposits, withdrawals, transfers) at book or contract value, which is deposits plus accrued interest, less any past withdrawals.

While SVIF do not require a set holding period but provide full access to the participant's principal and accumulated interest, they are subject to the general restrictions within the overall plan. For example, many plans restrict participants from the direct transfer to a competing short-duration bond or money market fund by requiring that money transferred out of SV be first invested in a non-competing (e.g., stock or long-term bond) fund for a short period such as 30-90 days to eliminate arbitrage.

This rule, together with the fact that plan participants do not act in concert regarding the allocation of their funds, allows the investment contract protections to be provided for a fraction of what it would cost if interest arbitrageurs dominated the pool and were revising their allocations aggressively.

Mean-variance analysis

From an investor's viewpoint, SV funds operate like a passbook savings account. They accrue interest at a pre-specified crediting rate that is generally updated every one to three months to slowly incorporate changing market conditions. Below are compared the relative yields of stable value and money market funds in the stressful post-crash period.

Stable Value Funds and Money Market Funds
December 2008 to September 2012

Legend: Stable Value Crediting Rate — iMoney Money Market Funds Annualized

SVIF also fared well over a longer time period. The SVIF returns shown are net of all fees. Note that over the twenty-one-year period shown below, there were only two brief intervals lasting a month or two each when the money market fund average yield exceeded the stable value average.

Source: Bloomberg, ICI, SVIA.
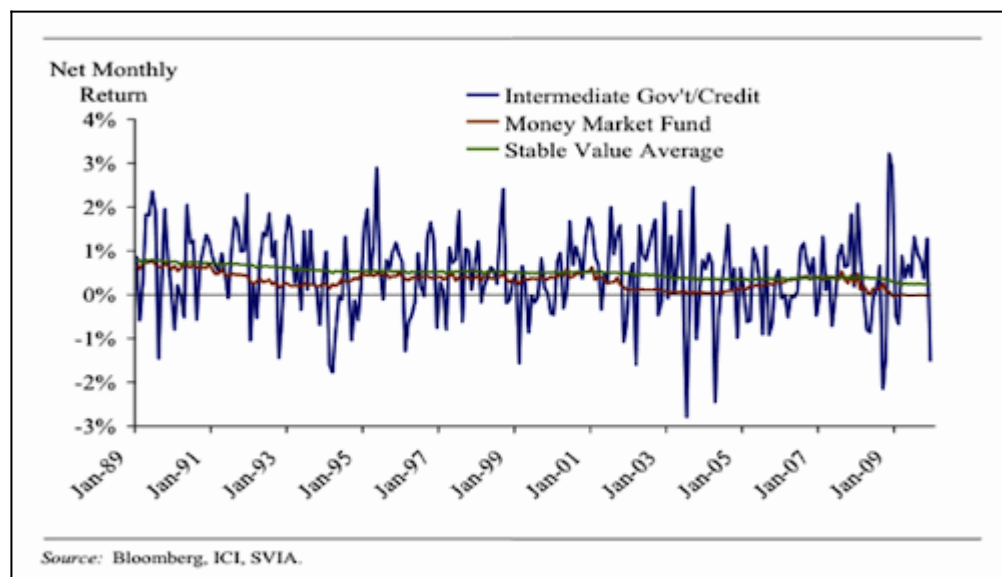
Despite shortcomings, the mean-variance approach is a popular analytical tool and provides useful insights into the ability of SV investments to dominate other asset classes.

The historical record provides evidence that, even as stand-alone investment, SV funds have been superior in the mean-variance sense to money market and intermediate-term government/credit bond funds.

Based solely on historical returns, when included in optimal mean-variance portfolios, SV funds contribute significantly to the portfolio, to the exclusion of money market, intermediate-term government/credit bonds, long-term corporate bonds and even large stocks.

In other words, optimal mean-variance portfolios based on past data contain only SV funds, long-term government bonds and small stocks in proportions that naturally vary with the expected return (or, alternatively, the expected volatility) of the optimal portfolio.

(Looking forward, we would expect long-term government bonds to be excluded from the set of efficient portfolios because their historical returns benefitted from a significant drop in yields, producing huge capital gains. We cannot expect such a significant drop in yields going forward, so their future returns relative to other investment classes cannot benefit from the capital gains.)

For example, over the past 23 years, from January 1989 through January 2012, SV returns exhibited both a higher mean and lower volatility than either money market or intermediate-term government/credit bond returns. This feature can be seen in the figure below, where we plot two efficient frontiers, one including all seven asset classes in our study and one that excludes the value-weighted SV (VW-SV) funds. The plot extending back to 1973 looks about the same.

Efficient Frontiers for Alternative Asset Classes Value-Weighted SV (Q1-1989 – Q4-2011)
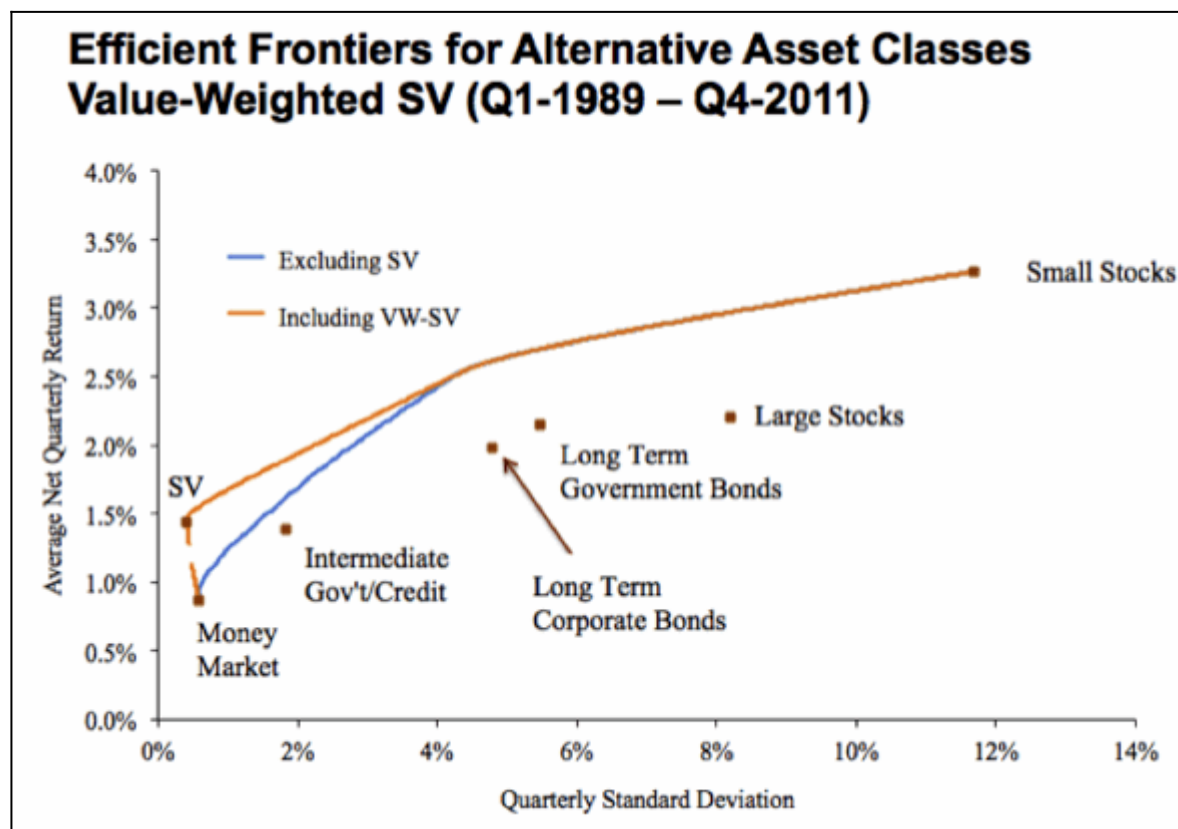
While not shown here due to space constraints, we observed that no optimal mean-variance portfolio along the efficient frontier included money market instruments, intermediate-term bonds or long-term corporate bonds. Not even large US stocks were included. We also observed that SV funds predominated in the lower portion of the expected return range, where one would conventionally anticipate seeing money market and intermediate-term bond investments.

The Sharpe ratio, commonly used in performance measurement, measures excess return per unit of risk. It measures how well an investor is compensated per unit of risk taken. Higher ratios denote greater return for the same level of risk.

The Sortino ratio focuses more on the downside risk. It is based on the Sharpe ratio, but penalizes for only those returns that fall below the target return, which in our case is the average riskless rate of return over the period of analysis. It gives the actual rate of return in excess of the risk-free rate per unit of downside risk.

The Sharpe and Sortino ratios for quarterly net return data from 1989-2011 are reported in the table below.

	Large Stocks	Small Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Intermediate-Term Gov't/Credit	Stable Value	Money Market
Mean	2.21%	3.27%	1.99%	2.15%	1.38%	1.41%	0.87%

Std. Deviatn	8.19%	11.68%	4.78%	5.46%	1.84%	0.38%	0.59%
Sharpe Ratio	0.16	0.20	0.23	0.24	0.29	1.69	N/A
Sortino Ratio	0.24	0.33	0.44	0.46	0.52	25.77	N/A

Note that the Sharpe ratio values for five of the asset classes are mostly clustered together, but that for SV it is about six times greater than the highest of the other asset classes. This pattern is even more pronounced for the Sortino ratio. The extremely high ratio for SV funds results from the fact that throughout the period under consideration, the risk-free rate exceeded the SV credited rate only for only a few months and by small amounts. Hence, there were only a few, small observations that factored into the denominator.

The Value Proposition, Challenges and Future Prospects

The positive evidence shown above also holds true over the entire 40-year period of existence for traditional and synthetic forms of SVIF. It raises two questions: What has been the value proposition that allowed these returns to be achieved? Should we expect this kind of performance over the future?

The value proposition has two facets. On the asset side, some of the return above money market yields comes from investing at durations sufficient to capture the term premium that has been traditionally available. The funds also are able to take on a very small amount of credit and convexity risk and thereby gain additional spread. They also invest in some less liquid securities and Guaranteed Investment Certificates (GIC), which provide higher spreads than the most liquid assets.

The first two of these factors help explain why SV returns have generally outpaced money market yields, but do not explain why they also have outpaced intermediate-term government/credit returns. For that we must turn to the liability side of fund management.

On the liability side, the contribution to performance derives from behavioral finance factors. SVIF have contingent liquidity that FASB and GASB define as "benefit responsive." From the point of view of participants, SV has liquidity similar to money market funds. Banks, insurers or other financial institutions that issue the investment contracts take on the transfer/liquidity risk as well as the investment/market risk that everyone will not withdraw at the same time, since the underlying portfolio has to be less than contract value to cause the investment contract to make up the difference.

SV providers mitigate their risk largely by being astute at predicting and underwriting participant behavior. Providers know that SV investors tend to use less liquidity than they think they need. They know that the vast majority of participants, because of tax penalties, equity wash requirements that inhibit interest rate arbitrage, and simple investor inertia, tend to leave their money in stable value options for a

fairly long time. Providers are willing, therefore, to guarantee a fixed rate for a traditional GIC or a minimum zero percent crediting rate each quarter for a synthetic GIC. This allows "wrap" providers to offer their guaranties at lower prices than otherwise would be the case.

Going forward, SVIF will need to be able to continue earning term premia, liquidity premia, and credit spreads while investors will need to continue to behave as they have over the past 40 years for it to continue to be a widely sought investment vehicle for accumulation and decumulation.

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[1] Our previous studies were published in the Working Papers Series of the Wharton Financial Institutions Center website (Babbel and Herce, 2007-#21, 2009-#25, 2011-#1). http://fic.wharton.upenn.edu/fic/papers.html These studies provide references to the literature that explain the details.