

# The Mesirow approach to private assets in defined contribution plans

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New evergreen structures that avoid vintage year issues because of constant investment refreshment, along with liquidity buffers that enable daily pricing, typically accompany the new defined contribution (DC) products coming to market. These products may entail either a more pure-play single asset sleeve (e.g., private equity) — even if they consist of multiple managers — or else, structured as a multi-asset amalgamation that combines numerous private asset types. In multi-asset flavors, the allocations to different asset classes may vary widely

and include infrastructure or commodity assets as well, intending to offer a one-stop alternative assets option. These DC market-oriented investments may best be described as semi-liquid because there are still some restrictions, but the new structures make them accessible, especially as diversifiers in a multi-asset class Target Date Fund (TDF) setting within a plan's Qualified Default Investment Alternative (QDIA).

There has been increasing interest in the space, likely both demand-driven from plan sponsors and supply-driven by providers looking to tap a larger and faster growing market than DB and ENF. Mesirow Fiduciary Solutions (Mesirow) has been analyzing, modeling, and utilizing specialty private market investments for a number of years in select DC settings — mostly private real estate. We model the capital market assumptions (CMAs) for the broad asset classes and make adjustments for specific features of particular investment vehicles. Due to the unique nature of newer retail-



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oriented evergreen products, we have developed an asset-manager-specific – rather than product-specific – evaluation process that is performed within each broad private asset class due to the extensive availability of long-term data. We make adjustments for vintage year pools and the dispersion across the manager universe to achieve an overall weighted manager score.

Mesirow believes in the benefits of diversifying asset classes that offer lower correlations with traditional public assets and that have some intermittent volatility-muting advantages. We quantify these benefits in our multi-faceted, horizon-focused asset allocation modeling process. The potential costs, discussed in detail later, include a loss of transparency, residual liquidity limitations and potential adverse selection concerns that are weighed more qualitatively. Mesirow has guidelines for determining appropriate asset allocations for either individual private asset sleeves or multi-asset products and which public market asset classes those allocations are carved from, along with adjustments made for specific product characteristics.

### Private credit

Private credit, also known as private debt, consists of loans made to companies directly. Historically, the majority of private loans have been to small-cap to mid-cap sized companies that are unable to access bank credit, and therefore, are most similar to high yield bonds from a risk and return standpoint. They are generally senior lien in the payment hierarchy and intermediate duration. The loans are made across industries but have been most prevalent in the Healthcare Services and Technology sectors in recent years, where there is not much tangible asset collateral relative to other sectors. Estimates of the size of the private credit market vary, with estimates on the lower end of \$1.6 trillion from MSCI to almost \$2.2 trillion from Cliffwater.<sup>1</sup> For many years, the deal count of private credit loans has outpaced bank loans and fundraising commitments have more than doubled in the past decade.

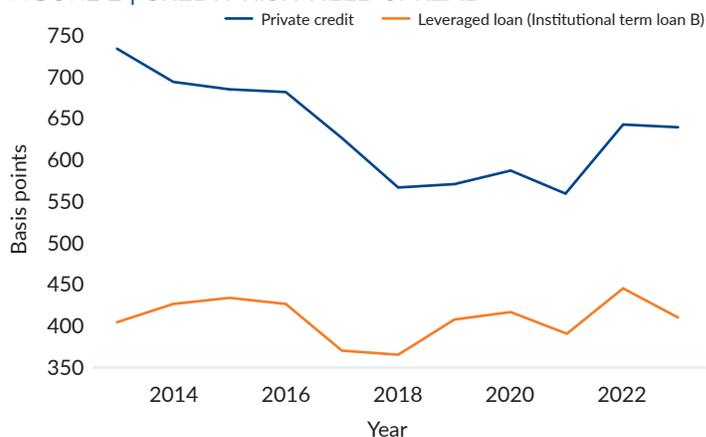
FIGURE 1 | WHO'S TURNING PRIVATE – BEFORE TRANSITION TO PRIVATE



Source: S&P Global. | Note: Data is based on a review of 25 issuers that went from public to private.

Figure 1<sup>2</sup> shows a chart from S&P Global showing the debt ratings of publicly traded debt for companies before they transitioned to private debt markets, all of which are below the investment grade threshold of BBB. Figure 2<sup>3</sup> shows the typical spread for leveraged loans and private credit over short-term borrowing rates. Of course, we expect some liquidity premium for private high yield over public high yield debt, in addition to the typical credit risk premium. The graph shows that the average loan spread declined in recent years before rising again in 2022, following the Fed's interest rate hiking cycle. The difference in spreads is consistent with the riskier profiles of private credit borrowers relative to syndicated loan borrowers, but some of the differences are also attributable to private debt funds requiring additional compensation for holding these loans in their books (i.e., the liquidity premium). While there is a substantial return premium, the underlying 'true volatility' also is higher than public levered loans or public high yield debt. This higher ultimate volatility is masked on an intermittent basis with private assets and may result in lower reported volatility, but it indicates the long-term range of potential wealth outcomes when an investment is finally liquidated. In other words, terminal wealth risk is not mitigated by the volatility muting stemming from private market valuation and reporting practices.

FIGURE 2 | CREDIT RISK YIELD SPREAD



Source: Federal Reserve and Pitchbook | Note: This chart plots spreads above a benchmark interest rate (LIBOR or SOFR, mostly SOFR from 2022 onwards) in a given year for private credit leveraged loans.

The structure of the private loans is typically floating rate, and therefore, extremely sensitive to the interest rate environment. In an economic downturn that may entail a falling rate environment, the falling interest payments function as a buffer versus the economic stress that would normally lead to higher default. This is weighed against the potentially worse credit profile and higher loan rates relative to similar publicly traded high yield bonds. In a rising rate environment, investors would have lower capital losses relative to fixed rate bonds, but with higher default risk. There is some evidence that default rates are lower in private markets than public markets,<sup>4</sup> but this evidence is limited and has not been tested in a deep recessionary environment. Countering this is other evidence showing lower recovery rates for debt that has defaulted, due to many loans made in low tangible asset collateral sectors, such as software, financial services, and healthcare services.<sup>5</sup>

In recent years, there has been an increasing prevalence of 'investment grade' (IG) loans made to companies that could otherwise access either the traditional public credit markets or bank credit, but for assorted reasons are willing to pay a higher rate for private funding. These IG-like loans often have higher allocations in DC-oriented private credit, as well as a higher prevalence of asset-backed loans rather than the more cash-flow based loans in traditional private credit. 'Investment grade' is qualified because even though the borrower might have that creditworthiness from a borrowing standpoint, the liquidity discount in loan value during periods of stress is not expected to behave as well as for public IG bonds.

These differences from one private credit product to another in credit quality, assets versus cash flows securing loans, consumer versus business loans, etc., all can affect the expected premium and excess volatility versus public market debt. These product-specific features impact targeted asset allocations as well. For instance, higher credit quality may allow for carveouts from core fixed income in addition to obvious carveouts from high yield bonds, and therefore, higher overall allocations in a glide path.

The data on any private investments in reported databases shows substantially more dispersion among return outcomes than for publicly traded investment managers. One study of pension data by Cliffwater showed the relative dispersion in the private credit space among investments to be roughly 2.5 times that of similar public debt investments over the

same period of observation.<sup>6</sup> With no investable private asset index option, high dispersion places a high burden on private asset investors selecting the right investment managers to be on the 'good' side of that distribution, or else investing in many managers to have a high probability of achieving the overall expected return for the asset class.

The same Cliffwater study that measured dispersion of outcomes also noted that the excess return over levered loan indices was roughly 2%. This is consistent with the assumptions of DB and ENF investors, who typically use public levered loan indices, such as the Morningstar LSTA index (previously S&P) or the S&P UBS LL index (previously Credit Suisse) and then apply somewhere in the range of a 0-2% markup for their return expectations.

While databases give a good amount of data about ultimate return outcomes over extensive time periods through IRRs, distributed capital numbers, etc., there are very little relevant data in the private databases on time series volatility. There are plenty of useful data on cross-sectional volatility (i.e., dispersion), but little in the way of asset class-level, time series volatility. Analysts typically use public market data on volatility as a lower bound and then some markup consistent with the higher return due to riskier underlying loans. After all, there are few "free lunches" in investments. Return is related to risk.

Mesirow has performed its own analysis on publicly available data to quantify volatility markups to the extent possible. Business Development Corporations (BDCs) are retail investment vehicles of companies investing in direct loans, and many of these vehicles are offered by the same companies that run private credit portfolios in the defined benefit arena.<sup>7</sup> BDCs are widely used in high net-worth portfolios by wealth advisors and represent nearly \$500 billion in assets. The advantage in deciphering BDC data is that it can provide a 'true' market view of direct lending volatility with extensive history. The major adjustment that must be made is accounting for leverage and the cost of borrowing funds. BDCs are permitted to use up to 200% leverage and this increases both volatility and drawdowns while also increasing expected returns.

Our study utilized underlying individual BDC data from closed-end funds in the Cliffwater BDC index (CWBDIC). We only use the subset of BDCs that have at least ten years of return history and de-lever the return data utilizing an assumption of 200% levered exposure and Prime + 2% financing rate. We equal-weight, rather than market-weight, the individual BDCs and also utilize average BDC volatility (rather than the assumption of a diversified index holding all BDCs) as representative of the asset class. This approach generates a conservative volatility adjustment that represents a typical single private debt investment.

The results that we arrive at are reasonable and consistent with the return premium (2-3%) exhibited in the DB space relative to levered loan indices and provide a reasonable premium relative to public high yield debt with consistent excess market volatility as well. The results are shown in **Figure 3**. For reference, the long-term Pitchbook data that we analyze arrives at a similar 3% return premium for private credit vintage pools on average relative to public high yield returns over the last 25 years.

**FIGURE 3: BDC RETURN AND RISK RELATIVE TO OTHER SELECT PUBLIC CREDIT INDICES (PERIODS ENDING 10.31.2024)**

<b>Past 5 Years</b>		<b>#BDCs: 27</b>					
<b>BDC Avg</b>		<b>IA HY</b>		<b>CS LL</b>		<b>MS LSTA</b>	
Adjusted Return	4.26%	Index Return	2.25%	Index Return	2.90%	Index Return	2.76%
Adj Std Dev	11.40%	Std Dev	9.36%	Std Dev	7.08%	Std Dev	5.94%
Return to Risk Ratio	0.37		0.24		0.41		0.46
<b>Past 10 Years</b>		<b>#BDCs: 27</b>					
<b>BDC Avg</b>		<b>IA HY</b>		<b>CS LL</b>		<b>MS LSTA</b>	
Adjusted Return	7.68%	Index Return	4.86%	Index Return	4.91%	Index Return	4.50%
Adj Std Dev	10.18%	Std Dev	7.58%	Std Dev	5.39%	Std Dev	4.93%
Return to Risk Ratio	0.75		0.64		0.91		0.91
<b>Past 20 Years</b>		<b>#BDCs: 5</b>					
<b>BDC Avg</b>		<b>IA HY</b>		<b>CS LL</b>		<b>MS LSTA</b>	
Adjusted Return	16.52%	Index Return	13.53%	Index Return	10.03%	Index Return	9.81%
Adj Std Dev	12.99%	Std Dev	9.12%	Std Dev	6.52%	Std Dev	7.05%
Return to Risk Ratio	1.27		1.48		1.54		1.39

Source: Morningstar Data and Mesirow Calculations

In exchange for the 2-3% return advantage, the calculated volatility is roughly double that of the public levered loan indices and 25-33% higher than the public high yield indices for similar time periods. While private credit volatility may be muted over shorter time frames and investment values may appear to weather public market shocks better, that is the result of unrecognized intermittent losses in the valuation process. Some of this is indicated in the current markdown of the majority of BDCs trading below NAV, many by 10-20% or more. Additionally, the average BDC posted negative returns in 2025, despite a good year for public fixed income and high yield.<sup>8</sup>

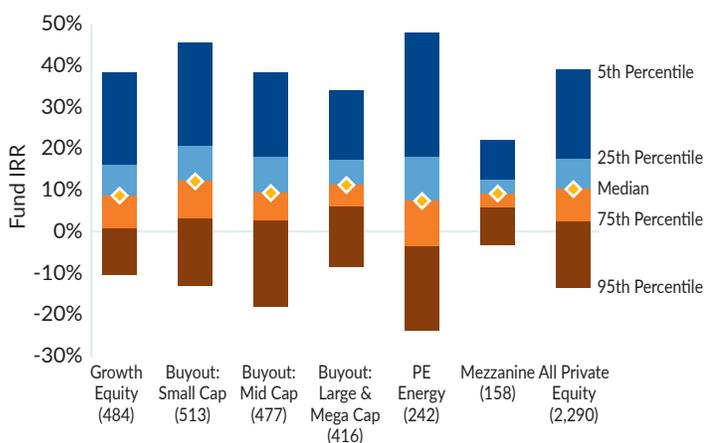
The volatility that we derive from BDC data indicates the potential variation in the ultimate distributed capital returns that determine potential terminal wealth outcomes for private credit. To be clear, in our estimation, this adjusted BDC volatility estimate is a valuable but high-end volatility assessment for private credit. It is not what we ultimately utilize in our CMAs, but it does help to provide a reasonable upper bound volatility estimate (the adjusted BDC estimate) to complement a lower bound estimate (public high yield). These are reference points. The ultimate volatility estimate can be adjusted along with return premia estimates depending upon the specific characteristics of private credit investments that we are analyzing and modeling.

## Private equity

Private equity investments relate to the purchase and sale of direct ownership stakes in private companies. There are several different types of private equity strategies, including: Fund of Funds, Growth Equity, Leveraged Buyouts (LBOs), Mezzanine Capital, Real Estate Private Equity (REPE), and Venture Capital (VC). Each of these investments entails different time horizons, risk levels, and end use goals. For instance, early-stage venture capital is the riskiest segment of private equity because it invests in start-ups with a high expected failure rate of which only a very small percentage may be expected to exit via very high return initial public offerings (IPOs), while LBO has been the least risky.

Historically, in private equity fundraising, the general partner (GP) of a private equity fund would raise capital from institutional investors, such as pension funds, endowments, and insurance companies in a process that could take several years. Once capital had been raised, the GP would begin capital deployment, investing in companies at various stages of development, from early-stage to mature businesses. There would be on-going portfolio monitoring, when a GP would work closely with the portfolio companies to help them grow and/or improve their performance. This might involve providing strategic guidance, operational support, and further capital. Of course, there are also day-to-day operations, including tracking investment performance, monitoring, managing capital calls and distributions, preparing financial reports, and complying with regulatory requirements.

**FIGURE 4: DISPERSION OF FUND-LEVEL RETURNS ACROSS PRIVATE EQUITY STRATEGIES (AS OF SECOND QUARTER 2016 - VINTAGE YEARS 1986-2014)**



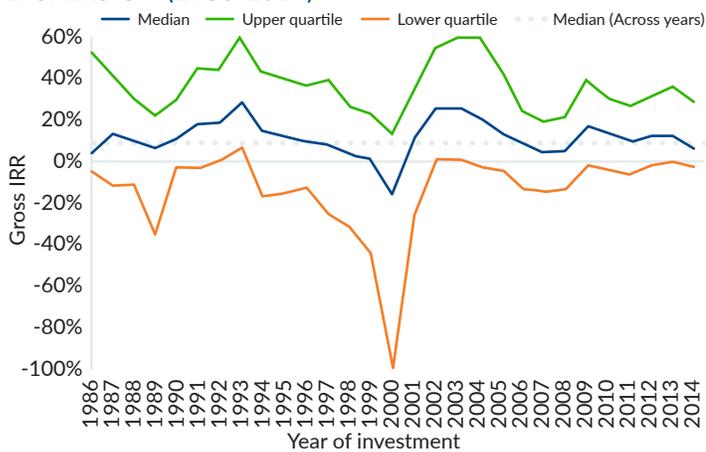
Source: Cambridge Associates, LLC. | Notes: Private indexes are pooled IRRs since inception and net of fees, expenses and carried interest. Number of funds included in groupings shown under label.

Some refer to the investment and return pattern in private equity as a 'J-Curve' because investors put capital in and face leverage costs (negative returns), experience subsequent costs involved in restructuring companies, and then ultimately, sell companies for profits, hopefully leading to high realized returns. Ultimately, the exit and return are generated when the GP believes that a company has reached its full potential. This could be accomplished through an IPO, sale to another company, or even recapitalization. Once all of the investments in a fund have been exited, the fund is liquidated, and the proceeds are returned to investors. The exited investment proceeds are known as distributed capital, while any remaining investments are residual capital and any unused capital is referred to as "dry powder." The J-curve moniker, in fact, is a borrowed term from other economic fields, such as international trade, where it has a slightly different meaning.

Despite its atypical character relative to public equity, private equity investment and cashflow data can be harnessed to calculate several useful performance-related metrics, including internal rate of return (IRR), distributed capital to paid in value (DSV), residual value to paid in capital (RSV) and total value to paid in value (TPV). The higher quality data are fully distributed capital and the metrics derived from fully liquidated investments where the returns are fully realized. Residual values are subject to appraisal, potential value inflation, etc. These metrics constitute the historical private equity performance data from which return and risk estimates have been generated, academic studies have been performed, and endowments and foundations have experienced superior long-term returns. That institutional investor success with private equity has generated financial media buzz, which in turn has led to the current interest in translating such performance metrics into a more liquid format appropriate for daily pricing and retail performance reporting standards. We will note the differences in the new structures and concomitant differences in expectations, but it is worthwhile to examine some of the long-term data that is available and long-term data studies that have been performed.

Historical data by specific investment funds is widely available in the private asset databases mentioned earlier. There is great variation by vintage year pool for the same investment firms, as well as wide dispersion across investment firms and even across different funds from the same firm and vintage year pool. The same Cliffwater study that estimated 2.5 times greater dispersion in private credit versus public manager equivalents, estimated that the corresponding ratio is 5.5 times for private equity.<sup>6</sup> See **Figure 4** from for long-term average cross-sectional variation across private equity strategy types. The variation in returns from one vintage year set to another can be even larger; see **Figure 5** for the dispersion in results across time. Which specific funds were invested in and when those investments were made have had a significant impact on the premium that was achieved in private equity relative to public equity. While the data may appear stale, it is important to note that these investments have very long life cycles, with vintage years from 10 years ago perhaps not fully exited and only funds with fully distributed capital giving definitive results.

**FIGURE 5: PRIVATE EQUITY VINTAGE YEAR IRR DISPERSION (1986-2014)**



Source: Cambridge Associates, LLC.

Reliable estimates of private equity return and risk premia have been a focus of numerous academic works. From an academic perspective, it is important to note the shortcomings of IRR, which is the metric that is most widely reported in the databases that we all rely on for analysis. IRRs do not completely represent investor returns and risks and are difficult to compare between funds. A fund's internal rate of return (IRR) is the discount rate that, when applied to a series of cash flows, makes the net present value of the cash

flows equal zero. In other words, it is a proxy for the annual return that those cash flows represent over time.

The problem for private equity investors, however, is that the IRR will equal their economic return only if the cash flows can be invested at the same rate of return as the underlying private equity fund. That is nearly impossible. IRR is also not time-weighted: larger flows affect IRR more than smaller flows; larger funds have greater fluctuations in IRR than smaller funds. That creates two problems. First, early vintage funds (whose distributions have largely been made) will have IRRs that underestimate returns; while later vintage funds (that have made some initial distributions) will have IRRs that overestimate returns. Second, larger funds will have what seem to be much more varied returns (measured by IRR) but only because the metric is not time-weighted.

Therefore, from a purely academic perspective, IRRs are not ideal as a measure of an investment's performance either at a point in time or historically. They can be misleading when used to measure either dispersion between top- and bottom-quartile managers (or when comparing returns to public markets) and can also prove problematic when evaluating a portfolio of private equity as a series of various vintages. A portfolio that is weighted towards early vintage funds will overall seem to be underperforming another that is weighted towards later vintages. Neither will accurately reflect economic reality. This variation will be even more pronounced if the portfolio consists mostly of large funds. Having noted the academic objections, IRR is still the most reported and often the only metric available. While imperfect, we utilize the data that we have.

Another less commonly reported metric is Multiple On Invested Cash (MOIC). MOIC is derived by dividing the total distributions from a fund by the total amount invested (as opposed to committed). The MOIC is not a discount rate, so it is more reliable in evaluating economic return than IRR. But it also is not time-weighted, leaving it with many of the same disadvantages as IRR. To use a simple illustration, a fund reporting an MOIC of 2.0 over a 3-year period is vastly different than a fund reporting an MOIC of 2.0 over a 10-year period (26% average annual return versus 7.2% average annual return).

To account for some of the shortcomings with both IRR and MOIC, academic work often uses Public Market Equivalent (PME). PME assumes that capital in a fund grows at a public

benchmark rate of return, like the Russell 1000 index of large-cap US stocks. Cash flows are time-weighted and compared to the time-weighted returns of the benchmark. A PME of 1.0 means that the economic rate of return of the fund was the same as the rate of return of the benchmark over a given time frame, while less than 1.0 means that the fund underperformed the public benchmark and vice versa.

Since private equity investments have an average distribution period of many years, PME can be translated into annual over performance or under performance by dividing the difference between the PME and 1.0 by a particular number of years. In other words, a PME of 1.5 for a period of 5 years will mean in this context an outperformance over the S&P of approximately 10% per year because  $(1.5 - 1.0) = 0.5$  and  $0.5/5 = 0.1$ . PME is built on cash-flows, and an investor could earn the returns of the public benchmark on intermediate distributions by investing in a public index fund. Since it is time-weighted, it eliminates the over- or under-estimation of performance found in both IRR and MOIC. PME, however, is not reported in most datasets.

One academic paper authored by Harris, Jenkinson and Kaplan<sup>9</sup> that is widely cited looked at the relationship between these various metrics. They found that when comparing vintage years, MOIC explained 92% of the variation in PME, compared to IRR which explained 75% of the variations. Both IRR and MOIC together explained the same 92% of the variation. They found that each 0.10 in a fund's MOIC translated into a PME of 0.071 in buyout funds and 0.056 in VC. In other words, a buyout fund with a reported MOIC of 2.3 had an estimated PME of 1.63 ( $2.3/0.1 \times 0.071 = 1.633$ ).

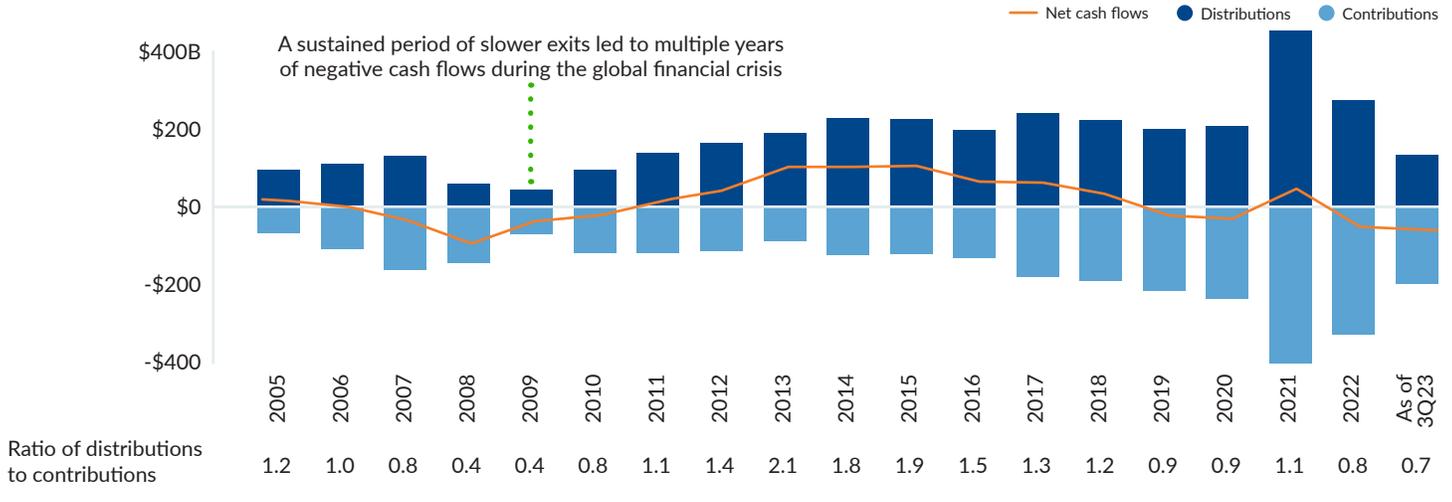
The same paper also looked at the underlying factors driving private equity returns; however, for much of history this meant LBO funds since it was among the earliest private equity strategy types. They found that leverage accounted for nearly all of the returns of the average buyout vintage year in the 1980s and the 1990s, although not in the decade of the 2000s. For the first two decades, leverage accounted for nearly all of the returns and in the latter 10 years of the study it seemed to account for none. This suggests that when looking at the earlier long-term historical returns of buyout funds, the average investor earned little more than leveraged equity returns; however, size and value explained most of the recent returns. The crux is that, historically, private equity represented leveraged public small cap value equity.

Another paper from the same three authors (and one additional)<sup>10</sup> and also an updated working paper of the same authors<sup>11</sup> focuses on performance persistence. Overall, their findings were not encouraging. They found that selecting top-quartile buyout managers did not give an investor much better returns than randomly selecting managers. Since 2000, small performance persistence evaporated among buyout funds. Using previous fund PME at fundraising, they find modest persistence, but it is driven by bottom-, rather than top-quartile performance. Losers repeat but winners do not. They speculate that it may be the result of the disruption of the financial crisis or that more buyout managers are now competing for fewer buyout opportunities. On the other hand, performance for VC funds persisted even when using information available at the time of fundraising.

Besides obvious concerns about the lack of transparency that is endemic with private equity, other observers have noted that the return horizon and J-Curve have been extending. **Figure 6** from Bain & Company<sup>12</sup> shows that net contributions have turned negative for the first time since the financial crisis as the pace of contributions has outstripped distributions for buyout funds. Moreover, **Figure 7** from the same analysis shows that the ratio of undistributed capital to total capital has risen steadily as the median holding period for investments has roughly doubled from 3.1 to 6.1 since 2000. Other work has focused on extracting time series volatility from overlapping vintage year pool data that arrives at much higher estimates of volatility than raw data from the private databases.

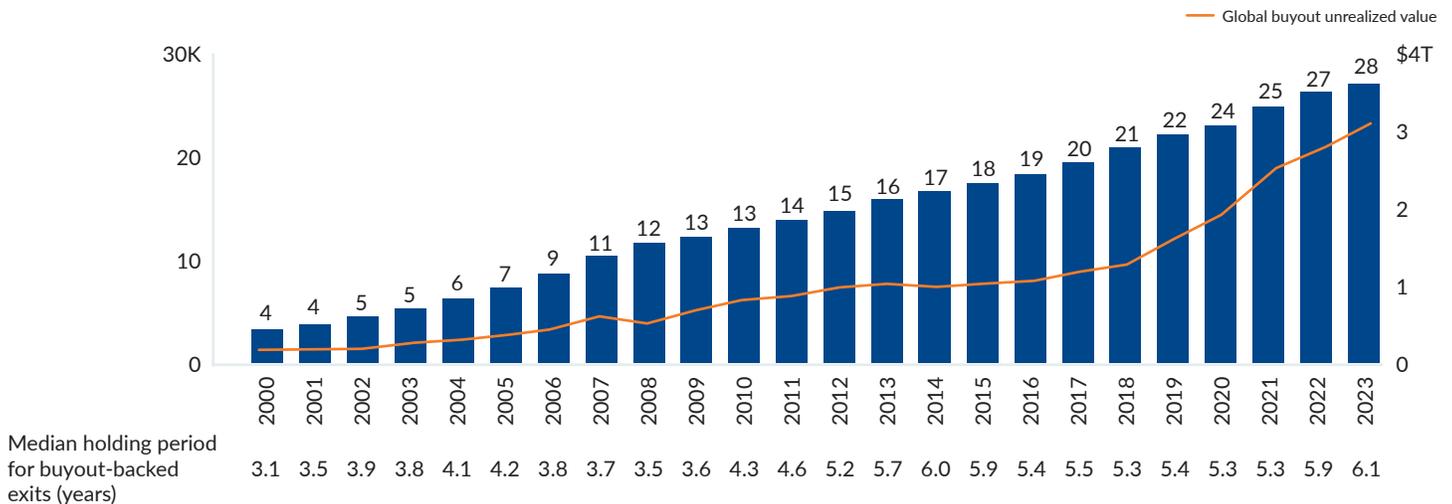
An important caveat is that the body of academic work and these changes in liquidity are focused on traditional private equity that was historically buyout (LBO) dominated, with some focus on venture capital, as well. This is very useful referential background, but its direct translation to the expected investment characteristics of more liquid DC-oriented products is uncertain. The evergreen structure is meant to render the holding period issues, as well as the J curve and vintage year pool drawbacks, less relevant while making them viable for DC investors.

FIGURE 6: GLOBAL BUYOUT FUND CAPITAL CONTRIBUTIONS AND DISTRIBUTIONS



Source: MSCI and Bain & Company | Note: 2023 represents aggregation of distributions, contributions and net cash flow from Q1 to Q3 2023.

FIGURE 7: GLOBAL ACTIVE BUYOUT-BACKED COMPANIES



Source: Preqin, Pichbook and Bain & Company. | Notes: Shows data through FY 2023 for global active buyout-backed companies and average holding period and data through Q2 2023 for unrealized value; excludes add-ons; buyout category includes buyout, balanced, coinvestment and coinvestment multimanager funds.

Moreover, because of the greater need for liquidity, the nature of the DC-oriented investments likely will entail a larger weighting to “core” private equity investments that are selected to be long-term buy and hold companies that generate reliable growing cashflows. This form of private equity is not well-represented in the historical private data set and would be distinct from the growth equity segment that is significantly more volatile than LBO historically. From a factor standpoint, conceptually these might behave more like ‘Warren Buffet-style’ larger-sized value companies.

Therefore, in application, the expected return and risk modeled, as well as the carveout from traditional equity allocations to accommodate a specific DC private equity product in a multi-asset class TD strategy, may depend upon the relative weighting of the investment between strategy types: for example, venture capital (i.e., small cap growth), LBO (i.e., levered small cap value), growth equity (i.e., large-cap growth) and this concept of “core” equity (i.e., large-cap value).

## Private real estate

Private real estate investing, also known as direct real estate investing, is the allocation of capital for the purposes of direct property ownership or that of property-related debt. These investments are not traded on a public stock exchange, as is the case with real estate investment trusts (REITs), while both provide investors with returns through income (dividends in the case of REITs) and potential capital appreciation.

Real estate property is different than financial assets in that it entails the ownership of physical goods rather than financial assets. In this sense, it is similar to commodities, but property is not an easily traded good on spot markets as is the case with commodities. This is largely because real estate is not homogenous in nature, nor consumable, as with most commodity goods. There are some small

segments of real estate investing, such as timberland, which are very commodity-like in nature, but most segments entail ownership for the purpose of income production and potential capital appreciation. While commodity goods are more correlated with overall inflation, real estate is commonly viewed only as a partial inflation hedge. Though our research indicates that it is not a particularly effective short-term inflation hedge, it benefits from being less inversely correlated to inflation than other financial asset classes, such as equity and bonds, which generates an advantage as a portfolio diversifying asset.<sup>13</sup> The income component of real estate makes it similar in some respects to bonds, but it provides an inflation-adjusted income rather than a fixed payment stream. The ‘cap rate’, which is the net operating income (NOI) divided by the market value, is similar in many respects to the yield to maturity (YTM) on a nominal bond.

FIGURE 8: CORRELATIONS OF DIRECT REAL ESTATE VS REITS (OVERLAPPING ROLLING RETURN TIME HORIZONS)

	1 Year		3 Year		5 year		10 Year	
	Direct RE	REIT	Direct RE	REIT	Direct RE	REIT	Direct RE	REIT
Direct RE	1.0000		1.0000		1.0000		1.0000	
REIT	0.1315	1.0000	0.3999	1.0000	0.4601	1.0000	0.3875	1.0000
US LC	0.0268	0.5773	0.2900	0.3848	0.1851	0.2537	-0.1151	0.2267
US SC	0.0136	0.7044	0.3393	0.7965	0.2766	0.8028	0.0523	0.8481
Intl LC	0.0477	0.4614	0.2736	0.4663	0.2364	0.4912	0.0266	0.6524
Agg Bond	-0.1833	0.2656	-0.0893	0.2955	0.0067	0.3633	-0.1359	0.6079
1-3 Tsy	-0.2430	-0.0533	-0.2796	-0.0940	-0.2875	0.0290	-0.0833	0.4205
1 Yr CMT	0.0587	0.0566	0.1323	0.1889	0.1458	0.4026	-0.0087	0.7085
30-Day T-Bill	0.1832	0.0319	0.2235	0.2027	0.1927	0.4280	0.0205	0.7217

Source: MPI Stylus Data and Mesirow Calculations

Investors will often view REITs and private real estate as highly related, if not interchangeable, but the historical behavior from an asset class standpoint actually has been quite dissimilar. Some of difference stems from easily identifiable disparities in weightings to investment sectors, as well as more frequent marking-to-market for underlying REIT assets, but it extends beyond these simple components. REITs are traded as stocks and behave much more like other small-cap stocks than is rational based on their underlying property composition—regardless of the time horizon.

Over the common historical data period from January 1978 through September 2025, the FTSE NAREIT All Equity index returned 11.33% with an annualized standard deviation of 17.22%, while the NCREIF ODCE index returned 7.92% with

a volatility of 6.33%. Ergo, the REITs look a lot like small-cap equity while the private real estate looks more like a muted volatility mixture of bonds and stocks.

Some observers have argued that this is merely a function of time horizon. Interestingly, Mesirow finds that the time horizon does not materially impact this characterization, which can be demonstrated in the rolling correlation with asset classes for different time horizon monthly return data as displayed in **Figure 8**. The data covers the same time period as noted above (1978-2025). While REITs and private real estate are correlated over longer horizons, and REITs have the highest asset class correlation for private real estate, the data peak at 0.46 for a 5-year rolling data horizon, which is quite low. In contrast, REITs are highly correlated with

small-cap US equities and this increases with the horizon, as 5-year and 10-year horizons both exhibit correlation coefficients above 0.8.

The relatively low correlation with both stock and bond asset classes, as well as a return and unsmoothed volatility profile residing between the two, makes private real estate a very attractive investment from an asset class allocation standpoint. It is more of a distinct private asset relative to its publicly traded counterpart than either private equity or private credit, which merits relatively higher allocations across different investment time horizons within diversified asset allocation portfolios. While private equity is a direct carveout from equity allocations and private credit from fixed income, private real estate is carved out from both traditional asset classes in the Mesirow portfolio construction framework.

### **Mesirow's private asset manager evaluation process**

For publicly traded assets, the metrics for manager modeling and evaluation are clear. Passive indices can be used both to model for asset allocation purposes and to measure relative active manager performance, which complements peer-based manager comparisons. The active managers hold varying combinations of the same underlying publicly traded investments in most cases, although there are exceptions, such as private placement investments in some fixed income manager portfolios. With private assets, investments are hard to value until liquidated. While many managers invest in some of the same underlying companies, properties or debt, there is much wider variation and many unique solo investments. There are no passive investment benchmarks, and peer-based comparisons suffer from different starting points, vintage years, percentage of the portfolio investments exited, etc., all of which greatly influence the IRR and other performance metrics.

Many of the private funds coming to the public markets in a CIT structure utilize an evergreen investment approach. There is no data yet on evergreen investments in the publicly available data sources and limited available return data. We collect any limited data available directly from fund providers when a specific product is available. Given the limited return history and extensive long-term data that is required, we utilize data in publicly available data sources to create a manager firm score. Since most traditional private investments are heavily dependent on vintage years and the

nature of capital markets at the time of investment exits, it is not logical to evaluate any one specific fund. Rather it makes more sense to evaluate an investment firm, their process, and their historical track record.

We evaluate all investments from an investment firm grouped by vintage year pools and compare them to the wider universe in publicly available data sources via a z-score methodology, in which key metrics are evaluated within the distribution of results within a population by translating them into multiples of standard deviation above or below the mean. We look at IRR, Distributed Value to Paid in Capital and Total Value to Paid in Capital. These metric scores are our means of both selection and monitoring from a quantitative perspective, which is supplemented by our qualitative due diligence process consisting of manager meetings to understand performance nuances and process expertise. The qualitative process is documented in manager meeting notes. Watchlist status arises at negative one z-score for at least two of the quantitative variables. The normal frequency of quantitative and qualitative due diligence updates for a firm is annual; however, Mesirow may conduct more frequent meetings and quantitative analysis for firms that have triggered watch status after having been added to coverage. If Mesirow assesses that the drivers of underperformance are structural and likely to be persistent, the firm could be placed on watch and its funds eventually removed from fiduciary coverage or not initially added to coverage.

An investment process employed by a manager may be sound and work most of the time but suffer from bad timing (or benefit from good timing) that leads to great variation from one investment to another for the same manager. In the face of great variation from one manager to another and from one investment to another across time for the same management firm, the Mesirow view is that more data across time is better. We attempt to minimize the cross-temporal variation by sub-dividing the universe into five-year vintage pool groupings that generally capture variations in the capital and macroeconomic environment (i.e., 2003-2007, 2008-2012, 2013-2018, 2018-2022, 2023-2027). The earlier data periods have more fully exited investments (Distributed Value to Paid in Capital) that are higher quality from a data standpoint, while the latter have far fewer (more Remaining Value to Paid in Capital). By sub-dividing into pools and increasing the similarities in this exiting process within each pool, we address some of the short-comings endemic in the

IRR and other metrics noted earlier.

Once these sub-groupings are made, the cross-sectional evaluation comes in the form of a z-score that evaluates the difference from the universe mean for each metric in terms of standard deviations above or below that mean. These z-scores are averaged if there is more than one investment fund for an investment manager in a particular vintage grouping. Then the manager scores for each pool grouping are equally weighted to produce an overall manager investment score. This scores the manager and not a particular investment, which we feel is a fair quantitative evaluation of their applied process over a long time frame. An example of this score for an anonymized investment manager is shown in **Figure 9**.

**FIGURE 9: MESIROW FIDUCIARY SOLUTIONS MANAGER Z-SCORE EXAMPLE**

		Internal rate of return	Distributed to paid in	Russell 3000
Inception date: 1983-2002	Mean	10.51	1.47	12.17
	SD	12.66	0.40	
	Positive	41	39	
MGR XYZ Investment Fund V	Negative	2	7	
	Fund V	44.00	2.45	
	<b>z-score</b>	<b>2.65</b>	<b>2.44</b>	
Inception date: 2003-2007	Mean	8.45	1.50	13.63
	SD	8.92	0.72	
	Positive	104	110	
MGR XYZ Investment Fund VI	Negative	4	20	
	Fund VI	9.00	1.70	
	Fund VII	25.00	2.08	
MGR XYZ Investment Fund VII	Average	17.00	1.89	
	<b>z-score</b>	<b>0.96</b>	<b>0.55</b>	
	Inception date: 2013-2017	Mean	15.70	0.83
SD		7.45	0.57	
Positive		110	43	
MGR XYZ Investment Fund VIII	Negative	2	79	
	Fund V	10.00	1.37	
	<b>z-score</b>	<b>-0.77</b>	<b>0.94</b>	
<b>MGR XYZ weighted z-score</b>		<b>0.95</b>	<b>1.31</b>	

Source: Pitchbook Data and Mesirow Calculations

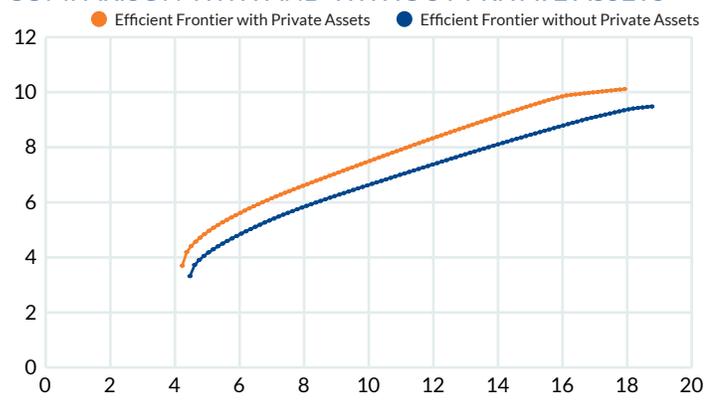
This particular example has two products in the 2003-07 vintage pool whose individual z-scores are averaged and no representation in the 2018-2022 vintage pool. The overall weighted z-score for the firm is shown at the bottom, which is slightly less than 1 for IRR and over 1 for distributed value to paid in capital. However, there is obviously substantial variation in results, with some investment funds above the mean and some below the mean, even in the same vintage pool.

As noted earlier, IRR and compound annual return are not equivalent, but the annualized return for the Russell 3000 index of US stocks is shown in the far-right column as a point of reference. A z-score of 1 is one standard deviation above the peer group mean, so even if the universe mean IRR is below the market index, those z-scores of 1 correspond to IRR values that are generally well above the public market's annual returns in the data above.

### Mesirow's approach to asset allocation with private assets in a TDF setting

Although Target Date Fund asset mixes for different time horizons are largely driven by differing horizon-based capital markets inputs combined with simulations and/or sensitivity analysis, it can still be useful to start with a simple one-period mean variance optimization (MVO) model to evaluate the impact that private assets have on return and risk trade-offs. This is shown in **Figure 10**. Both efficient frontier sets have the same absolute and relative asset class constraints except that the frontier without private assets includes a zero absolute constraint on private real estate, private equity, and private credit. There is a substantial favorable movement in the frontier with the addition of private assets upward and to the left, such that a portfolio with private assets in the mix can either achieve a higher return for a similar risk portfolio or similar return for lower risk relative to a portfolio without private assets.

**FIGURE 10: EFFICIENT FRONTIER PORTFOLIO COMPARISON WITH AND WITHOUT PRIVATE ASSETS**



Source: Morningstar Software and Mesirow Inputs

Without reasonable constraints that are typical in MVO modeling in order to provide for prudent diversification and greater stability – rather than narrow, extremely concentrated portfolios that change drastically with slight input changes – the private assets certainly would consume a higher percentage of the frontier portfolio set. It is easy to understand how many models, especially using average long-term data without volatility adjustments, arrive at very high weightings to private assets. Obviously, due to all of elements discussed earlier in the paper, such as high vintage year variation and investment selection dispersion, reasonable boundary constraints are a fundamental component in implementation.

As a consequence, Mesirow allocation rules with private assets begin with basic heuristics regarding carveouts from exiting public asset classes, rather than based on direct, head-to-head, asset class modeling in each instance. Our baseline relative allocation bound for private equity is 10% of total equity. This is derived from asset allocation studies with “traditional” private equity market assumptions (i.e., LBO) and which errs on the conservative side. In implementation, there is malleability. Private equity products with a higher “core” private equity component, which emphasizes lower volatility cash flows designed for long-term holdings, may enable higher allocations versus products emphasizing traditional private equity.

Private credit is generally most similar to public high yield debt (although usually floating rate in construction), so we apply our maximum relative allocation bound for high yield as a baseline to err on the conservative side. Private credit strategies with a “core” strategy of lending to Investment Grade borrowers might enable higher private credit allocations, with excess allocations sourced from US core bonds.

Private real estate has some fixed income characteristics as noted earlier, but positive correlations with equities. Mesirow models the asset class based on an unsmoothed market benchmark analysis, but we source the allocations from traditional assets by treating private real estate as composed of 60% equity / 40% fixed income. For higher equity vintages, we apply a 10% of total equity maximum relative allocation bound, similar to private equity, in keeping with our general approach to limiting most diversifying asset classes to a maximum absolute allocation of 10%. For lower equity vintages, we embrace the fixed income characteristics of private real estate by exceeding the 10% of total equity bound, which typically leads to plateauing of the absolute allocations to private real estate nearing and through retirement.

**Figure 11** shows a table of a representative glide path with a broad asset class set, including stable value, with baseline allocations to private assets. This presumes individual private asset class sleeves, rather than a multi-asset product. The multi-asset products offer the ease of a one-stop option for private assets but have the drawback of fixed allocations to private equity, private credit and private real estate that reduces flexibility for implementation. As a result, our carveout rules tend to bind at lower overall private asset allocations than is the case with individual sleeves. It is difficult to present a strawman example of this type of product as they each vary substantially, so any particular illustration would be ill-fitting for most other such products. Regardless, even in the case of individual sleeves, determining allocations is a bespoke process based upon the specific composition of each investment product.

**FIGURE 11: MESIROW FIDUCIARY SOLUTIONS REPRESENTATIVE TDF ALLOCATIONS WITH PRIVATE ASSETS**

	2060+	2055	2050	2045	2040	2035	2030	2025	2020	Retirement
<b>Equity</b>										
US LC Value	12.1%	12.1%	12.1%	11.4%	11.3%	10.4%	10.5%	9.7%	8.7%	5.9%
US LC Growth	11.3%	11.3%	11.3%	11.4%	11.3%	10.4%	10.5%	9.7%	8.7%	5.1%
MC Value	4.3%	4.3%	4.3%	4.4%	4.4%	4.4%	3.5%	3.5%	1.7%	1.7%
MC Growth	4.3%	4.3%	4.3%	4.4%	4.4%	4.4%	3.5%	2.6%	1.7%	0.0%
SC Value	4.3%	4.3%	4.3%	4.4%	4.4%	4.4%	3.5%	2.6%	2.6%	2.6%
SC Growth	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	2.6%	2.6%	0.0%	0.0%
International	22.5%	22.5%	22.5%	21.9%	20.1%	19.1%	17.5%	14.1%	12.2%	8.5%
Emerging Mkt	6.1%	6.1%	6.1%	6.1%	6.1%	5.2%	5.2%	4.4%	2.6%	1.7%
<b>Private Equity</b>	<b>10.0%</b>	<b>10.0%</b>	<b>10.0%</b>	<b>9.0%</b>	<b>9.0%</b>	<b>8.0%</b>	<b>7.0%</b>	<b>6.0%</b>	<b>5.0%</b>	<b>4.0%</b>
<b>Real Assets</b>										
REIT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Commodities	7.0%	7.0%	7.0%	7.0%	6.0%	5.0%	4.0%	3.0%	2.0%	2.0%
<b>Private Real Estate</b>	<b>10.0%</b>	<b>10.0%</b>	<b>10.0%</b>	<b>10.0%</b>	<b>9.0%</b>	<b>9.0%</b>	<b>8.0%</b>	<b>6.0%</b>	<b>5.0%</b>	<b>5.0%</b>
<b>Fixed Income</b>										
Core Bonds	0.9%	0.9%	0.9%	1.3%	2.0%	2.3%	3.3%	4.5%	4.9%	5.9%
High Yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TIPS	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	5.0%	8.0%	9.0%	12.0%
Stable Value	3.7%	3.7%	3.7%	5.3%	8.6%	9.9%	13.9%	19.1%	30.7%	39.7%
<b>Private Credit</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>2.0%</b>	<b>4.0%</b>	<b>5.0%</b>	<b>6.0%</b>
<b>Broad AC Exposure</b>										
Public Equity	75.4%	75.4%	75.4%	74.4%	71.4%	66.8%	60.8%	52.4%	40.4%	27.4%
Public Fixed	4.6%	4.6%	4.6%	6.6%	10.6%	16.2%	22.2%	31.6%	44.6%	57.6%
<b>Private Asset</b>	<b>20.0%</b>	<b>20.0%</b>	<b>20.0%</b>	<b>19.0%</b>	<b>18.0%</b>	<b>17.0%</b>	<b>17.0%</b>	<b>16.0%</b>	<b>15.0%</b>	<b>15.0%</b>
<b>Total</b>	<b>100.0%</b>									

Source: Mesirow Fiduciary Solutions

## Conclusion

Mesirow believes in the benefits of diversifying asset classes that offer lower correlations with traditional public assets and that have some intermittent volatility-muting advantages. Private assets fall into this genre. We specifically quantify these benefits in our multi-faceted horizon-focused asset allocation modeling process. The trade-offs include loss of transparency, residual liquidity limitations and potential adverse selection concerns that are weighed more qualitatively.

One interpretation of the newfound interest in the DC-space for private assets is that it is a concept whose time has come

after years of heavy presence in the DB and ENF space, and is therefore largely demand-driven from plan sponsors. Some industry observers see more of a supply driven push by providers looking to tap a larger and faster growing market as the median holding period for investments lengthens and therefore cashflow for new investments available from exiting older investments is lower. This potential issue is compounded by recent years of weak fund-raising amid more down-to-earth returns relative to both history and public market alternatives. According to Private Equity International, 2,288 funds gathered \$735bn between them in 2025, marking the fourth consecutive yearly slump in capital raising for the asset class.<sup>14</sup>

Some notable concerns have emerged in the BDC space, which have exhibited a trend of weakening returns in recent years, as well as some high-profile defaults, such as First Brands.<sup>15</sup> Whether this is a leading indicator of broader private credit markets, in general, is the subject of debate that is strongly refuted by private credit advocates. Concerns also have been voiced about the overall increasing concentration of loan portfolios. One key example is the loans involved with AI data centers with massive price tags and fast-depreciating hardware that the mega-techs don't want to finance themselves, and so are financed in part by commercial real estate collateralized loan obligations (CRE CLOs).<sup>16</sup>

Both proponents and advocates are expected to make their presence known with any market innovation. In such an environment, financial modeling expertise, extensive experience in investment due diligence and an overall balanced approach are critical. Our view is that whenever a major innovation in an industry emerges, it represents both risks and opportunities that must be measured accordingly. Mesirow is ready for this new era. We have a process for evaluating private asset managers. We have guidelines for determining appropriate asset allocations for either individual private asset sleeves or multi-asset products, along with bespoke adjustments made for specific product characteristics. Most importantly, we have nearly a decade of practical experience in the use of private assets in a DC context.

## About Mesirow

Mesirow is an independent, employee-owned financial services firm founded in 1937. Headquartered in Chicago, with offices around the world, we serve clients through a personal, custom approach to reaching financial goals and acting as a force for social good. With capabilities spanning Private Capital & Currency, Capital Markets & Investment Banking, and Advisory Services, we invest in what matters: our clients, our communities and our culture.

**Mesirow Fiduciary Solutions** creates institutional investment solutions for the retirement and health savings marketplace, supporting plan sponsors, financial advisors, recordkeepers and administrators, trust companies and insurers.

To learn more about how Mesirow can help you, please contact us at [fiduciaryinquiries@mesirow.com](mailto:fiduciaryinquiries@mesirow.com) or visit [mesirow.com/fiduciarysolutions](https://mesirow.com/fiduciarysolutions).

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