

STABLE TIMES

NEWSLETTER OF THE STABLE VALUE INVESTMENT ASSOCIATION

SEPTEMBER 1997

Inflation Indexed Products for Stable Value Funds

by Dave LeRoux, Jackson National Life

In January of this year the Treasury Department held its first auction of an inflation indexed bond, a 10-year issue that pays a real coupon of 3 3/8% on a principal balance which increases with inflation. Since that time, the Treasury has held two more auctions of inflation indexed bonds (a re-opening of the earlier 10 year and, most recently, a 5-year) and there have been more than a dozen other agency, corporate and municipal issues of inflation indexed securities. While there has been considerable discussion of the potential use of inflation-linked products in stable value funds, few actual purchases have taken place. This article examines the suitability of such products for stable value funds and discusses a methodology for determining an appropriate allocation. The next issue of *Stable Times* will continue this discussion by presenting some practical considerations in obtaining inflation indexed exposure in a stable value fund.

Suitability for Stable Value Funds

Stable value investing evolved through time primarily in the free market environment of participants selecting

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Pooled Funds: You've Come a Long Way

by Janet Jasin Quarberg, Hueler Companies

Over the past ten years pooled funds have exploded in size and have been structurally transformed. Pooled funds are no longer considered the stepchild of stable value investments or lowly bottom feeders forced to purchase contracts from second rate issuers. In fact today, every major issuer writes contracts to pooled funds and due to the diversified client base, many issuers say that pricing is very favorable. Additionally, every major stable value investment management firm currently runs one or more collective trust funds and many are looking for additional ways to leverage this "pooled client" approach.

The pooled fund market's explosive growth was in the early 90's which was directly fueled by the tremendous growth in the 401(k) market. Pooled funds grew at a rate of 40%-50% per year during this time period. When Hueler Analytics started tracking the pooled fund market in December of 1989, total Hueler Universe assets were only \$3.7 billion. Today, universe assets are \$28.5 billion, more than a seven-fold increase.

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Special Autumn Inaugural Issue!

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Safe and Sound***Liftoff - Welcome Aboard!****by Allan Fen, Fidelity Investments*

Welcome to the inaugural issue of *Stable Times*. We've launched this newsletter to provide a forum for public discussion and debate of issues within our industry, something I've felt has been sorely missing, considering the role stable value plays in the defined contribution marketplace. The emphasis will be on research, analysis and more in-depth treatment of stable value issues than is available in other publications. This will also provide an opportunity for the newly renamed Stable Value Investment Association to update the membership on its activities.

As corny as it sounds, this is your newsletter. We hope it provokes thoughtful contributions from many different perspectives on a wide variety of stable value topics including investments, DC issues, legal and regulatory updates, industry trends, and more. We are taking a fairly informal approach to this newsletter for now, using more of a trial-and-error approach on everything from accepting articles to layout and production. Fine tuning will happen over time. We do have a one-page set of guidelines for contributors available upon request.

We have recruited an all-star editorial staff which represents many different perspectives within the stable value industry. Donna Sheehan of BT Alex Brown joins me as co-editor. Donna and I will alternate serving as lead editor each quarter. The Associate Editors are Dan Libby of IBM,

*Continued Page 3***A Message from the President*****The Challenges Ahead****by Cindy Hargadon, Stable Value Investment Association*

We are pleased to introduce the first issue of *Stable Times*, the quarterly newsletter of the Stable Value Investment Association. This publication is a reflection of the professional standards the Association has set for itself providing valuable products and services to its members.

We recently sent out a Mid Year Report detailing the Association's 1997 activities and accomplishments. In that report, we shared the results of the organization's strategic planning efforts and a summary of the planning document itself. The mission of the Association is as follows:

- Promote the importance of saving for retirement and informed investment of retirement assets.
- Advance wider understanding and recognition of the contribution stable value investments can make toward achieving retirement security and other savings needs through education, communication and research.
- Provide leadership and representation for the membership before regulators, legislators, educators, the media and opinion leaders.
- Provide a forum for the exchange of ideas and discussion of pertinent issues among members.

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Liftoff - Welcome Aboard! *(continued from Page 2)*

Kelli Hueller of Hueller Companies, Vicky Paradis of PIMCO, Karl Tourville of Galliard Capital Management, and Dave LeRoux of Jackson National, who thought up the newsletter's catchy name. I want to thank them all for volunteering, as well as Association President Cindy Hargadon for her support in this endeavor. I also want to thank Laurisa Stebbins, whose desktop publishing skills made this issue possible. The staff was responsible for most of the content of this first issue but will be focusing on recruiting others to contribute in the future. If you have an idea for an article or know of someone who has, please contact your favorite Associate Editor, preferably via Email. If you don't call them, they'll probably call you (deadline for the December issue is 11/1).


We have an exhilarating first issue with contributions from Dave LeRoux discussing the applications for inflation protected securities in stable value (first of two installments), Vicky Paradis on the significance of portfolio duration, and Dan Libby on stable value benchmarks. Janet

Jasin Quarberg writes on trends exhibited in the Hueller Pooled Fund Universe, Karl Tourville and John Caswell look at the track record of active bond managers over time, and Shivan Govidan of BT Alex Brown analyzes wrapping amortizing structures. Cindy Hargadon gives us her views on the challenges ahead for the Association and I contributed an investment oriented crossword puzzle, the likes of which have attracted a small but loyal cult following.

Stable Times will be evolving as we discover new and better ways of doing things. But we need your help to achieve our potential of providing a lively forum for constructive discussion of important issues within our beloved industry. If this is well received, it could lead to related initiatives such as an internet stable value discussion group, similar to but more exciting than those on-line chat rooms I frequent in my spare time. We strongly encourage you to assist us in this effort by contributing articles or giving us your comments. 

The Challenges Ahead *(continued from Page 2)*

The development of the *Stable Times* newsletter is in direct support of the Association's mission by serving as a forum for addressing issues facing the industry as well as serving an educational purpose. It will educate and inform a wider audience than just our membership through wide dissemination to our target audiences both in hard copy and on our upcoming website. We encourage members to consider what contribution they can make to this publication in the future with the goal of continued active participation in Association activities by a wide range of members.

Let me also take this opportunity to remind you to plan to attend our upcoming industry conference, the National Forum, in Washington D.C. on October 14th - 16th. As its name implies, it serves the industry by providing a comprehensive agenda of important issues and new ideas and offers networking opportunities as well. We also hold the annual Association membership meeting during the Forum to update members on important activities and major initiatives. Mark your calendar now and look for more information in the mail soon. 

Mark Your Calendars!**Stable Value Investment Association
National Forum****October 14 - 16, Washington D.C.****(Contact Forum, October 14, 1:30 - 4:30,
Preceding Welcoming Reception)**

Evaluating Alternative Stable Value Benchmarks from an Asset Class Perspective

By K. Daniel Libby, IBM

I look forward to a long and somewhat controversial life for this new publication, since it is only through challenging existing wisdom that change and progress occur. Hopefully this forum will bring about a healthy mix of new ideas, concerns, trends, and analysis that will foster a stronger and more vibrant industry. I certainly believe this corner of today's investment supermarket faces unique challenges and would probably benefit strongly from a little "paradigm shifting". May this first issue serve us all well in that pursuit.

Perhaps as it should be, upcoming publications certainly will have space devoted to old products, new products and applications for both old products and new products. But while products may be the more sexy side of a discussion about any market, it is the way you use your assets that makes the greatest impact! In fact, the greatest value added in either a burgeoning or otherwise enigmatic market often comes from applying the frameworks and tools commonly in use in markets that are better understood. It is seldom necessary that a new approach or tool be fashioned for use in a market that poses unique or seemingly intractable issues. Often times, there will be some who are quick to devise an innovative solutions to fill a void that results from such a situation.

It is certainly true that, in many ways, the stable value arena is unique; certainly there is no shortage of issues worth our attention. Among the most pressing topics are the implications for the stable value market due to its maturation and the "unstoppable" rally in equities, modes for better public awareness/investor communication and current investment management practices in our industry. Without our focus in these areas, stable value funds may be relegated to a life of systematic underperformance.

But nowhere in stable value can our energies be better rewarded than in the area of asset class benchmarking and its companion topic, strategic asset allocation. Someone very astute gave us the pithy maxim, "Without measurement, management is not possible". But, it has a corollary with direct implications for stable value, "Without measurement, management underperformance is assured". The

focus of this article and one that will follow next quarter is benchmarking and strategic asset allocation, respectively.

Stable value asset classes have historically resisted application of performance measures. The AIMR mandates that for purposes of evaluating performance, measures must be market value-based. While for the uninitiated this may seem obvious, for the stable value practitioner this has become a quandary. After all, it is the book returns of the asset class that determine the economic satisfaction of the participants.

Thinking through this conundrum can be done without the aid of confusing and constraining simulations which

“Without measurement, management underperformance is assured”

succeed in shedding light on more narrowly defined problems. It is better to digest each alternative in turn and decide based upon the implications that we can conclude.

Book return-based standards such as GIC indices and comparative universe performance indices have never caught on due to the plan specific characteristics that drive investment decisions and investment performance. Characteristics such as corporate activity, participant demographics and plan structure drive plan investment allocations and duration decisions thereby making 'comparative universe' a contradiction in terms, at least for purposes of book return evaluations. Unfortunately, nothing quite so easy will suffice.

Fortunately, only more conventional benchmarks are left to be considered. There are two possible perspectives we can adopt in resolving this puzzle. The first is to ignore the AIMR due to the obviously unique circumstances surrounding stable value funds and proceed to use the crediting rate as a basis for performance analysis against a market-based index. We could simply apply the arithmetic required to adjust the crediting rate and benchmark for distortions due to plan-specific cash flows and the timing mismatch between recognition of book returns and market returns. What results is an apples vs. apples comparison, sanitized and standardized and ready for use as a customized stable value benchmark. This approach may be

Evaluating Alternative Stable Value Benchmarks (continued from pg. 4)

becoming fashionable for some in the community, but there are at least a couple of reasons to resist its allure.

For one, many interested observers are not well versed in crediting rates much less cash-flow-adjusted crediting rates and book-value-modified benchmarks. Therefore, this type of an approach will almost certainly guarantee that this asset class continue to be relegated to the realm of the "mysterious and the fantastic" - wonderful qualities for certain occasions but likely to go out of style for the audience(s) we should care most to reach.

An even more fatal flaw to this approach is evident in its lack of applicability for attribution analysis unless further effort or assumptions are made. The benefit of market-based indices is that today's market environment reflects all known future information about the asset's value. Book-based returns are the continual recognition of small pieces of previous market environments which had no bearing on actions that a manager took when faced with the current market environment. Regardless of how clever, any efforts to extract out the effects of prior decisions/market environments can only be achieved at the considerable expense of acquiring or maintaining all relevant historical data or by making crucial assumptions.

The easiest way to see this is to think about the information required and the steps taken to translate returns between a market and book basis and vice versa. From the

portfolio's (or index's) market values (or unit values) a crediting rate can be constructed quickly. The only additional required inputs are an agreed upon initial guess for the crediting rate each period and an agreed upon "amortization factor" for gains and losses. However, to reconstruct a total rate of return from a time series of book-based unit values requires knowing the timing, amount, price and duration of all prior transactions. "Shortcuts" that appear sensible can be used but often result in an unusually large attribution bucket entitled "Other", which could just as easily be named "Mysterious/ Fantastic".

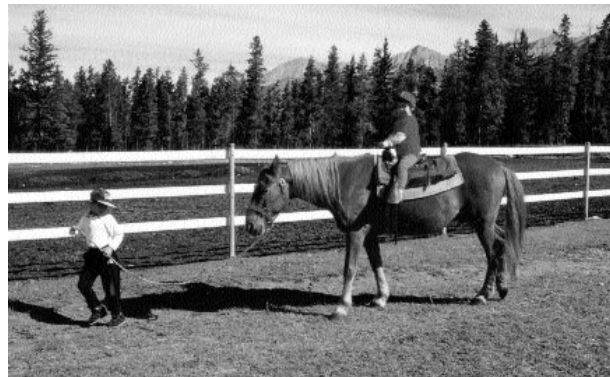
Applying more of a market value-based discipline to stable value portfolios is both worthwhile and inevitable.

The second perspective is to embrace the market value-based standard as prescribed by AIMR. Applying more of a market value-based discipline to stable value portfolios is both worthwhile and inevitable. Only

by valuing the assets of the portfolio at market, net of all fees (including wrap fees), can stable value managers properly measure, attribute and therefore best manage their asset class. It should be clear that the benefit responsive insurance in a GIC or a synthetic is primarily a risk reduction tool and not usually a source of added value to be actively managed. Therefore, its effect should be netted out before considering any investment decision that impacts the asset class. Initially, this perspective may be a more difficult choice than others discussed, however we in the stable value community should pursue the best practices wherever practicable and we will see this asset sector benefit because of it. 🏠



Roundup time at *Stable Times*



Submission Deadline for next issue is November 1

Measuring Active Fixed Income Managers Against Their Benchmarks

by Karl Tourville and John Caswell, Galliard Capital Management

Of the many changes affecting the stable value market in recent years, one of the more significant has been the emergence of fixed income investment managers as major players in the market. Their growing role reflects the increased use of GIC alternatives such as synthetic GICs and, to a lesser extent, separate account GICs. Taken together, synthetic GICs and separate account GICs now comprise approximately 35% (\$90 billion) of the \$260 billion stable value market. While precise data is unavailable, a significant amount of these assets are managed as constant duration (evergreen) portfolios.

The utilization of bond managers in the management of stable value portfolios presents plan sponsors and stable value managers with both opportunities and challenges. The potential for enhanced returns is clearly attractive in an investment environment characterized by historically narrow yield spreads in all sectors of the fixed income market. However, avoiding the pitfalls of active management, primarily the selection of an under-performing manager, requires a thorough understanding of their investment style and process, oversight and risk management policies and, finally, selection of the appropriate benchmark against which to measure their performance. Indeed, this process can be every bit as difficult, and in some ways more complicated an endeavor, as selecting an equity manager who consistently outperforms the stock market - a feat which, based on most studies, is not easily achieved.

Bond Managers - By the Numbers

Prior to conducting a search for a bond manager, it may be worthwhile to undertake an assessment of performance data to see if a parallel can be drawn between bond and equity manager's ability to beat the market.

To get a general sense of how a broad group of bond managers have performed, we analyzed the performance of bond mutual funds in selected Lipper Universe categories. The Short-Intermediate Investment Grade Debt and Intermediate Investment Grade Debt categories were selected because the characteristics of the funds included are generally similar to what might be expected in the management of an evergreen portfolio within a synthetic or separate account structure, namely, relatively high credit quality and intermediate maturity/duration.

Within these categories, performance is reviewed over the last 1, 3, and 5 year periods. To facilitate comparisons to widely used bond market indices which do not include fees, average expense ratios have been added back to the performance data. Based on the weighted average maturity parameters (and corresponding durations) of the Lipper universe, many fixed income managers use the Lehman Brothers Intermediate Government/Corporate and Lehman Brothers Aggregate indices as benchmarks for funds in the Lipper Short-Intermediate Investment Grade Debt and Intermediate Investment Grade Debt categories, respectively. The data is shown in Tables 1 and 2.

Table 1

Lipper Universe	Short-Intermediate Investment Grade			Intermediate Investment Grade		
	1 year	3 year	5 year	1 year	3 year	5 year
Average Annualized Returns	6.63%	6.68%	5.64%	7.54%	7.62%	6.40%
Average Expense Rate	0.85%	0.85%	0.85%	0.89%	0.89%	0.89%
Adjusted Universe Average Rate	7.48%	7.53%	6.49%	8.43%	8.51%	7.29%
Lehman Intermediate G/C	7.23%	7.51%	6.49%			
Lehman Aggregate				8.16%	8.53%	7.12%
Lipper Ranking (w/ expenses added back)						
Top Quartile	7.70%	7.86%	6.85%	8.99%	9.24%	7.87%
Median	7.35%	7.44%	6.59%	8.26%	8.30%	7.21%
Lower Quartile	6.87%	7.18%	6.17%	7.60%	7.86%	6.87%

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Measuring Active Fixed Income Managers Against Their Benchmarks (continued from page 6)

Table 2

	Lipper Short - Int. Inv. Grade, Top 20%, 3/31/97	Lehman Int. G/C, 6/30/97	Lipper Int. Inv. Grade, Top 20%, 3/31/97	Lehman Aggregate, 6/30/97
Gov't/AAA	68%	78%	63%	83%
AA	3%	4%	6%	3%
A	8%	12%	13%	9%
BBB	14%	6%	9%	5%
BB	3%	0%	3%	0%
B	1%	0%	1%	0%
Foreign	1%	0%	1%	0%
CCC/NR	1%	0%	1%	0%
Short-Term	1%	0%	3%	0%

Observations About the Data

There are several observations which can be made about the data found in Tables 1 and 2. First, in each universe, the relevant index is relatively consistent with the median fund's performance during varying time periods. For example, in Table 1, the Lehman Int. G/C index closely tracks the performance of the median fund (gross of fees) in the Short-Intermediate Investment Grade universe in each time period studied. If expenses are taken into account, an index fund with low fees would appear to be a superior, if not top quartile performer. If adjusting for an institutional fee level, say .10% for an index bond fund and 0.25% for a separately managed portfolio, the index would still outperform the median in all time periods. This demonstrates the important effect fees have on bond manager performance in an era of narrow yield spreads and convergence of manager performance.

Table 1 also reveals that the Lehman Aggregate index tracks very closely with the median fund in the Intermediate Investment Grade universe for all time periods. While the index slightly underperforms the median fund over the last five years, again adjusting for investment management fees would make this advantage disappear. The conclusion here is that an index fund with minimal fees would have been a better than average performer net of fees.

An interesting observation can be seen looking at the quality breakdown of the top performing funds in Table 2. In both universes, the top 20% of the funds as a whole had on average a 5-6% allocation to non-investment grade bonds and healthy allocations to BBB rated bonds (14% and 9% respectively). It is important to note that lower quality bonds have been among the best performing segments in recent years (and historically for that matter) but are not meaningfully represented in indices most widely

used for performance comparisons. The indices would be even more favorable on a relative basis when excluding funds using non-investment grade holdings.

An encouraging aspect of the data we reviewed is that in both categories, approximately half of the top 10 funds in terms of 5- year investment performances were also among the top 10 in performance in 1- and 3- year time periods as well. This implies that at least historically, if you've picked a top performing fund with a good long term track record, odds have favored a continuation of superior relative performance.

Some Final Observations.

At least in these universes, indices have been competitive with actively managed mutual funds, although not to the extent seen in the stock market. At the same time, the top performing bond funds as a group have used lower quality bonds which are not represented in the most commonly used indices. Removing lower quality bonds would likely improve the standing of the indices. The appropriateness of lower grade bonds within synthetics and separate accounts needs to be determined based on the investment objectives and guidelines of the individual plan or fund. Also, in these universes, top managers have shown a certain amount of consistency. In the absence of finding a solid total return manager, the data suggests that a certain portion of a portfolio in index funds or an enhanced index approach may be a viable alternative.

A Thorough Due Diligence Process is Key

To find a good manager requires a thorough due diligence process which includes the following steps. First, obtain access to a broad fixed income manager performance universe such as Lipper Mutual Funds or PIPER Funds, or if available, one of the larger consultant universes. Screen for the top quartile performers over at least 5

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Indexed Amortizing Notes—An Alternative to Mortgage Backed Securities

By Shivan Govindan, BT Alex Brown Inc.

Portfolios of defined contribution stable value options, defined benefit plans, and pooled funds commonly permit investment in a wide range of mortgage backed securities (MBS). MBSs are placed in a wide range of portfolios because they provide some additional yield relative to Treasury paper while guaranteeing return of principal. Following the trend in other fixed income markets, MBS spreads relative to Treasuries have come in significantly. Along with the instruments' current relative cost, investors may have difficulty finding an MBS with exactly the right prepayment, extension, maturity, and other characteristics that they seek. Index amortizing notes (IANs) present investors another way to take mortgage-like risk and customize each moving part to precisely fit their desired risk/return and maturity profile.

IANs behave similarly to MBSs, but offer a higher degree of transparency and adaptability. These structures present an alternative way to achieve the same sort of exposure that MBS's offer. They typically work as follows: an investor purchases a note earning a higher yield than non-amortizing instruments of the same credit quality. In exchange, the investor agrees to let the note amortize down based on a specified reference index's movements around agreed levels. Like an MBS, the investor enjoys a higher rate now, with the caveat that all or part of the principal may prepay if the borrower can find cheaper money elsewhere.

Consider the following example. Suppose a plan has \$100mm to place in a five year benefit responsive investment. The plan is willing to take prepayment (reinvestment) risk. It is wary of extension risk, as it anticipates the need for liquidity. The plan looks at several MBS's, but is unable to find one that matches these characteristics at an attractive price. Instead, the plan chooses to buy a five year note from an IAN issuer. The note pays the issuer's five year rate of funding rate plus 38 basis points for the life of the note. For an issuer that funds at LIBOR, this note would pay 6.90% (AEY). In exchange, the plan agrees to let the note prepay depending on where 3-month LIBOR trades on specific valuation dates with a two year lockout. (The lockout period is the initial time over which the note will not amortize regardless of the level of the reference index.) Also, the issuer guarantees that the note will not extend. The plan works with a dealer to create the following amortization table:

- Assumes 2 year lockout, with quarterly adjustment of principal thereafter
- Pays 6.90% of adjusted principal over life of note
- Using a Base Rate of 6.31%, (3-month LIBOR rate two years forward). As of COB August 20, 1997

If 3-month LIBOR moves:	Note Amortizes Down by (based on original notional):
2.00%	0%
1.00%	5%
0.00%	10%
(0.50%)	50%
(1.00%)	100%

The above table was structured such that the note will prepay slightly on each reset date to replicate the behavior of a typical MBS. Because of the lockout, this IAN promises the plan 6.90% (AEY) on the entire original face of the note for the first two years. If rates go down (and the pool of homeowners can borrow money less expensively) an MBS may prepay. Similarly, the IAN may prepay after the lockout period, but at objective, predetermined levels like those in the above table. After the lockout period, if 3-month LIBOR trades at the Base Rate on a reset date, the note will begin to prepay by 10% or \$10mm. (The Base Rate is the two year forward rate for 3-month LIBOR.) On each subsequent reset date, the note may prepay by some amount as triggered by the reference index's rate relative to the Base Rate. (If the 3-month LIBOR moves between levels listed on the table above, we interpolate the amortization amount.) Notice that if rates rise slightly, this note will still prepay, while an MBS might actually extend. This feature makes this IAN relatively conservative, as it allows the plan to reinvest in a higher rate environment. Reducing or eliminating the note's amortization in a rising rate environment would increase the yield pickup of the note.

Several factors determine the amount of the IAN's yield pickup:

- The value of the amortization is greater when the market perceives the reference index as volatile. For this reason, volatility levels (visible through the prices of options) have a significant effect—the higher the volatility, the greater the pickup.

Measuring Active Fixed Income Managers Against Their Benchmarks *(continued from page 7)*

years and preferably ten years to determine top performing candidates for selection. Second, further reduce the list of those candidates with strong performance by reviewing consistency of returns and risk, and portfolio characteristics which match individual portfolio requirements. Next, from this list, a thorough due diligence process must be conducted with each manager which details: their firm structure; investment philosophy and management process; historic returns and risk; professional staff; technology resources; client service capabilities, etc. Visit the top three or four managers if possible. The optimal manager is the one who demonstrates consistently superior performance over time from a disciplined investment process and with a stable group of investment professionals.

The manager's particular investment strategy is also of key importance for stable value products given the importance of portfolio duration to the crediting rate calculation. Generally speaking, managers that exhibit a fairly steady duration profile provide less risk to stability of crediting rates than a manager using large duration changes (i.e. market timing) to achieve results.

Conclusion

This is not intended to be a comprehensive study of bond manager performance but rather some observations based on our experience and some empirical evidence. One thing we believe strongly is that alternatives (i.e. synthetics or separate account GICs) will continue to play a major role in stable value portfolios and actively managed portfolios are a growing segment of this market. That said, it is "caveat emptor" ...buyer beware...because it appears that, as with equities, a large segment of active managers cannot beat an index fund after management fees. It requires a significant amount of due diligence to find managers that have consistently out performed benchmarks after fees with a risk profile acceptable for stable value portfolios. A mix of enhanced indexing combined with a limited group of total return specialists may be the best bet for adding value through active management in synthetic portfolios.



Indexed Amortizing Notes—An Alternative to Mortgage Backed Securities *(continued from page 8)*

- The amount the note amortizes down given a certain move in the reference index influences the yield pickup as well. The more the note prepays given a certain move in the reference index, the greater the yield pickup.
- Often these notes feature a lockout provision. A lockout period will decrease the effect of the yield pickup.
- Most IAN's prepay given a certain move of the reference index. They can also be structured to extend under other circumstances, just like an MBS. Bundling extension risk or other risks into the note will also boost the yield pickup.
- The IAN can also be customized to suit the credit appetite of the investor. The dealer can arrange for the notes to be issued by other entities, like AAA or AA agencies for example. Structuring a stronger credit than of the dealer into the note will lower the overall yield on the IAN.

Advantages/Disadvantages

There are some significant differences between IAN's and mortgages. An IAN is entirely customizable—the buyer can peg its prepayment schedule to 3-month LIBOR, 1-month LIBOR, a constant maturity Treasury index, or a variety of other instruments. The buyer of the note can also customize the amortization table and other characteristics to fit the desired risk profile. A major practical difference is that the IAN lacks the demographic and behavioral dynamics of a mortgage or pool of mortgages. If rates fall, a mortgage might prepay, or it might not—there is a degree of behavioral uncertainty, as the borrower owns the right, but not the obligation, to prepay. In contrast, given certain movements in the markets, an IAN will behave in the prescribed ways.

IAN's can be held to maturity or traded like MBS's. Often, an IAN can be sold or "torn-up" at a tighter spread at which a comparable MBS can be sold. Like an MBS, an IAN can be held at market value or wrapped for benefit responsiveness.



Duration Management Within a Stable Value Framework

by Victoria M. Paradis, CFA, Pacific Investment Management Company

Measuring the risk of stable value investments requires more than knowledge of quality ratings. The risk assessment of any stable value investment must importantly address its maturity profile. Longer maturity investments are more risky than shorter maturity investments, from both a credit and interest rate perspective. For years, the most common risk measure for traditional GICs was the average life (or average maturity). This simple calculation remains the primary risk measure for some stable value investments. However, duration, the measure of a fixed income investment's price volatility (sensitivity to changes in market interest rates), is the comparable risk measure used exclusively by traditional fixed income investment professionals.

Even though stable value investments do not directly exhibit price volatility as interest rates change, duration is a key determinant of a stable value fund's risk and return. If consistently applied, duration analysis can also offer a useful framework that simplifies the assessment of stable value investments.

The purpose of this article is to:

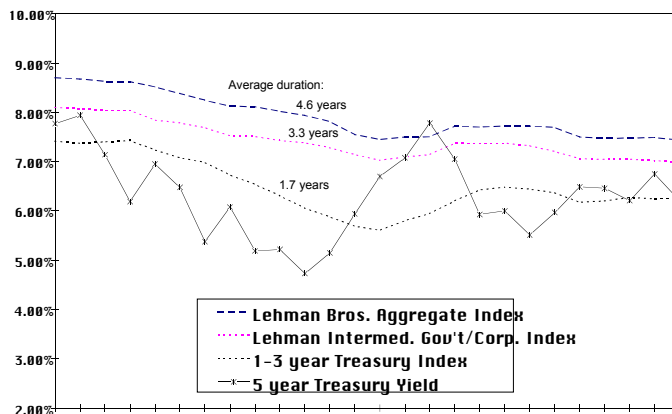
- Explain how the volatility and return trade-off inherent in duration measurements translates into a stable value framework.
- Illustrate that duration issues are equally relevant when selecting among stable value products or when managing an entire stable value fund.
- Discuss historical and current duration trends of stable value funds.
- Outline a fair framework for evaluating product categories based on comparable durations.
- Support the important point that the fund's duration is the backbone of its blended rate pattern, regardless of the underlying product structure.

Duration: Its Impact on Stable Value Portfolio Behavior

While book value wrap contracts smooth the volatility of all bond portfolios, there is a difference in the crediting rate behavior of shorter and longer duration portfolios (specifically evergreen, or constant duration, portfolios). The credited rate of return for a shorter duration portfolio will respond more quickly to changes in interest rates than for a longer duration portfolio. A longer duration portfolio will generally have a more stable crediting rate, but will lag changes in market interest rates more than a shorter duration portfolio. This lag is of particular concern when a fund experiences a sustained period of increasing interest rates. However, longer duration portfolios should accumulate a useful return "cushion" from higher yields (with a positively sloped yield curve) and expected returns (over time). This cushion should help buffer the crediting rate of longer duration portfolios to help offset the slower interest rate tracking when rates rise.

The chart below illustrates this point: three simulated evergreen index portfolios were funded on 12/31/90 (this time period was selected because it covers a complete interest rate cycle). The chart compares the book value crediting rate pattern for each portfolio with the 5 year Treasury yield. As compared with the longer duration portfolios, the crediting rate of the shorter duration portfolio (1.7 year average) decreased more rapidly as interest rates fell through 1993. During the rising rate period of

**The Stable Value Tradeoff:
Interest Rate Tracking versus Return Potential**



1/1/91/91/91/91.1/1/92/92/92.1/1/93/93/93.1/1/94/94/94.1/1/95/95/95.1/1/96/96/96.1/1/97/97

Continued Page 11

Duration Management Within a Stable Value Framework (continued from page 10)

1994, the shorter duration portfolio's blended rate also responded more quickly by increasing sooner than the longer duration portfolios. The longer duration portfolios reacted more slowly to both rising and falling rates. However, it is important to note that the higher historical returns enabled the crediting rates of the longer duration portfolios to remain above the spiking Treasury yields for much of 1994.

Targeting a Stable Value Fund Duration

The tracking versus return trade-off illustrated in the above chart applies not just to wrapped evergreen bond portfolios, but also to entire stable value funds. Comparable duration funds that invest exclusively in maturing stable value contracts (GICs, buy-and-hold bonds, or fixed maturity managed bond portfolios) will exhibit the same blended rate patterns. The goal of the plan sponsor should be to strike the right balance between lengthening the duration of the fund to target a higher return, while limiting duration to a level that will allow the fund to reasonably track market interest rates.

Many of today's stable value funds have a duration of 1.5 - 2.5 years. This duration is often achieved by default, not design. This is partially because funds that historically invested exclusively in traditional GICs minimized credit risk by limiting maturities to 3-5 years. However, today's broader selection of stable value products, particularly managed bond portfolios, allows a somewhat longer duration target, without assuming unmanaged credit, cash flow, or liquidity risk. In addition, a bond portfolio's duration is managed on an ongoing basis, instead of just at contract inception. By adding wrapped bond portfolios, many plans today are electing to slightly extend the duration of their stable value funds to achieve higher long-term expected returns.

Comparing Apples to Apples

After determining a fund's target duration, some managers of stable value funds are interested in comparing various product categories available in the market. Each product will have its own unique return, diversification, and liquidity profile. These factors should be the primary determinants in choosing from a product class. In practice, the product selection process is often flawed because the underlying duration of each of the products is not directly comparable. For example, consider the following:

- a 5 year GIC
- a laddered portfolio of 5 year maturity contracts, and
- a 5 year constant duration bond portfolio

Each investment has a very different duration, so direct comparisons are not appropriate. While this may

seem obvious, too often these products are selected based upon a flawed comparison.

Plans often view an evergreen bond portfolio as an alternative to an individual GIC or other fixed maturity contract. In practice, an evergreen portfolio behaves like a laddered portfolio of maturing contracts. Therefore, it is more appropriate to view a single evergreen contract as a separate segment within a stable value fund. It will behave comparably to a laddered portfolio of maturing contracts, not like an individual contract.

Combining Products to Achieve Target Duration

To achieve the target duration for a stable value fund, plans do not need to invest such that each contract meets the target duration. The overall fund duration is what matters, not the duration of individual investment contracts. A plan can achieve its target fund duration with many combinations of products and strategies. For example, the strategy combinations presented below would all achieve a target fund duration of 3 years. Of course, these are just several of many possible combinations.

Wrapped Evergreen Portfolios:	Approx. duration (years)	Product Combinations that Target Fund Duration of			
		3	4	5	6
Lehman Aggregate	4.6	40%	15%	20%	30%
Intermediate Gov't/Corporate	4.6		60%	30%	30%
1-3 year Tsy	1.7			20%	40%
Laddered Portfolios:					
Laddered 5 year maturities	5		85%	40%	30%
Laddered 3 year maturities	3	60%			

Conclusion

The underlying duration is usually the most important determinant of a fund's return profile for the participants. Each fund's target duration should reflect the sensitivity of its participant base to tracking market interest rates, versus targeting a higher return that is more appropriate for a retirement savings vehicle. The target duration should be determined independent of the underlying product allocation.

After setting a fund's target duration, product allocation is a secondary component. Each product class available within the stable value market has its own strengths and weaknesses. A product comparison should assess benefits and risks, given the same duration. Adjusting for duration comparability will allow for a more fair assessment of the important issues, which include diversification, return, liquidity, and flexibility.



Inflation Indexed Products for Stable Value Funds (continued from Page 1)

investment options which suited their needs. As such, it does not come with the clearly specified boundaries of most other asset classes. To say a particular investment “fits” in a stable value fund ultimately depends on whether it is consistent with participant expectations when they allocate their funds to the stable value option of their plan. While this is subjective, I believe that there are two criteria which most clearly embody participant expectations and which can be used to evaluate the suitability of products and investment strategies:

- The value of participant accounts allocated to this option should be strictly increasing.
- The actual participant return for any reasonably long holding period should be significantly higher than that available from money market funds.

Based on the first criterion, an inflation indexed bond held at market is not a good fit. The price of the 10 year Treasury inflation indexed bond, for example, is quite sensitive to changes in real rates, and can go down in value. In fact, during a two month period shortly after the initial issue, the bond dropped in price by about 3%. For this reason, stable value funds investing in inflation indexed bonds will likely choose to hold them at book value by obtaining some form of benefit responsive protection. This protection may come in the form of a synthetic wrap, or it may be part of the product itself, allowing participant withdrawals at book value.

Assuming the product is held at book, then it will satisfy the first criterion. Even during a period of deflation, the Treasury bond guarantees a final principal payment at least as large as the initial principal, resulting in a nominal return of at least the real rate. Stable value funds will likely require this feature in any potential inflation indexed

product. By holding the product at book value, the positive return is earned throughout the product’s life and contributes well to the continuously increasing feature participants value so highly.

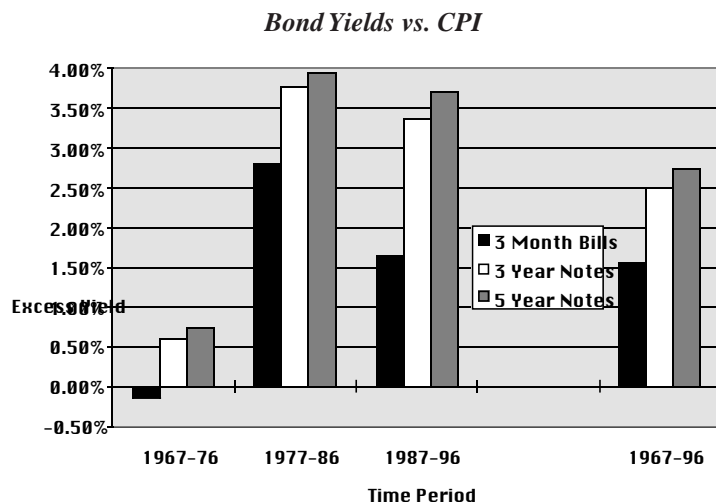
Regarding the second criterion, there is ample historic evidence that the real returns offered by current inflation indexed products are significantly higher than the real returns of money market funds, and comparable to the real returns of nominal bonds. For example, the chart below shows the excess of bond yields over the CPI for nominal bonds in consecutive 10 year periods over the last 30 years. The excess yields are for three month Treasury bills and for three and five year Treasury notes.

The excess yields of Treasury bills, which are comparable to the real returns of money market funds, look quite small compared to the real returns in the range of 3.50% to 3.65% recently offered by both the 5 and 10 year Treasury inflation indexed bonds. It seems clear that inflation indexed bonds meet the second criterion, perhaps as much as the nominal coupon instruments that are the mainstay of stable value funds.

Of course, higher real returns than shown above could have been achieved by investing in other sectors than Treasuries. However, the same is true in the inflation indexed market where significantly higher real rates may be obtained when credit or call spreads are added.

How Much of a Good Thing?

Once a plan sponsor or stable value manager becomes convinced of the suitability of inflation indexed products, the next question is “how much?” One technique commonly used by investment professionals faced with an asset allocation problem is “mean/variance optimization.” This technique seeks to find the mix of allowable assets offering the highest expected return for a given level of risk, where risk is defined as the volatility, or standard deviation, of total return of the portfolio on a market value basis. I would argue that this is an appropriate risk measure from the fund manager’s perspective for a stable value fund held at book value, since any market value under-performance is eventually passed through to participants. In addition, this risk measure assesses the likelihood that the market value of the underlying assets will diverge from the book value, creating participant equity issues and withdrawal risk.



Inflation Indexed Products for Stable Value Funds (continued from Page 12)

The assumptions needed to perform a mean/variance optimization are the expected returns, standard deviations, and correlations of the asset classes under consideration. A thorough asset allocation analysis for a stable value fund would likely include many fixed income asset classes with varying credit risk, duration, convexity, etc. As a simple example, let's consider a three asset class model consisting of cash, nominal coupon bonds, and inflation indexed bonds (IIB). This illustration is based on the following assumptions.

	<u>Expected</u>		<u>Correlations</u>		
	<u>Return</u>	<u>Deviation</u>	<u>Cash</u>	<u>Bond</u>	<u>IIB</u>
Cash	5.0%	0.5%	1.0		
Bond	6.0%	3.5%	0.1	1.0	
IIB	5.8%	2.0%	0.1	0.2	1.0

For Cash and Bond, these assumptions are consistent with the actual total return performance of these asset classes over the last five years, and they approximate current yields. Since there is not much historical data for inflation indexed bonds, these assumptions must be based on other considerations, such as historical CPI data, current real rates offered by these bonds, performance of inflation indexed bonds in other countries, etc. Using an expected return for IIB equal to that of Bond seems reasonable considering the relative real return results of these two asset classes described above. To be conservative in determining an allocation to IIB, I have arbitrarily reduced this to a return 20 bp below that of the Bond asset class.

The standard deviation for IIB depends upon the volatility of the CPI, the volatility of real rates, and the "real duration" of the IIB. Since real rates are likely to be much more stable than nominal rates, it makes sense that

the standard deviation assumption for IIB be lower than that for Bond. To date, the price volatility of the 10 year inflation indexed Treasury has been about half that of 10 year nominal bonds. The assumption above is likely a high estimate for the volatility of the recently issued 5 year inflation indexed Treasury.

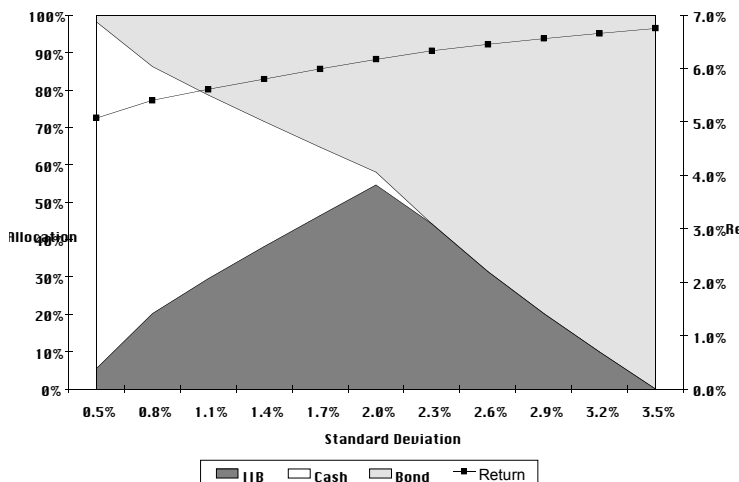
Another important assumption for this analysis is the correlation of the Bond and IIB returns, for which, again, there is little historical data in the U.S. It is clear that these two asset classes do not move in tandem, since an unexpected increase in inflation will cause an increase in returns for IIB and a decrease in returns for Bonds, at least in the short run. The assumption above is close to the actual correlation between nominal Treasury bonds and the inflation indexed Treasury since it was issued.

Once you accept the assumptions, and the underlying assumptions of modern portfolio theory, the rest is just math. For each level of risk tolerance (expressed in terms of standard deviation of return for the overall portfolio) there is a mix of these asset classes that will produce the highest expected return. For these assumptions, the results are shown in the chart below.

Even using assumptions which should lead to a low weighting, the model gives a sizable allocation to inflation indexed bonds. Without inflation indexed products, the stable value manager's primary method of reducing risk is by shortening duration, or in this simplified example, by holding more cash. By introducing an asset class which is not highly correlated with nominal coupon instruments, the stable value manager has a new way to reduce risk. Alternatively, the manager can keep overall risk at the same level and boost return by allocating a portion of the portfolio to inflation indexed products and taking slightly higher risks in the areas of credit, duration and convexity. In either case, the resulting portfolio is more efficient through better diversification of risks.

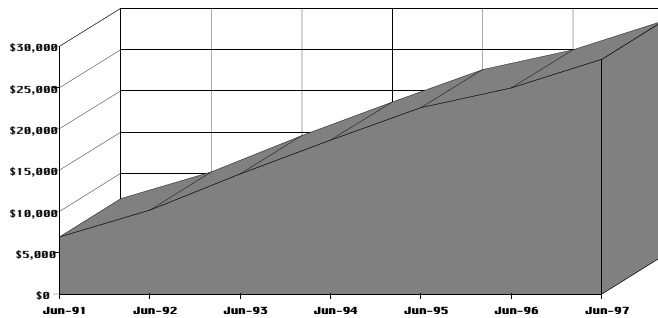
This type of analysis is not highly dependent upon the exact assumptions chosen. For any set of assumptions where IIB has an expected return premium over cash and only a moderate correlation to Bonds, the moderate risk portfolios will contain a significant allocation to inflation indexed securities. Why, then, have stable value funds not begun making allocations to these products? It is likely due to the novelty of the asset class and the lack of suitable product, rather than to serious differences of opinion on the suitability of inflation indexed products to stable value funds.

Allocation Among Cash, Bond, and IIB To Optimize Return per Unit of Risk



Pooled Funds (continued from Page 1)

Pooled Fund Universe Growth '91-'97 (\$ millions)



As noted in the table below, over the past eight years the median fund size has increased by 125%. This exponential growth has turned these relatively small funds into giants. Today, 36% of funds in the Hueler Universe have assets of over \$1 billion, 18% of the funds have assets of over \$2 billion and the largest fund has assets approaching \$4 billion. Pooled funds continue to have healthy cash flow and appear to have weathered the “transfer to equities” storm quite well. While growth has slowed over the past few years, pooled funds can still claim a solid rate of 10%-15% per year.

Historical Fund Size (\$ millions)

	1989	1997	Difference
Universe Assets	\$3,744	\$28,449	\$24,705
Largest Fund	\$771	\$3,851	\$3,080
Median Fund	\$180	\$406	\$226
Smallest Fund	\$28	\$78	\$50

Rapid growth coupled with significant advances in the spectrum of available product has had an impact on the demographics of the pooled funds over the years. One of the demographics that has exhibited meaningful change is deposit size. Hueler’s data shows a clear shift to larger deposits. The table below shows for the period between 1991-1997, deposits of less than \$1 million as a percentage of the total have declined sharply while deposits of \$10 million and higher have grown dramatically.

Changes in Deposit Size (\$ millions)

	\$1	\$1-\$5	\$5-\$10	\$10-\$20	> \$20
6/30/97	9%	20%	16%	20%	36%
6/30/91	22%	30%	16%	14%	20%

This change is a direct reflection of the changes in our industry. First, the overall size of the funds allows for the acceptance of larger deposits. Second, due to the increased product sophistication and minimum deposit amounts for contracts, even medium-sized plans have a difficult time managing a portfolio well in today’s market. The end result is that many plans have decided that pooled funds are an effective and efficient way of accessing stable value products.

At the present time, the total number of plans represented in the Hueler database sum to 16,700 plans. Relative to the estimated total 40,000 viable defined contribution plans this figure indicates that approximately 40% of plans across the country invest in pooled funds.

Another change in pooled fund demographics is the change in the types of plans making deposits. As noted below, 63% of 1991 deposits came from 401(k) plans, and today that number is 84%. Profit sharing and defined benefit plan deposits have tapered off from 21% to 10% and 10% to 3%, respectively. This again can be explained by the boom of the full service 401(k) plan.

Changes in Deposit Types

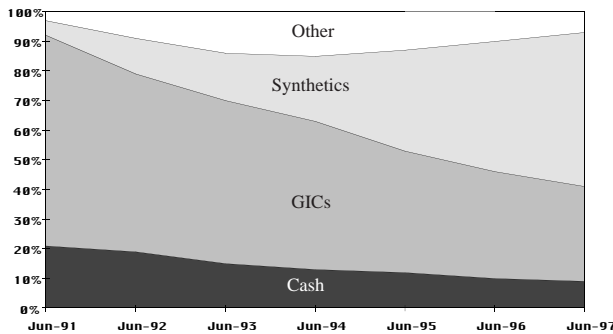
	401k	Profit Sharing	Defined Benefit	Other
6/30/97	84%	10%	3%	4%
6/30/92	63%	21%	10%	6%

Time, growth, and expanded product selection have had a meaningful impact on pooled fund managers’ investment style and strategy over the years. Over the past six years, the average cash position in these funds has decreased dramatically. As outlined in the next chart, on June 30, 1991, the average cash position was 21% where on June 30, 1997, the average position was only 9%.

Another trend is the significant move from GICs to synthetic products. In 1991 the average synthetic position was 5% of portfolio assets and today it is 52%. This increase in synthetics correlates with the decrease of GICs which held a majority position of 71% in 1991 and now hold a minority position of only 32%. While these statistics seem to indicate that everyone has jumped on the synthetic bandwagon, that is not quite true. As of June 30, 1996, 20% of the funds in the Hueler database did not own a single synthetic contract. Today, that number is down to 7%, but surprisingly 46% of funds hold a synthetic position of 20% or less of portfolio assets.

Pooled Funds Show Renewed Vitality (continued from Page 14)

Historical Portfolio Allocation



With all this discussion about change, there are several pooled fund characteristics that have remained relatively constant. As shown in the table below, over the past 5 years the average weighted average maturity has stayed in a band ranging from 2.25-2.54 years, and for the last 3 years between 2.49-2.54 years.

Average credit quality, based on a numerical scale where 10=Aaa/AAA, has risen due to the enhanced ability to purchase AAA products via synthetics. That increase however may not be as substantial as expected. As shown in the table below, over the past 5 years the average credit quality has increased from 8.27 in 1992 to 8.82 in 1997. This translates into approximately one half of an incremental rating increase.

Historical Universal Averages

	2Q97	2Q96	2Q95	2Q94	2Q93	2Q92
Quarterly Return	1.53%	1.55%	1.60%	1.49%	1.51%	1.49%
12 Month Rolling Return	6.43%	6.44%	6.43%	6.16%	6.44%	7.72%
Wtd Average Maturity	2.54 yrs	2.52 yrs	2.49 yrs	2.50 yrs	2.25 yrs	2.28 yrs
Average Credit Quality	8.82	8.8	8.76	8.75	8.25	8.27
Average Fund Size	\$1016mm	\$891mm	\$867mm	\$690mm	\$501mm	\$376mm

The average 12 month rolling return for the past three years has been virtually flat. Although the average annualized returns have not changed significantly over the past 3 years, the range between the 10th percentile and the 90th percentile has compressed as highlighted in the table at the top of the next column. The quarterly return numbers have compressed at a rate of 2 basis points per year, and the one year return numbers have compressed more than 10 basis points per year. The three year performance numbers are less dramatic, compressing less than 5 basis points per year. Most likely this is due to the maturity of the funds in the database.

Pooled Fund Universe Performance Bands


	Qtr Return 10th %	Qtr Return 90th %	Differential
Jun-97	1.51%	1.61%	0.10%
Jun-96	1.45%	1.57%	0.12%
Jun-95	1.51%	1.65%	0.14%
	1 Year 10th %	1 Year 90th %	Differential
Jun-97	6.23%	6.56%	0.33%
Jun-96	6.09%	6.56%	0.47%
Jun-95	6.00%	6.58%	0.58%
	3 Year 10th %	3 Year 90th %	Differential
Jun-97	6.12%	6.55%	0.43%
Jun-96	6.07%	6.53%	0.46%
Jun-95	6.07%	6.57%	0.50%

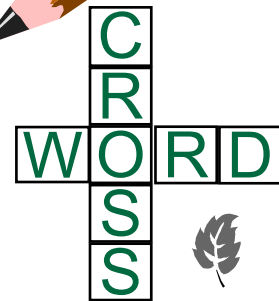
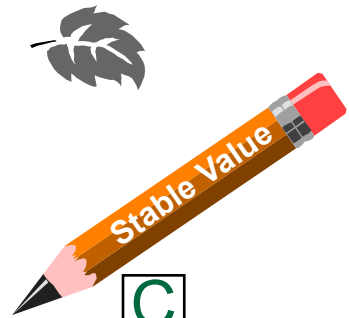
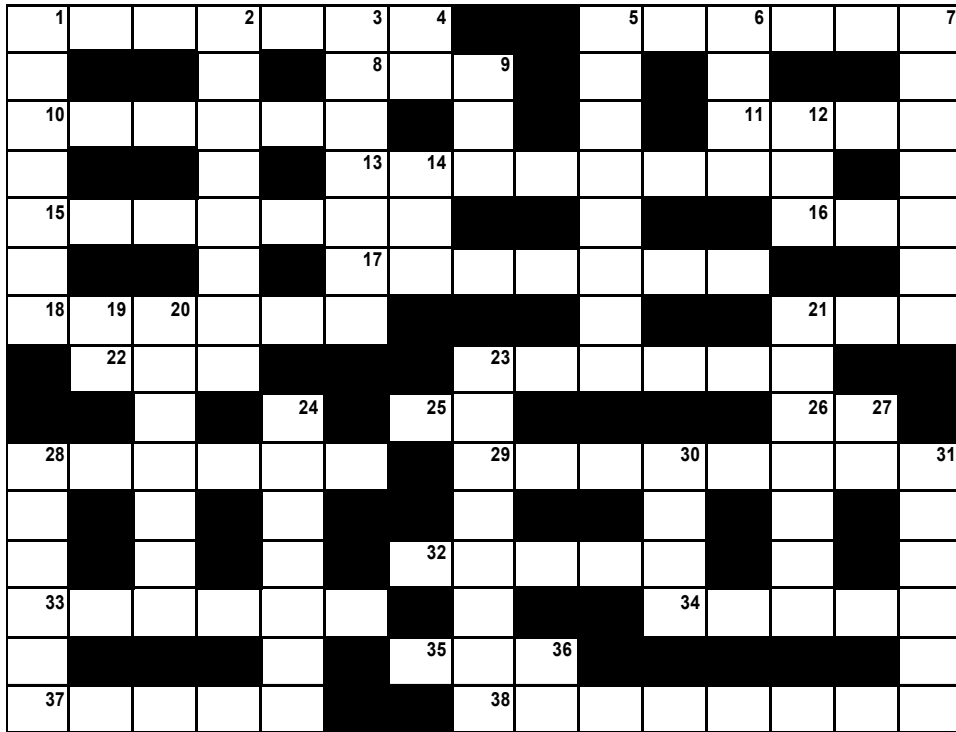
Currently, over 95% of funds in the Hueler database are over six years old, and over 75% of funds are more than eight years old. In previous years some of the older funds enjoyed higher contract rates from purchases in higher interest rate environments. Now that the majority of the funds are on a level playing field, the return range is tightening. Today the performance differential can be attributed more to manager style and investment strategy than fund inception date.

While there has been significant discussion in our industry about fees and the pressure on fees over the past few years, pooled funds' fee schedules do not show a significant reduction. As described in the table below, the average fee on a \$1 million deposit has come down by 8 basis points. The average fee on a \$5 million deposit has come down by 6 basis points and the average fee on a \$10 million deposit has come down by only 3 basis points.

Fee Changes (in bps.)

Deposit Size	\$1 million	\$5 million	\$10 million
1996			
High	75	62	58
Average	54	42	37
Low	30	29	20
1997			
High	100	55	55
Average	46	36	34
Low	25	23	19
Avg. Fee Reduction	-8	-6	-3

In conclusion, Hueler has watched these funds grow from their infancy, through their toddler and teen years over the last 10 years. Most of these funds are now mature adults making many prudent, complex decisions each day for all the investors in the fund. Today pooled funds are stronger than ever. They have long standing, proven track records, strong credit, solid liquidity structures, and sophisticated investment strategies. The future looks bright. You've come a long way, baby! 



by Allan Fen

ACROSS

1. Above par
5. Yield difference
8. Gun lobby (abbr.)
10. Asset subclass
11. Swat
13. Distribute
15. Repeat
16. Net mortgage spread (abbr.)
17. Issue
18. Redacted
21. Group
22. Each
23. Alaska mountain
25. Spanish yes
26. Musical note
28. Hang around
29. Auto ABS type
32. Godzilla's winged rival
33. Still in inventory
34. Boredom
35. Lennon's wife
37. Bridal gift
38. Government bond

DOWN

1. Type of management
2. Expiration
3. Not graded
4. Male title (abbr.)
5. Approve
6. Respite
7. Bank transaction
9. Sharp tool
12. Man's name
14. Guided
19. Prosecutor (abbr.)
20. Benchmarks
21. CA Valley
23. Fed-controlled rate
24. Lawfully
27. Exist
28. Marketable
30. Type of tree
31. Ownership
36. Conjunction

Answers along with names of successful puzzlers will be in the next issue. Mail or fax completed puzzle to address below.

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Company: _____

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