

## COMPREHENSIVE ASSET LIABILITY MANAGEMENT:

A **CALM** Approach to Investing  
Healthcare System Assets



# Fiduciary Insights

**IN A COMPLEX HEALTHCARE INSTITUTION WITH MULTIPLE INVESTMENT POOLS, BALANCING INVESTMENT AND OPERATIONAL RISKS IN A COORDINATED WAY IS PARAMOUNT.** Strategic's Comprehensive Asset/Liability Management (CALM) approach provides an analytical framework for integrating a healthcare system's investment decisions across multiple multi-asset pools with its operational and financial decisions.

# Introduction

Large healthcare institutions often have several pools of assets, each dedicated to a different purpose. Such institutions can easily fall into the trap of managing their various funds as separate silos, instead of viewing all of their asset risks and operational risks together.

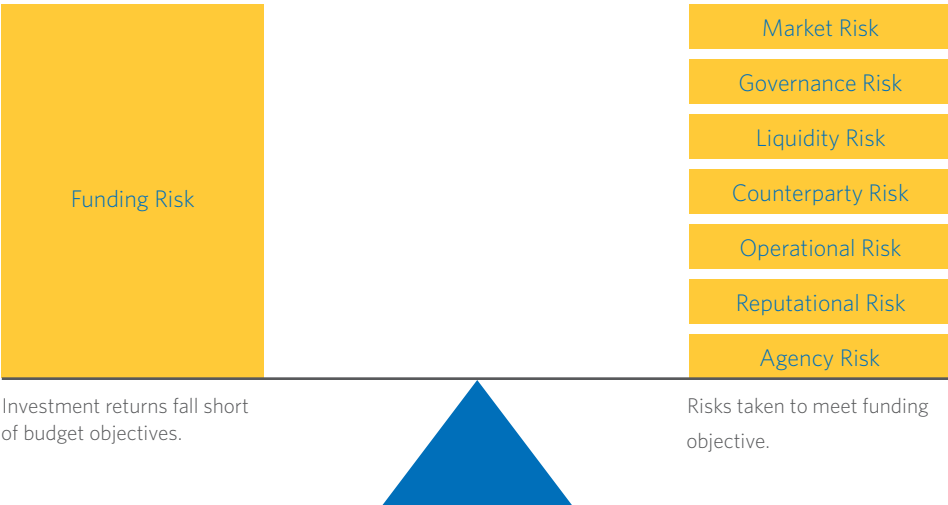
Strategic's comprehensive asset/liability management (CALM) approach provides a solution to this problem. It simulates investment returns by various methods to develop probability distributions of returns under a range of scenarios. These return probabilities are then integrated with projections of operating results, capital expenditure, and debt issuance. By integrating simulated investment outcomes with expected operational results, the CALM

framework can help project key financial metrics of particular interest to the healthcare system.

## Balancing Objectives

Healthcare systems face a wide range of risks that must be weighed by using quantitative and qualitative assessments. Investing to meet a return objective necessarily involves price fluctuations (market risk), possible weaknesses in the investment decision-making process (governance risk), potential difficulties in the sale of investments (liquidity risk), trading with others who might not fulfill their obligations (counterparty risk), losses arising from errors or fraud (operational risk), the possibility that some investments will generate adverse

**EXHIBIT 1:**  
Balancing Risks



publicity for the system (reputational risk), and the likelihood of misaligned incentives either within the healthcare system or between the system and third parties (conflicts of interest, or “agency risk”).

CALM guides decisions on how to balance these risks and calibrate how much of each type of risk to take across portfolios (Exhibit 1). To achieve a desired financial return objective, a variety of different types of risk must be assessed, taken, and managed. The goal is to achieve a specific funding objective while keeping each type of risk within tolerable bounds.

## Multiple Multi-Asset Funds — One Healthcare System

Of all the diverse investment funds that a large healthcare institution may have, operating assets are often the largest pool. These assets are the keystone of the balance sheet, supporting capital expenditures and facilitating access to debt markets at reasonable cost. They may either be a regular source of operational funding or serve as a resource in the event of operational

income shortfalls or unanticipated financing needs. This core portfolio must grow with the healthcare system to retain its pivotal role, and remain able to underpin the healthcare system’s credit rating and compliance with bond covenants. While investing the portfolio over a long horizon, the institution must also observe short-term benchmarks used by rating agencies and lenders to assess creditworthiness annually. This requires a careful evaluation of the institution’s ability to withstand return volatility and liquidity risk in its investment program.

In addition to this core pool, many healthcare systems have a defined benefit (DB) pension plan. This pool has funding requirements that are a function of the changing value of assets and the present value of pension obligations. The value of these pension obligations varies inversely with the plan’s discount rate and behaves just like a short position in a bond with a very long maturity. Funding shortfalls from DB pension plans pose a potential claim on the healthcare system’s operating income and affect ratios monitored by credit rating agencies and lenders.

The appropriate investment policy for the pension fund will be heavily influenced by its funded status, as well as by whether the plan is open to new participants and growing, closed to new participants, or has its benefits frozen.

- An institution with an underfunded plan that is open and whose participant group and benefits are growing would, as

**EXHIBIT 2:**  
Multiple Pools, Objectives and Constraints

Portfolio	Investment Objective	Growth Needs	Volatility Tolerance	Liquidity Needs	Rating Agency Ratios Impacted	Debt Covenant Ratios Impacted
Operating Assets	x.x%	Moderate/High	Moderate	Moderate	All	All
Pension Fund	x.x%	Moderate/High	Moderate	Low	Debt/Cap	Debt/Cap
Self-Insurance Fund	x.x%	Moderate	Low	High	None	Cash/Debt
Charitable Assets	x.x%	Moderate	Moderate	Low/Moderate	None	None

assumed in Exhibit 2, target a moderate to high return strategy in an attempt to close the funding gap and achieve growth in assets commensurate with the pension obligations to an expanding pool of participants. Such a return generation-oriented investment policy would likely require tolerance for a moderate amount of year-to-year volatility and relatively low liquidity.

- In contrast, an institution with a closed and frozen pension plan that is fully funded would more appropriately select an investment policy that offsets fluctuations in the value of the pension's liabilities with changes in the value of its assets. This liability-driven investment (LDI) policy would strive to reduce the volatility of the pension's funded status by aligning the duration, or interest rate sensitivity, of assets and liabilities, thus limiting a significant source of risk to the healthcare system's balance sheet. This would not eliminate volatility in the value of the invested assets, which could be significant with a long-duration strategy, but would align that volatility with that of the liabilities. In addition, a liability-driven investment program would likely incorporate allocations to predominantly liquid assets.

Self-insurance funds represent a third major type of healthcare investment fund, with their own objectives, funding goals, regulatory requirements, and liquidity needs. These funds are designed to meet claims for compensation that may arise from patients and employees. They receive periodic inflows in the form of premium payments and target an actuarially based level of funding. They may experience large and unpredictable cash outflows, and thus have a low tolerance for year-to-year return volatility and a high liquidity need. The investment policies for these pools typically have a large allocation to fixed income investments and cash.

Healthcare systems also may have investments in charitable asset pools. These portfolios may have their own idiosyncratic objectives, risk tolerances, and rules, driven in part by the objectives of contributors. Contributions may be tied to funding a particular activity or capital investment or, as assumed in Exhibit 2, be available over an

extended period as a more general supplement to the system's sources of funds.

While the investment of the assets of each individual fund must be consistent with its objectives, risk tolerance and regulatory requirements, it is also essential to look at these funds in aggregate. As Exhibit 3 illustrates, these funds all serve, in their unique ways, a single institution with combined financial operations and a consolidated balance sheet. Investment risk can harm the well-being of the whole healthcare system through the impact of bad investment outcomes on key financial metrics, the system's credit rating, and ability to access credit at a reasonable cost. Seeing all investments in aggregate and integrating them explicitly with the balance sheet, key financial metrics, financial operations, and debt structure is a critical step toward finding the right balance of risk.

## Shifting Risk Across Multiple Portfolios

The all-too-frequent approach of viewing each portfolio as an isolated silo of assets misses critical opportunities for optimizing where and how different types of risk are taken. It is important to understand the trade-offs across different types of risk and how risks are optimally distributed across different types of portfolios. For each portfolio, and in the aggregate, the CALM approach considers the likelihood of achieving investment objectives and the impact of return volatility and changes in liquidity on operations, debt covenants, and key financial metrics monitored by ratings agencies. In the case of the pension and self-insurance funds, potential demands on cash related to funded status volatility are also assessed.

Consider two examples where there may be benefits to shifting risk across portfolios.

1. **Different accounting treatments of individual funds.** In this case, a healthcare system may wish to have an allocation to relatively illiquid private equity and real

estate investments as part of its overall asset mix, but may be concerned about the impact of the investments on measures of liquidity monitored by rating agencies. It would be advantageous at the margin to place such illiquid investments, subject to prudent limits, in an open, growing and underfunded pension fund that has a low liquidity need and is not included in the healthcare system's liquidity measures. The CALM framework would help identify the opportunities for shifting different types of risk across portfolios and provide a model to quantify the overall impact on the system's finances.

- 2. Significant change in a DB plan investment policy.** Another example would arise in the event of a move to an LDI strategy for the pension fund. As explained in greater detail in the following section, implementing an LDI strategy would shift the asset allocation of the pension fund from one with a high concentration of equities to a largely fixed income portfolio with a duration aligned as closely as possible to pension liabilities to minimize funded status volatility. The implementation of an LDI strategy would thus change the asset mix of the healthcare system's aggregate investments. Moreover, a successful LDI strategy would reduce the risk arising from funding shortfalls on the healthcare system's finances, including potential claims on its operating income and debt

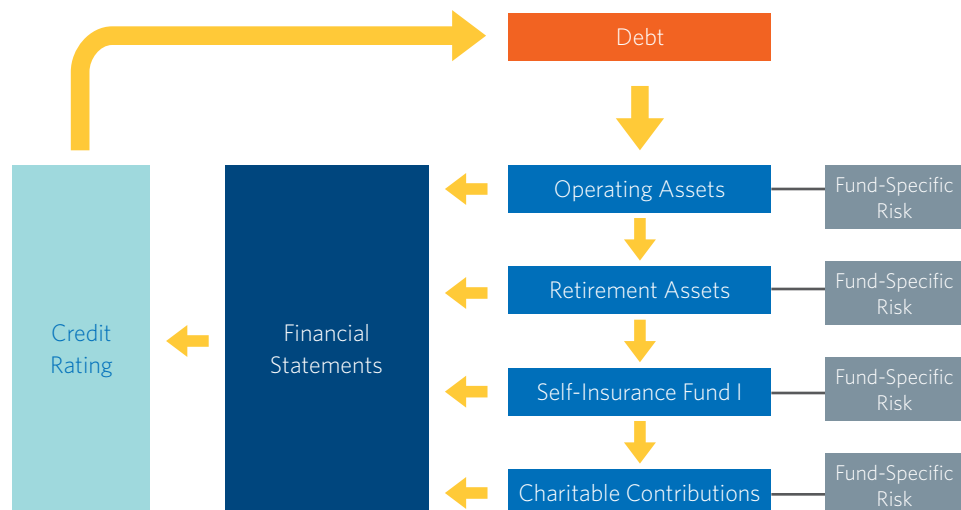
ratio. A comprehensive analysis would help guide decisions on how to respond to this lower overall risk profile, including considering the appropriateness of seeking higher investment returns by adjusting the asset allocation of other investment funds.

## Traditional vs. LDI Efficient Frontiers for Pension Fund Investments

A traditional efficient frontier represents the optimal tradeoff between absolute risk and return that can be achieved by combining different assets. In the case of traditional return-optimizing portfolio construction, assets are combined to generate a targeted return with the least possible absolute risk. At each point along the efficient frontier lies a return-optimizing portfolio that strikes the best possible balance between return and absolute risk.

An LDI efficient frontier also represents

**EXHIBIT 3:**  
Many Asset Pools — One Healthcare System





portfolios that strike an optimal tradeoff between risk and return, but the horizontal axis represents risk relative to liabilities, not absolute risk. In an LDI strategy, the riskiness of each asset is considered not in absolute terms, but rather relative to its effectiveness in hedging liabilities.

For example, as illustrated in Exhibit 4, the asset with the lowest risk in an LDI portfolio is not cash — the asset with the lowest absolute risk in a traditional portfolio. Cash has a low correlation with long duration pension liabilities, and is thus a poor hedge of a stream of pension benefit payments. A portfolio that consisted only of cash would have a very low absolute volatility, but fail to reduce funded status risk. Instead, a bond portfolio whose duration, or interest rate sensitivity, matches the duration of pension liabilities is the least risky asset on the LDI efficient frontier. The duration-matched portfolio minimizes funded status volatility, fulfilling the objective of LDI.

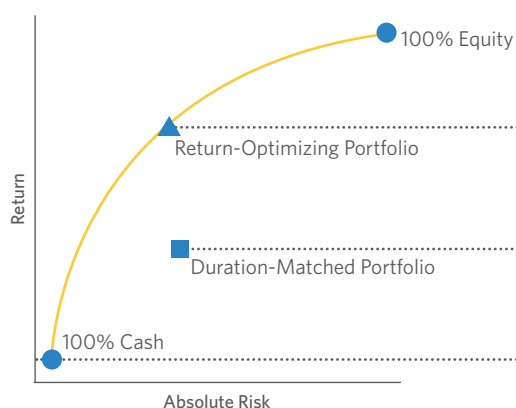
Likewise, equities, which typically play a leading role in diversified return-optimizing portfolios because of their relatively high expected return and low correlation with fixed income securities, are not an optimal liability hedge. As Exhibit 4 shows, a diversified return-optimizing portfolio with a significant

allocation to equities lies on the traditional efficient frontier representing an efficient tradeoff between return and absolute risk, but does not efficiently balance risk and return when we are concerned with risk relative to liabilities. However, this does not mean that equities are never included in LDI portfolios. Rather, for equities to be included, their return contribution must more than compensate for their additional risk relative to liabilities.

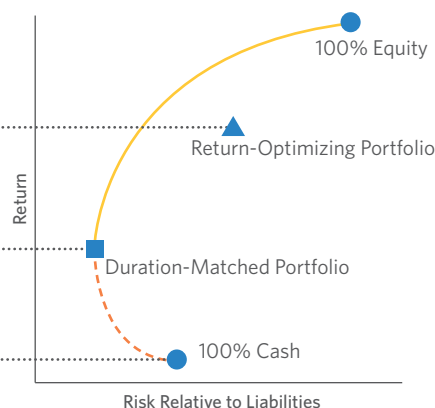
Strategic's CALM approach provides a framework for reaching judgments on when and how to implement an LDI strategy for a DB pension plan and assessing the broader implications of that action. For example, as noted above, the CALM framework could be used to model the pros and cons of changing the asset allocation of other portfolios to offset the reduced equity and higher fixed income allocation under an LDI strategy in the DB pension portfolio. Alternatively, the CALM framework could be used to model the reduction in risk to the healthcare system as a result of the adoption of LDI, in order to help senior management reach judgments on the

*Strategic's CALM approach provides a framework for reaching judgments on when and how to implement an LDI strategy for a DB pension plan and assessing the broader implications of that action.*

**EXHIBIT 4:**  
Traditional Efficient Frontier



LDI Efficient Frontier



Sample portfolios in Exhibit 4 are shown for illustrative purposes only and do not represent actual portfolios. Actual portfolios and their risk and performance may differ significantly from those shown here. Please see the Note at the end of this paper for important risk disclosures.

*Taking a realistic view of the likelihood of serious downside risk and considering, in advance, the potential actions to take in the event of a tail event can prevent knee-jerk reactions, which typically do more harm than good.*

implications for operating decisions, including increased scope for debt issuance or capital expenditure.

## Sources Of Liquidity Risk

Liquidity risk — defined as the inability to rebalance the portfolio or meet obligations — is the ultimate tail event. The long-run expected returns targeted by investment portfolios are predicated on the ability to rebalance the portfolio in response to changes in the relative valuations of different asset classes. If this ability to rebalance is impaired by a liquidity event, the portfolio will be off kilter and will likely fail to achieve its expected long-run risk and return trajectory. Inadequate liquidity management may also lead to the sale of assets at depressed prices, locking in losses that might be recouped as the market rebounds. Worse still, a liquidity event in an investment portfolio may complicate the fulfillment of an obligation or cause the breach of debt covenants, raising fundamental problems for the healthcare system. The CALM framework devotes considerable attention to analyzing the risk of liquidity events to ensure that each fund and all investments in aggregate can meet the need for liquidity to manage investments as well as the system's liquidity needs.

CALM assesses different investment strategies with Monte Carlo analysis in a path-dependent model that simulates monthly returns of each fund and all investments in aggregate. For each set of simulated monthly returns, the model evaluates the portfolio's cash position, the allocation of the portfolio after market returns are applied, and the difference in the portfolio allocation and the long-term policy. It then uses a rule-based decision process both to rebalance the portfolio to target and to make investment decisions regarding the illiquid asset classes in the portfolio. The model's output can be tailored to the key financial metrics of particular interest to the healthcare system. The model quantifies the probability of approaching critical thresholds related to key financial metrics and analyzes how the

risks to observing these metrics change in different states of the world.

The discipline provided by the CALM framework helps decision makers anticipate adverse outcomes and prepare possible responses to them. Taking a realistic view of the likelihood of serious downside risk and considering, in advance, the potential actions to take in the event of a tail event can prevent knee-jerk reactions, which typically do more harm than good. In this way, the CALM approach helps reduce governance risk, including, in particular, panic-driven decisions that are counterproductive to long-run investment objectives. Making sure that the system has the liquidity, *ex ante* analysis, and fortitude from a strong governance structure needed to avoid panic selling in a severe downturn is likely to pay significant dividends on the upswing.

## Conclusion

A broad analytical approach is required if one is to reasonably assess how investment risks interact with a healthcare system's operations, debt structure, and capital spending plans. Strategic's CALM methodology provides a framework for guiding judgments on striking an appropriate balance of risks. It uses a robust analytical platform to assess different investment strategies and operational decisions under a range of favorable and adverse scenarios. Decisions made in a CALM framework are likely to be better grounded, better aligned with the steady pursuit of the healthcare system's long-run objectives, and leave the institution better prepared for adversity.

**Note:** It is important to note that the expected returns are based upon Strategic's estimates of equilibrium asset class returns, volatility, risk and correlations and should not be interpreted to represent a promise of future performance. Because the expected return data was constructed with Strategic's judgment and knowledge of history in mind, it may not adequately capture the influence of future market conditions on investment returns. As a result, actual returns may differ substantially from the returns shown herein. In addition, the expected returns do not represent actual trading and, therefore, do not account for the impact of financial risk on actual trading, such as the ability to adhere to a particular strategy in spite of significant trading losses. Hypothetical or simulated performance results have many inherent limitations and there are numerous factors relating to the markets in general or to the implementation of any specific trading program that cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results.

# Strategic Investment Group

Strategic, a pioneer in dedicated Outsourced CIO (OCIO) solutions since 1987, offers a comprehensive service platform for managing customized portfolios for institutional and private investors. Our proprietary process combines active portfolio management, rigorous risk management, and open architecture manager selection.

Strategic functions as our clients' investment partner and co-fiduciary, effectively becoming an extension of their resources. Clients are then free to focus on their core businesses, while we focus on providing the highly specialized portfolio management expertise that clients need to meet their investment goals. Depending on a client's needs and preferences, Strategic can orchestrate the management of an entire portfolio comprising multiple asset classes, focus on specific asset classes, such as alternatives (e.g., hedge funds, real estate, and/or private equity) or international investments, or manage strategies with high potential for adding value (e.g., portable alpha through investor-friendly turnkey structures). Customized liability-driven investing (LDI) solutions, whether through an integrated total portfolio approach or a targeted long-duration strategy, are also available, as are solutions that address mission-related investment objectives.

We strive to build enduring partnerships with our clients by strengthening their investment programs through a dynamic, value-enhancing investment process, sound governance framework, and world class client service. Our mission is to empower investors through experience, innovation, and excellence.

For more information, please email us at [inquiries@strategicgroup.com](mailto:inquiries@strategicgroup.com).



1001 Nineteenth Street North  
16th Floor  
Arlington, VA 22209 USA

+1 703.243.4433 TEL  
+1 703.243.2266 FAX

[strategicgroup.com](http://strategicgroup.com)