Private Capital Insights

THIRTY-FIFTH EDITION | Q4 2024

CURRENT QUARTER PERFORMANCE SUMMARY

The State Street® Private Equity Index (SSPEI) recorded a modest 1.09% gain in Q4 2024, marking a notable slowdown from 2.92% in the previous quarter. The quarterly deceleration was primarily driven by Buyout and Private Debt funds, which saw returns decline to 0.72% and 0.83%, respectively—down sharply from 3.09% and 3.06% in Q3. In contrast, Venture Capital continued its upward momentum, delivering a solid 2.78% return for the quarter (see Exhibit 1).

Exhibit 1. Private Equity Performance by Strategy

	All PE	Buyout	VC	Private Debt
2024 Q4	1.09%	0.72%	2.78%	0.83%
2024 Q3	2.92%	3.09%	2.20%	3.06%
2024 Q2	1.26%	1.47%	-0.07%	2.18%
2024 Q1	1.46%	1.20%	2.07%	2.17%
YTD	5.85%	5.96%	4.14%	8.18%

Source: State Street Data Intelligence, as of Q4 2024.

Despite a slower performance in Q4 2024, private equity still overperformed small-cap stocks, proxied by Russell 2000, which had a 0.3% quarterly return, and the US bond market, proxied by Bloomberg Barclays US Aggregated Bond Index, which had a -3.2% quarterly return. SSPEI, on the other hand, lagged behind large-cap stocks across all horizons, with SSPEI underperforming the S&P 500, which posted a quarterly return of 2.4% and an impressive one-year return of 25.0% in 2024 (see Exhibit 2).

Exhibit 3 shows the trend of SSPEI performance relative to the S&P 500 over the past 25 years in multiple horizons, measured using direct alpha. Consistent with the results in Exhibit 2, as of Q4 2024, direct alpha metrics indicate that SSPEI underperformed the S&P 500 across all horizons: quarterly, 1-year, 3-year, 5-year, and 10-year. This marks the first time such broad-based underperformance has occurred since 2000. The 1-year direct alpha was -15.27% in Q4 2023 and -14.34% in Q4 2024, representing the two largest one-year underperformances in the history. Historically, private equity has outpaced public markets, particularly over longer horizons. The recent trend may reflect a slowdown in private market activities and fewer realizations. While private equity remains a long-term asset class, the current results underscore the growing challenge of maintaining outperformance in a competitive market environment.

Exhibit 2. Investment Horizon Returns

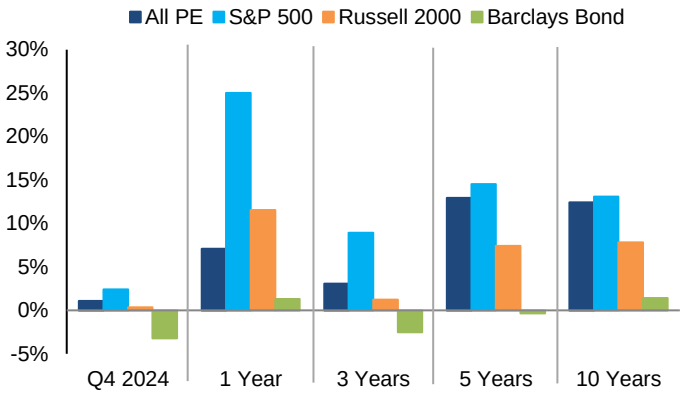
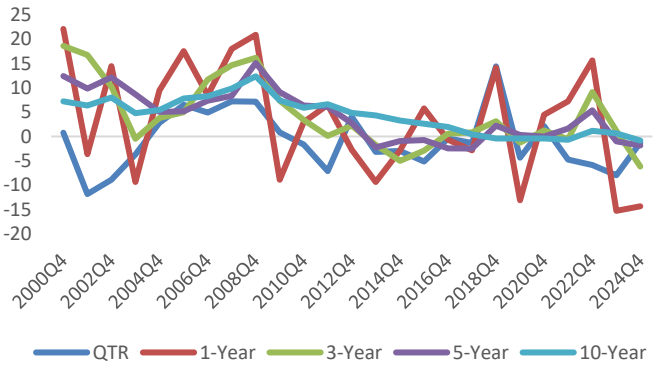


Exhibit 3. Direct Alpha of SSPEI Against S&P 500



Source: State Street Data Intelligence, DataStream, Bloomberg Barclays US Aggregate Bond Index (total returns as of Q4 2024).

Continued on page 7.

THE QUEST FOR LIQUIDITY

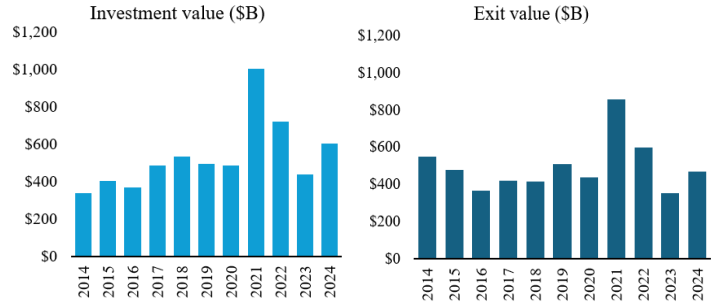
Insights from Harvard University and the Private Capital Research Institute

By Josh Lerner

Introduction – Rebound in activity, roadblocks in realization

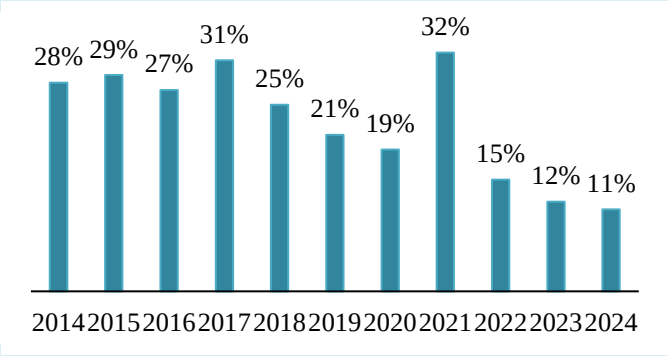
After a two-year decline from 2021's highs, buyout investment and exit values increased 37% and 34%, respectively, year-over-year from 2023 (**Figure 1**). This upward momentum fueled hopes that 2025 would mark the beginning of a broader recovery in private equity (PE).

Figure 1: Global buyout activity, 2014 - 2024[1]



Despite the year-over-year increase in exit value, distributions have remained low relative to total value of existing funds (**Figure 2**). Buyout funds have nearly doubled their total net asset value (NAV) from 2019, but total exit value remains at roughly the same level.[2] Even as PE seems to be recovering from an adjustment period, liquidity persists as a pressing concern.

Figure 2: Global buyout distributions as a percentage of NAV by year [3]



Liquidity is an even greater concern in venture capital (VC) since – unlike buyouts where exits seem to be rebounding – VC exits continue to decline (**Figure 3**). Sluggish exit activity since 2021 has led to a glut of unexited VC deals. Throughout 2023 and 2024, trailing twelve months distributions represented less than 10% of NAV for US VC funds (**Figure 4**).

Figure 3: Global VC exit value ($B) [4]

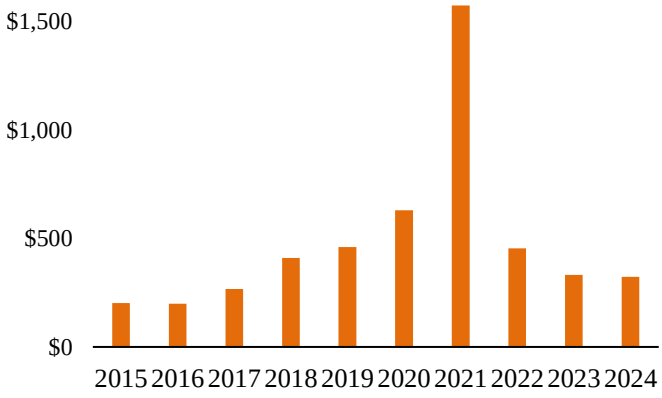
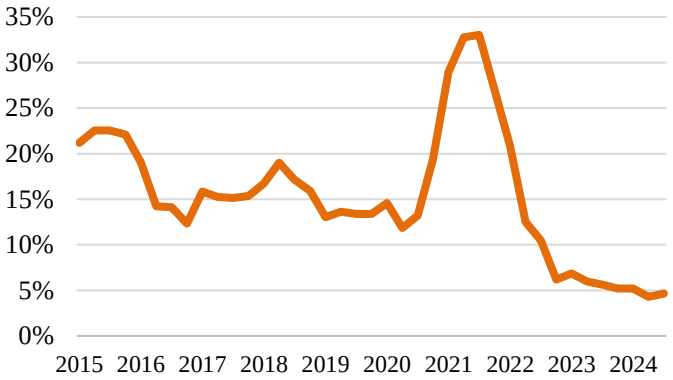


Figure 4: US VC trailing twelve months fund distributions relative to NAV, 2015 – 2024 [5]



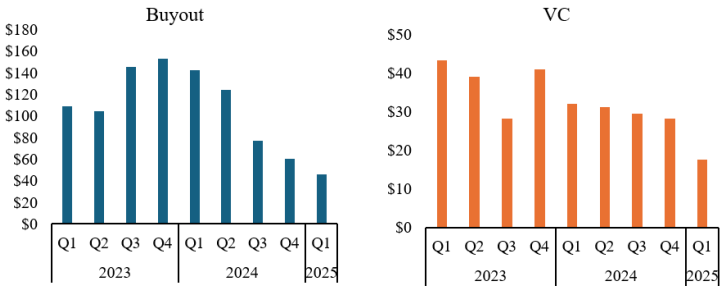
This lack of liquidity yields adverse impacts for general partners (GPs) and limited partners (LPs) alike. Many institutional investors – especially endowment funds – have sought to rebalance their portfolios given macroeconomic and

[1] "Global Private Equity Report 2025," Bain & Company, March 3, 2025, https://www.bain.com/insights/topics/global-private-equity-report/.
[2] Ibid.
[3] Ibid.

[4] "Q1 2025 Global VC First Look," PitchBook, April 2, 2025, https://pitchbook.com/news/reports/q1-2025-global-vc-first-look.
[5] Trailing twelve months fund distributions relative to NAV is up to October 30, 2024. Source: "US Venture Capital Outlook," PitchBook, December 16, 2024, https://pitchbook.com/news/reports/2025-us-venture-capital-outlook.

political volatility in the first half of 2025. However, the fact that their private investments have been largely illiquid (with the majority of reported value tied up in NAV) for an extended period complicates these rebalancing efforts.[6] Given the lack of returns on currently invested capital, LPs are generally reluctant to make further commitments to PE funds. GPs have faced difficulty raising new capital, as highlighted by the downward trend in quarterly buyout and VC fundraising since the end of 2023 (**Figure 5**).

Figure 5: Quarterly global fundraising ($B) [7]



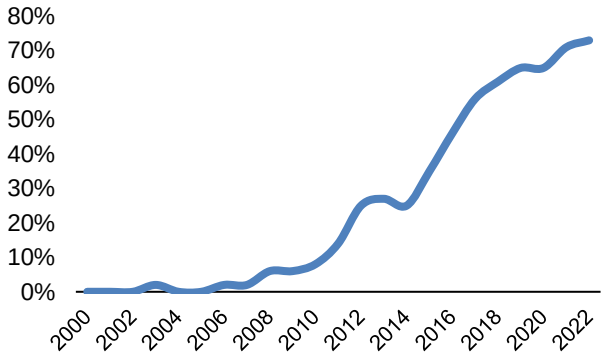
In response to these pressures, GPs have increasingly explored alternative liquidity routes. In this short essay, we explore three of these liquidity mechanisms and discuss considerations around each, focusing especially on how they might exacerbate agency conflicts inherent to limited partnerships.

Liquidity mechanism 1: Subscription lines of credit

Subscription lines of credit (SLCs) offer funds an alternative to calling capital from LPs to fund investments in portfolio companies. SLCs are typically structured as either a revolving line or a term loan. These facilities normally carry a floating interest rate, with maturities that can span months to years and often include the option to renew. SLCs are generally secured by LP capital commitments.

For GPs, SLCs provide quick, certain access to cash and allow managers to better control the timing of capital calls and distributions. LPs may also benefit from the more predictable drawdown schedules enabled by SLCs. Given these potential advantages, by the end of 2022, roughly one-third of all buyout funds were already using SLCs, with nearly three-quarters of one-year-old funds turning to this financing tool (**Figure 6**). Estimates from Fitch suggest that the total market for subscription finance grew to about $1 trillion in 2024, up from $600 billion in 2020.[8]

Figure 6: Fraction of one-year-old buyout funds using SLC[9]



Because SLCs enable managers to shift the timing of cash flows, they can materially affect performance metrics such as internal rates of return (IRRs) and public market equivalents (PMEs). In practice, GPs may delay capital calls or accelerate distributions to artificially boost these time-sensitive measures.

Two academic studies provide evidence that SLCs can meaningfully distort performance. Albertus and Denes (2024) finds that funds using SLCs call capital significantly later than funds that do not use SLCs and that SLCs increase the annualized IRR for funds using them by 1.9 percentage points (as opposed to funds that call capital traditionally).[10] Similarly, Schillinger et al. (2019) simulates hypothetical fund performance with and without the use of an SLC, determining that the use of an SLC with a 6-month maturity and size of up to 25% of undrawn capital increases the average fund IRR by 0.47 percentage points.[11]

[6] "Leaning Into the Turbulence: Private Equity Midyear Report 2025," Bain & Company, June 2024, https://www.bain.com/insights/private-equity-midyear-report-2025/.
[7] Data from Preqin, accessed June 12, 2025.
[8] "Subscription Finance Ratings Update: 3Q24," Fitch Ratings, December 19, 2024, https://www.fitchratings.com/research/fund-asset-managers/subscription-finance-ratings-update-3q24-19-12-2024.
[9] Patrick Warren, "The Rise (and Rise) of Sub Lines in Private Capital," *MSCI* (blog), July 11, 2023, https://www.msci.com/www/blog-posts/the-rise-and-rise-of-sub-lines/04219806963.
[10] James F. Albertus and Matthew Denes, "Private Equity Fund Debt: Agency Costs and Cash Flow Management," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, November 6, 2024), https://doi.org/10.2139/ssrn.3410076.
[11] Pierre Schillinger, Reiner Braun, and Jeroen Cornel, "Distortion or Cash Flow Management? Understanding Credit Facilities in Private Equity Funds," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, August 7, 2019), https://doi.org/10.2139/ssrn.3434112.

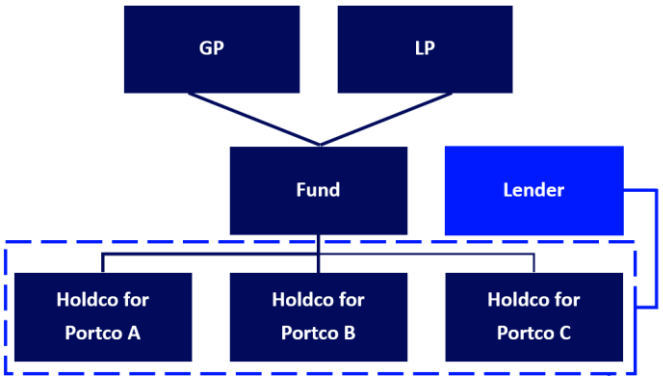
Given these distortions, SLCs can even affect the performance classification of funds. Schillinger et al. (2019) finds that 44.4% of funds using SLCs with two-year maturities move up by at least one performance decile – potentially the difference between ranking in the top quartile or not.[12]

The varied structures and maturity terms of SLCs can also make apples-to-apples comparisons of fund performance (among other things) challenging, underscoring the need for transparency in SLC use. For instance, 81% of surveyed LPs in a recent study expressed a desire for details on the use of fund-level leverage for consistent fund reporting.[13] Moreover, Albertus and Denes (2024) show that GPs are significantly more likely to use SLCs in the year prior to a new fundraising effort and prior to a fund reaching its hurdle rate, further highlighting the importance of clear, timely reporting.[14]

Liquidity mechanism 2: NAV lending

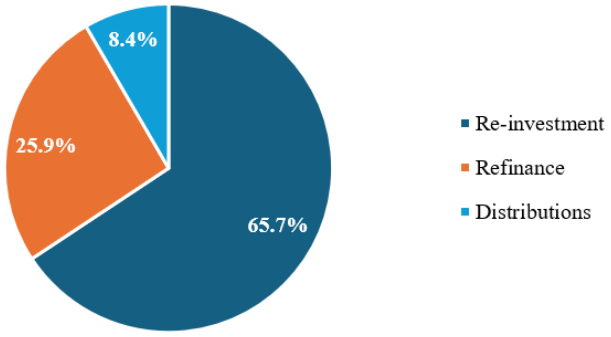
NAV lending has emerged as another fast-growing liquidity solution in PE. Although market estimates vary, the outstanding NAV loan market totaled roughly $150 billion across 75 to 100 lenders as of early 2025, and some lenders project that market size will double to $300 billion by the end of the decade.[15] NAV loans are structured as asset-backed debt, secured by the sponsor's stakes in portfolio companies. These facilities typically take the form of term loans with three- to five-year maturities and most often occur near the end of, or shortly after, a fund's investment period.

Figure 7: Illustrative example of a NAV loan arrangement



Once a fund has fully deployed its committed capital, sourcing additional financing for follow-on investments in portfolio companies can prove challenging, particularly in a tight credit environment and against a difficult fundraising backdrop. NAV loan proceeds are therefore primarily used to re-invest in existing portfolio companies or to refinance company-level debt (**Figure 8**). This allows GPs to avoid fundraising efforts and the dilutive effects of equity-based solutions, such as co-investment vehicles. A limited number of GPs are also using proceeds as distributions for LPs, with estimates ranging from as little as 5% to upwards of 20%.[16]

Figure 8: Intended use of NAV loan proceeds (among 53 transactions) [17]



Regardless of the use case of proceeds, LPs may harbor concerns about the additional layer of leverage that NAV loans introduce on top of existing portfolio company debt, especially given the high fees (**Figure 9)** and relatively high spreads (**Figure 10)** charged on these facilities. Cross-collateralization through NAV loans also means that portfolio companies co-depend on each other's performance, introducing additional risk factors within GP portfolios.

[12] Ibid.
[13] "Inaugural Limited Partners Sentiment Survey 2024-2025 Edition" (ILPA, April 9, 2025), https://ilpa.org/wp-content/uploads/2025/04/Inaugural-ILPA-LP-Sentiment-Survey.pdf.
[14] Albertus and Denes, "Private Equity Fund Debt."
[15] Graham Bippart, "New NAV Loan Index Offers Some Surprising Insights," *Private Funds CFO* (blog), December 10, 2024, https://www.privatefundscfo.com/new-nav-loan-index-offers-some-surprising-insights/.
[16] Graham Bippart, "New NAV Loan Index Offers Some Surprising Insights," content, *Private Funds CFO* (blog), December 10, 2024, https://www.privatefundscfo.com/new-nav-loan-index-offers-some-surprising-insights/.
[17] "Is NAV Lending Good or Bad for GPs and LPs?" Crestline Portfolio Finance, October 2023, https://www.crestlineinvestors.com/wp-content/uploads/2023/11/Crestlines-Approach-to-NAV-Lending.pdf

Figure 9: Mean spread over three-month Term Secured Overnight Financing Rate ("SOFR") for PE fund NAV loans, by loan-to-value ratio ("LTV") and measured in basis points ("bps")[18]

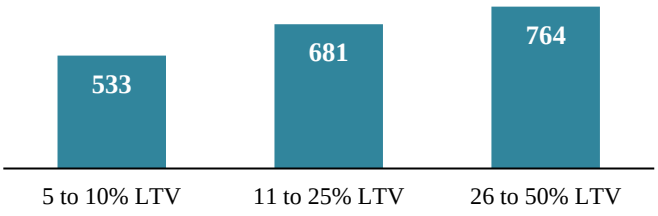
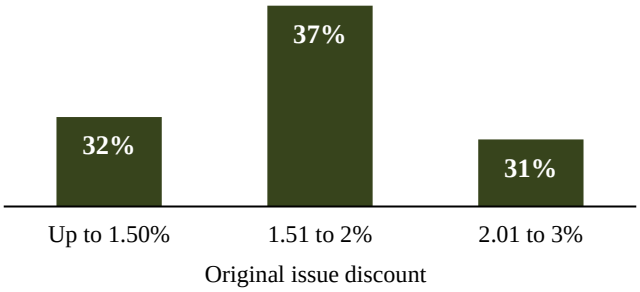


Figure 10: Upfront fees (as a % of principal) for NAV loans (% of surveyed transactions) [19]

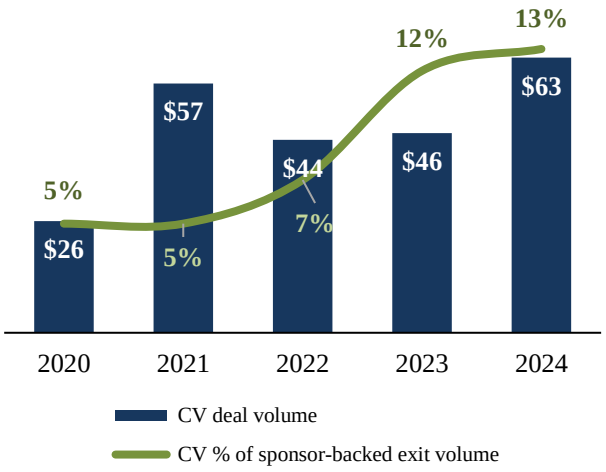


Moreover, early distributions generated by NAV financing can inflate performance metrics such as IRR and DPI. As with SLCs, LPs could benefit from pursuing greater transparency around NAV loan usage.

Liquidity mechanism 3: Continuation funds

As part of the secondary market's record year for fundraising in 2024, continuation vehicle activity reached new highs. Continuation funds are a form of GP-led secondary transaction in which one or more assets move from one of a GP's funds to another of the GP's funds (or a dedicated vehicle) at the GP's discretion. This gives existing LPs an opportunity to "cash out" on these assets while new LPs can gain exposure to them through the new vehicle. In 2024, continuation funds accounted for 13% of all sponsor-backed exits (**Figure 11**).

Figure 11: Global continuation vehicle (CV) deal volume ($B) [20]

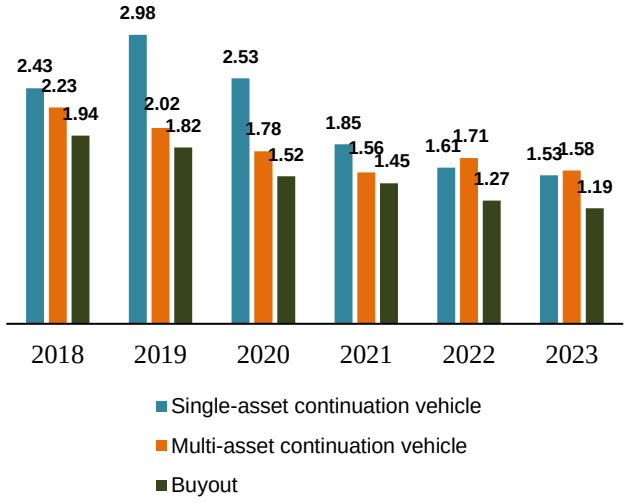


While continuation funds were once employed mainly to extend the lives of underperforming assets (nicknamed "zombie funds"), GPs increasingly use these vehicles to proactively manage a fund's highest-conviction investments.[21] There are three primary benefits associated with continuation vehicles: flexible holding periods, access to durable lines of capital, and the ability to capture upside for existing LPs. By extending the runway for value creation, these vehicles can deliver liquidity to LPs within a traditional fund lifecycle while giving GPs extra time to identify an optimal exit.

So far, returns data support this narrative of continuation funds as extending holding periods of "crown jewel" assets. The performance of continuation funds has been in line with or better than that of comparable buyout funds (**Figure 12**).

[18] "Insights on the NAV Lending Market," Proskauer, February 22, 2024, https://www.proskauer.com/report/insights-on-the-nav-lending-market-2023.
[19] Ibid.
[20] "2025 Global Secondary Market Review," Jefferies Private Capital Advisory, January 2025, https://www.jefferies.com/wp-content/uploads/sites/4/2025/02/Jefferies-Global-Secondary-Market-Review-January-2025.pdf.
[21] Adam Le, "Continuation funds continue their streak: Story of the Year," *Private Equity International*, December 26, 2023, https://www.privateequityinternational.com/continuation-funds-continue-their-streak-story-of-the-year/.

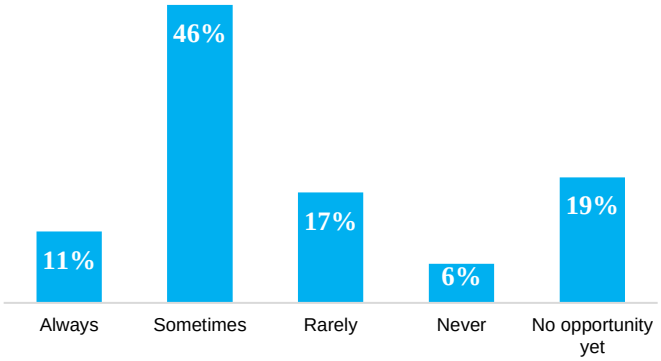
Figure 12: Continuation fund versus buyout fund net multiple, 2018 – 2023 vintages [22]



However, because the GP acts as both buyer and seller, conflicts of interest are inherent to continuation funds. In particular, asset valuation becomes problematic when most existing LPs decide to cash out rather than roll over their investment into the new vehicle. In this situation, incoming LPs seek the lowest possible entry price while existing LPs demand the highest exit price. GPs must navigate a compromise between the two groups, and exiting LPs may be left asking whether they could have achieved a higher return with a different form of exit.

Another potential issue is that muted exits could re-ignite adverse selection, with the risk that GPs channel under-performing assets into the rising volume of continuation vehicles. Concerns around a return of "zombie funds" are relevant given that LPs often lack sufficient time to perform full due diligence on these assets. According to a recent survey, only 11% of LPs report always having enough time to decide whether to roll over or exit investments transferring to continuation funds. In contrast, 46% sometimes have enough time and 23% rarely or never do (**Figure 13**).

Figure 13: LP survey responses to: "Do you feel you have enough time to make a decision on committing to a continuation fund and are not forced to roll or sell?" [23]



Takeaways

Amid the current liquidity drought, SLCs, NAV lending, and continuation vehicles have become more prevalent. While each liquidity mechanism offers advantages – from more predictable investment schedules to longer-term value creation opportunities among high-performing assets – issues of incentive alignment reappear across them all. LPs could benefit from identifying when their GPs are using these new liquidity solutions and scrutinizing the potential impacts on returns and fee structures. Greater transparency overall could improve the information with which LPs make these decisions.

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The Private Capital Research Institute is a not-for-profit 501(c)(3) corporation formed to further the understanding of private capital and its global economic impact through a commitment to the ongoing development of a comprehensive database of private capital fund and transaction-level activity supplied by industry participants. The PCRI, which grew out of a multi-year research initiative with the World Economic Forum, also sponsors policy forums.

[22] Buyout fund performance is as of Q4 2024. Performance is likely too early to meaningfully evaluate at least the 2022 and 2023 vintages as a result. Source: Madeleine Farman, "CVs offer lower return dispersion compared with buyout funds – Evercore," *Secondaries Investor*, June 2, 2025, https://www.secondariesinvestor.com/cvs-offer-lower-return-dispersion-compared-with-buyout-funds-evercore/.

[23] "Perspectives 2025 Study," *Private Equity International*, December 2024/January 2025, https://www.privateequityinternational.com/download-peis-perspectives-2025-study/.

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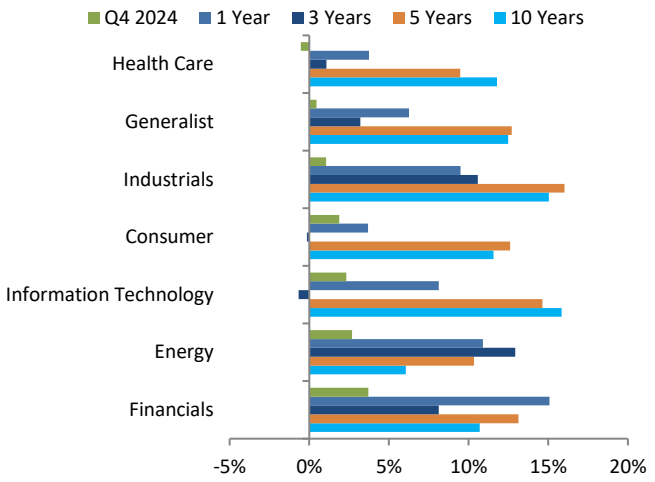
In Q4 2024, we saw a dispersion across the performance of different sectors. Funds focusing on Financials and Energy sectors were the top performers, delivering quarterly returns of 3.7% and 2.7% respectively. As the strongest performer in the 10-year horizon, Information Technology funds improved their quarterly performance with a quarterly return of 2.3%. This improvement puts Information Technology funds at the third place across all sectors. After rebounding with a positive quarterly return of 2.3% in Q3 2024, Health Care sector funds recorded the only negative return across all sectors in Q4 2024. Consumer sector funds, which were the lowest performing sector last quarter, improved their quarterly return from 1.5% to 1.9%, while the overall SSPEI performance went down in Q4 2024. (see Exhibit 4).

Exhibit 4. Performance of Sector Focused Funds



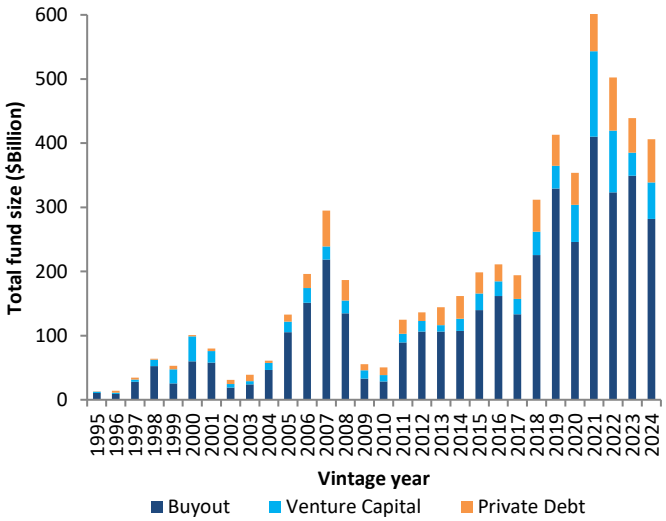
Source: State Street Data Intelligence, as of Q4 2024.

Fundraising

Fundraising activity has picked up in the fourth quarter with the SSPEI constituent funds raising $126 billion in Q4 2024 and $406 billion in 2024. This annual fundraising corresponds to a 7.6% decrease from 2023 and 35.8% drop from the all-time peak of $632 billion raised in 2021. Buyout was the only strategy that posted a drop in fundraising activity with -19.2%, from $349 billion in 2023 to $282 billion in 2024. Both Venture Capital and Private Debt fundraising activities were strong in 2024, with Venture Capital funds raising $56.7 billion and Private Debt funds raising $67.1 billion, up 56.6% and 24.9% from the prior year respectively (see Exhibit 5A). Regionally, Europe funds' activities remained strong, raising 94.6 billion in 2024, a 12.5% jump from 2023. US and Rest of World focused funds raised $263 and $48 billion respectively—amounting to 88% and 85% of the total raised in 2023 (see Exhibit 5B).

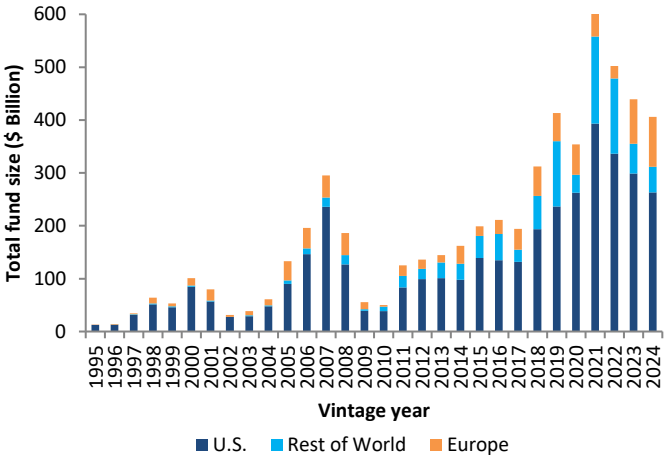
Exhibit 5. Total Fund Size (USD Billion)

A. By Strategy



Source: State Street Data Intelligence, as of Q4 2024.

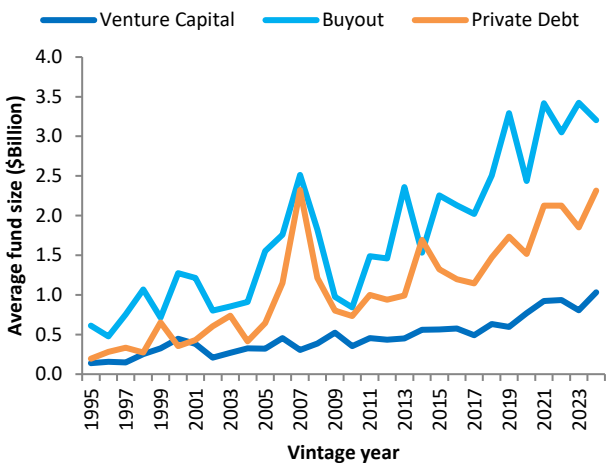
B. By Region



Source: State Street Data Intelligence, as of Q4 2024.

The average fund size of Buyout funds remained the highest among all three strategies while it marginally decreased compared to the prior year, dropping by 6% from its 2023 average of $3.42 billion to $3.20 billion. Venture Capital and Private Debt funds, on the other hand, experienced major jumps in their average funds sizes in 2024. While Venture Capital funds posted a 28% jump from its 2023 average of $0.81 billion to $1.03 billion, Private Debt funds jumped 25% from its 2023 average of $1.85 billion to $2.31 billion (see Exhibit 6).

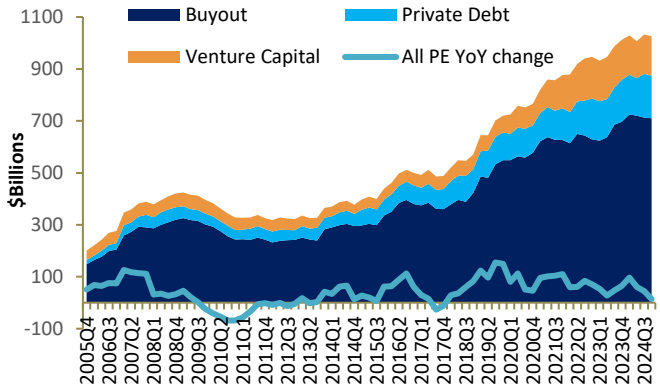
Exhibit 6. Average Fund Size (USD Billion)



Source: State Street Data Intelligence, as of Q4 2024.

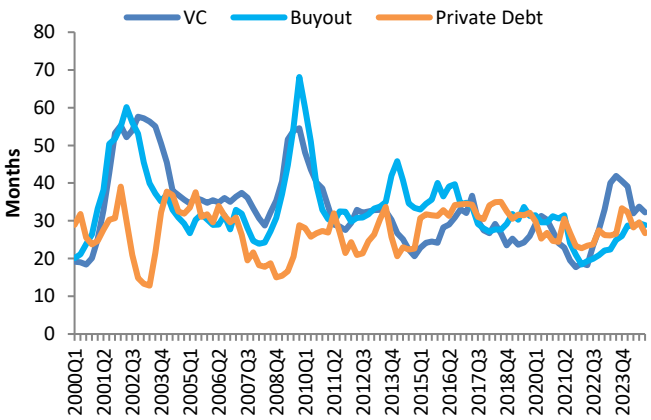
Exhibit 7. Dry Powder

A. Monthly Dry Powder



Source: State Street Data Intelligence, as of Q4 2024.

B. Quarterly Dry Powder Normalized by Average Contribution



Source: State Street Data Intelligence, as of Q4 2024.

Dry Powder

Dry powder, or unfunded commitment, represents the amount of capital that has not been called, thus remaining available for future investment opportunities. In Q4 2024, the total dry powder of SSPEI constituent funds reached $1.03 trillion, slightly lower than its all-time high in Q3 2024, and roughly the same as a year ago. Specifically, the dry powder level for Buyout funds reported $710 billion which was lower than that of preceding quarters in 2024 but higher than the quarterly average in 2023. Dry powder for Private Debt funds decreased to $164 billion from $169 billion in Q3 2024 but it was still higher than that of all preceding quarters. The dry powder of Venture Capital funds remained the same as the previous quarter at Q4 2024 with $152 billion, while marginally decreasing from $155 billion from a year earlier. (see Exhibit 7A).

The quarterly dry powder normalized by the monthly average contribution of the past 12 months measures how long the current dry powder inventory can last at the recent average capital call rate without new fundraising activities. In Q4 2024, the dry powder inventory for all PE was 28.9 months, roughly a one-month drop from the previous quarter. While Buyout funds marginally decreased by 0.5 months to 28.9 months, Venture Capital funds dropped by 1.5 months to 32.2 months. The drop in Private Debt funds dry powder inventory was the most significant. It was at 26.7 months, a 2.2 month decrease from Q3 2024 (see Exhibit 7B).

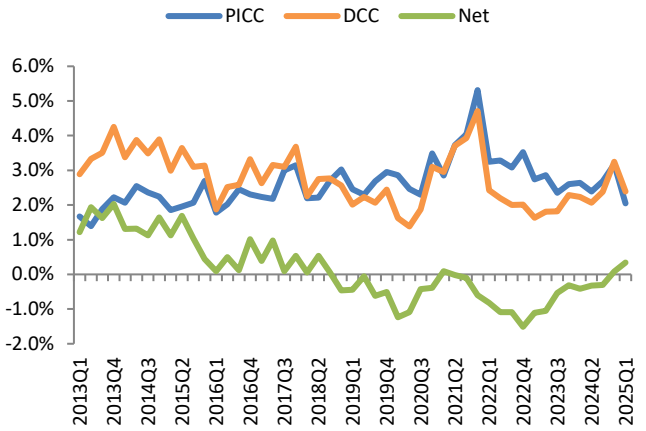
Cash Flow Activity

In Q1 2025, the quarterly distribution to committed capital (DCC) ratio decreased to 2.4%, and the quarterly paid-in over committed capital (PICC) ratio decreased to 2.0%. This contributed to the upwards trend of net cash flow, which increased to 0.34% (see Exhibit 8A).

Exhibit 8B provides a detailed examination of the net cash flow across different PE strategies. All strategies posted a positive cash flow for the first time since Q3 2018, as Venture Capital fund cash flows also turned marginally positive with 0.01% in Q4 2024. Buyout and Private Debt funds, on the other hand, reported positive net cash flows of 0.28% and 0.93%, respectively.

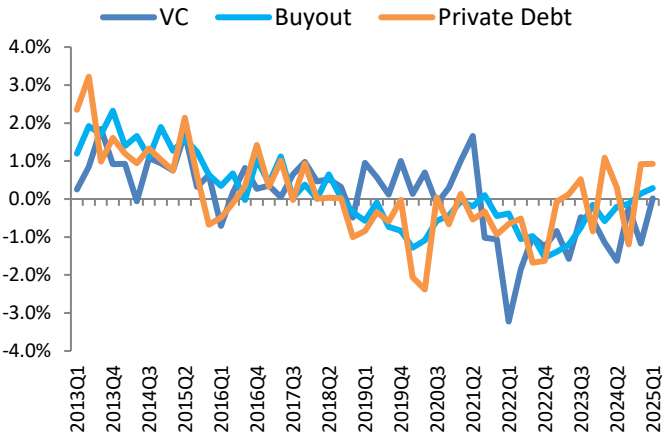
Exhibit 8. Quarterly Cash Flow Ratios Normalized by Commitment

A. Contribution and Distribution for All PE



Source: State Street Data Intelligence, as of Q4 2024.

B. Net Cash Flow to Committed Capital By Strategy



Source: State Street Data Intelligence, as of Q4 2024.

Valuations

The Dollar Value Added (DVA) is the sum of NAV changes and net cash flows. It measures the realized and unrealized gains and losses in dollar amounts.

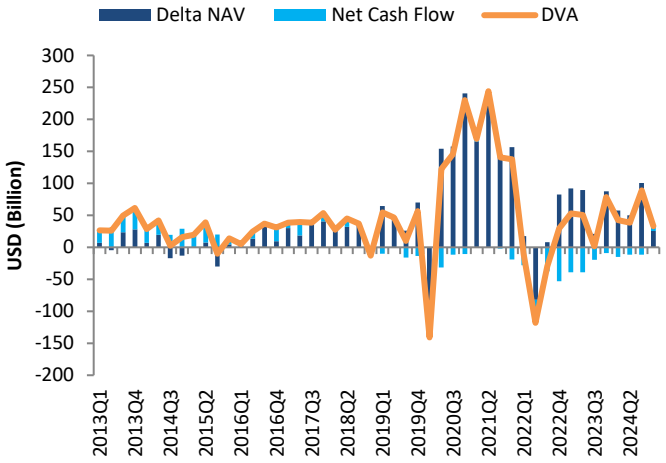
$$DVA = EndingNAV - BeginningNAV + Distribution - Contribution$$

The quarterly DVA as of Q4 2024 for all PE decreased significantly, from $89.0 billion in Q3 to $33.3 billion. This decrease was mainly driven by the slower quarterly increase of NAV, which increased by $25.5 billion in Q4 compared to the $100.4 billion in Q3 (see Exhibit 9A).

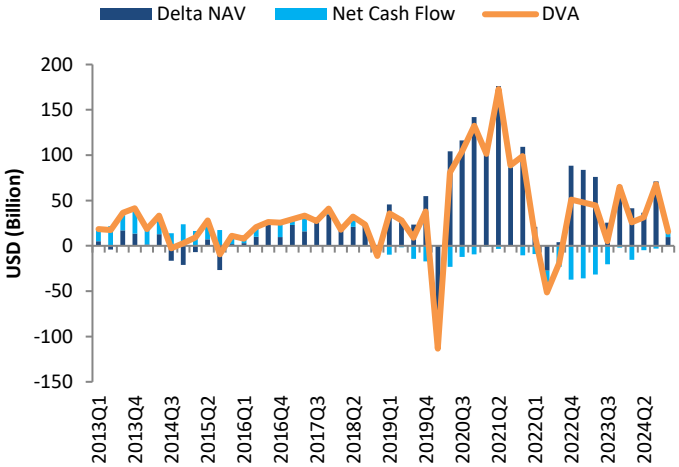
DVA for Buyout and Venture Capital funds increased by similar magnitudes in Q4 2024, with $15.8 billion and $14.9 billion respectively. While the positive DVA of Buyout was a combination of both positive net cash flows and NAV growth, it was mainly driven by the NAV growth for Venture Capital funds. Private Debt funds, on the other hand, posted a decrease in their NAV for the first time since Q2 2022, while they experienced a large positive net cash flow, which outweighs this negative change in NAV, resulting in a marginally positive DVA at $2.6 billion in Q4 2024 (see Exhibit 9A, 9B, 9C, 9D, and 9E).

Exhibit 9. Dollar Value Added

A. All PE

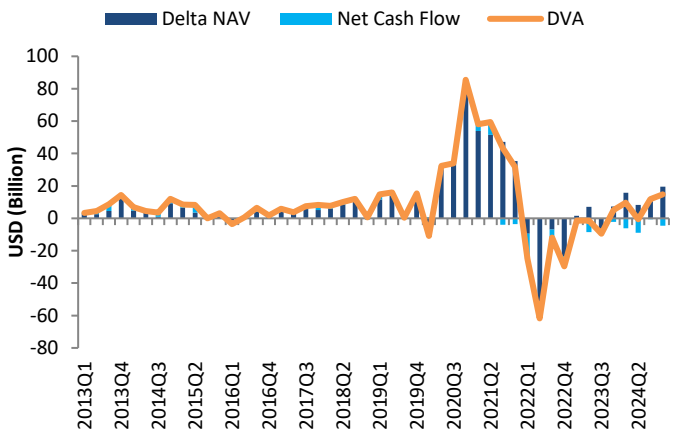


B. Buyout

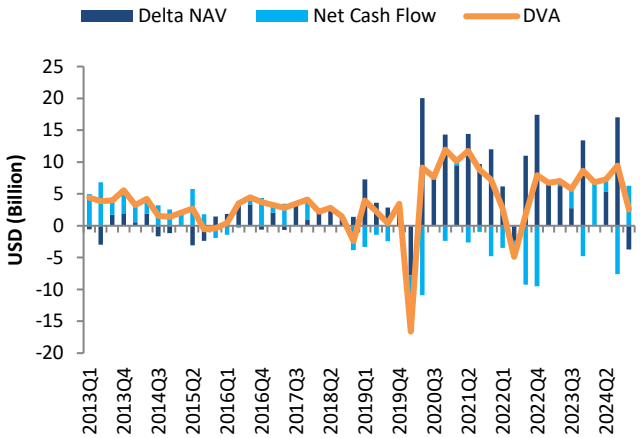


Source: State Street Data Intelligence, as of Q4 2024.

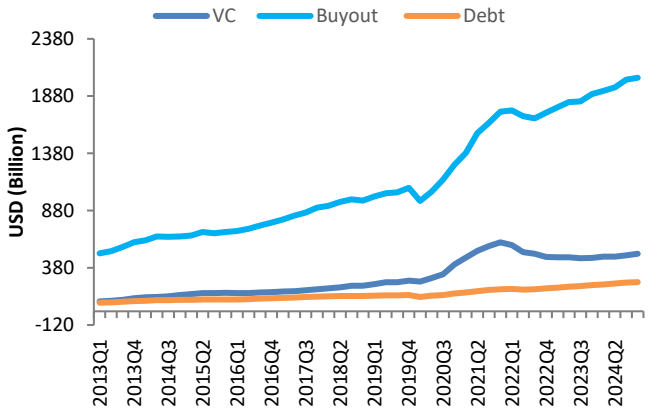
C. Venture Capital



D. Private Debt



E. NAV by VC, Buyout and Private Debt



Source: State Street Data Intelligence, as of Q4 2024.

Holdings Exposure

In SSPEI, sector focus is categorized at the fund level. While this classification offers insights into the overall fund strategy, classifications at the holding company level would provide finer granularity, allowing us to identify the exposures more precisely.

Exhibit 10A displays the NAV weights of GICS sector classifications of the portfolio companies in SSPEI constituent funds, based on State Street proprietary private holdings data, across strategies as of Q3 2024[24]. Information Technology sector had the highest share of holdings across all strategies. For Buyout funds, overall there was 29% NAV in Information Technology sector, followed by Industrials, Health Care and Consumer Discretionary with NAV weights of 14%, 12%, and 11% respectively. The NAV of Venture Capital had 52% concentrated in Information Technology which was marginally higher than that of Q3, followed by 17% of Health Care and around 8% of Financials sectors. Private Debt still stayed as the most diversified among strategies, with Information Technology, Financials and Health Care as the top three sectors having largest NAV weights of 15% for each sector.

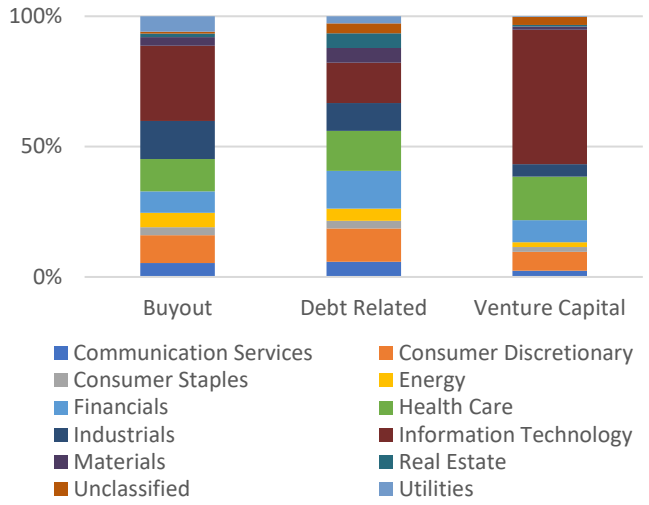
For funds classified as Generalist in SSPEI, Information Technology consists of 22% of the NAV, followed by Industrials, Health Care and Financials, accounting for 17%, 16% and 11% respectively. These four sectors collectively represented 66% of the NAV within generalist funds (see Exhibit 10B).

Exhibit 10C illustrates the percentage of holding companies whether their remaining NAV to remaining cost ratio increased, decreased, or remained stable from Q3 2024 to Q4 2024 across various sectors, excluding fully exited deals. The changes in the NAV-to-cost ratio serves as a key indicator of valuation changes, isolating the investment cost adjustments. In Q4 2024, only Energy, Information Technology, Financials and Utilities sectors saw more than 50% of investments increased in valuation. In contrast, Real Estate and four other sectors had a larger proportion of theirs investments experience a decline in their valuation ratio rather than an increase.

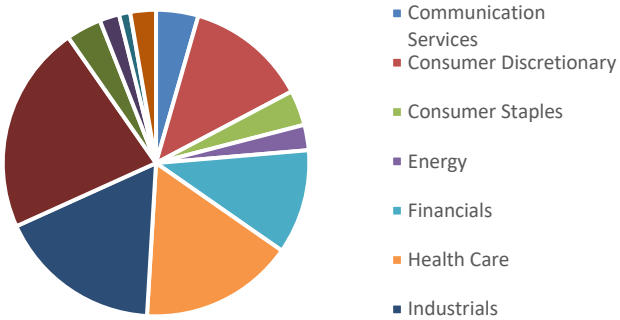
[24] As of June 2025, the coverage of Q4 holdings data was 70% of the overall NAV in SSPEI.

Exhibit 10. Holdings Sector Exposure Measured by NAV

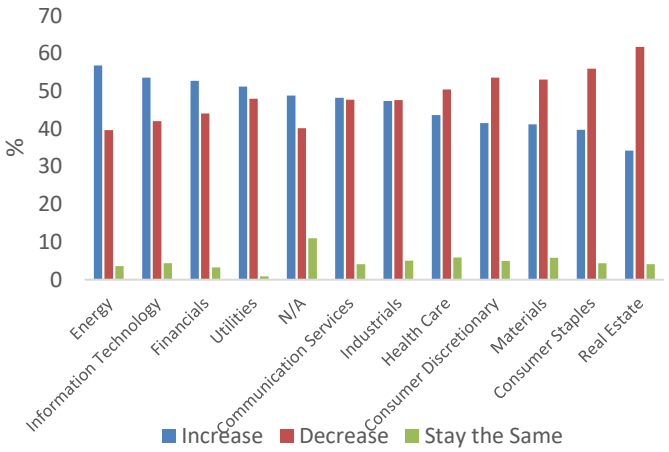
A. Sector Exposure by Strategies



B. Sector NAV weights for Generalist PE Funds



C. NAV/Remaining Cost Ratio from Q3 to Q4 2024



Source: State Street Data Intelligence, as of Q4 2024.

Nowcasting

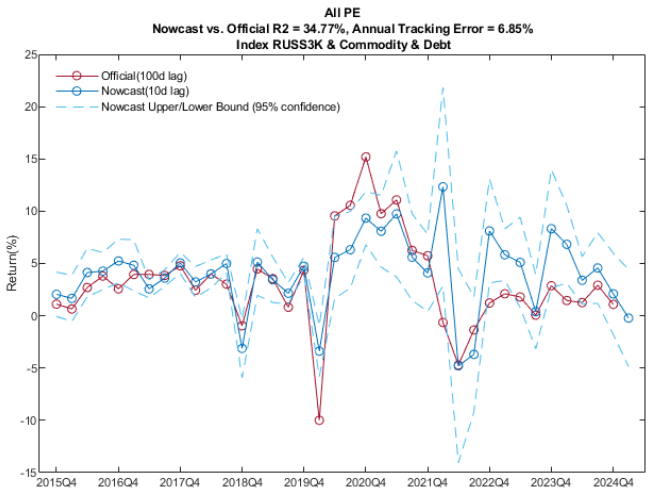
Inspired by the concept of nowcasting, SSPEI research team developed a model, aspiring to estimate the concurrent performance of private equity market, of which the reporting is otherwise delayed at least by one quarter. We hereby only share the model predictions for Q4 2024 without going into theoretical background. For model details, please refer to State Street Private Equity Insights Q3 2021 publication.[25] Nowcasting results are out-of-sample predictions based on the regression coefficients from the past 5 year rolling window and the observed public market returns and private market cash flows.

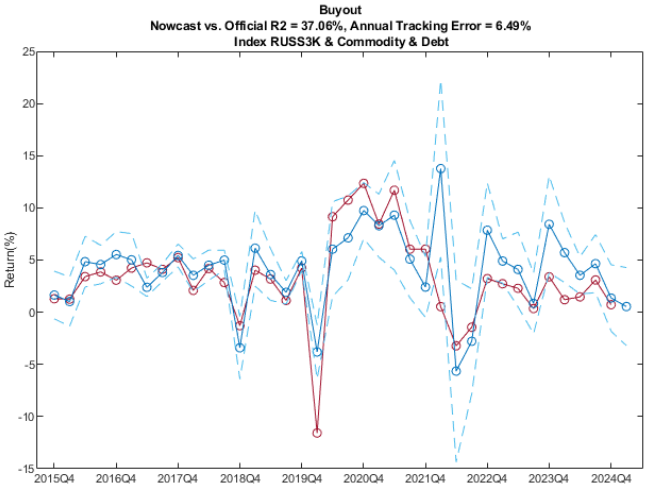
Reflecting on Q4 2024, the actual returns for All PE, Buyout, Venture Capital, and Private Debt were 1.09%, 0.72%, 2.78% and 0.83% respectively. Comparatively, last quarter's nowcasting model made the predictions of 2.10%, 1.36%, 4.03% and 2.50%. Exhibit 11 indicates that the nowcasting model's predictions for all strategies were within their 95% confidence intervals, except for Private Debt which fell below the 95% interval. The model accurately predicted the downward trend in quarterly performance for All PE, Buyout, and Private Debt and the upward trend for VC returns, but the drop in Private Debt was more significant than previously anticipated.

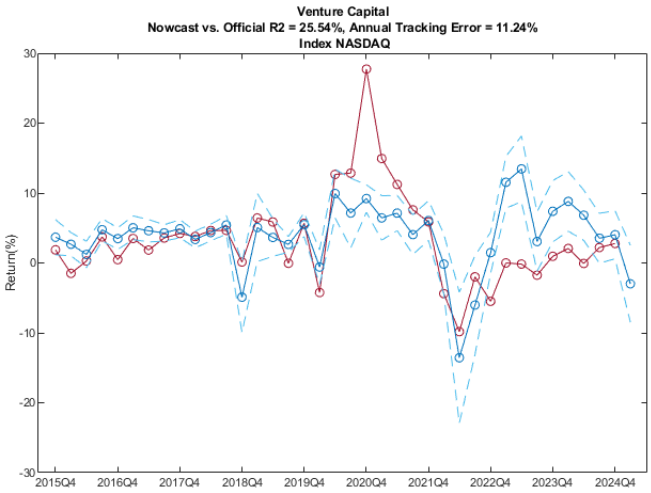
Looking ahead to Q1 2025, the nowcasting model anticipates a decrease returns across all strategies, predicting quarterly returns of -0.22%, 0.54% and -2.99% and 1.78% respectively for All PE, Buyout, VC, and Private Debt. The trend shows a decline slowdown for Buyout funds and an decline acceleration for VC funds in Q1 2025. This forecast is linked to a recovering debt market but weak equity market performance in Q1 2025. Bloomberg US Aggregated Bond Index returned positive to 2.91%, Bloomberg US Corporate High Yield Index marginally rose to 1.04%, and the Russell 3000 Index returned -4.72% which was a drop from 2.63% in Q4 2024. Additionally for Venture Capital, despite a weak two-quarter recovery, the model expects a significant drop in Venture Capital return for Q1 2025. This forecasted drop is driven by the technology-heavy NASDAQ Composite Index, which recorded a quarterly return from 6.34% in Q4 2024 to -10.26% in Q1 2025 due to market uncertainties and tariff announcements.

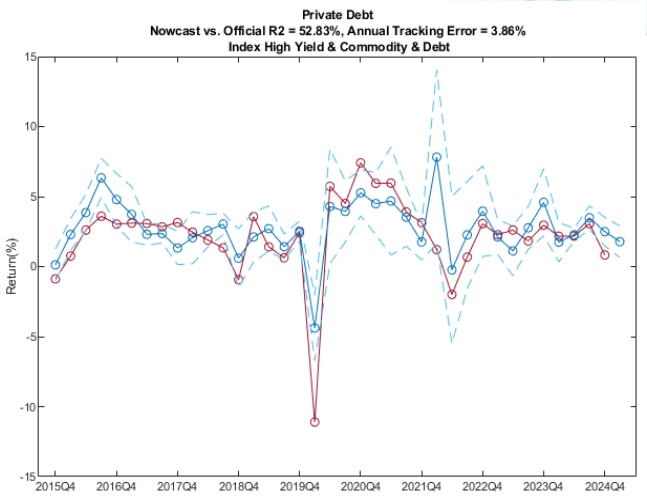
[25] State Street Private Equity Insights Q3 2021
https://globalmarkets.statestreet.com/portal/peindex/ publications

Exhibit 11. Actual vs. Out-of-sample Nowcast IRRs









Source: State Street Data Intelligence, as of Q4 2024.

DISCUSSION – HEDGING FX RISK AT FUND AND ASSET LEVEL

Continued from the discussion of previous quarter, in which we identified currency exposure in private equity portfolios when LPs commit to funds denominated in foreign currencies, and uncovered a deeper asset level FX exposure, stemming from the PE funds' underlying holding companies, a question comes to mind naturally: how can investors hedge against the risk and protect their returns from unpredictable currency fluctuations?

In this study, we explore a proof-of-concept framework by hedging quarterly valuations, leveraging the PE funds data and portfolio holdings data of State Street Private Equity Index.

The framework is constructed as follows:

- At the start of quarter, identify foreign NAV exposure (NAVs of funds denominated in currencies other than LP's base currency, or NAVs of foreign assets in funds' portfolios, which is applicable to GPs and LPs if underlying data is available).
- Use 3-month rolling hedge (with assumptions[26] for simplicity).
- Apply a uniform hedge ratio for all foreign currencies and full sample period.
- At the end of quarter, add hedging profit/loss to fund's cash flows.
- Lastly, calculate quarterly hedged returns and measure the degree of volatility reduction.

We plot out the hedging results by different uniform hedge ratios from 0% (unhedged) to 100% (fully hedged) for USD- and EUR-based investors. As seen in Exhibit 13A, for a USD-based LP, whose portfolio currency allocation alike that of SSPEI, i.e. 14.4% foreign exposure (refer to Exhibit 12), hedging quarterly valuations of foreign currency denominated funds reduces the return volatility across the board. The sample volatility reduces monotonically with respect to the increase of hedge ratio, both in aggregate and across all foreign currency fund groups. The largest risk reduction for the portfolio is 37 bps annually when hedged 100%. On the other hand, to a EUR-based LP, majority of the currency exposure is now foreign, i.e. 13.19% domestic (EUR) and 86.81% foreign. The volatility reduction in turn becomes much more significant, 255bps annually, with 90% the optimal uniform hedge ratio (see Exhibit 13B).

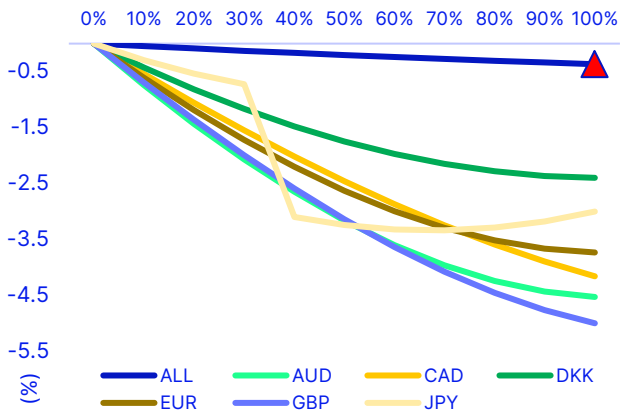
Exhibit 12. Fund local currency exposure

A. Share of fund size by fund regional focus and denominated currency

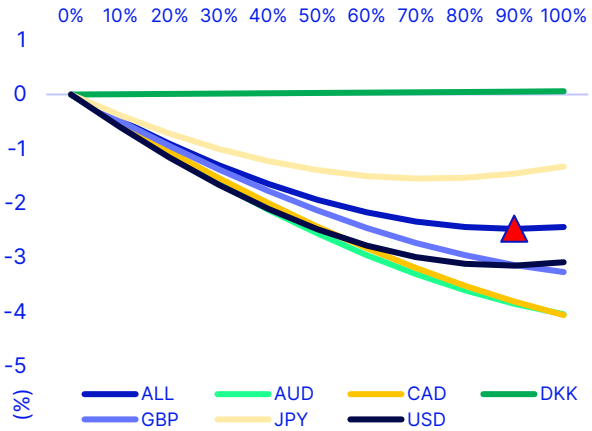
Regional focus	USD	EUR	GBP	Other
All PE	85.60%	13.19%	0.83%	0.38%
U.S.	99.17%	0.82%		0.01%
Europe	15.10%	79.02%	5.37%	0.50%
Rest of World	94.40%	3.69%	0.02%	1.89%

Exhibit 13. Annualized risk reduction when hedging 0-100% NAVs of foreign currency denominated funds

A. USD-based LP investor



B. EUR-based LP investor



Source: State Street, as of Q4 2024.

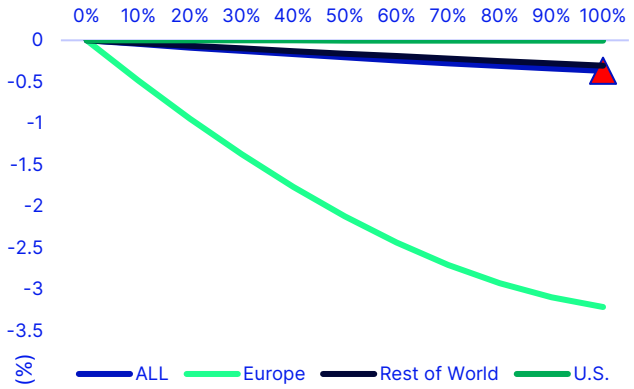
[26] 1) perfect hedge (i.e. forward rates the same as spot rates at settlement); 2) no transaction cost; 3) no liquidity limitations; 4) PE funds do not hedge.

The Exhibit 14 shows the hedging results by regional aggregates. Recall the disconnect we identified in the rest of world (ROW) focused funds, between their denominated currency (94.4% USD as in Exhibit 12) and the global exposure of underlying assets (35% USD as in Exhibit 15D). Consequently, it is not surprising to see only marginal risk reduction with the fund level NAV hedge for USD LPs (see Exhibit 14A).

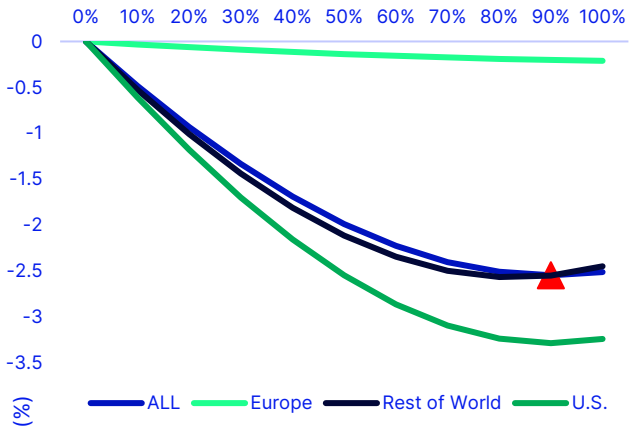
With that said, to uncover the deeper level FX risk and hedge against it, we resort to the portfolio company level valuations to implement the hedging strategy.

Exhibit 14. Annualized risk reduction by regional focus when hedging NAVs of foreign currency denominated funds

A. USD-based LP investor



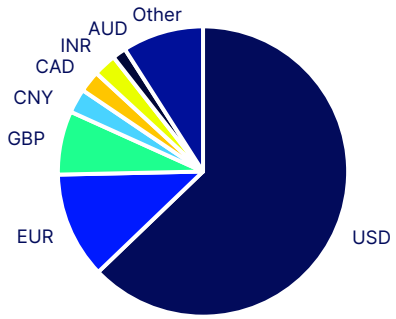
B. EUR-based LP investor



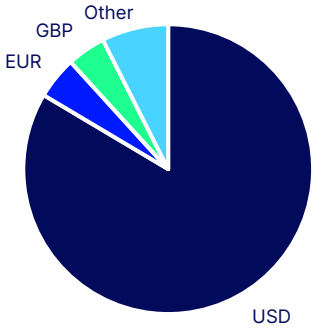
Source: State Street, as of Q4 2024.

Exhibit 15. Portfolio company level FX exposure

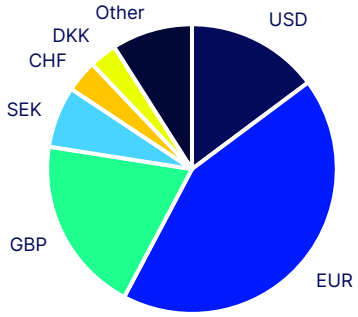
A. All funds



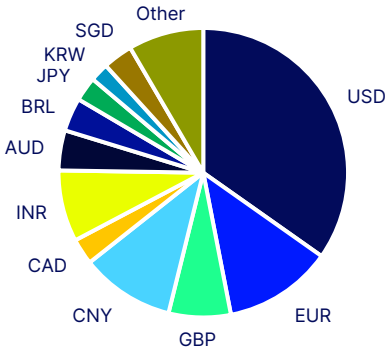
B. U.S. focused



C. Europe focused



D. Rest of World focused

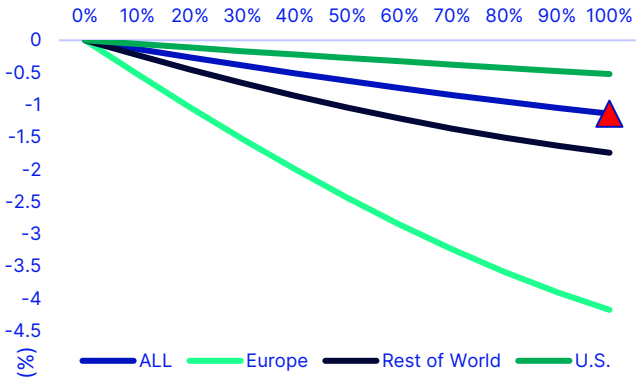


Source: State Street, as of Q4 2024.

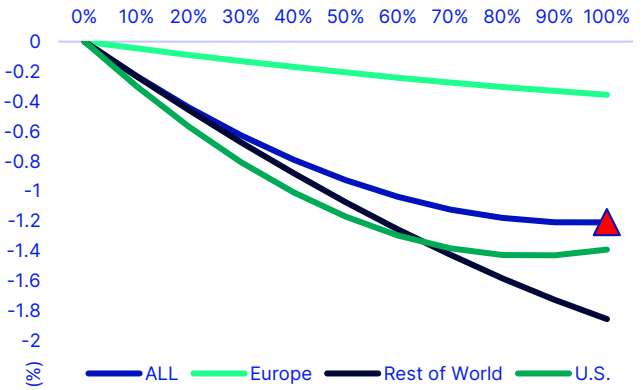
In Exhibit 16, it is evident that hedging the NAVs of foreign assets in underlying portfolios also effectively reduces the return volatility. For a USD-based investor, the annualized risk reduction in aggregate is 114 bps, greater than the 37 bps when hedging by fund level currency exposure. The volatility reduction is also more significant for every region when fully hedged, with U.S. 52 bps, Europe 417 bps, and ROW 174 bps (Exhibit 16A). From the perspective of a EUR-based investor, Europe focused funds saw a higher risk reduction hedging at the asset level given the larger FX exposure, with 36 bps volatility reduction in Exhibit 15B, than 21 bps in Exhibit 14B. However, we do not see the same case for U.S. or ROW regions, which possibly indicates some degree of over-hedging, when the currency risk for some assets is already hedged by PE funds; or due to that U.S. and ROW FX exposure is predominantly USD at the fund level, while in asset level hedge, the exposure to other non-USD currencies, such as GBP, SEK, CHF, DKK (Exhibit 15C), diversifies the FX risk partly.

Exhibit 16. Annualized risk reduction when hedging 0-100% NAVs of foreign assets in underlying portfolios

A. USD-based GP or LP investor



B. EUR-based GP or LP investor



Source: State Street, as of Q4 2024.

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Derived from actual cash flow data of our Limited Partner clients who make commitments to private equity funds, SSPEI is based on one of the most detailed and accurate private equity data sets in the industry today. These cash flows received as part of our custodial and administrative service offerings are aggregated to produce quarterly Index results. Because the SSPEI does not depend on voluntary reporting of information, it is less exposed to biases common among other industry indexes. The result is an index that reflects reliable and consistent client data, and a product that provides analytical insight into an otherwise opaque asset class.

- Currently comprises more than 4,000 funds representing more than $5.7 trillion in capital commitments as of Q4 2024
- Global daily cash-flow data back to 1980.
- The Index has generated quarterly results since Q3 2004.
- Published approximately 100 days after quarter-end.

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