Understanding How Much Alternative Assets Your Portfolio Can Handle

Managing Liquidity Risk for Public Sector Defined Benefit Plans

September 2014
Key Points

- Many public sector defined benefit plans can use alternative assets to improve the return potential and diversification of their portfolios. But it is critical to ensure that any illiquidity risk is tolerable.

- The specific level of illiquid assets a public pension plan can hold is highly customized to its circumstances, including benefit payments, contribution levels and asset allocation.

- Investors considering alternative assets should perform multi-year stress-testing projections to understand their liquidity profiles. For pension plan sponsors, these projections should be integrated with an asset-liability analysis to incorporate both benefit payments and future contributions.

- Most large public pension plans are able to invest in a substantial amount of very illiquid alternative assets such as closed-end real estate and private equity, in addition to hedge funds and core real estate. The specific allocation levels tolerable are highly dependent on the plan sponsor’s contribution strategy; a plan sponsor that increases contributions in deep market downturns is able to hold more illiquid assets than a plan sponsor that contributes a stable amount across different market conditions.

One of the biggest concerns about incorporating alternative investments in a portfolio is illiquidity, though the opportunity to invest in illiquid assets often translates into the very potential for higher returns and diversification that many investors seek. So, understanding the liquidity characteristics of different types of alternative investments can help investors maintain their liquidity needs while maximizing the benefits of alternative assets.

Unfortunately, simple rules of thumb are not often reliable ways to assess the risks and benefits of incorporating alternative assets. The amount of alternative assets an investor can hold tends to be highly individualized, as it is heavily dependent on factors such as:

- **Contributions**—expected levels of contributions, and their sensitivity to different economic scenarios
- **Benefit payments**—expected levels and sensitivities to different economic scenarios
- **Investment policy**—level of return-seeking assets

This paper uses a case study to illustrate how U.S. public pension plans can use a combination of quantitative analysis and qualitative judgment to analyze liquidity risk from alternative assets.
Case Study

Situation:

- The investor is a public pension plan with ongoing accruals.
- The contributions are a level percentage of pay, less than the Actuarially Required Contributions (ARCs) and assumed not to be sensitive to changes in the funded status.
- The plan is currently 60% funded. It has approximately $5 billion in assets.
- The annual benefit payments for the plan are nearly $500 million, which is approaching 10% of the assets. The payments are significantly greater than the annual contributions, creating a situation with negative cash flows.
- The illiquid assets the investor wants to consider are private equity (with an approximate 14-year horizon), opportunistic real estate (with an approximate nine-year horizon) and hedge funds (approximately one- to three-year lock-ups).
- The investment policy has a target allocation of 82% return-seeking assets. This currently includes 21% in private equity, 13% in private real estate and 12% in hedge funds, a distribution that is near the target allocations.
- To ensure its capacity for vintage year diversification, this investor will consider only strategies where commitments to private equity and real estate can be continued for at least three years, preferably longer, based on the planning pacing schedule (under no circumstances would the plan default on commitments). Similarly, hedge funds will be entered into only to the extent that the investor will maintain the positions for at least three years.
- The plan wants to review the current strategy to determine if there are economic scenarios under which it would have a liquidity event. Once this is known, it will consider whether to look at continuing, and possibly adjusting, its target allocations to illiquid assets.
- It also wants to consider how the situation might be impacted by increases in employer contributions, which are currently fixed at 8% of payroll.

The figures that follow illustrate how the investor’s liquidity profile will evolve in different economic scenarios. The plan sponsor starts by looking at the “Central” economic scenario for its current allocation, assuming additional commitments cease after three years (a very conservative scenario for liquidity, as the sponsor intends to continue investing in alternative assets beyond then). As shown in Figure 1 below, the allocations to hedge funds (1-3 year lock-up) are returned in 2018, while the allocations to opportunistic closed-end real estate (5-10 year lock-up) and private equity (10+ year lock-up) remain level for three years, then gradually decline as existing commitments are honored and capital is returned. The allocations to alternative assets never exceed—or even approach—the 82% total allocation to return-seeking assets, so this scenario does not appear to present liquidity challenges for the investor.

---

1In practice, hedge funds have a wide variety of different liquidity characteristics. The assumptions in this paper are a simplification for illustrative purposes.
2We define “return-seeking assets” as most assets other than high-quality fixed income and cash.
3The Central scenario represents our base case assumptions for capital market returns. For example, public equities would return 7.5% in each year.
Figure 1

Figure 2 is a simplified version of Figure 1, grouping all the alternative assets together so it is easier to see how the allocation to the total pool of alternative assets evolves over time. The remainder of this paper includes graphs similar in format to Figure 2.

Figure 2
With only the analysis in the Central scenario, one may wonder if this plan has the capacity to increase its allocation to alternative assets. In order to evaluate this better, we perform stress testing under a very pessimistic economic scenario: “Black Skies.”

The Black Skies scenario is extremely challenging for this investor, as shown in Figure 3. The combination of negative asset returns, high levels of illiquid assets and insufficient contributions makes this scenario a death spiral. Asset levels drop precipitously, and the majority of the benefit payments are paid from the declining pool of public equities. By 2017, the plan’s funded ratio is less than half its initial level and it has sold all of its public equities to cover the benefit payments. In 2018, its allocation to alternatives exceeds the target allocation to return-seeking assets. The plan receives some liquidity in 2019 when the hedge funds are liquidated (note that the analysis assumes the hedge funds are gated in this economic scenario, so the plan is assumed to have had to wait over a year between the time of deciding to terminate its hedge funds and receiving the assets). By 2020, the plan does not have enough liquidity to pay benefits, and its funded status drops to 0% by 2023.

Such a bleak scenario happens despite a fairly conservative assumption that the alternatives program begins to wind down in three years. What appeared to be a fairly benign allocation in the Central economic scenario could turn out to be extremely problematic in the deep, prolonged recession of the Black Skies scenario.

Figure 3

---

4The Black Skies scenario represents a deep recession with no bounce-back. For example, public equities values would fall by about 50% over three years, and other assets’ returns would move in relation to their correlations with public equities.
It is important to realize that the situation described above is more extreme than for the typical U.S. public pension plan. It occurs because this particular case study is based on a plan with the combination of high benefit payments relative to the assets, a high allocation to return-seeking assets that creates exposure to Black Skies scenarios, and a contribution policy that is unresponsive to market downturns. Every plan is different.

The plan sponsor in this case study wants to do additional testing to see how its results would change if employer contributions gradually increased from the current level of 8% of payroll to 20%. Continuing to focus on the Black Skies scenario because it is the most challenging, Figure 4 illustrates how additional contributions would impact the scenario.

**Figure 4**

The additional contributions lengthen the sponsor’s time horizon significantly, providing additional capital to pay benefit payments for several years. Over the 10-year horizon, the plan’s funded ratio never goes to 0%, though in 2024 it does not have enough liquid assets to pay benefits. While this level of increased contributions is not enough to fully solve the plan sponsor’s problems in such a pessimistic economic environment, it does allow additional time to work through other solutions such as finding sources of additional funding.

**Plan Sponsor’s Decision**

This case study suggests a very challenging situation for this particular plan sponsor. Clearly the sponsor has a potential problem with its contribution strategy—it would need far higher contributions in a Black Skies scenario to avoid liquidity problems. Although additional contributions may be beyond the control of the plan’s investment committee, the appropriate role of illiquid assets strongly depends on whether the investment committee believes the contribution level will increase. Such additional contributions would lengthen the time until the “day of reckoning,” and thus increase the plan’s horizon and ability to invest in
alternative assets. As a result, the plan sponsor decided to do a deeper analysis into the political environment to assess the most likely level of contributions over the next decade, then revisit the liquidity scenario analysis afterward.

**Commitments versus Target Percentage Allocations**

It is notable that the percentage allocation to alternatives varies significantly across time and economic scenarios—ranging from near 10% in the latter years of the Central scenario to over 100% of the portfolio in some years of the Black Skies scenario—without additional contributions. Most investment policy statements are written to target certain percentage allocations. However, liquidity risk manifests itself when the actual allocation is different from the target level. Investors in illiquid assets do not decide on the percentage allocations; they decide on the commitment levels—and the percentage allocations are a result of combining the effects of the commitment levels, the economic environment and the other factors that may not be influenced by the investor.

As a result, when we model liquidity risk for a particular investment strategy, we base it on commitment levels—the unit of decision for investors—and the actual percentage allocations that would occur in different economic scenarios, rather than target allocation percentages. The target allocations and ranges in an investment policy statement may be determined from the scenario analysis.

**Summary of Key Factors That Drive Results**

Though the case study in this paper is intended to represent issues that affect U.S. public pension plans, each plan has unique circumstances. The key factors that influence the ultimate results for a particular plan are:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions</td>
<td>Contributions inject liquidity and offset benefit payments. Higher contributions—particularly in periods of stress—allow greater allocations to illiquid assets.</td>
</tr>
<tr>
<td>Benefit payments</td>
<td>Higher levels of benefit payments or spending needs create a lower allowance for illiquid assets.</td>
</tr>
<tr>
<td>Target asset allocation</td>
<td>One perspective is that a higher allocation to return-seeking assets can create room for large allocations to alternative assets. However, higher allocations to return-seeking assets also increase exposures to market downturns; in this respect, a lower allocation to return-seeking assets can allow for greater exposure to illiquid assets. These competing dynamics will combine to influence how the target asset allocation affects the ability to invest in alternatives.</td>
</tr>
<tr>
<td>Tolerance for breach of asset allocation targets</td>
<td>By their very nature, illiquid assets make rebalancing difficult. Investors who have broader ranges for asset allocation or are comfortable with short-term breaches of asset allocation targets can hold more alternatives.5</td>
</tr>
</tbody>
</table>

---

5 Another application of these types of liquidity projections is to help calibrate the size of ranges for different asset classes.
Synthesizing Results: The Art and Science of Liquidity Analysis

While this paper describes a very analytical approach to looking at liquidity, there is an art to interpreting the results and translating them into portfolio implications. Investors must thoughtfully consider which scenarios to analyze, and their likelihood—not just the economic environments, but also scenarios for different levels of contributions and benefit payments. In addition, investors must think about how painful different liquidity events would be. For example, a slight breach of the desired asset allocation—say, a liquidity event that causes an investor to hold 61% return-seeking assets instead of a target allocation of 60%—is probably not as painful as a liquidity event in which an illiquid asset must be prematurely sold at a discount. In addition, many investors may prefer to invest less in illiquid alternatives than the maximum target allocation, preserving the ability to increase their exposure in the future if unique market circumstances arise.

The approach described in this paper is a stress-testing model for risk management, not a tool to provide an objective answer to how many alternative assets an investor can hold. Without understanding this information, it is difficult—if not impossible—for investors to make a complete case for (or against) high allocations to alternatives. This type of analysis will help investors consider many different scenarios and have confidence in the rationale for the amount of illiquidity in their portfolios.
Contact Information

Eric Friedman
Associate Partner
Investment Consulting
+ 1.312.381.1319
eric.friedman@aonhewitt.com

About Hewitt EnnisKnupp

Hewitt EnnisKnupp, Inc., an Aon plc company (NYSE: AON), is an SEC-registered investment adviser, and provides investment consulting services to over 470 clients in North America with total client assets of approximately $2 trillion as of 12/31/2013. More than 270 investment consulting professionals in the U.S. advise institutional investors such as corporations, public organizations, union associations, health systems, endowments and foundations with investments ranging from $3 million to $700 billion. For more information, please visit www.hewittennisknupp.com.

About Aon Hewitt

Aon Hewitt empowers organizations and individuals to secure a better future through innovative talent, retirement and health solutions. We advise, design and execute a wide range of solutions that enable clients to cultivate talent to drive organizational and personal performance and growth, navigate retirement risk while providing new levels of financial security, and redefine health solutions for greater choice, affordability and wellness. Aon Hewitt is the global leader in human resource solutions, with over 30,000 professionals in 90 countries serving more than 20,000 clients worldwide. For more information on Aon Hewitt, please visit www.aonhewitt.com.