INTEGRATION OF ASSETS AND LIABILITIES IN INVESTMENT PROGRAM MANAGEMENT

Now more than ever, institutional investors are looking for ways to more efficiently manage their investment programs by reducing costs, controlling risk and managing funding concerns. After the dramatic market events of the last decade, defined benefit plan sponsors are facing stricter accounting and regulatory oversight. These challenges are forcing plan sponsors to reconsider how their investment programs are managed. In this paper, we discuss the changing landscape of pension plan investment program management and present some ideas for overseeing pension plan management in this new era.

Sponsors want to control funded status volatility, and focusing on a plan's liabilities when contemplating asset decisions is a good way to accomplish this task.

TRADITIONAL INVESTMENT PROGRAM MANAGEMENT

Defined benefit plans traditionally have approached the task of investing plan assets as an exercise in asset management only. This approach focused first on the plan's asset allocation and, second, on the performance of its investment managers. The importance of balancing these activities with an understanding of the liabilities was not typically considered. In the years 2000 – 2001, the financial markets imploded, sending equity values down dramatically. At the same time, the Federal Reserve began to aggressively lower rates to stimulate the economy. (From the beginning of 2000 to the end of 2001, the Federal funds rate dropped more than 400 basis points.)

The equity decline, coupled with low rates that raised the value of plan liabilities, caused great distress in many plans' funded status. It was after these events that accounting boards and government agencies began to take a closer look at how pension plans were being managed and how participant benefit payments could be better protected in the long term. These events were supposed to be a wake-up call for defined benefit plans to get their proverbial houses in order. However, it would take regulatory and accounting guidance changes (PPA and FAS 158) and yet another financial meltdown to solidify the urgency for plan sponsors to take action concerning their own pension plan management issues.

EVOLUTION

Today, pension plans are battling back from another challenging market environment of asset value and interest rate declines where plan sponsors experienced precipitous declines in the funded status of their plans *(see Chart 1: Annual Pension Funded Status)*. Further, within the annual timeframes presented in Chart 1, there were periods of extreme volatility in funded status. Prior to the market crisis, pension plans in the Standard & Poor's (S&P) 500 index witnessed their funded status achieve a high of 113% at September 2007, followed by a low of 70% during the crisis at March 2009 [(1)]. After two "perfect storm" events (where equity values and interest rates decline simultaneously) in the last 10 years, and rule changes that make volatility more transparent in financial statements, plan sponsors have become frustrated with the results of traditional plan management. Sponsors want to control funded status volatility, and focusing on a plan's liabilities when contemplating asset decisions is a good way to accomplish this task. Next, we discuss the decisions that sponsors today may make when contemplating managing assets relative to liabilities.

(1) Hewitt Pension Risk Tracker

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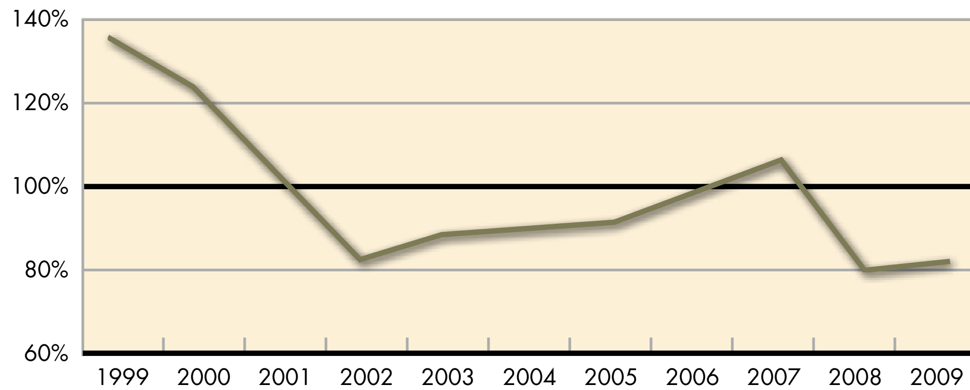
Plan sponsors have experienced a "double dip" in funded status over the past 10 years.

CHART 1

Annual Pension Funded Status



Source: Milliman

MANAGEMENT IN THE NEW ERA

Managing pension plan assets against plan liabilities in today's environment is an ongoing, interactive process. This process has evolved to become more complex, factoring in future expected changes to assets and liabilities based on asset returns, discount rates and contributions. Managing this process requires focus and dedicated resources to be successful. A logical first step to success is conducting an asset liability (A/L) study, which helps a sponsor set its strategic portfolio allocation by projecting important metrics like contributions, pension expense and funded ratio for various portfolio mixes, highlighting the impact of asset allocation decisions.

Traditionally, A/L studies were performed about every three to five years, with the focus on maximizing asset return per unit of asset risk. How well assets met liabilities was often an afterthought. Under the old rules, the allowed smoothing of asset values and gains and losses – as well as static discount rates – created an environment for asset-only analysis. Given that the new pension rules create a more volatile funded status, plan sponsors are now more focused on managing a plan in the asset-liability space. This change in focus also means more frequent A/L studies may be helpful due to changes in funded status, plan status or the plan sponsor's desire and ability to contribute to the plan.

All of these factors, along with a plan sponsor's desired return and risk tolerance, can affect its perspective on which portfolios on the efficient frontier are most appropriate. The A/L study should emphasize the asset-liability or surplus efficient frontier (return versus surplus risk). This frontier yields different efficient portfolios than the traditional frontier, particularly pertaining to the fixed income asset classes. Longer duration fixed income asset classes become more efficient because the pension liability tends to have longer duration. A/L studies are also effective in showing the expanded efficient frontier when introducing new asset classes, so they can help sponsors look beyond traditional equities and fixed income to evaluate the addition of alternative asset class investing.

Asset allocation is an important component of portfolio return. The A/L study can be a main resource for making these asset allocation decisions. Once the A/L study is complete, the plan sponsors should have greater insights to help them navigate the next series of decisions:

- What is the optimal allocation to equity and fixed income?
- How great is the desire to hedge liability movements?
- What are the implementation options?

Only after considering its specific risk-return profile can a sponsor decide on its optimal equity to fixed income allocation.

EQUITY/FIXED ALLOCATION

The A/L study and supporting surplus efficient frontier provides the sponsor with numerous efficient portfolio allocations from high risk/high return to low risk/low return. Shifting allocations from equity to fixed income often causes movement along this efficient frontier. Deciding where to land on the efficient frontier is usually affected by a sponsor's need or desire for return weighed against its ability to accept funded status volatility (risk). There is no silver bullet to this decision; all portfolios are efficient, but not all are appropriate for each sponsor. So a portfolio that is appropriate for client A may be inappropriate for client B. Why?

Some (but not all) of the major decision points that may separate plan sponsors include desired return, funded status, ability to contribute and willingness or ability to accept volatility. For example, the asset allocation should have a direct impact on a sponsor's pension expense through the FASB expected return on asset assumption. Therefore, any sponsor who wants a rather high, 8% expected return assumption will likely be locked into asset allocations with a high equity allocation. A lower funded status usually translates into higher desired expected return/high equity portfolio to increase the chance of asset growth reducing the deficit. A greater willingness to accept volatility tends to lead to a higher allocation to equities. Some cash-flow-rich sponsors may choose to contribute money now and then manage a less-volatile, high fixed-income portfolio going forward. Other cash-flow-rich sponsors may choose a higher risk, high equity portfolio in hopes of reducing future contributions, knowing they can afford bad outcomes. Only after considering its specific risk-return profile can a sponsor decide on its optimal equity to fixed income allocation.

Once the basic equity-to-fixed-income allocation has been decided, further investigation into equity allocation by capitalization weight, size, domestic and international should be considered, but is beyond the scope of this paper. We will discuss, however, further breakdown of the fixed income or hedging asset component.

LIABILITY HEDGING

Liabilities are denominated like corporate bonds, so when considering whether to hedge the liability, credit spreads as well as risk-free rates should be considered. All plan sponsors should recognize that changes in Treasury rates and credit spreads change liabilities, and consequently they should know what investment options are available to hedge those liability changes.

The most common physical investment options are long credit bonds, long government bonds, intermediate bonds and Treasury strips. Beyond physical investments, credit default swaps, Treasury futures, interest rate swaps and swaptions are derivatives that can hedge liability movements. Derivatives can be very useful in implementing hedging strategies, either in conjunction with physical bonds or on a stand-alone basis. However, they can be complex to manage and often carry some risk, so many plan sponsors might not be comfortable using them in their investment programs.

Hedging strategies may be very tactical, as sponsors seek to over- or underweight duration based on risk-free rates and over- or underweight spread investments based on corporate credit spread levels. Most sponsors choose not to be this tactical but instead set a long-term strategic hedging objective.

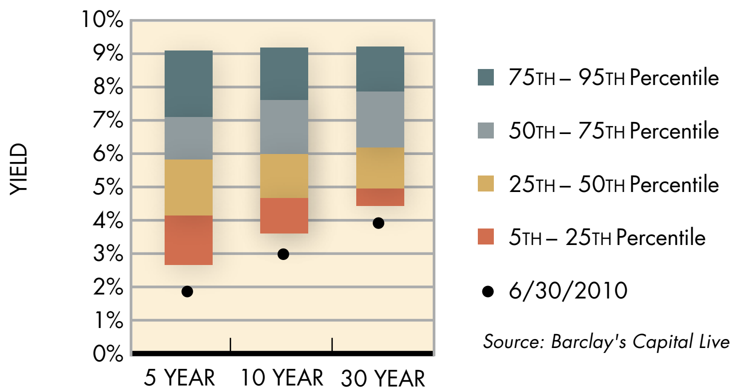
IMPLEMENTATION OPTIONS

Many plan sponsors have shifted one of their important questions from "should I hedge" to "when should I hedge?" With the current risk-free rates displaced historically low *(see Chart 2: Historical Distribution of Treasury Rates)*, many plan sponsors are shying away from extending duration in their fixed-

income allocation right now. Even if an A/L study indicates a strategic target allocation to long duration fixed-income assets, it is understandable that plan sponsors are currently hesitant to embrace longer-duration strategies. However, the decision to hedge does not have to be an all-or-nothing decision; rather, plan sponsors can gradually migrate to a longer-duration fixed income portfolio over time.

CHART 2:

Historical Distribution of Treasury Rates



Source: Barclay's Capital Live

A step-rate approach to implementing a longer-duration mandate allows for periodic review of the decision, diminishes rate timing and can offer flexibility to accelerate or reverse the decision *(see Chart 3: Step-Rate Approach to Allocating Assets to Long Duration Fixed Income)*. Notice in Chart 3 the plan is moving from a Core Fixed Income portfolio to a Long Duration portfolio quarterly by 5% increments, completing the transformation in six quarters. This concept is similar to dollar cost-averaging into equity positions. Many plan sponsors are also concerned that their current low-funded status means it is not a good time to hedge. While it may be an uncomfortable time to *implement* a large or full hedge, it is a great time to *plan* to de-risk as funded status improves. Getting a committee comfortable now with making changes in the future may prevent emotional attachment to performing assets and can help reduce vulnerability to a third "perfect storm."

GLIDEPATH APPROACH TO ASSET ALLOCATION

As mentioned, the dynamic nature of pension liabilities calls for a dynamic approach to asset allocation that evolves over time. At Northern Trust, we have developed a "glide-path" approach to pension plan investing customized to each plan's circumstances and objectives. This is not a set-it-and-forget-it exercise because as plan circumstances change over time, the glidepath will need to be adjusted (*see Chart 4: Sample Glidepath Approach to Asset Allocation*).

In Chart 4's example, the plan is currently 70% funded with a core aggregate bond fixed-income allocation. The glide-path recommends moving immediately to long bonds and then further increasing fixed income and decreasing equities as funded

CHART 3:

Step Rate Approach to Allocating Assets to Long Duration Fixed Income

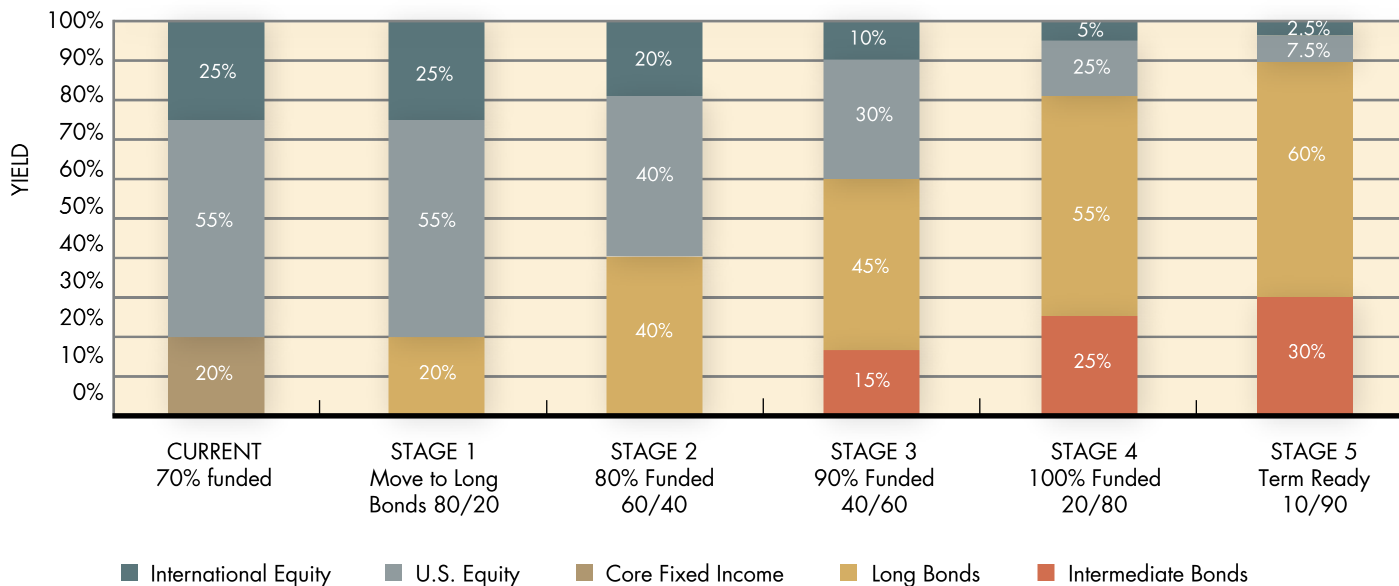
	Current	12/31/2010	3/31/2011	6/30/2011	9/30/2011	12/31/2011	3/31/2012
U.S. Equity	55%	55%	55%	55%	55%	55%	55%
International Equity	15%	15%	15%	15%	15%	15%	15%
Core Fixed Income	30%	25%	20%	15%	10%	5%	0%
Long Bond	0%	5%	10%	15%	20%	25%	30%
	100%	100%	100%	100%	100%	100%	100%

For illustrative puposes only

Source: Northern Trust

CHART 4:

Sample Glidepath Approach to Asset Allocation



status triggers (80%, 90%, 100%, etc.,) are achieved. This glidepath is typically customized to each plan's circumstances. For example, this schedule is adjusted for current funded status; whether the plan is an ongoing concern, closed or frozen; the sponsor's ability to contribute to the plan; and the plan's risk tolerance.

APPROACH TO SURPLUS MANAGEMENT

In pension finance, funded status has a unique importance. Regulatory targets are defined in terms of the funded status, and funding rules are designed for pension plans to become 100% funded within a specified timeframe. Since the funded status of the pension plan is the focal point for pension plan sponsors to determine investment plan success, it is reasonable to use funded status targets to define investment strategy.

Assuming that only investment strategy is employed to achieve full funding (i.e., ignoring contributions) for an under-funded plan, the asset return needs to exceed the liability return to narrow the funding gap. As liabilities grow, the assets must grow faster to achieve fully funded status. Therefore, for a plan to succeed and meet the regulatory funded-ratio targets, the ***surplus return target*** (defined as asset return less the liability return) must be greater than zero.

A surplus return target greater than zero requires a reasonable allocation to return-seeking investments. For an under-funded plan, a higher allocation to return-seeking investments is necessary to reach a positive surplus return target. As the funded status improves over time, the surplus return target can be revised downward, and consequently, the target allocation to return-seeking investments can be decreased.

The following table illustrates different sample surplus-return targets corresponding to different funded ratios. When the plan is underfunded, the assets must work harder to not only keep up with growth in liabilities but also to make up the shortfall. The surplus-return target is, therefore, higher for lower-funded ratios and decreases as the funding gap narrows. As an example, let's

Sponsors may better avoid trouble down the road by considering liability movements when choosing assets.

assume a liability return of 6%. If a plan is 80% funded, the assets would need to return 7.5% [6% ÷ 0.8 = 7.5%] just to maintain the deficit. Higher returns are required to decrease the deficit. Returning 50 basis points more than 7.5% would yield an 8% return and the 2% (8% – 6%) surplus return target shown below.

In addition to achieving fully funded status, other funding targets, such as termination, can be set for the plan. These targets also can be expressed as a series of surplus-return targets, each tied to the funded status. Generally, the funding target for termination is higher than for full funding. For example, achieving a funding target of 110% may be required so the sponsor can terminate the plan. The actual target for termination depends on factors such as pricing, interest rate environment at the time of termination, expenses associated with termination etc.

This asset allocation strategy, which evolves over time as the funded status of the plan improves, requires ongoing monitoring and implementation. An analysis of plan liabilities through an A/L study can determine the required surplus-return target based on plan objectives. Ongoing liability reports keep track of changes in funded status and help the investment strategist adjust the asset allocation for the plan.

Funded Ratio	Surplus Return Target
80%	2.0%
90%	1.0%
105%	0.0%

PLAN MANAGEMENT AND REPORTING

In this new era of pension plan supervision, plan management is not what it used to be. No longer is a sponsor only setting a target allocation, rebalancing and evaluating managers but now has the added responsibility of monitoring funded status, risk-free rates, credit spreads, yield curves, etc. Decisions implemented require continual, focused monitoring of the economic and plan-specific circumstances. Thus, finding a trusted advisor who is willing to help guide this process is more important than ever. Flexibility is very important, as even when schedules are in place, plan sponsors must stay aware of large market moves and be able to adjust strategies accordingly.

For any sponsor who desires dynamic allocation, frequent funded status reporting is necessary. A funded status report should include assets, liabilities and surplus and also highlight important drivers of the asset and liability changes. A sample of this type of reporting can be seen in *Chart 5: Asset & Liability Reporting.*

Plan sponsors and their investment committees need to recognize funded status volatility and what affects that volatility – which is not always equities. Sometimes, volatility arises from liability fluctuation due to interest rate changes. Showing this volatility quarterly or monthly can help plan sponsors better understand pension plan management from an asset-liability perspective. Even if a sponsor is not dynamically changing asset allocations, we believe all plans should be reporting and monitoring funded status, as that truly is the most important measure for pension plans.

THOUGHTFUL, DELIBERATE PROCESS

Today, pension plan sponsors seek thoughtful, deliberate processes to manage their pension assets and meet the needs of future beneficiaries. By considering liability movements when choosing assets, sponsors may better avoid trouble down the road. Evolving accounting and government regulations – plus two volatile market periods – have forced sponsors to be more accountable. And the dynamic nature of pension liabilities calls for continuous monitoring and potential quick action.

TO LEARN MORE

With Northern Trust, you will find a strong and stable partner, one well-positioned to help plan sponsors outsource their investment management responsibilities. To learn more about how our suite of services and products may help your investment program become more nimble and dynamic, please contact your relationship manager or visit northerntrust.com.

CHART 5:

Asset & Liability Reporting (continued on page 8)

	March 31, 2010	June 30, 2010	Returns
Asset	$ 208,792,424	$ 194,141,239	–6.2%
Liability	294,822,074	317,476,489	9.1%
Surplus (Deficit)	$ (86,029,650)	$ (123,335,250)	
Funded Ratio	70.8%	61.2%	–13.7%
Liability Discount Rate	5.8%	5.2%	
	Duration	Duration	
Hedging Assets	4.7	4.3	
Liability	10.9	11.4	
Hedging Asset Allocation	23.9%	28.4%	
	Dollar Duration	Dollar Duration	
Hedging Assets	$ 2,345,365	$ 2,370,853	
Liability	32,135,606	36,192,320	
Surplus	$ (29,790,241)	$ (33,821,467)	
Hedge Ratio	7%	7%	

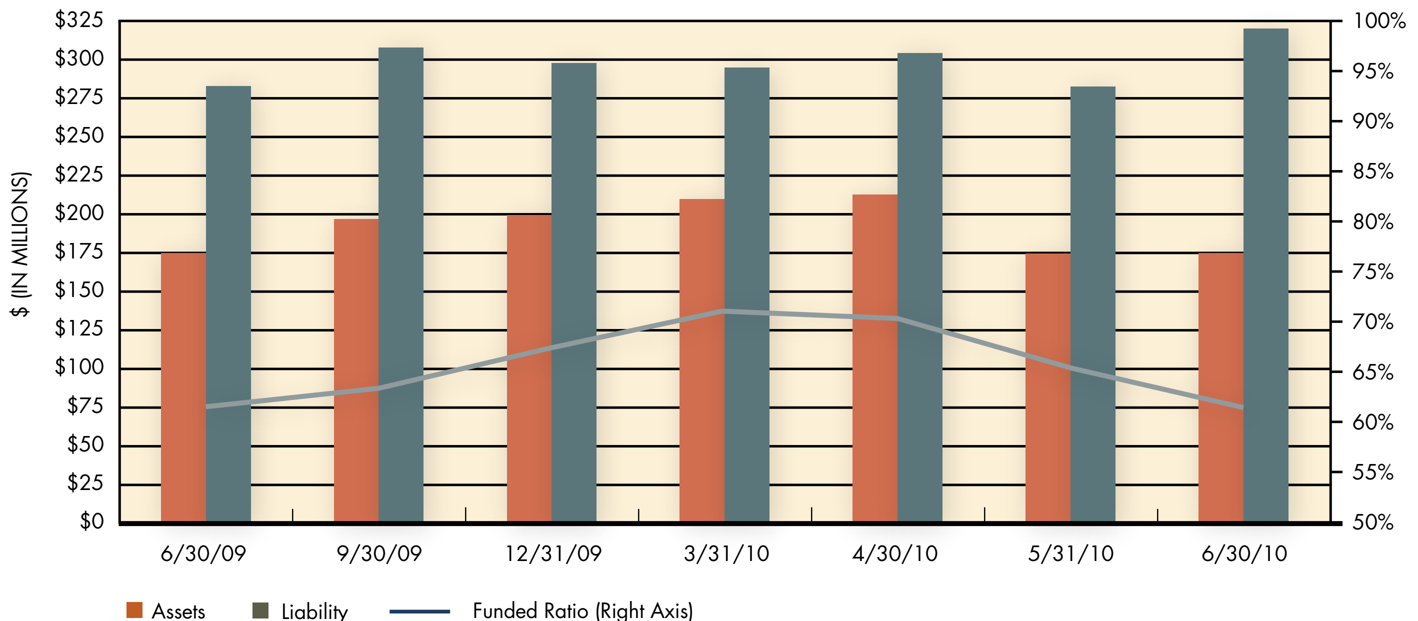
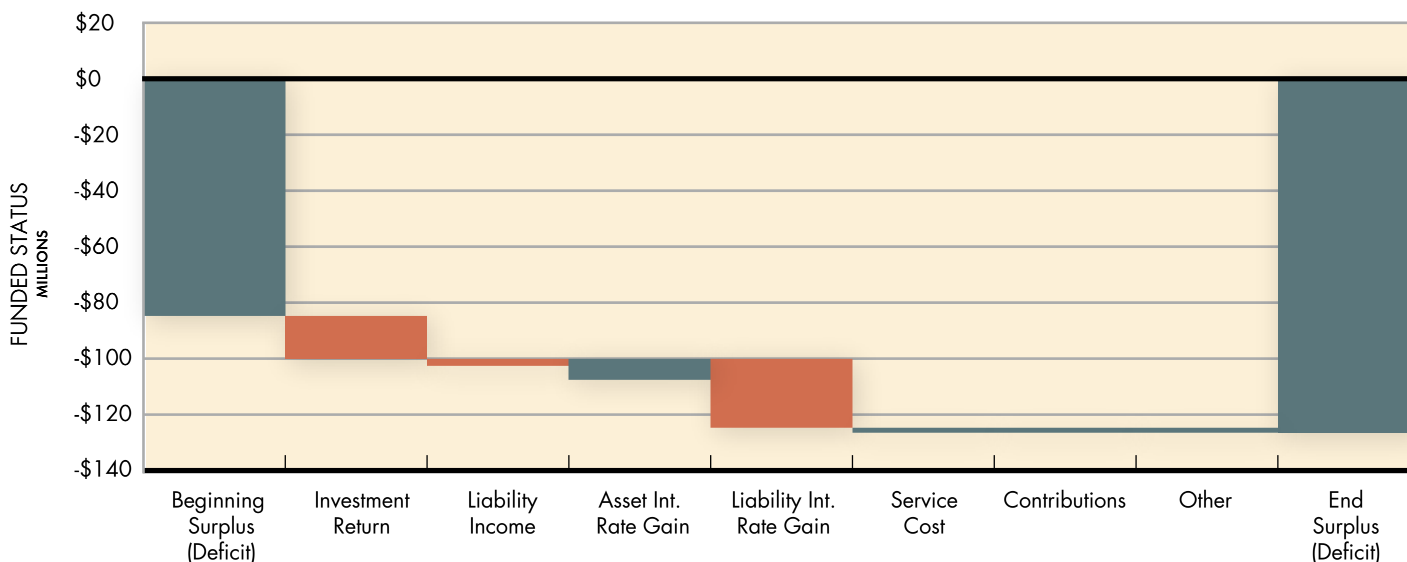


CHART 5:

Asset & Liability Reporting (continued from page 7)

Financial Summary 2010 Q2	$ Assets	minus	$ Liabilities	equals	$ Funded Status	Funded Ratio
Balance 3/31/2010	208,792,424	–	294,822,074	=	(86,029,650)	**70.8%**
Investment Return	(14,604,351)	–	3,236,364	=	(17,840,715)	
Interest Rate Capital Gain	1,794,312	–	23,193,982	=	(21,399,671)	
Contributions	2,844,055	–	—	=	2,844,055	
Service Cost	—	–	825,000	=	(825,000)	
Other Events	—	–	—	=	—	
Distributions	(4,685,201)	–	(4,600,931)	=	(84,269)	
Balance 6/30/2010	$ 194,141,239	–	$ 317,476,489	=	$ (123,335,250)	**61.2%**

Quarter Ending June 30, 2010



Source: Northern Trust

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