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Integrated Liquidity Management for Private Markets Programs

As allocations to private markets grow, so do the cashflow, liquidity and "j-curve" challenges of capital calls and distributions. How might investors set aside assets to fund commitments without disrupting other parts of their portfolios, and without sacrificing too much return potential?

In this article, we propose fully funded, "integrated-liquidity" management as a solution. We discuss the advantages of having a well-equipped private markets manager handle the liquid commitments portfolio, and describe three different model portfolios to suit different investor profiles.

Executive Summary

- Allocations to private markets continue to grow in size and complexity, and with that comes the challenge of efficient liquidity management.
- Fully funded, "integrated liquidity" programs, where a well-equipped private markets manager handles the liquid commitments portfolio, can help investors manage the cash flow implications of these allocations and maximize their efficiency.
- A "one-stop shop" solution allows a liquid portfolio to seek enhanced return potential with managed risk, while private markets commitments are being drawn.
- We believe this approach can also allow for more opportunistic private markets investing, potentially resulting in faster capital deployment, mitigating some of the "j-curve" return profile of the typical private markets program.
- We describe three model liquid portfolios for committed capital:
  - **Volatility Control Portfolio** – Where the focus is on enhancing returns above cash with managed volatility and limiting downside risk
  - **Strategic Asset Allocation (SAA) Carveout Portfolio** – Where the liquid portfolio matches the general risk/return attributes of a client's strategic asset allocation
  - **Proxy Portfolio** – Where the return target of the liquid portfolio approximates that of the private markets portfolio
- The appropriateness of each model depends on the profile, circumstances, risk appetite and funding source of the investor.
- The case for using an integrated liquidity management approach for private markets programs is even stronger where there are multiple private markets commitments: in these cases, a fully funded approach enables liquidity to be managed across the board, seeking to maximize portfolio efficiency and risk-adjusted returns.

Allocations to private markets are increasing in prevalence and complexity as investors search for alternative sources of return and yield. An often underappreciated aspect of private markets program development is the liquidity and cashflow management required, both building up to and exiting an investment.

The pattern of drawdowns and distributions in a private markets program is influenced by a number of factors and depends on the types of private markets funds and their specific terms. Whatever the pattern, investors are legally bound to meet requests for capital, often at short notice and sometimes within a few days. That necessitates a sophisticated liquidity management strategy, designed to preserve capital to meet obligations while limiting the performance drag that excess liquidity can have on the overall investment program. The portfolio rebalancing decisions that become necessary in response to capital calls utilize time and resources, representing yet more costs for investors. Compound this by having multiple private market commitments, diversified by vintage year and across different managers, and an investor can face a meaningful operational and governance burden.

We believe that a fully funded, integrated liquidity solution, where investors delegate a well-equipped private markets manager to handle the liquid commitments portfolio alongside the private markets allocation from day one, can simplify governance and enhance the efficiency and potential aggregate performance of a private markets program.

The Traditional Commitment Model and Its Challenges

The typical lifecycle of a closed-ended private market fund spans three phases: Fundraising, Investment and Harvesting. During the investment period (typically three to five years), the fund manager gradually draws down the capital committed by investors during fundraising. The capital calls are driven by the size and timing of individual investment deals, and as such are often hard to predict. Distributions can begin anytime through the life of the fund as investments are realized, but are most concentrated in the harvesting phase, typically from year five onwards. The entire lifecycle of a fund can span a decade or more.

Investors can face penalties if capital call obligations are not met by their deadlines. But there are also financial consequences associated with unsophisticated liquidity management of a private markets program. Investing commitments solely in risk-free assets is likely to act as a drag on performance over time, yet being forced into a "fire sale" of riskier assets to fund capital calls is also a big risk. It's worth remembering that private equity managers will be out looking for bargains for your portfolio just after public equity markets have endured a sell-off. Through the market stress of 2008, many investors were forced to realize deep losses in liquid assets in order to fund their private equity commitments. Managing this liquidity risk should be at the forefront of any private markets investor's mind.

Over the lifecycle of a fund there will be many active investment decision points—such as which assets to sell to fund capital calls, and whether and how to re-invest distributions. In isolation, each may be a modest decision, but as investors build exposure to multi-dimensional private markets allocations, diversifying commitments over a range of strategies and vintage years, the decision tree typically becomes rapidly more complex and can lead to a near constant rebalancing exercise for investors.

The Potential Benefits of Integrated Liquidity Management

1. Shift the cashflow management process to the private markets' manager

   In a fully funded solution, cashflows are managed on behalf of investors—with no administration required to meet capital calls and a default instruction in place for distributions. Within an integrated Investment Management Agreement (IMA), investors can select to recycle or withdraw distributions based on their income needs and desire to "re-up" and maintain private markets exposures.

   For a multi-dimensional private markets' program, an investment manager can net distributions with new private markets investments across the entire portfolio, resulting in highly efficient liquidity management.

2. Enhance the potential for returns by defining a liquidity portfolio consistent with the client's objectives

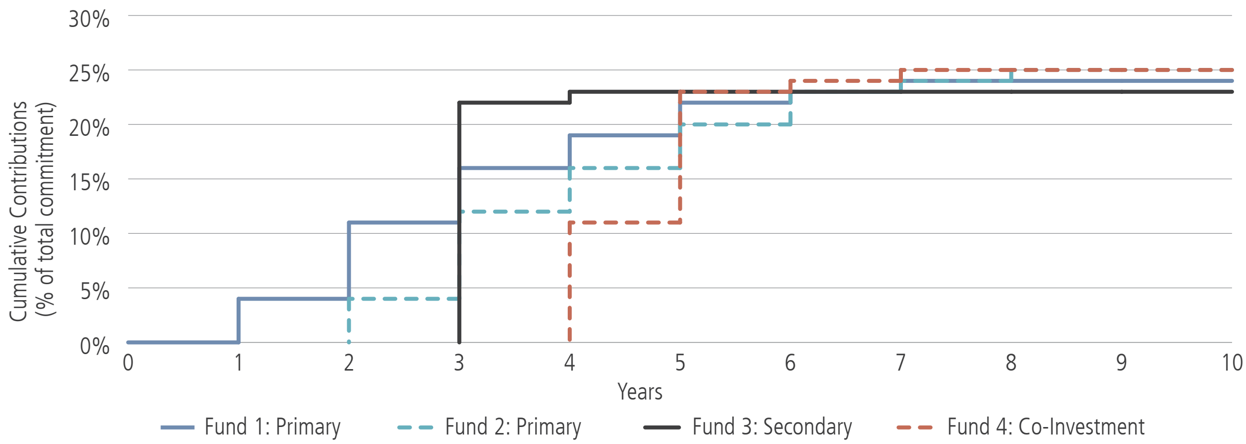
   There is the potential for more attractive risk-adjusted returns in a well-managed liquid portfolio relative to what many investors may be capturing within their own allocations earmarked for private markets commitments. Particularly in a low interest rate environment, the opportunity costs associated with holding sizable amounts of cash and cash-like securities is high and can cause a drag on the performance of the overall portfolio. On the other hand, many investors who opt to take risk in their liquidity portfolio do not have the capacity to actively manage highly diversified liquid multi-asset allocations with a rigorous risk framework, encompassing volatility and downside risk limits. In many cases, that leads to private markets commitments being funded by a single asset class or strategy, with very concentrated risk exposures. A fully funded solution that delegates this function to a well-equipped private markets manager can help avoid the pitfalls of taking too little or too much risk in a liquidity portfolio.

3. Provide greater flexibility for opportunistic investments in private markets, and more rapid deployment of capital

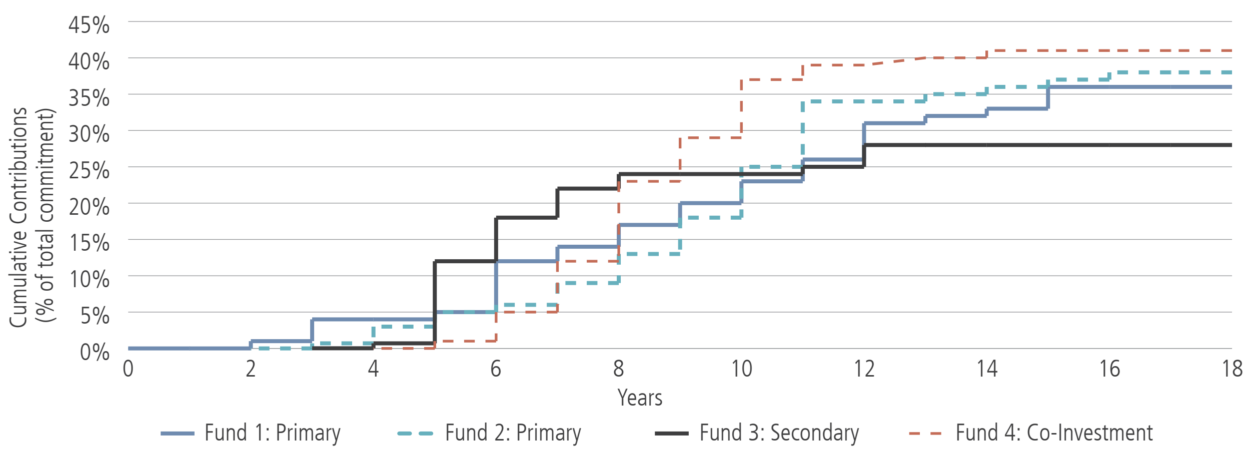
   Perhaps most importantly, integrated liquidity solutions give the ability to mitigate some of the "j-curve" effect experienced in traditional private markets investing. The investment manager is in a unique position to operate opportunistically on an investor's behalf, thereby deploying capital sooner as well as taking advantage of the market's full opportunity set. In particular, the investment manager can utilize secondaries and co-investments, drawing upon the liquid portfolio as and when needed. As figure 1 shows, secondaries and co-investments typically draw on commitments faster than primary fund investments; and co-investments typically distribute cash sooner, too. But this is not just about managing the "j-curve." Particularly in the secondaries market, which continues to grow and evolve, being a liquidity provider can offer attractive returns. Likewise, being able to invest nimbly when opportunities arise from market dislocations may improve the aggregate private markets portfolio performance.

FIGURE 1. TYPICAL CASHFLOW PROFILE (CALLS/DISTRIBUTIONS) FOR PRIVATE MARKETS INVESTMENTS (SINGLE, AND MULTIPLE)

Illustrative Drawdown Patterns



Illustrative Distribution Patterns



Source: Neuberger Berman. The figure shows illustrative cash flows of each individual fund from a hypothetical four-fund portfolio; all four funds have the same commitment (25% of total commitment), but different vintages. Funds 1 and 2 are examples of primary global buyout funds, fund 3 is an example of secondary global buyout fund, and fund 4 is an example co-investment fund. These cash flows are from one simulated scenario from NB's proprietary stochastic model. Please see endnotes for important information regarding the Stochastic Model and underlying assumptions. The model ***above*** is provided for illustrative purposes only and reflects a sample analysis performed with unique client parameters. The model is designed to forecast capital calls/distribution activity and Net Asset Value ("NAV") developments and is not intended as a promise or prediction of performance. Assumptions are for modeling purposes only. There can be no assurance that the strategy will achieve comparable results, that targeted diversification or asset allocations will be met, that the strategy will be able to or will ultimately elect to implement the assumptive investment strategy and approach described in the model. **Past performance is not necessarily indicative of future results.** Any results provided are before estimated NB management fees and carried interest. Please see the Disclosures ***at the end*** of this presentation, which include important disclosures relating to target returns included in this model.

Key Attributes of a Liquidity Portfolio

At its core, we believe a liquidity portfolio needs to protect capital in order to have sufficient liquid assets available to meet the funding requirements for the private market investments, including:

1) **Managing Downside –** At any point in its life, large market falls can be disastrous for a capital funding source which decreases in size over time. Maintaining a minimum funded status needs to be the number one objective of the liquidity portfolio to avoid the need for further capital injections.

2) **Risk mitigation –** For the same reason, volatility should be minimized in the search for return. Diversifying and uncorrelated assets can assist in constructing the most risk-efficient liquidity portfolios.

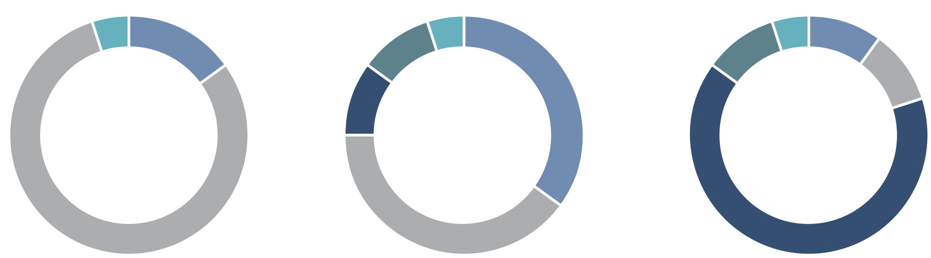
3) **Liquidity risk –** To meet all of the calls for capital for private markets investments, a large portion of the portfolio needs to be in daily-traded, high-volume, liquid assets that can be readily realized. As the program matures, the allocation should evolve to ensure the asset mix remains appropriate, in terms of both volatility and liquidity.

4) **Income generation –** Income can reduce volatility by enhancing total return during down markets; it also provides a natural liquidity stream, without the transaction costs associated with asset sales, that can be used to net-off capital calls.

We think there are three basic models of liquidity portfolios for private markets programs, each suited to different investors' objectives and guidelines.

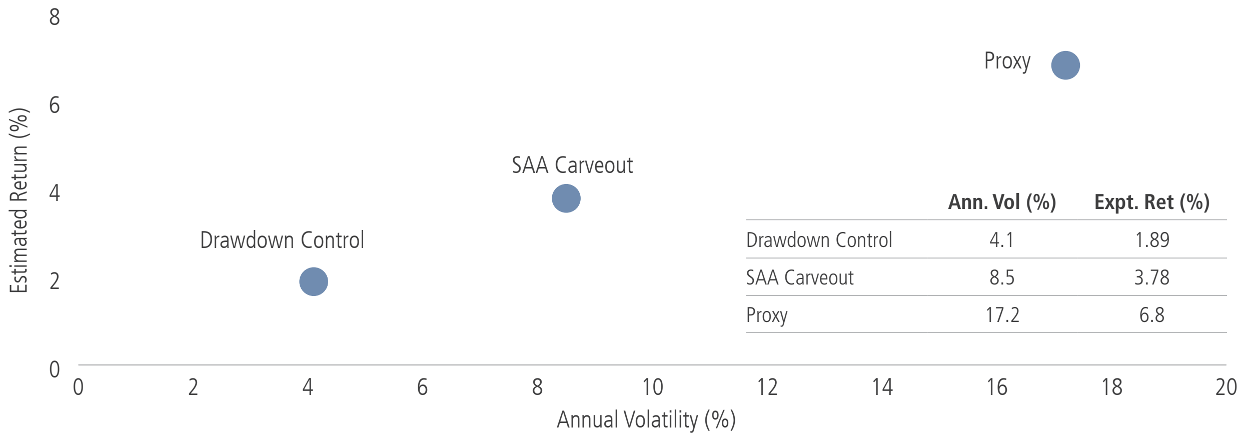
- **Volatility Control portfolio** – Here, the focus is on reducing the size and probability of negative performance while adding the potential for a modest return above cash. Typically, this portfolio will allocate predominantly to short duration fixed income investments, with perhaps a modest allocation to defensive or low-volatility equity strategies, and uncorrelated diversifying strategies for risk mitigation. It would be expected to provide modest positive returns in stable and rising risk asset markets, while reducing volatility and downside market capture through periods of market decline. The higher degree of certainty associated with this model makes it particularly suited for accelerated private markets commitments, in our view. We believe it is most aligned with investors that currently source their private markets commitment from cash, bonds, or equivalent assets.
- **Strategic Asset Allocation Carveout portfolio** – Here, the liquidity portfolio is constructed to match the general risk and return attributes of a clients' Strategic Asset Allocation (SAA), thereby leaving total portfolio risk and return broadly unchanged as the private market investment builds. By matching the SAA, this model saves clients from having to make rebalancing decisions through the investment period of the private market program. The allocation will depend on the investor, but would typically include fixed income, equity, uncorrelated diversifiers and liquid alternatives in line with their agreed SAA. We believe this is the most suitable option for investors that currently fund their private markets commitments from their existing portfolio.
- **Proxy portfolio** – This model targets a similar return to the steady state private markets portfolio, but via a highly diversified portfolio of liquid investments, potentially utilizing leverage. The portfolio will allocate predominantly to liquid alternatives with some public equity. Along with the increased risk level comes the possibility of having to reduce an investor's private markets commitment or inject additional funds into the liquidity portfolio should asset values decline. In our view, this model is most suited to those sourcing their private markets commitment from equity or other higher return-seeking asset classes.

FIGURE 2. THREE MODELS FOR A LIQUIDITY PORTFOLIO



	VOLATILITY CONTROL	SAA CARVEOUT	PROXY
Equity	15%	35%	10%
Fixed Income	80%	40%	10%
Liquid Alternative	0%	10%	65%
Uncorrelated Diversifiers	0%	10%	10%
Cash	5%	5%	5%
Estimated Return	Low/Moderate	Moderate/High	High/V High
Estimated Risk	Low	Moderate	High
Equity Beta	Moderate/low	Moderate	High
Private Equity Beta	Low	Moderate	High

ESTIMATED RETURN AND VOLATILITY OF MODEL PORTFOLIOS



	Ann. Vol (%)	Expt. Ret (%)
Drawdown Control	4.1	1.89
SAA Carveout	8.5	3.78
Proxy	17.2	6.8

Source: Neuberger Berman, Bloomberg-Barclays, HRFI. Indices used: S&P 500 Index (equities); Bloomberg Barclays U.S. Corporate 1-5 Years Total Return Index (fixed income); 66% ProShares Global Listed Private Equity ETF (PEX USD), 33% FTSE Nareit All Equity REITs Index (liquid alternatives); HFRI Fund of Funds Composite Index (uncorrelated diversifiers), U.S. 3-month Treasury Bill (cash). Analytics are as of November 30, 2021. For illustrative purposes only. Past performance is no guarantee of future results. Annual volatility is estimated based on historical monthly returns from January 1, 2007 to November 30, 2021. Please note that estimated returns data is based on NB's capital markets assumptions and are provided for information purposes only. There is no guarantee that estimated returns will be realized or achieved nor that an investment strategy will be successful, and may be significantly different than shown here. Investors should keep in mind that the securities markets are volatile and unpredictable. There are no guarantees that historical performance of an investment, portfolio, or asset class will have a direct correlation with its future performance. Net returns will be lower. Please see important disclosures regarding NB's Stochastic Model and forward-looking statements at the end of this document.

Key Considerations

Markets – Certain economic environments may amplify the potential benefits of using an integrated liquidity solution. In particular, a genuinely diversified, risk-managed and active solution can help when valuations in public markets are notably stretched relative to history, or when correlations in public markets are increasing, by reducing the risk of having to fund a capital call when multiple asset classes are simultaneously in decline.

When might these model portfolios not be the optimal solution? The answer to this really depends on the source of funding. Investors that hold cash or cash-like liquid assets to fund their private markets allocations should almost always benefit from the enhanced risk-adjusted return potential of a Volatility Control portfolio. Those that fund from equities alone, however, may do better to continue that way during an extended period of rising equity markets, rather than incurring the opportunity costs of a more diversified solution. Similarly, those funding from a typical balanced SAA may do better to continue that way in an environment of low or declining rates, low volatility and negative correlations, where the complexity of a more diversified portfolio may not be rewarded. That said, we must be mindful of the seven- to 12-year time horizon associated with a typical private markets program. We believe it is prudent for investors to assume that they will experience varying market environments over this timeframe, including environments in which additional diversification and volatility reduction are highly beneficial.

Costs – Integrated liquidity solutions offer cost-effective, well-structured liquidity management leveraging the private markets relationship and economies of scale to access sophisticated and active management of a liquidity portfolio. This approach, versus managing in-house could offer more fee-efficiency, particularly in the context of the overall portfolio results.

Skills – In a fully funded program, it's important that an investment manager has the skills and infrastructure across private and public markets to run both portions of the portfolio effectively. Managers should have access to the full array of liquid investment strategies, including innovative approaches for example, low volatility equity strategies such as Put Writing and other specialist liquid alternatives, such as hedge funds, currency alpha and risk premia strategies. Managers who have historically been focused solely on private markets investments may not have such well-established capabilities for running dynamic and balanced liquidity portfolios.

Expert Analytical Tools – An effective private markets program should be underpinned by dedicated tools and capabilities that support program management, such as advanced modelling and cashflow pacing analysis, liquidity and risk management. Sophisticated stochastic modelling can be used to project the NAV and cash flow development of investments in private markets assets. Linking future NAV and cash flow development with the current portfolio makes it possible to design future commitment plans considering dispersion of returns, NAV targets, liquidity needs and other factors, enhancing program management and potential outcomes.

Investor Type – The relevance of integrated liquidity management depends perhaps most crucially on the specific circumstances of each investor. Overall, in our view a fully funded approach is most suited to investors that lack the investment management and administrative capacity for large scale in-house management of a liquidity portfolio. In terms of the specific model, we think Volatility Control may be more suited to intermediaries and their clients, who are likely to prioritize risk management and adequate liquidity over return, whereas SAA Carveout and Proxy lend themselves more to institutional and private client objectives.

Open Ended Fully Funded Products – An alternative solution for investors to access private markets without the traditional capital call structure. Other than opportunistic secondaries, open-ended funds of this kind tend to invest directly rather than through funds. However, choices may be more limited as the fund structure is less common, though growing as demand for liquid private markets solutions increases.

In conclusion, we believe it is important that investors consider their liquidity strategy at the outset of a private markets program to increase its efficiency and better align it to their investment objectives.

Index Definitions

The **S&P 500 Index** consists of 500 U.S. stocks chosen for market size, liquidity and industry group representation. It is a market value-weighted index (stock price times number of shares outstanding), with each stock's weight in the Index proportionate to its market value.

The **Bloomberg Barclays U.S. Corporate 1-5 Years Bond Index** measures the investment grade, fixed-rate, taxable corporate bond market with one to five years left to maturity. It includes USD-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers.

The **ProShares Global Listed Private Equity ETF (PEX)** is an exchange-traded fund that tracks the performance of the LPX Direct Listed Private Equity Index, which is designed to represent the global performance of the 30 most highly capitalised and liquid Listed Private Equity companies, diversified across regions, financing styles and vintages, which pursue a Direct private equity investment strategy.

The **FTSE Nareit All Equity REITs Index** contains all tax-qualified REITs with more than 50% of total assets in qualifying real estate assets other than mortgages secured by real property that also meet minimum size and liquidity criteria. It is part of the FTSE Nareit U.S. Real Estate Index Series, which is designed to present investors with a comprehensive family of REIT performance indexes that spans the commercial real estate space across the U.S. economy. The index series provides investors with exposure to all investment and property sectors. In addition, the more narrowly focused property sector and sub-sector indexes provide the facility to concentrate commercial real estate exposure in more selected markets.

The **HFRI Fund of Funds Composite Index** is designed to track the equal-weighted performance of funds of funds, as reported by the hedge fund managers listed within the HFR Database, which report in U.S. dollars monthly, net of all fees performance and assets under management, and have either (a) $50 million assets under management or (b) at least $10 Million assets under management on the last reported month prior to the index rebalance, and have been actively trading for at least 12 months.

Description of NB's Proprietary Stochastic Model

Neuberger Berman Private Equity uses stochastic modeling capabilities to forecast capital call / distribution activity and Net Asset Value ("NAV") development of private market investments. NB's stochastic model uses a Monte Carlo Simulation, projecting, with varying levels of confidence, how a private markets portfolio of funds, co-investments and secondaries will develop over time. The model projects capital calls, distributions and NAV development based on asset class, current NAV, vintage year and drawn amount of each investment in the portfolio, as well as additional (potential) future investments and commitments.

The input and assumptions used in the model are based on information from Thomson Reuters's Thomson ONE database covering 25 years of private equity industry data (cash flow, NAV development, etc.). Cash flows represent the pooled cash flows of all private equity funds that report performance data to Thomson Reuters and are net of all underlying fund fees and expenses. The industry performance assumptions used in the analysis are based on long-term averages from the Thomson ONE database, not on NB's historical or projected returns. The inputs used within the model include the median historical net IRR, median historical yield, average holding period, mean and standard deviation of contributions for various private market asset classes (i.e., large-cap, small & mid-cap buyout, venture & growth capital, special situations, private credit, real estate and infrastructure debt) and strategies (i.e., primary fund investments, secondary fund investments, direct co-investments and direct credit investments). Yield is calculated as actual annualized cash coupon of current unrealized investments divided by current unrealized invested capital.

The assumptions are for illustrative purposes only and are not intended as a promise or prediction of performance. There can be no assurance that the fund will achieve comparable results, that targeted diversification or asset allocations will be met, that the fund will be able to or will ultimately elect to implement the assumptive investment strategy and approach described in the model. Alternative assumptions may result in significant differences or complete loss of capital in such projections.

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