



## A Framework for Pension Investment Strategies

Pension investment portfolios exist only to fund plan liabilities, not to hit targets of capital efficiency, asset allocation, bond duration, total return or any strategic benchmark.

In the aftermath of the global financial crisis financial academics and practitioners alike have undertaken a rigorous reassessment of risk management practices, strategic allocations, fees and styles in hopes of constructing pension asset portfolios that are more likely to avoid the mistakes of the past. Many have increased allocations to fixed income—particularly long-term assets— in recognition of the long-term nature of the liabilities. We applaud the renewed willingness to build a better mousetrap but believe they are doomed to fail because these inquiries are conducted in the context of a fatally flawed framework: measuring success in terms of total return compared to a strategic benchmark return. We believe there is one, and only one, true objective for pension plans: to fund the payments of pension liabilities.

The very structure of these plans as ERISA trusts establishes their unique function. For the last twenty years or so, the “received wisdom” of the herd was that total return was the most meaningful method for evaluating the relative success or failure of these funds with very long term payment obligations. We don’t dispute that total return is a valuable concept, but find that the wide variations in the patterns of anticipated liability payments clearly challenge the relevance of a single broad-based and undifferentiated measure.



But if total return is so out of step with what is required for the pension fund how could the measure have been so universally accepted as the litmus test for evaluating plan returns? The answer is simple: total return is easily calculated using uniform methods. It's nice to use handy and uniform measures in some circumstances, but if they measure the wrong things it's probably not a very good tool for directing pension fiduciaries.

For those who question our skepticism on the relevance of total return for the pension portfolio we pose the following question: What if the pension plan assets return -20% in a period in which the strategic benchmark returns -25%? If we use total return as the test of success or failure we have to conclude that the portfolio has been decidedly successful. Management, however, is quite likely to point out that the portfolio's ability to fund liability payments has decreased substantially and would probably be more inclined to throw bricks than bouquets.

### Clear objective: Fund expected pension liabilities

Simply put, we believe pension plans are best served by establishing and articulating that the primary objective of the plan assets is to fund the expected pension liability payments. With this as our premise, we have a different way of approaching the scores of difficult decisions plan sponsors have to make about asset allocation, manager selection, risk measurement, rebalancing methodologies among other things. The clarity of our objective provides us with a simple, robust and effective framework for considering those problems. There are three—and only three—reasons to hold any asset or undertake any strategy in the plan:

- Provide cash flow to support expected liabilities
- Grow at a rate greater than the liabilities
- Reduce risk of funding shortfalls

By directing pension investment efforts toward fully funding pension liability, the company reduces the financial risks associated with underfunding and can reallocate the risk to business lines where the firm has an advantage and can expect greater reward.



## If it is so obvious that funding pension liabilities is the objective why haven't pension plans done that up to this point?

Almost all plans commission actuaries to calculate expected pension liabilities on a regular basis. Until recently, however, firms were able to apply a variety of different approaches to discounting the liabilities. Regulators have intervened to establish more consistency in the discount mechanisms and reduce manipulation of the liability values. These changes shine an even brighter light on pension funding.

Most plans do have language identifying the objective of funding pension obligations, but their means of attaining the objective is by following the pension herd and focusing on a total return concept that measures the return of the overall portfolio, or its constituent parts, against strategic benchmarks. The problem is those benchmarks don't tell us anything about the progress of the plan in meeting its funding obligations. Between the creative use of "smoothing" techniques and sometimes overly optimistic estimates of future returns of different asset classes, plans could comfortably reside in the midst of the pension herd without calculating or disclosing more robust measures of expected liabilities and asset flows. We think it is time to get back to these central questions in order to achieve the objective.

This is not an abstract idea. For example, if we were saving for a child's college education we would estimate what the education would cost, when the payments would have to be made, and establish a funding mechanism to try to achieve the goal. If our college fund savings dropped in value during that period, we would not likely be comforted by the notion that other similar investments declined as well; instead we would probably want to increase contributions to the extent possible to ensure steady progress toward the goal. Most of us would not be content with the magical thinking of the herd.

Hence, the enabling principles; strategy selection is always based on some principles or policies, whether explicit or not. The real question for plan sponsors is: how well do their own principles 1) inform present actions and 2) conform to future goals.

## Simplicity Brings Analytical Advantage

You can also apply a third measure to the value of a strategy-picking framework: analytical advantage. If our enabling principles may seem very simple on the surface, that quality hides the considerable analytical power such simplicity provides. It allows us to consider all possible tactics, not just ones promoted by default for a given strategy, so actions have greater impact.



It also forces us to be crystal clear on the rationale behind each and every investment decision. Managers can ask: how does the decision align with the three principles? Do alternative strategies align better? With which principles? What is the current priority, based on current conditions (e.g., funding ratio, market trends)? Compare this to the conventional approach of basing strategy choices on an ever-expanding universe of assets – where each new arrival either fits into an existing class or helps define a new one – each with its own rules, definitions and questions. (Should real estate be considered part of the bond allocation or as an alternative asset?) Each requires its own a priori assumptions regarding the magnitude, volatility and correlation of the returns compared to other asset classes.

Such complexity virtually invites the convoluted plan architectures prevalent during the last two decades, many over-engineered to the point of incoherence, whose risks can be summed and codified statistically but whose natures were ultimately too complex for fiduciaries to understand.

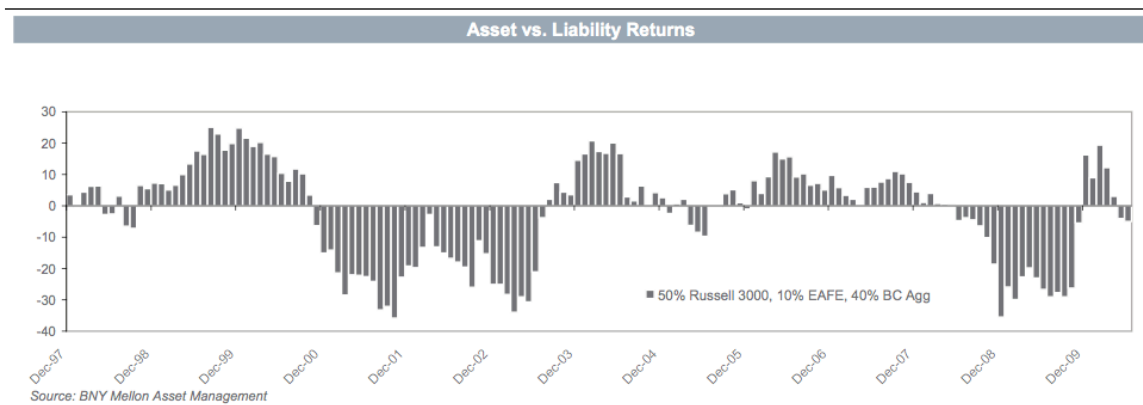
Risks that can't be explained are much harder to manage. As a consequence, over those years, sponsors allowed massive amounts of enterprise risk to be exported to pension funds. In our view, businesses operate in an environment rife with risks and their success or failure hinges on their ability to embrace those risks from which they can create value and minimize those that destroy value. Profits can only be gained by taking risk. There are risks that central to their business strategy– like product development and positioning–along with other risks (i.e. regulatory or pension funding) that might be quite important but are not aligned with the core competencies of the firm. Faced with a limited ability to take on business risk, we think most executives would rather take their biggest risks in their core business–where they have an advantage–instead of their pension plans. Successful business management is essentially an exercise in allocating finite resources across the spectrum.

Over the past few decades, however, practice has frequently been at odds with this simple but important concept. The approach to pension management is a prime example, with plan reviews often relegated to an annual rubber-stamped agenda item. As scores of experts held forth on their arcane segments of the portfolio, mathematical precision ruled the day as did investment innovation and increasingly detailed risk management techniques. In the process, the industry collectively lost sight of the very simple premise that the sole purpose of the pension assets was to support liabilities. Our principles-based approach keeps that premise front and center. In so doing it can also vastly simplify investment, improve performance, reduce fees and enhance fiduciary oversight while at the same time reducing volatility and risk.

## You Can't Always Follow the Leader

Figure 1 shows the BNY Mellon Asset Management<sup>1</sup> asset versus liability returns from December 1997 through June 2010. There were in fact four periods when pension portfolios with moderate risk (weighted 50% Russell 3000, 10% EAFE, 40% BC Aggregate) produced returns exceeding those of pension liabilities: roughly late 1998 to late 2000, late 2003 to late 2004, late 2005 to early 2008 and early 2010. While the moderate risk portfolio generated a return of 3.3% over the ten years ending in April 2010, it lost 5.6% relative to the liabilities. The chart clearly shows that these assets sharply underperformed the liabilities from early 2001 to late 2003 and mid-2008 to late 2009, with modest recoveries which were insufficient to move funding ratios back into positive territory. Moreover, the Plan Funding Status Changes shows a 12% decline in plan funding over the course of four months, from 86% in March of 2010 to 74% in June.

We believe these sobering numbers reveal the weakness in the total return approach and starkly underscore the need to focus the asset strategy on the liabilities. Focusing



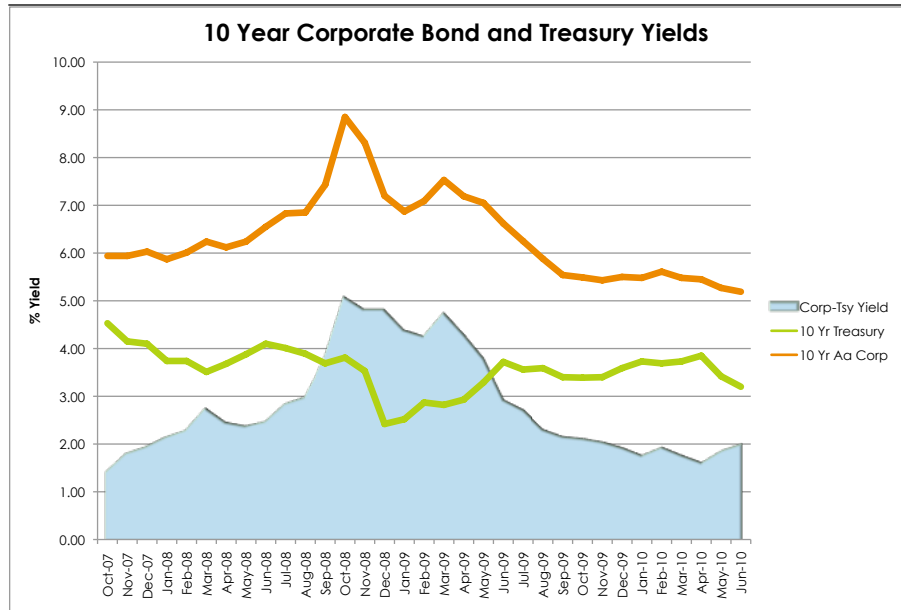
**Figure 1: Funding gaps.** A comparison over 12+ years between asset returns and liability returns for a moderate risk portfolio reveals intervals when a typical 60% equity/40% bond allocation would have been more or less helpful in meeting future pension fund obligations.

on the correct objective certainly doesn't guarantee ultimate success, but we strongly believe a decision-making process which centers on funding liabilities is more likely to produce the desired results than one which is fundamentally disconnected from the objective.

<sup>1</sup> [http://www.melloninstitutional.com/core/library/documents/knowledge/pensions/pension\\_liability\\_index/BNY\\_Mellon\\_Asset\\_Liability\\_Summary\\_I006.pdf](http://www.melloninstitutional.com/core/library/documents/knowledge/pensions/pension_liability_index/BNY_Mellon_Asset_Liability_Summary_I006.pdf)

## Outperform Your Liabilities

The 2007-2008 financial meltdown followed by the European debt crisis has created an environment in which US interest rates generally declined as investors sought the safety of US Treasuries. In mid-2007, corporate bond yields – which roughly gauge liability returns and, inversely, prices – started to diverge widely from treasuries. Figure 2, below illustrates the extraordinary volatility of these important discounting rates since late 2007.



Source IRS, Federal Reserve Board of Governors and Harrison Fiduciary Group

**Figure 2: Rates and Aa corporate bond spreads drive the valuation of liabilities.** The Aa bond yield, a function of both Treasury rates and corporate credit yield spreads, drives the valuation of liabilities.

Declining rates is great news for investors in long treasury or corporate bonds. However, viewed in the light of valuing liabilities the implications are not so rosy. The Pension Funding Act of 2004 (PFEA) and the Pension Protection Act of 2006 (PPA) requires that pension liabilities have to be valued using discount rates approximating long term corporate bond rates. The combination of the decline in interest rates and spreads on corporate bonds means the “value” of the liability stream sharply increases. This means that the funding ratio is critically dependent on corporate bond rates.

We think understanding the function of Aa corporate bond yields as the discount rate used to value pension liabilities is very important. We don’t think this methodology is necessarily any better or worse than ones that preceded it, but it is central to the calculation of liabilities and therefore should be front and center in the plans’ strategy.

The impact on pension liabilities resulting from this dynamic is tremendous. Figure 3 illustrates the magnitude of funding impact of recent changes in the Aa Corporate discount rate employed by the IRS.<sup>2</sup> For example, the present value of a \$10 million liability payment due in 10 years would have swung from \$4.1 to \$6.0 million during the course of the thirty two months ending in June 2010. This difference in value is equal to a whopping 34% of the average value of \$5.3 million.

Because plans can invest in Aa corporate bonds (although it is not possible to invest in the index used to calculate the discount rates), we can see that funding gap risk can potentially be mitigated by using corporate bonds. So instead of having a place at the periphery of pension strategy, we think fixed income should take a more prominent—but not necessarily dominant—role in the plan.

		Liability Years>		
		10	20	30
Present Value (\$ million)	High	6.0	3.0	1.6
	Average	5.3	2.6	1.3
	Low	4.1	2.0	1.0
Present Value "Swing"				
	High-Low	1.9	1.0	0.6
Impact of Swing				
	Swing/(High-Low)	34%	41%	51%

Calculations based on \$10 million future value at 10, 20 and 30 years, using range of Treasury HQM index from October 2010 (inception) to June 2010.

**Figure 3:** Changes in liability discount rates are one of the two drivers in pension funding\*

## What About Diversification?

Pension plan portfolio managers, of course, don't have perfect foresight. Nor might they expect to outperform liabilities over the long run if their sole focus were merely to match asset and liability returns period to period. That is why managers diversify: to blend in higher returns while also mitigating risk. Historically, however, diversification tends to work the least well when needed most: during periods when one of the asset classes in the portfolio comes under pressure and delivers poor or negative returns. In fact, correlations between many historically uncorrelated asset classes increase during periods of market stress.<sup>3</sup>

<sup>2</sup> [http://www.irs.gov/pub/irs-tege/recent\\_corporate\\_bond\\_yield\\_curve\\_spot\\_rates.xls](http://www.irs.gov/pub/irs-tege/recent_corporate_bond_yield_curve_spot_rates.xls)

<sup>3</sup> Chua, Krtizman and Page, The Myth of Diversification, Journal of Portfolio Management, Fall 2009



Much of diversification's appeal comes from its apparent simplicity. A simpler tool should be easier to use and therefore more efficient. But achieving efficient diversification is actually much more complex than it looks – especially if managers elevate it to guiding principle rather than just a tool. When managers view diversification as a benefit in its own right, its inherent complexities ripple through the investment plan as a whole. As these effects multiply, their interactions make the portfolio even more complex and their ultimate impact harder to measure, understand or control. Rather than simpler, diversification taken beyond a certain point makes management's task unwieldy.

That complexity starts with the fact that diversified portfolios are designed to underperform. By definition, diversified portfolios produce inferior returns versus those consisting purely of the asset class that produces the greatest returns over the relevant period. In fact, the idea of diversification is really rooted in mitigating the effects of down markets. Most investors would not oppose a lack of diversification as long as markets were increasing.

So why should the task of mitigating downside risk with portfolios designed to underperform look simple? Perhaps because it involves only three basic steps:

- Determine the asset classes
- Capture historical returns for each asset class
- Measure the pattern of return movement between asset classes

For example, if we were looking at equities and bonds we might gather information on the Standard & Poor's 500® and the Barclay's Aggregate Bond Index®. We would then calculate a number of statistical measures from the two asset classes: returns, risk (standard deviation of returns) and the co-movement (correlation) between the two return streams over the period. Armed with this information, we would determine that by splitting our allocations between stock and bonds we would find that the asset classes tend to move to different beats – potentially increasing risk-adjusted return. However, during periods when risk mitigation counts most – down markets – it's harder to find asset classes (and so achieve total returns) that buck the downward trend. So rather than focus on the actual, and more attainable, objective of funding future plan liabilities, managers pursue the quixotic quest of "perfect" diversification. Ever more exotic asset classes are defined – the differences of which are ever more carefully nuanced – and whose relationships with other asset class are ever more difficult to determine.





Our three principles provide us a means of thinking about these asset classes in a different way, instead of purely depending on historical correlations and hoping they will remain intact. The additional perspective should also be valuable in helping to calmly reconsider allocations during times of stress in the markets. This is not a silver bullet and certainly doesn't mean our expectations would be any more accurate than others, but we strongly believe it is the best place to start.

## Occam's Razor

The result of following the herd, focusing on the wrong benchmark or seeking seeking maximum diversification is what we see today: a pension landscape populated by extraordinarily sophisticated and detailed asset pools. It is not uncommon for a large plan to have 30 asset managers and three or four asset consultants investing (or directing the investing) of the plan on behalf of the plan's named investment fiduciary. Many of these plans have assembled teams representing a virtual who's who in investment management.

The inescapable problem facing each of these complex and highly-evolved plans is that such constructions fly in the face of a basic tenet of scientific research methodology: parsimony. The principle of parsimony – sometimes called Occam's razor – holds that for each estimate we make there is a finite amount of estimate error – error that accumulates with each estimate. The more estimates you make, the greater the total error, and the less reliable is any decision based on those estimates.

Even our simple example of stocks and bonds reveals how basic and widely accepted measures can obscure important information and provide unwarranted comfort about diversification's benefits. We can add strategy after strategy and make new calculations ad infinitum. The computers and practitioners are happy to comply. The real problem is that these numbers – expected returns, ex-ante risk measures, correlations and so on – can be generated for a nearly unlimited number of asset classes and strategies but the results we get may not tell us anything useful. So our preference is to construct pension investment portfolios which are straightforward enough for us to feel confident in the risk measurement, while saving enough risk budget to make targeted allocations to more complex or emerging strategies when we expect they provide an opportunity for exceptional returns.

## Fewer Strategies = Lower Fees = Better Returns

But the problem of pursuing strategy over principle doesn't end with overwrought pension portfolios, impenetrable risk interactions, and obscure exposure characteristics. The narrower mandates almost always mean higher fees. Since most



asset management fee structures are based on asset size – with incremental fees decreasing as asset size increases – by definition the more individual strategies plans have, the more often they pay at the expensive end of the fee structure.

The impact of fees on net plan returns is simple and compelling. Each cent paid in fees is a drain on the present and future returns of the fund. Gross fees, typically quoted in institutional fee schedules, are just not relevant to the plan; the only valuable measure of return to the plan is what the plan actually captures after paying fees. When we look at returns net of fees (and often even when we look at returns gross of fees) it is very difficult to make the case for “active” management. Often this argument is mischaracterized in financial literature. Many purists demand that “owning the market” through passive (indexed) funds is the only rational path to pursue in light of the incremental risk and expense of active management. They say, with considerable empirical support, that active management doesn’t work and essentially transfers wealth from the plan to asset managers. Active managers counter that markets are not efficient and skill can be demonstrated. This battle has raged for at least three decades with no sign of resolution.

Our view is a little more nuanced than either of these two positions. We agree that some managers and some asset classes produce excess returns and sometimes do so over a number of years. We can clearly and frequently observe this pattern by studying performance records. The problem for investors is that it is difficult to pick those winners prospectively. After all, we all know that people win lottery jackpots, but the fact that there are winners doesn’t mean that any of us are able to accurately choose the numbers ahead of time.

In order to gain the advantage of superior net returns plan sponsors must identify those managers in advance and invest in those strategies. It is at this stage that we find the “received wisdom” of the market puzzling: while the successful active equity manager must, by definition, ultimately “buy low and sell high,” market practices for identifying these managers almost always are based on the exact opposite approach. Consultants and plan sponsors comb databases to find those managers who have outperformed over multiple periods, most frequently three-year periods. They often look for the managers consistently appearing in the top quarter or half of their competitive universe (gross of fee). On this basis the “best candidates” for investment mandates are narrowed-down, with the plan sponsor ultimately choosing from a small handful of those managers who have made it through the screening process.

We find this process flawed on two fronts: first, there is virtually no empirical evidence that these managers will continue to outperform. This process is the equivalent of



buying high and selling low. Past performance is a major justification for hiring a manager even though consultants and plan sponsor know it is not a valuable measure for predicting future outperformance. The herding mentality of the industry in this respect is both strong and wrong.

The second problem with this approach is that the same firms tend to find favor across the industry – because so many consultants and pension plans use the same screens for finding them. That concentration causes two additional problems: First, managers widely perceived to be better have greater pricing power – so their fees go up and propensity to discount goes down. Second, many asset managers’ strategies work better with fewer assets. Managers can sometimes attract so much in new assets that they can no longer buy or sell in requisite amounts without moving the market against them. This scale problem is sometimes referred to as “eating your own alpha.”

### It’s Time to Match Actions to Intentions

None of this is to attack any particular strategy or managers who adopt them.

Strategies are critical to any endeavor. The problematic issues we outline here occur when managers put strategies ahead of principles. The three enabling principles are a strategy filter that reduces management complexity and expense enormously. They discourage herding and following new investment fads, while providing a means to evaluate the attractiveness of emerging approaches.

Does a proposed strategy provide cash flow to support expected liabilities? Does it help the portfolio grow at a rate greater than the liabilities? Will it reduce funding shortfalls? The answers to these questions should determine the path to the portfolio’s ultimate objective.

By law, all pension plan managers have only one overriding duty: to fund the plan’s liability payments. There is, after all, only one reason to run a pension plan: to attract, retain and reward valuable employees. This promise of a pension creates a legal liability for the company, which while complex, is not intrinsically different from other liabilities such as accounts payable or payroll. What matters most is not the value, duration, or risk profile of plan assets – or for that matter any other strategic benchmark whose relevance may shift over time. All that matters is the plan’s readiness to pay future liabilities. When managers’ decisions are made in that light and only that light, their stated goal to fund plan liabilities will consistently match their actions.





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