GLOBAL INSTITUTIONAL ADVISORS

The Vantage of Vintage

How can family offices manage vintage risk

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Private Fund Investing: A Structural Primer

Private fund investing involves allocating capital to companies that are privately owned and not listed on public stock exchanges. In recent years, an increasing number of investors have explored this space in pursuit of long-term growth opportunities beyond traditional public markets.

Rather than purchasing shares directly in individual companies, investors commit capital to professionally managed private funds. The fund manager deploys this capital to acquire ownership stakes in private businesses, enhances operations and profitability over several years, and ultimately exits these investments with the goal of generating attractive returns.

Private equity investing can be compared to purchasing a house using a combination of equity and debt, improving the property, and selling it later at a higher value. Because part of the purchase is financed through leverage, increase in value can translate into amplified returns on invested equity. The objective is long-term value creation through active ownership, operational improvement, and disciplined execution.

Private fund investments are inherently long-term. Most funds are structured with a lifespan of approximately ten years, with limited liquidity during the investment period.

While private funds have historically delivered attractive long-term returns, outcomes are influenced not only by manager skill and structural advantages, but also by the timing of capital deployment. This document examines both the structural return case for private equity and the implications of vintage year exposure on long-term outcomes.

The structural differences between public markets and private funds can be summarized as follows:

Parameters	Public Markets	Private Funds
Liquidity	Continuous liquidity	Capital is locked for years
Pricing	Daily price changes	Periodic valuation
Control	Control over entry and exit	Manager controls entry and exit
Flexibility	High flexibility and rebalancing	Limited flexibility and reallocation
Return Metrics	Measured using CAGR	Measured using IRR and MOIC
Leverage	Lower use of leverage	Comparatively higher leverage
Access	Retail and Institutional Investors	Accredited investors
Tracking	Mark to Market	Appraisal based
Reporting	Quarterly & annually	Periodic & manager-reported

Exhibit 1
Note: As per SEC, accredited investors are investors who typically meet certain criteria of income, wealth and financial sophistication.

Structure of Private Funds

Private funds include asset classes such as private equity, growth, venture, infrastructure, or private credit and operate through a pooled capital structure. This structure could be closed-ended or open-ended in nature.

- **Closed-ended fund**: A fund with a fixed life (typically 10 years, often extendable to 12–14 years to allow orderly exits) where capital is committed upfront, drawn over time and with no redemptions before maturity.
- **Open-ended fund**: A perpetual or semi-perpetual structure that allows periodic subscriptions and redemptions, with capital not bound by a fixed term.

A private fund has two main groups:

- The **Fund Manager** (also called the General Partner or GP) makes investment decisions.
- The **Investors** (also called Limited Partners or LPs) provide the capital.

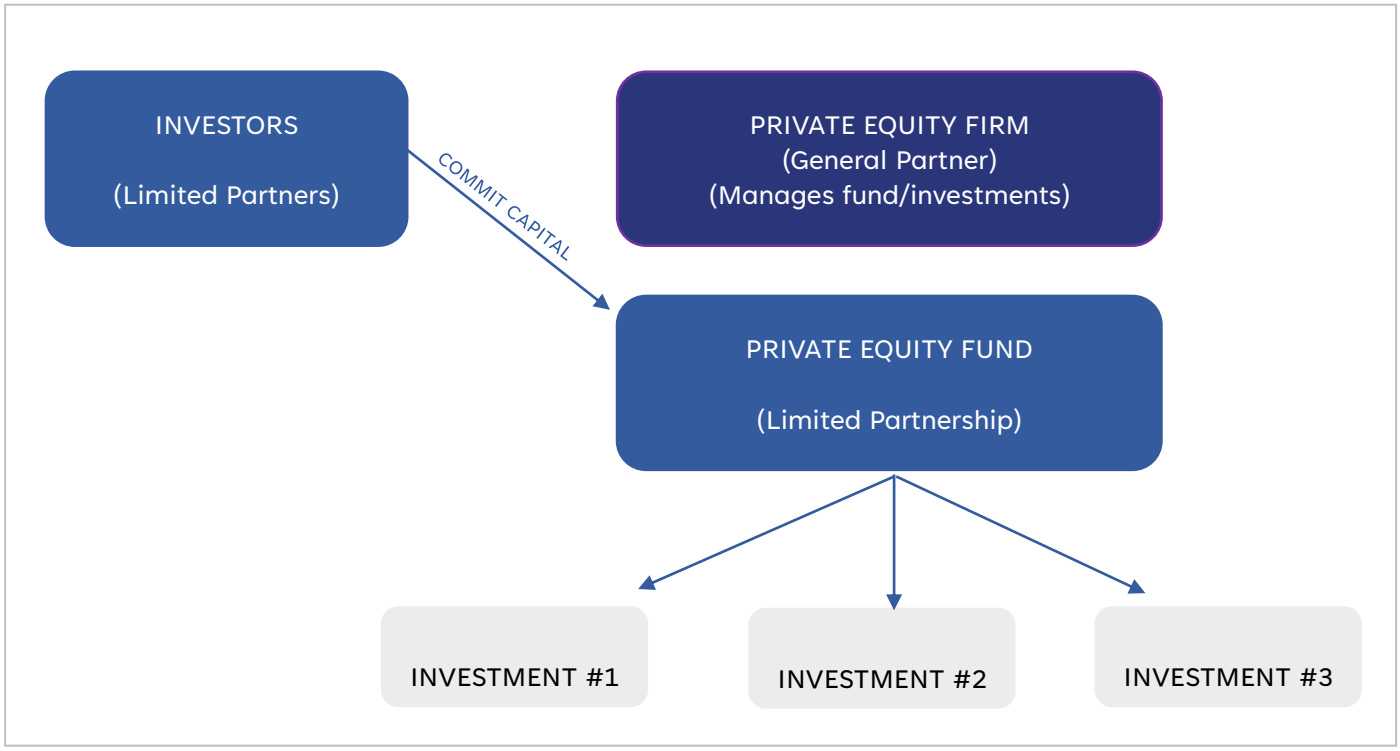

Exhibit 2

The manager (General Partner) is compensated through the following fee structure:

Fees Type	Charged On	Fees %
Management Fees	AUM	Typically 1.5%-2%
Performance Fees	Profits (above hurdle)	Typically 20%

Commitment vs Capital Call

Investors ("Limited Partners" or LPs) commit capital upfront. However, capital is not invested immediately. Capital is called over multiple years as investment opportunities arise. It is the obligation of the investors to provide the capital when it is called.

- Committed Capital is the total amount an investor agrees to provide.
- Capital Called is the portion actually drawn by the fund.

The table below illustrates committed capital and capital calls (outflows) over multiple years and distributions (inflows) from a fund over a typical 10-year period. All values shown are in $ Mn.

Year	0	1	2	3	4	5	6	7	8	9	10
Committed Capital	$100										
Capital Called		$25	$25	$20	$15	$15					
Capital Distributed							$20	$30	$40	$60	$100

Private funds usually show lower or negative returns in the early years. This is mainly due to management fees and initial investment costs. Positive distributions occur later in the fund life as investments are exited. The return pattern often looks like the letter "J" as demonstrated in the exhibit below.

This early performance profile should not be interpreted as underperformance, but rather as a structural feature of private fund investing.

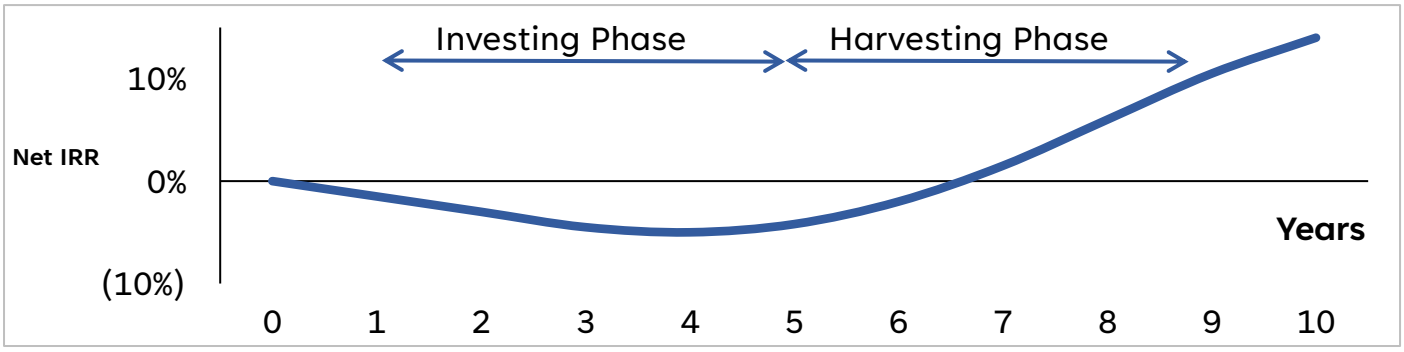

Exhibit 3

Private fund performance is typically measured using:

- **IRR (Internal Rate of Return):** The annualized return accounting for timing of cash flows.
- **MOIC (Multiple of Invested Capital):** Total value received divided by capital invested.

- **DPI (Distribution to Paid-In):** Amount of capital that has been returned to investors relative to the capital they have contributed.

Unlike public markets, where investors can adjust exposure daily, private fund exposure is determined by when capital is deployed and when investments are exited.

Structural Case – Does Private Equity Deliver an Illiquidity Premium?

Private equity has historically delivered higher returns than public markets over extended time periods, including from 1998 to 2015. A commonly cited explanation for this return differential is the presence of an illiquidity premium. This premium is intended to compensate investors for reduced liquidity, increased complexity, and longer capital lock-up periods.

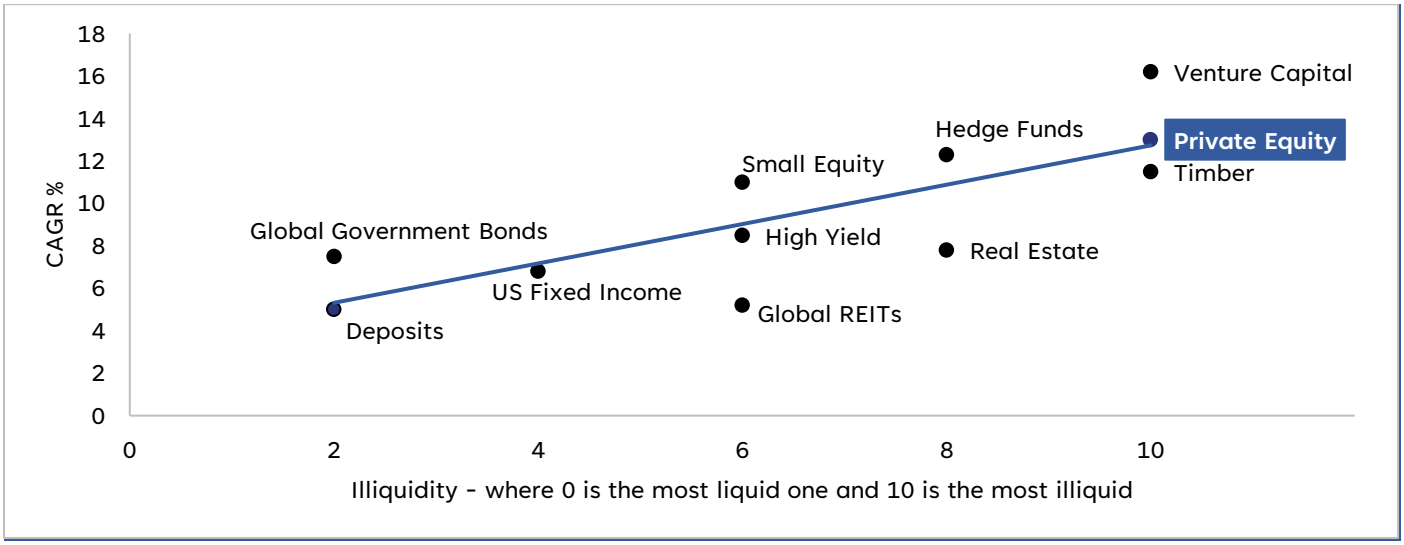

Exhibit 4

Source: Kitces.com, "Expected Returns" by Anti Illmanen, 2011 as cited in "Private Capital, Private Opportunities" by Blackstone.
Notes: As per "Expected Returns" by Anti Illmanen, 2011, Investment returns generally increase with illiquidity.

The following structural factors are often cited to explain this premium:

- **Active Ownership and Operational Improvement:** Managers take controlling or influential stakes in companies and work closely with management to improve operations, reduce costs, and drive growth.
- **Information Asymmetry and Complexity:** Private companies do not release detailed financial information as public companies do. Investing under these conditions requires skill, judgement, and deep analysis. Investors expect higher returns for investing in this complex environment.
- **Sourcing:** Private equity firms access proprietary or limited-auction deals through deep networks, allowing entry at more favourable valuations than broadly intermediated public markets.

- **Family-Owned Business with Succession Needs:** Many founder-led or family-owned companies lack institutional management and clear succession, creating operational uplift opportunities that public markets typically cannot access.
- **Platform Play for Multiple Expansion:** Private Equity sponsors build scaled platforms through bolt-on acquisitions, improving growth profile and market positioning, which can justify higher exit valuation multiples.

However, even if a structural premium exists over long horizons, realized returns vary significantly across managers and vintage years.

Empirical Evidence of Long-Term Outperformance

Numerous industry studies and benchmark analyses have evaluated private equity performance relative to public markets over extended investment horizons. While results vary by strategy, manager selection, and vintage year, pooled benchmark data provides insight into aggregate outcomes across cycles.

Data published by Cambridge Associates indicates that U.S. private equity has generated higher annualized returns than comparable public market indices across 10, 15, and 20-year horizons. The comparison, conducted using a Modified Public Market Equivalent (mPME) framework, adjusts public market returns to reflect the same cash flow timing as private fund investments, enabling a more like-for-like assessment.

US PRIVATE EQUITY — **AS OF SEP 30,2025**

FUND INDEX SUMMARY: HORIZON POOLED RETURN COMPARED TO CA MODIFIED PUBLIC MARKET EQUIVALENT (MPME)

CA INDEX	1Qtr	1Yr	3Yr	5Yr	10Yr	15Yr	20Yr	25Yr
CAMBRIDGE ASSOCIATES LLC US PRIVATE EQUITY INDEX [1]	2.13	8.31	8.2	14.08	14.99	15.71	13.4	11.95
MPME ANALYSIS [2]								
mPME MSCI World / MSCI ACWI (gross) [3]		17.77	23.49	14.43	12.96	11.21	9.11	8.37
Value-Add (bps)		-946	-1529	-35	204	450	429	359
mPME Russell 3000 Index		17.34	24.02	16.03	15.02	14.68	11.04	9.57
Value-Add (bps)		-903	-1583	-195	-3	103	236	239
mPME Russell 2000 Index		10.87	15.13	11.37	10.01	11.18	8.69	8.56
Value-Add (bps)		-256	-694	272	499	454	471	340

Exhibit 5

Cambridge Associates LLC U.S. Private Equity Index represents the pooled net performance of U.S.-based private equity funds including Buyout, Growth and Mezzanine Funds. Russell 3000 Index represents a comprehensive U.S. public equity benchmark. Russell 2000 Index is used as a proxy for growth-oriented, smaller companies.

Source: Cambridge Associates

Notes: (1) Returns are net of fees and carried interest.

(2) Modified Public Market Equivalent (PME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund.

(3) MSCI World/MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Analysis: Over 10 and 15 year time horizons, private equity has shown higher returns as compared to public market benchmarks.

As shown in Exhibit 5, over longer timeframes such as 10 and 15 years, benchmark private equity returns have exceeded those of broad public indices. However, shorter-term horizons display greater variability, reflecting the impact of capital deployment timing and market conditions.

To further examine performance dynamics across investment cycles, we analysed PitchBook benchmark data across vintages from 1998 to 2015, assuming a full 10-year investment period. Both the private equity benchmark IRRs and the MSCI returns used in this comparison are presented on a pre-tax basis.

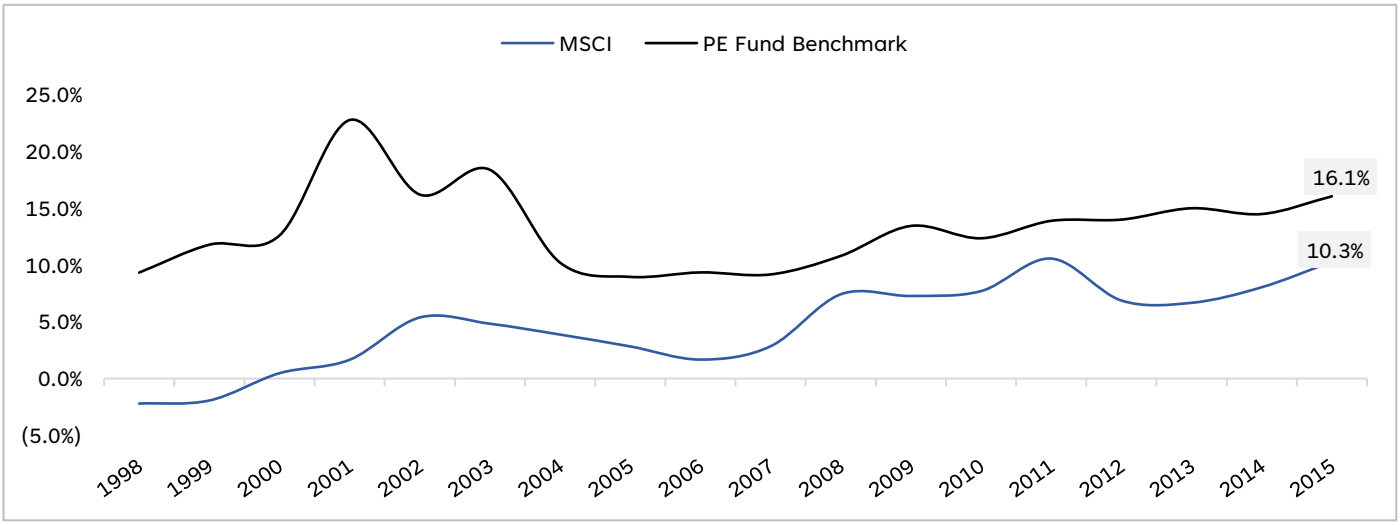

Exhibit 6
Source: Pitchbook, Bloomberg
Notes:
(1) PE IRR: Pitchbook benchmark IRR, net of fees and carry.
(2) Public Market Comparison: MSCI 10-year holding period return from vintage year.
(3) Time Horizon: Full 10-year investment cycle.

Across the sample period:

- Benchmark private equity IRRs ranged from 9% to 23%, with an average of approximately 13%.
- Comparable MSCI 10-year holding period returns ranged from -2% to 11%, with an average of approximately 5%.

These results suggest that private equity has delivered excess returns over public markets when looking at long investment horizons. The illiquidity premium, combined with active management and structural features of the private markets, helps explain this outperformance.

However, long-term averages can obscure meaningful variation across investment cycles. To understand this variability, it is important to examine performance by vintage year.

Vintage Year Dispersion: The Cyclical Nature of Private Equity Returns

A vintage year refers to the year in which an investor commits capital to a private equity fund. This plays a major role in determining returns since funds that begin investing in different years operate under different market conditions.

Private equity performance is influenced by these factors:

- **Entry Valuation Multiples**: If funds invest when valuations are high, future returns may be lower, however if they invest during downturns when valuations are cheaper, returns may be higher.
- **Credit Conditions**: When interest rates are low and credit is easily available, deal activity increases. When borrowing costs rise, returns can face downward pressure.
- **Macroeconomic Cycle**: Economic growth, inflation, and stability affect investment performance. Funds investing during recession periods may benefit if recovery follows.
- **Exit Window Environment**: If IPO markets are strong or buyers are active, exits happen at higher valuations. If markets are weak, exits may be delayed or priced lower.
- **Team Consistency:** Private equity is highly manager-dependent; stable senior teams with a demonstrated track record of value creation across cycles tend to produce more repeatable outcomes, while team turnover or weak attribution clarity can introduce performance variability.
- **Regulatory Environment vs Innovation Advantage:** Funds operating in sectors or periods with lighter regulation may capture early mover advantages and experience supernormal growth, whereas increased regulatory oversight or policy shifts can compress margins, delay exits or reduce return potential.

Empirical Dispersion Across Vintages

The analysis highlights that returns can vary meaningfully across cycles.

- **2001 Vintage IRR:** 22.8%; The 2001 vintage invested immediately after the dot-com bubble burst**.** This period created attractive entry conditions.
- **2007 Vintage IRR:** 9.2%; The 2007 vintage invested at peak pre-financial crisis valuations.
- **2009 Vintage IRR:** 13.4%; The 2009 vintage deployed capital during a market downturn post financial crisis.

The difference between 2007 and 2009 is over 400 basis points (4%). This demonstrates that timing of entry can materially impact performance. Across the sample period from

1998 to 2015, the spread between the highest and lowest vintage IRRs exceeds 1,380 basis points (13.80%), illustrating meaningful dispersion risk.

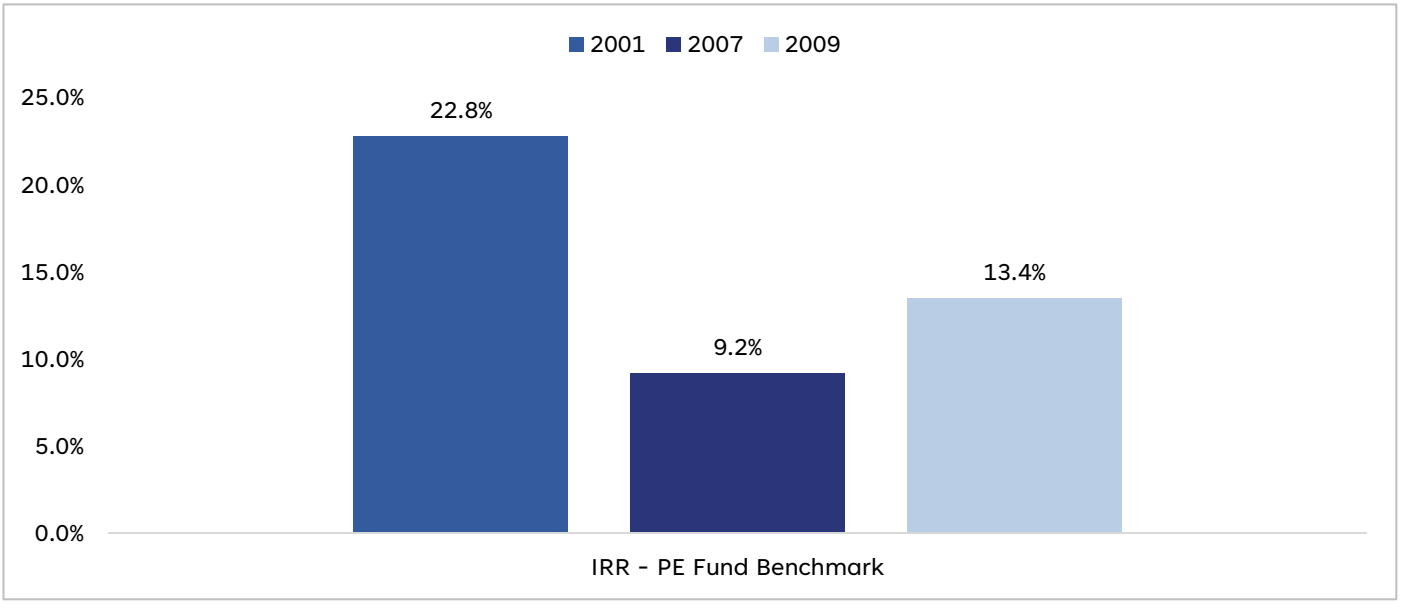

Exhibit 7
Source: Pitchbook

The level of outperformance as compared to public markets varies by vintage year. Some vintages benefit from the following:

- Low entry prices (2001, 2002 and 2008)
- Strong economic recovery
- Favourable exit conditions (2007, 2011, 2015)

Other vintages suffer from the following:

- High entry prices
- Tight credit conditions (2008 during GFC)
- Weak exit conditions (2008 during GFC)

The illiquidity premium in private equity appears structural over long horizons. However, the size of that premium expands in favourable cycles and compresses in unfavourable cycles. Vintage year dispersion has a meaningful impact on returns. For investors deploying large capital in a single vintage, this dispersion can materially alter long-term wealth outcomes. The extent to which this dispersion affects investors depends on how capital is allocated across vintages.

Family Offices Are Structurally Exposed to Vintage Risk

While vintage dispersion is a structural feature of private equity, its impact depends on how capital is deployed. Institutional investors such as pension and endowment funds typically follow disciplined pacing models, committing capital consistently across years. In contrast, family offices often deploy capital more opportunistically, which can increase exposure to timing risk.

Family office capital deployment tends to exhibit certain characteristics:

- **Opportunistic Commitments:** Family offices invest frequently when they encounter attractive managers, compelling opportunities, or strong market narratives. Commitments are often relationship-driven rather than calendar-driven. While this flexibility can create access advantages, it may also result in uneven exposure across vintages.
- **Lumpy Capital Allocation:** Unlike institutions that allocate a fixed percentage annually, family offices often match available liquidity with larger commitments in those specific years. This results in concentrated vintage exposure rather than evenly distributed commitments.
- **Sentiment Driven Behaviour:** Commitment activity often increases during strong markets when fundraising activity is high and performance appears robust. Conversely, during market downturns, commitments may be reduced due to uncertainty or liquidity concerns.
- **Ecosystem Driven Investing:** Family offices often allocate within trusted networks or ecosystems relying on relationships and shared conviction rather than structured diversification, which may lead to correlated exposures and unintended vintage clustering.
- **Limited Exposure Monitoring Beyond Performance:** Tracking may focus primarily on reported IRRs or fund-level performance, while aggregate small commitment exposure across vintages, sectors, leverage environments, and liquidity timing may not be systematically monitored, increasing hidden concentration risk.

The Denominator Effect

During public market downturns, private market allocations can rise mechanically as a percentage of total portfolio value due to declines in listed assets. This “denominator effect” may prompt family offices to:

- Delay planned commitments.
- Reduce or temporarily pause new allocations.
- Rebalance exposure conservatively.

As public asset values decline sharply, the value of private market allocations becomes overweight relative to policy targets, influencing LP commitment behaviour and may lead to reduced near-term commitments.

Given such structural exposure, a pertinent question arises - whether vintage risk should be actively managed rather than passively accepted?

Should Family Offices Manage Vintage Risk?

The preceding sections establish two important conclusions. First, private equity has historically delivered excess returns relative to public markets over long investment horizons. Second, those returns vary meaningfully across vintage years. The relevant question for family offices, therefore, is not whether private equity works, but whether the timing of capital commitments should be actively managed.

The evidence below suggests that family offices should actively manage vintage exposure through disciplined commitment pacing.

❖ Vintage Dispersion Has Material Wealth Impact

Between 1998 and 2015, private equity benchmark IRRs ranged from 9% to 23%, with an average IRR of 13%.

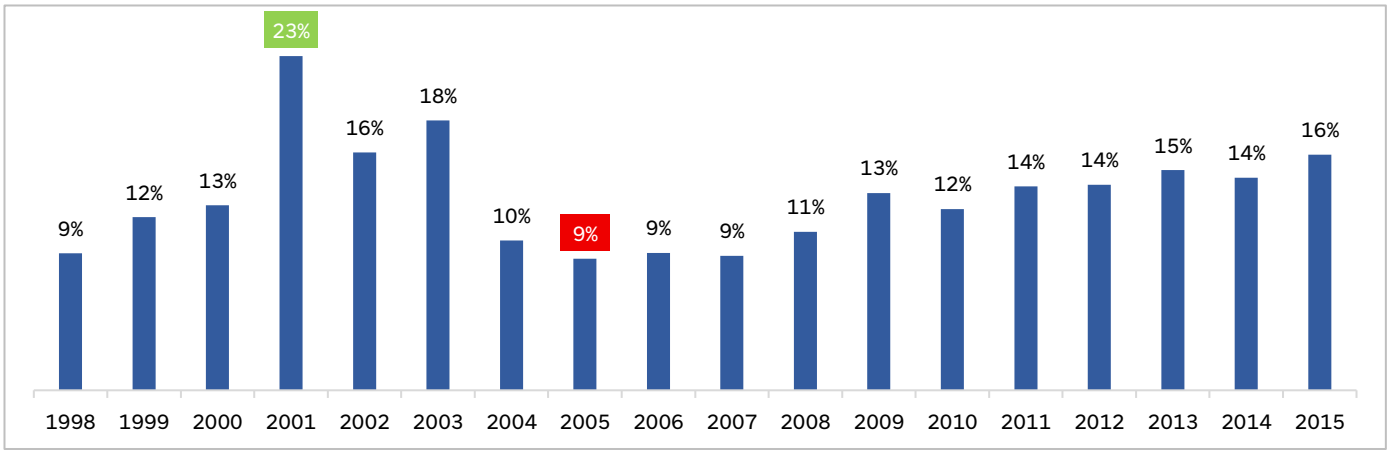

Exhibit 8
Source: Pitchbook
Notes: 2001 is Highest Return Vintage, 2005 is Lowest Return Vintage

While this dispersion may appear moderate on an annual basis, its compounded impact is significant. A $100 Mn investment in two separate vintages can have widely distinct outcomes over an investment period of 10 years as follows:

- **Low Returns Vintage (2005 Vintage):** If you invest $100 Mn in 2005 vintage, your investment grows to $236 Mn over 10 years, showing an IRR of 9%.
- **Average Returns Across Vintages:** If you invest $100 Mn across vintage, your investment grows to $348 Mn over 10 years, showing an IRR of 13%.

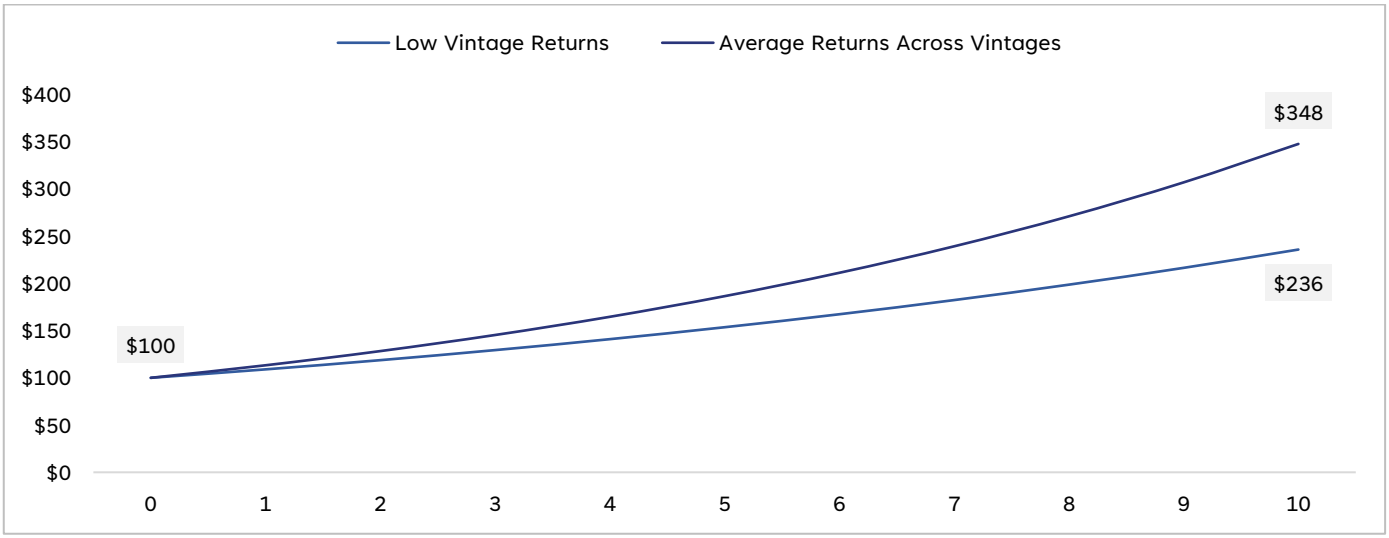

Exhibit 9
Notes:(1) Amounts in $ Mn
(2) Outcomes of a $100 Mn investment for a period of 10 years in two distinct vintage cases.

The difference between the average and lowest return vintages of over $112 Mn (47.5%) is driven by entry timing. **Vintage dispersion is therefore a significant wealth determinant.**

Disciplined Pacing Reduces Timing Risk

Family offices that deploy capital in an unstaggered manner are implicitly taking macro timing risk.

Disciplined Pacing Strategy: Investing and committing capital across multiple vintages, reduces exposure to risk of selecting the incorrect vintage.

The analysis using 5-year rolling benchmark IRRs shows that while pacing does not guarantee the highest performing vintage, it reduces exposure to the lowest performing one. Such outcomes align perfectly with the objective of a typical family office – wealth preservation and downside protection always precedes wealth expansion.

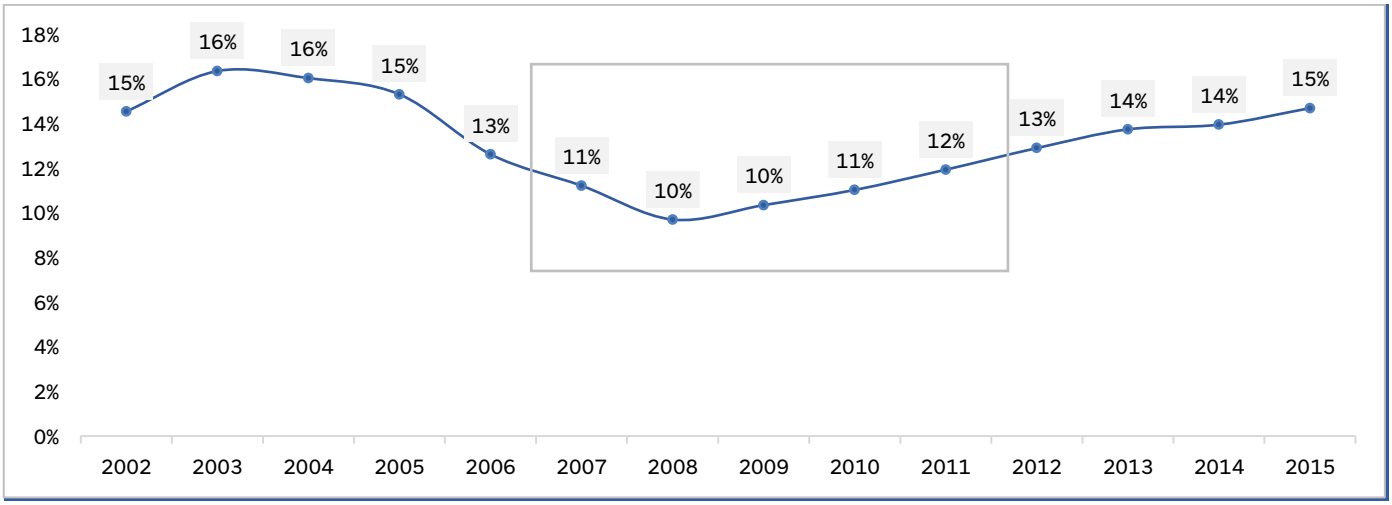

Exhibit 10
Source: Pitchbook
Note: 5-year rolling simple average of Benchmark PE IRRs. The Rolling Simple Average of 2002 consists of periods from 1998 to 2002.
Analysis: The rolling average benchmark IRRs from 2007 to 2011 show lower returns for the following reasons:

(1) Peak Valuations in 2007, elevating entry prices and compressing returns.
(2) Global Financial Crisis in 2008 and 2009, impacting exit markets.

A single weak vintage as highlighted in exhibit 9 meaningfully reduces ending wealth outcomes. Diversified pacing mitigates downside exposure as highlighted in exhibit 10. Vintage concentration amplifies dispersion, while diversification compresses it.

Reading exhibits 8, 9 & 10 together shows how a disciplined, multi-year pacing approach reduces reliance on any single vintage and improves the consistency of compounded returns, and thus vintage risk should be actively managed as part of long-term private market strategy for any family office.

Implementation Framework on Managing Vintage Risk

Managing vintage exposure requires an institutionalized portfolio construction framework rather than opportunistic allocation decisions. The following are few frameworks to manage vintage risk:

Strategies	Explanation
Disciplined Commitment Pacing	• Commit a fixed percentage of capital annually and maintain deployment through market cycles. • Institutional frameworks highlighted emphasize systematic
Vintage Allocation Caps	• Cap exposure to any single vintage year and monitor NAV concentration over time. • Diversified commitments reduce dispersion and improve
Secondary Market Rebalancing	• The private equity secondary market, which has seen a substantial growth in volume over the last decade, allows LPs to actively manage vintage exposure by selling concentrated stakes
Evergreen Structures	• Evergreen vehicles continuously deploy and recycle capital across vintages, structurally reducing timing risk.

Conclusion

Private equity's illiquidity premium is not solely a function of active management or sourcing; it is also shaped by the timing of capital deployment. Vintage dispersion can materially influence long-term compounded outcomes, particularly when capital is concentrated within a limited number of investment cycles.

Family offices, given their often-lumpy commitment patterns and sentiment-driven allocation behaviour, are structurally exposed to this dynamic, as uneven deployment can amplify the effects of favourable or unfavourable vintages on overall wealth outcomes.

Managing vintage exposure through disciplined pacing and diversification is therefore not optional, it is foundational to preserving the private markets premium and fulfilling the key office of building a family office – wealth creation and preservation for the long-term.

Annexure

Vintage Year	IRR - PE Fund Benchmark	IRR - MSCI	Variance
1998	9.3%	-2.2%	11.5%
1999	11.8%	-1.9%	13.7%
2000	12.6%	0.5%	12.1%
2001	22.8%	1.7%	21.1%
2002	16.2%	5.4%	10.8%
2003	18.4%	4.8%	13.6%
2004	10.2%	3.9%	6.3%
2005	9.0%	2.8%	6.1%
2006	9.4%	1.7%	7.7%
2007	9.2%	2.8%	6.3%
2008	10.8%	7.4%	3.4%
2009	13.4%	7.3%	6.2%
2010	12.4%	7.7%	4.7%
2011	13.9%	10.6%	3.3%
2012	14.0%	6.9%	7.1%
2013	15.0%	6.7%	8.3%
2014	14.5%	8.0%	6.4%
2015	16.1%	10.3%	5.8%

Source: Pitchbook
Note: Benchmark PE IRRs from 1998 to 2015.
Variance is calculated as difference between PE Benchmark Funds IRR and MSCI IRR across sample period.