WHEN THE WELL RUNS DRY

Managing Liquidity Through Extreme Markets

Fiduciary Insights

U.S. INSTITUTIONS HAVE INCREASINGLY ADOPTED PORTFOLIOS WITH LARGE ALLOCATIONS TO ILLIQUID ALTERNATIVES. This paper reviews certain portfolio management pitfalls created by diversification into illiquid assets, proposing tools and techniques to avoid falling prey to the costs of low liquidity at times of market stress.

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Introduction

In recent years, U.S. institutions have sought to diversify their portfolios more broadly, and have shifted to ever larger allocations of illiquid alternatives, such as private equity, real estate, and hedge funds. By 2008, the leaders of this trend, large endowments, had placed nearly half their allocations in illiquid assets (Exhibit 1). The successful performance of some well-known university endowments has encouraged public and private defined benefit plans to boost their illiquid allocations as well. For all of these institutions, the latent dangers of running illiquid portfolios revealed themselves during the devastating market collapse of 2008, when it became painfully clear that illiquidity can bring increased operational risks as well as enhanced returns.

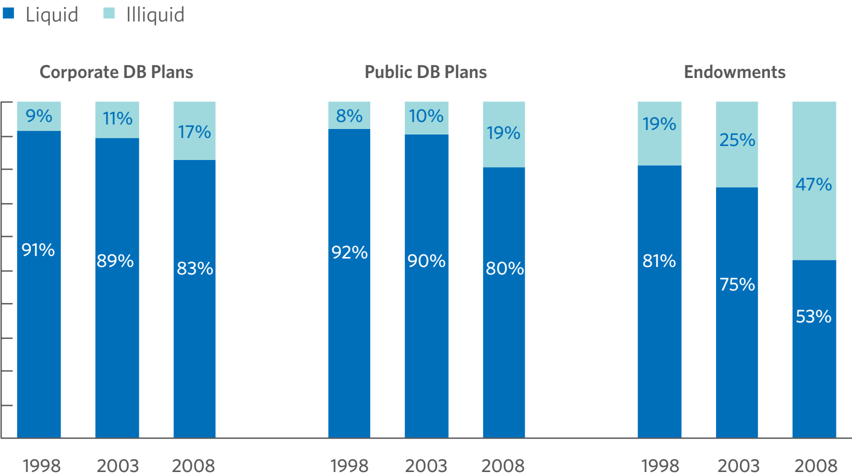
The ultimate objective of any investment portfolio is to accumulate assets for eventual distribution. For pension plans, the assets provide for retiree benefits. For endowments and foundations, they can help to meet a spending policy. For high net worth individuals, they provide needed income. Given the cyclical nature of investment returns, the need to fund periodic distributions can work at cross-purposes with the investment decisions taken to maximize the value of assets.

When markets are stressed by great uncertainty or volatility, the ability to price risky assets becomes impaired. This impairment in turn affects portfolio liquidity – the ability to turn investments into cash for distribution or reinvestment cost-effectively – which is essential to reallocating assets, as well as to managing risks and providing distributions. A variety of portfolio management tools and techniques can address the challenges that illiquidity poses to well-diversified portfolios.

Liquidity 101: It's a Function of Cost and Market Share

Some assets can clearly be defined as liquid in most investment environments, such as government bonds, whose bid-ask spreads are measured in fractions of basis points. Others can easily be identified as non-marketable or illiquid by definition. For example, fund structures that require lockup periods during which investors have no control over the timing of distributions qualify as illiquid. So, too, do those with explicit notification dates or queues to establish priority among investors requesting redemptions well in advance.

EXHIBIT 1:
Institutional Asset Allocation Over Time
Sources: NACUBO; Northern Trust; Greenwich Associates; Strategic.



An investment's liquidity is closely related to an investor's tolerance for transaction cost and market impact. For example, even interests in illiquid investments, regardless of established redemption hurdles, may be sold in secondary markets, though typically at a significant discount to their book value (10-80% and subject to general partner approval). Other investments are liquid and cheap to trade in normal environments, but can become less liquid and expensive to trade in high stress environments.

In Exhibit 2, investments are ranked by liquidity in relation to the market environment. A low stress environment could be characterized as positive appreciation or modest depreciation in the value of world wealth accompanied by low economic and price volatility. This is defined in Exhibit 2 as a periodic return within one standard deviation of what is expected. In contrast, a high stress environment would feature significant declines in world wealth and high volatility, defined as at least a three standard deviation event.

Alternative investments with partnership and lockup structures are illiquid in every environment. High yield bonds, securitized debt, and some over-the-counter derivatives have become illiquid in periods of moderate stress. Some exchange-traded securities, such as emerging market equities, derivatives contracts, and investment grade fixed income, are illiquid only in times so stressful that exchanges close or become dysfunctional as sellers overwhelm buyers.

In such crises, the only instruments that can be relied upon to provide liquidity are sovereign debt, cash, and perhaps exchange-traded futures instruments. Generally speaking, investments that comprise a large share of global capital markets, such as U.S. government bonds and large capitalization equities, are highly liquid by their very nature and degree of institutional acceptance. Yet even these highly liquid instruments can become hard to sell under extreme liquidity conditions (e.g., U.S. agency securities in 2008).

EXHIBIT 2:

Liquidity Available in Market Environments

Source: Strategic.

* As defined by the return of world wealth portfolio from equilibrium expectations

Liquidity is Essential to Portfolio Management

Even long-term investors require liquidity to meet periodic obligations, rebalance their portfolios to pre-existing policy or tactical allocations, or reallocate to new tactical allocations. In doing so, they can face actual expenses or opportunity costs when normally liquid markets do not clear.

Benefit payments and spending requirements require periodic liquidity, of course, and selling to provide this liquidity may unbalance a portfolio in periods of market stress. So, too, do investment vehicles that must be continuously funded. Private equity partnerships, for example, require an initial commitment of capital from investors. This commitment is then called in a series of cash transfers at the discretionary request of the investment manager as investment opportunities arise. If an investor is unable to provide cash upon demand to satisfy a capital call, the investor's existing investments in the partnership can become subject to immediate forfeiture, plus other penalties. Access to future commitments of capital by the class service providers can also be denied. There is therefore a significant financial and reputational risk in not fulfilling these funding obligations.

Even some liquid assets need to be supported by liquidity. For example, long positions in certain derivatives require the posting of maintenance margin when the notional value of the derivatives falls below a certain level. Investors must produce cash to replenish the margin, or their position will be closed out. In this case, a lack of liquidity can result in an untimely loss of exposure costly to future returns.

Liquidity is also routinely necessary for rebalancing a portfolio to its original policy weights or intended tactical investment strategy, when an allocation drifts out of balance. The process of rebalancing requires that assets that have risen in price (or fallen less) be sold periodically, so that allocations to assets that have fallen in price can be increased. When price volatility rises so much that market mechanisms break down, the liquidity of assets becomes impaired, frustrating attempts to rebalance at precisely the time when rebalancing may be most urgently called for.

Rebalancing can be particularly problematic for portfolios holding infrequently priced assets in combination with those regularly marked to market. Consider the common situation of a portfolio containing private equity, public equity, and fixed income. Significant declines in the prices of the public equities may produce underweights to equities overall, and at the same time there may be insufficient liquidity in fixed income assets to rebalance. The illiquid assets cannot be used for rebalancing and, since they have not been marked to market, their values are unknown.

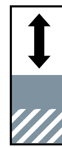
Exhibit 3 on page 4 illustrates the impacts of various declines of public equities on two portfolios diversified among public equities and fixed income, as well as illiquid alternative assets (commodity futures, private equity, real estate, hedge funds, and timber). The "Liquid" sample portfolio is based on the so-called "Endowment Model." The "Illiquid" sample portfolio reflects the concentrated holdings in illiquid alternative investments popular with the largest endowments and some high net worth investors. Expected returns and risks are from Strategic Investment Group's capital market assumptions in early 2009. Public equity declines of one, two and three standard deviations from the expected return are shown as Moderate, High, and Extreme stresses, respectively. In our experience, assumptions for fixed income returns are typical for such equity market episodes. For hedge fund returns, we assume that the funds have 30% of the downside risk of equity markets. Real estate and private equity, by definition, cannot be rebalanced, and provide no contemporaneous returns.

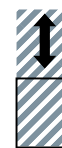
The inability to fully rebalance in the presence of illiquid assets is evident. The Liquid Portfolio may have sufficient liquid fixed income to rebalance public equity allocations to policy weights in the moderate and high stress cases, and the Illiquid Portfolio can

EXHIBIT 3:

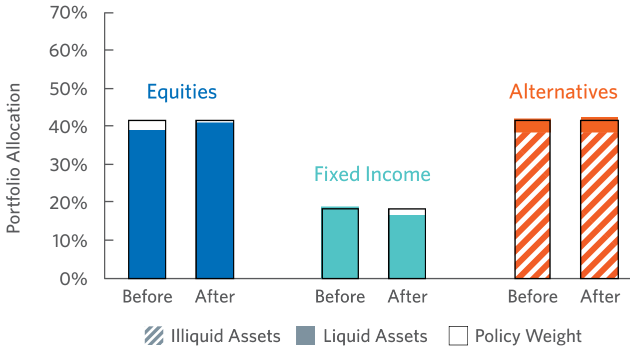
Allocations Before and After Rebalancing

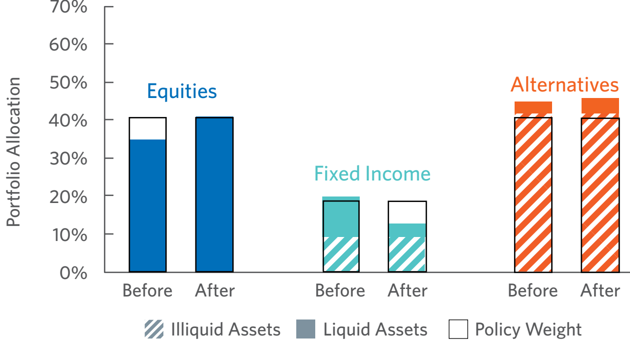
Source: Strategic.

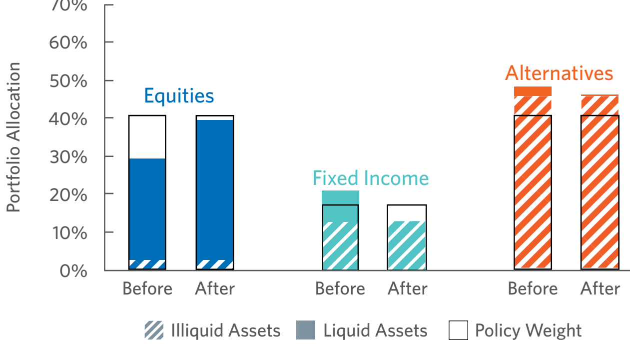

Represents the inability to increase allocation to policy weight


Represents the inability to decrease allocation to policy weight

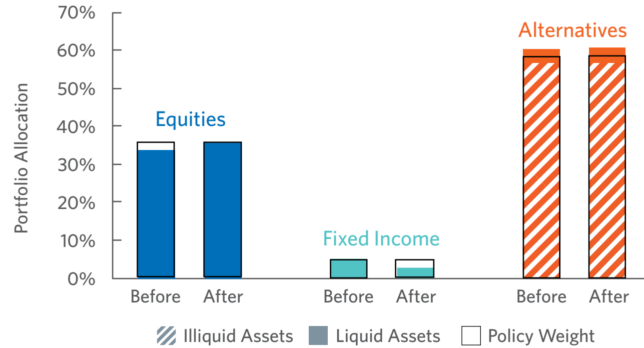
"Liquid" Portfolio

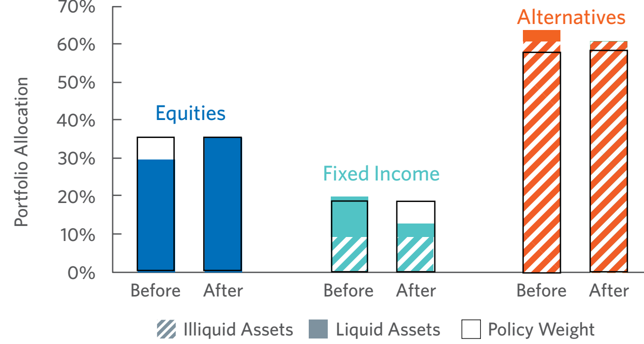


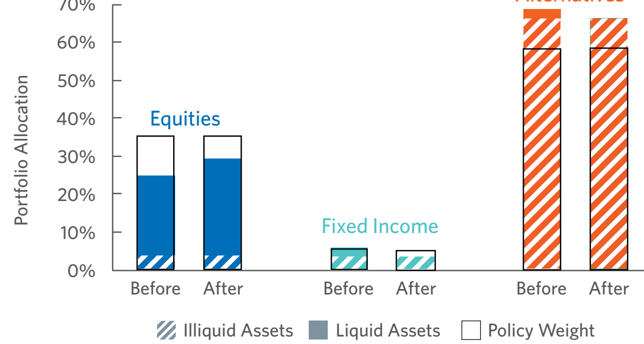




"Illiquid" Portfolio







Model portfolio is shown for illustrative purposes only and does not represent an actual portfolio. Actual portfolios and their risk may differ significantly from that shown here. Please see last page for important risk disclosures.

likewise be rebalanced from fixed income in the moderate stress environment. However, both portfolios lack the requisite liquidity to rebalance under extreme stress, and the Illiquid Portfolio must sell all of its liquid commodities to barely rebalance public equity weights. In these last three cases, the swollen illiquid alternatives allocations are also in jeopardy because of the paucity of remaining liquid assets to provide for capital calls.

Not surprisingly, including more illiquid assets in a policy makes reallocating even more difficult. Investors pursuing active asset allocation (the decision to tactically adjust the asset mix in response to anticipated changes in expected asset class returns) transact to return not to policy, but to an asset class strategy relevant to the prevailing investment environment. Allocators who follow a price-sensitive process (as opposed to one driven by momentum) would be likely to purchase more equity in response to extreme price declines. Their desire for additional exposure and sources of funds precisely when liquidity is impaired is hard to satisfy, and harder still with an illiquid portfolio, even if one just wants to rebalance to normal policy weights.

Liquidity Management Tools and Techniques

Investors need not fall prey to the impact of illiquidity. By planning ahead and building flexibility into their portfolio managements, fiduciaries can mitigate illiquidity's perverse effects.

- **Keep a liquid fixed income asset mix.** Only sovereign debt and cash can be relied upon to be liquid for rebalancing equity positions in periods of extreme uncertainty and volatility. Many U.S. investors benchmark their fixed income allocations against indices composed of as little as 10 to 15% – and sometimes less – in Treasury bills, bonds, and notes. In investment policies with a majority of public equities and illiquid alternatives, too little liquid fixed income may be available for rebalancing and reallocation. Investment grade debt was once thought to be liquid enough, but the severe financial crisis of 2008 proved otherwise.
- **Limit illiquid alternatives.** Investors with portfolios comprised mainly of risky marketable assets and illiquid alternatives should consider constraining their allocation to the latter. Where close to half of an investment policy is allocated to equities as shown in Exhibit 3, we believe a limit of no more than a third of the total portfolio for illiquid alternatives is prudent. Holding fewer public equities allows for greater illiquid assets, but in extreme markets investors allocated to combined equity and alternative weights greater than 90% have overestimated their ability to meet capital calls. Tools such as multi-period simulation or single-period scenario analysis stress testing can be employed to identify relevant limits for customized policies. But few long-term investors with yearly payment obligations can withstand a three standard deviation stress test if they have more than 50% in illiquid assets, unless they have access to significant amounts of credit even in worst case scenarios. Very few, if any, have such access. Extreme scenarios come out of blue skies; they cannot be predicted. Investors have to be prepared to survive them when they happen.
- **Substitute derivatives for physicals.** Index futures can be particularly powerful in rebalancing and reallocating portfolios, because they can be leveraged to create notional exposures several times larger than required collateral. Exchange-traded futures have proven liquid in the most extreme market environments and offer an appealing solution to the rebalancing challenge posed in Exhibit 3. Yet futures also demand liquidity – for maintenance margin. Since futures are marked to market daily, with cash required daily to settle any losses, futures can become a drain on liquidity in steadily falling markets. Thus, the usefulness of futures in preserving liquidity during rebalancing depends on market timing.

- **Increase cash flow control.** Today investors with size or reputational advantages can choose among investment managers with more generous liquidity terms. Better terms may be more widely available in the future, as competition for scarce investor dollars increases. Also, managed account and payment-in-kind options should be pursued when available, instead of commingled funds, which can be disadvantageous to investors in periods of illiquidity.

- **Pre-approve borrowing options.** Fiduciaries with access to internal capital or external capital markets in periods of great market stress can borrow to rebalance or satisfy capital calls. The problem is that in such circumstances, external borrowing is unlikely to be available and internal capital may be needed for other institutional purposes. A line of credit, debt issuance, or internal borrowing also leverages the investment policy to a riskier level than approved in the original investment mandate.

If these options are not available, fiduciaries can turn to redeeming illiquid assets as a last resort, although doing so will be costly and time-consuming. A wiser strategy is the prudent management of liquidity. It makes maintenance, rebalancing, and reallocation possible, preventing the negative effects of forced selling and excessive redemptions on all investors as they endeavor to meet their objectives.

Important Disclosures

Expected returns and risk are based upon Strategic's estimates of equilibrium asset class returns, volatility and correlations.

Limitations

It is important to note that the expected returns should not be interpreted to represent a promise of future performance under any of the scenarios described herein. Because the capital market statistics and expected return data were constructed with Strategic's judgment and knowledge of history in mind, they 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 in this analysis. 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 certain inherent limitations, some of which are described below. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points that can also affect actual trading results. There are numerous other 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. Furthermore, the hypothetical results do not contain any calculations of transaction costs that may be applicable to the described strategies.

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.

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