

ROLE MODELS: PENSIONS CAN USE DATA TO OPTIMIZE PI ALLOCATIONS



Jacob Goldberg
Senior Investment Director
Pension Practice

Tapping private markets in search of added returns is common practice among defined benefit pensions and other institutional investors. However, many pensions still avoid private investments (PI) out of fear that long-term capital lockups could elevate liquidity risk. Some also remain alarmed by the potential consequences of the “denominator effect.” This refers to situations in which total portfolio value decreases as a result of public market corrections, while private asset valuations lag, causing the PI sleeve of the portfolio to be above its target allocation.

Ultimately, overestimating liquidity risk and the denominator effect can prevent pensions from fully optimizing their portfolio’s return potential. This paper aims to help pension executives better understand how data can enable their effective use of PI. It also discusses how new investment policy approaches may help to take advantage of market opportunities and minimize the risk of portfolio stress when down markets occur.

FOLLOWING THE DATA

It is no secret that investing in private markets can add considerable portfolio value. Investors that have allocated to these asset classes over the long term have tended to outperform investors holding only public asset classes. And investors that managed to allocate primarily to top quartile PI managers have tended to perform even better (Figure 1).

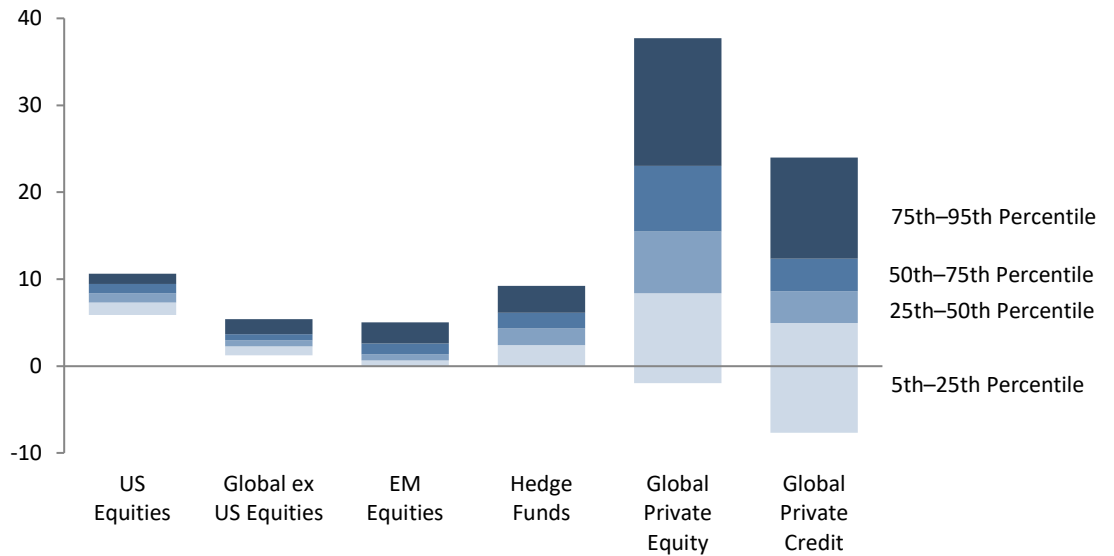
As pensions consider PI investments, data analysis based on historical returns for private markets can help them make more informed decisions. This analysis can yield insights about how PI allocations have previously behaved across different market environments.

For example, when a crisis scenario hits, private markets are expected to react. But in reality, the severity and duration of these market reactions are not instantaneous or uniform. In crisis conditions, private market asset values and cash flow generation can decrease—but contributions can also decrease—as asset managers have fewer investment opportunities. In the years immediately following a crisis, exit opportunities present themselves and PI-buying opportunities emerge, albeit typically with lower returns than a more normal market environment.

Published April 5, 2024

FIGURE 1 PRIVATE INVESTMENTS HAVE OFFERED OUTSIZED RETURN POTENTIAL

January 1, 2008 – June 30, 2023 • Average Annual Manager Returns by Asset Class (%)



Source: Cambridge Associates LLC.

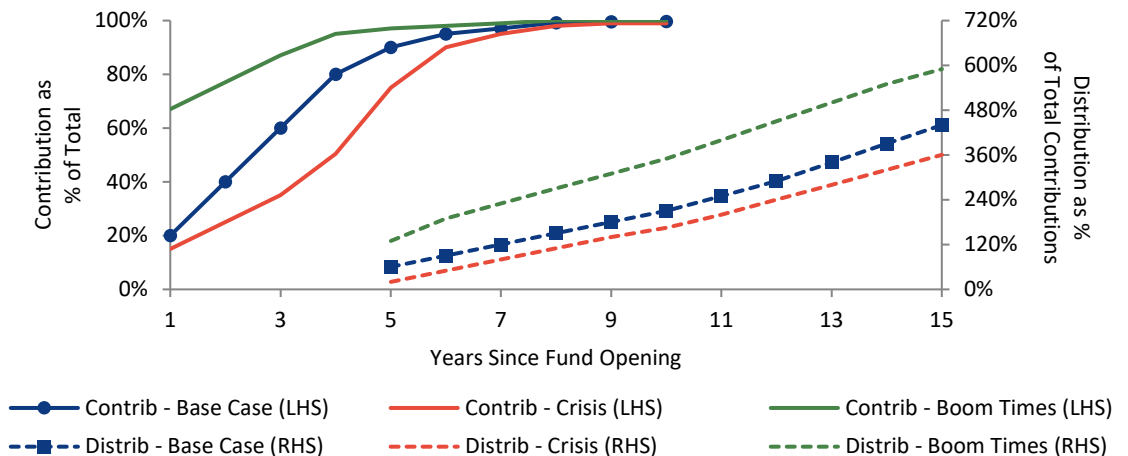
Notes: Returns data and percentiles for US Equities, Global ex US Equities, and EM Equities are time-weighted, while returns data and percentiles for Hedge Funds, Global Private Equity, and Global Private Credit are dollar-weighted. All financial investments involve risk. Depending on the type of investment, losses can be unlimited. Past performance is not indicative of future returns.

Figure 2 compares contributions and distributions from a sample private equity fund in hypothetical base-case, crisis, and boom environments. It shows how different market situations can impact the timing of capital calls by fund managers, as well as when capital is returned to investors. Contributions are deferred in crisis scenarios as managers typically wait until opportunities present themselves, while capital is often called quickly in boom scenarios. In both environments, it is typical for most capital commitments to be called by the manager over the total investment horizon. Conversely, distribution trends track nearly parallel for all three scenarios, echoing the returns of the public market.¹

¹ This is a summary of broad private equity and does not detail any other private asset classes that have a shorter or longer investment horizon. Those separate private assets have a similar contribution/distribution profile.

FIGURE 2 MARKET CONDITIONS INFLUENCE PE FUND CONTRIBUTION AND DISTRIBUTION DYNAMICS

Sample Private Equity Contributions/Distributions Over Time



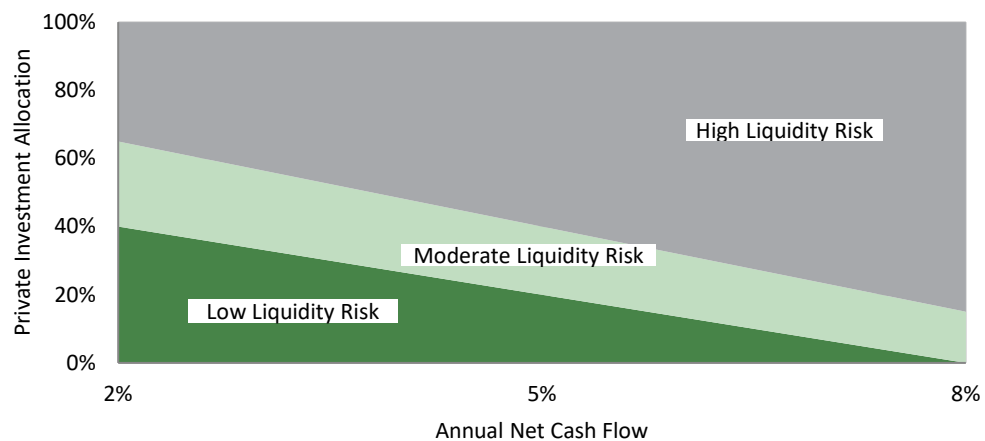
Source: Cambridge Associates LLC.

Putting it all together, whenever a crisis ensues, public market portfolios are immediately affected, but the value of a PI portfolio lags because valuations occur less frequently. Furthermore, private markets will call and return capital more slowly. In order to fully understand and interpret the potential impact of PI investments on pension portfolios, this complex web of inputs and outputs requires careful analysis.

MODELING AN INVESTMENT PORTFOLIO

Liquidity is a key factor for pensions investing in the private market, but at what level does the lack of liquidity cause serious risks to the pension? Figure 3 paints a broad picture of liquidity risk as a function of net distributions. In this case, net distributions is the percentage of outflows required to pay benefit payments and expenses, minus contributions.

FIGURE 3 PI ALLOCATION AS A FUNCTION OF NET DISTRIBUTIONS



Source: Cambridge Associates LLC.

Notes: Analysis assumes a diversified PI program consisting of private equity/venture capital, real assets, and private credit. Pool growth of 4% assumed under base case, stressed under various Monte Carlo simulations. Assumed distributions and contributions based on Cambridge Associates data, also stressed under various Monte Carlo simulation environments. Liquidity risk measured using three-year Liquidity Coverage Ratio (LCR) $[(\text{Liquid Assets} + \text{Anticipated Distributions} + \text{Employer/Employee Contributions}) / (\text{Benefit Payments} + \text{Expenses} + \text{Capital Calls})]$. Low Liquidity Risk reflects $\text{LCR} > 1.5$, Moderate Liquidity Risk reflects $1.5 < \text{LCR} < 1$, High Liquidity Risk reflects $\text{LCR} < 1$.

Using this simple framework is an effective way to consider the appropriate PI allocation for a pension. However, it's important to note that because each pension's risk and payment profile is unique, more detailed and bespoke modeling may be necessary. This is particularly true for those that intend to invest heavily in the PI market.

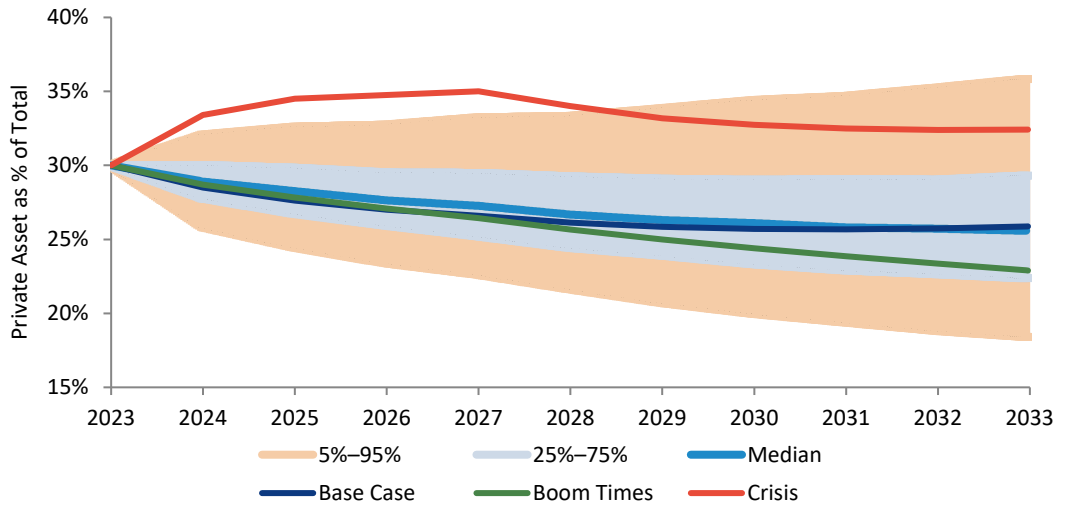
Modeling can also help to inform PI allocation dynamics over time. Figure 4 demonstrates a potential PI allocation path for a sample pension. In this example, the pension has a 25% target allocation to privates, is currently paying out 5% of assets per year in benefit payments, has benefit accruals equal to 1% of pension liabilities, and is currently above PI target by 5% due to recent market movements.²

² For the sample simulation, a 60/40 portfolio consisting of asset class targets 25% equities; 10% hedge funds; 40% long government/credit; 10% private equity; 10% private credit; and 5% real estate. The PI portfolio is assumed to be mature and returning 25%–30% of capital committed, while continuing commitments to target the 25% target weight.

Here, it makes sense to start with a micro view of the assets to ascertain expectations under base-case, boom, and crisis scenarios to inform a more refined application that allows a broader range of randomness like a Monte Carlo simulation model.³ The simulation model cannot be created without the scenario modeling.

FIGURE 4 SIMULATION MODELS CAN HELP INVESTORS UNDERSTAND POTENTIAL ALLOCATION DYNAMICS

Private Investment Allocation Over Time



Source: Cambridge Associates LLC.

In addition to forecasting potential PI portfolio dynamics, simulation modeling analyzes the non-PI portfolio, the liability plan profile, and broader capital market forecasts. The resulting “cone of doubt” in Figure 4 is based on 5,000 return simulations, with PI values informed by the three market scenarios discussed above. As in Figure 3, models such as this can provide a view to the potential liquidity risk inherent in the pension.

In this example, the model suggests an 81% probability that, in ten years, the PI allocation percentage will be less than where it is today. Furthermore, in the few future scenarios where the portfolio exceeds 35% in privates by 2029, there is a 71% likelihood that the proportion of PI in the portfolio will then decrease. These metrics suggest that the likelihood of a liquidity crisis is low—even in a stressed market environment—as is the risk that the portfolio will be overweight PI for a prolonged period. Thus, if an investor is willing to accept an elevated allocation to privates in the near term, then a decrease in private asset commitments, or a sale of private assets at a discount in the secondary market, is unnecessary.

RECONSIDERING PI RANGES

It is typical for pensions to express predefined thresholds for allocations within their investment policy statement (IPS). A well-constructed IPS dictates boundaries across all asset classes and informs decision making related to trading and rebalancing. However, in the case of a PI portfolio, there are few ways to remedy an overallocation

³ A Monte Carlo simulation model seeks to predict the probability of a variety of outcomes when the potential for random variables is present.

in the near term. As Figure 4 shows, even in a simulation model where the IPS boundaries are breached, an overallocation to PI is unlikely to remain above the threshold for long—and unlikely to cause a lasting liquidity crunch. These scenario projections can help bolster confidence on the part of pension executives, demonstrating that there is enough liquidity in their portfolio and that their allocation is likely to return to their IPS range over time. While the above depicts a sample case, scenario modeling such as this can be customized to specific situations.

GOVERNANCE AND TARGET RANGES

The topic of IPS ranges brings up the question of what boundaries are necessary for pensions with PI allocations. In fact, it can be optimal to create two sets of boundaries. The first is a soft guideline that, when breached, flags that the allocation is above target and action may be necessary. A second set of boundaries can be used to demarcate the point at which immediate action is warranted. When setting these two boundary ranges, it is important to note that the larger the target of the private allocation, the broader the ranges should be. For example, a 5% boundary on a 10% allocation may be reasonable but is most likely insufficient for a 25% allocation.

WHAT IF?

When pensions find themselves in the middle of a market crisis, it can be difficult to stay rooted to analysis conducted during a calmer period. However, it is at this precise moment that a pension executive's investment decisions can lead to the largest swings in PI value. For plans looking to sell in the secondary market to lower their illiquid allocation, the lost value is clear—their holdings will sell at a deep discount, locking in losses. However, for those interested in cutting commitments to new funds, outcome analysis depicts murkier results.

For example, what if decision makers overseeing the sample pension described earlier determine that the continued risk of the private allocation increasing is too high and move to cut their next three years of commitments by half? What amount of change can they expect in asset values? These questions can be answered using further simulation modeling, but the general outcome is that the pension has more surety of the liquidity profile at the expense of lower returns.

Looking back at Figure 1, a top quartile private equity performer may outperform the US equity market by ~15% per annum and—assuming a one-time, three-year decrease in commitments—the impact to the pension is a net decrease in assets of ~2%.⁴

MODEL OUTCOMES

Scenario modeling of PI holdings can yield a crucial takeaway for pension executives: don't fear the denominator effect. While the magnitude of this effect is conditional on a portfolio's broader allocation strategy, analysis suggests that, overall, it is an uncommon and typically short-lived phenomenon. Pensions with an effective investment governance framework that build a PI portfolio tailored to their investment

⁴ It is assumed that commitments decrease by ~2.7% of total assets and that the capital is drawn over six years and returned by year 13 with a total DPI of 2.6x.

objectives can use modeling to strengthen their conviction in the ability of optimized PI allocations to deliver stronger portfolio returns without imposing too much additional risk. Pension executives can also use scenario modeling to better assess how to balance their pension's liquidity requirements against PI growth opportunities as they work to meet their investment objectives over time. ■

Copyright © 2024 by Cambridge Associates LLC. All rights reserved.

This report may not be displayed, reproduced, distributed, transmitted, or used to create derivative works in any form, in whole or in portion, by any means, without written permission from Cambridge Associates LLC ("CA"). Copying of this publication is a violation of US and global copyright laws (e.g., 17 U.S.C. 101 et seq.). Violators of this copyright may be subject to liability for substantial monetary damages.

This report is provided for informational purposes only. The information does not represent investment advice or recommendations, nor does it constitute an offer to sell or a solicitation of an offer to buy any securities. Any references to specific investments are for illustrative purposes only. The information herein does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Information in this report or on which the information is based may be based on publicly available data. CA considers such data reliable but does not represent it as accurate, complete, or independently verified, and it should not be relied on as such. Nothing contained in this report should be construed as the provision of tax, accounting, or legal advice. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE PERFORMANCE. Broad-based securities indexes are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly in an index. Any information or opinions provided in this report are as of the date of the report, and CA is under no obligation to update the information or communicate that any updates have been made. Information contained herein may have been provided by third parties, including investment firms providing information on returns and assets under management, and may not have been independently verified.

The terms "CA" or "Cambridge Associates" may refer to any one or more CA entity including: Cambridge Associates, LLC (a registered investment adviser with the US Securities and Exchange Commission, a Commodity Trading Adviser registered with the US Commodity Futures Trading Commission and National Futures Association, and a Massachusetts limited liability company with offices in Arlington, VA; Boston, MA; Dallas, TX; Menlo Park, CA, New York, NY; and San Francisco, CA), Cambridge Associates Limited (a registered limited company in England and Wales, No. 06135829, that is authorized and regulated by the UK Financial Conduct Authority in the conduct of Investment Business, reference number: 474331); Cambridge Associates GmbH (authorized and regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin"), Identification Number: 155510), Cambridge Associates Asia Pte Ltd (a Singapore corporation, registration No. 200101063G, which holds a Capital Market Services License to conduct Fund Management for Accredited and/or Institutional Investors only by the Monetary Authority of Singapore), Cambridge Associates Limited, LLC (a registered investment adviser with the US Securities and Exchange Commission, an Exempt Market Dealer and Portfolio Manager in the Canadian provinces of Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario, Québec, and Saskatchewan, and a Massachusetts limited liability company with a branch office in Sydney, Australia, ARBN 109 366 654), Cambridge Associates Investment Consultancy (Beijing) Ltd (a wholly owned subsidiary of Cambridge Associates, LLC which is registered with the Beijing Administration for Industry and Commerce, registration No. 110000450174972), and Cambridge Associates (Hong Kong) Private Limited (a Hong Kong Private Limited Company licensed by the Securities and Futures Commission of Hong Kong to conduct the regulated activity of advising on securities to professional investors).