

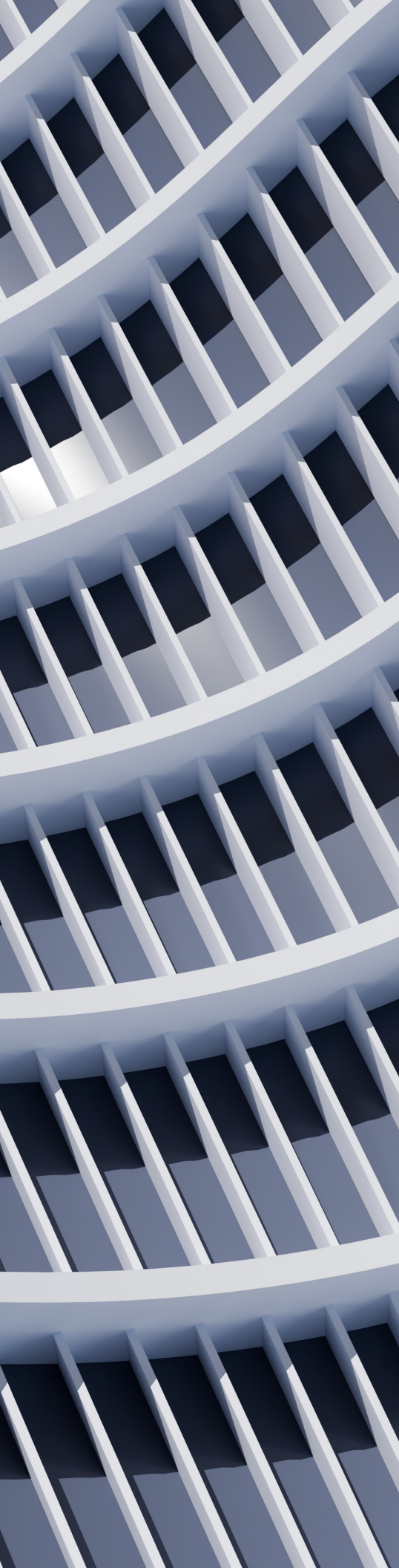
A low-angle, upward-looking perspective of a modern skyscraper with a glass and steel facade. The building's structure creates a strong sense of height and depth, with lines converging towards the top of the frame. The sky is a pale blue, visible through the glass panels.

Strategic Investment Advisory Group

# Gaining perspective on public and private equity

J.P.Morgan  
ASSET MANAGEMENT





# Important risk distinctions between public and private equity

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Public and private equity (PE) derive their returns from a common source: the ownership of commercial businesses and the claim on the earnings and cash flow that they generate. But as investments, their key risks are very different. Public equity is distinguished by broad market risk and high volatility, private equity by idiosyncratic performance and extreme illiquidity.

Traditional asset allocation models struggle to address these distinctions, leaving investors without a clear framework for distributing capital across the broader equity complex. In this paper, we draw several points of comparison between public and private equity that may help investors think through the trade-offs. Ultimately, however, we are confident that investors will want both equity categories as permanent components of their strategic asset allocations.

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# Key takeaways for investors

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- 1 Public and private equity both have historically delivered high returns across time, but private equity has generated a consistent return premium across market cycles, with lower realized volatility. However, the strong overall performance of this asset class masks a high degree of fund-level dispersion, making skill in manager selection essential to capturing the performance advantage.
  - 2 Simple comparisons of private equity vs. public equity probably overstate the degree of real-world outperformance. Investors seeking to capture the high fund-level internal rates of return (IRRs) on private equity must remain fully invested across time, which is quite challenging. Further, the passive public equity benchmarks against which these returns are compared represent a mix of sectors and firms that are fundamentally unlike those targeted by private equity.
  - 3 Private equity has the potential to provide fundamental diversification vs. public equity allocations. Two particular subcomponents of private equity – venture/growth capital and small/mid-market buyout – derive their returns from underlying sources that are difficult to replicate in public markets. The leveraged buyout market, in contrast, relies more heavily on leverage, financial engineering and public market exits, all of which are vulnerable to adverse market forces.
  - 4 The idealized model of private equity investing depends on the continuous recycling of capital between asset allocators and their PE fund managers, a process that has proven challenging to even the most sophisticated investors over time. Recently, however, market conditions have made this process more difficult to execute efficiently. Aggressive fundraising, slower deployment of capital, higher financing costs, reduced leverage, a difficult exit environment and reduced distributions all will have lingering effects on future performance.
  - 5 Private equity's excess returns are often attributed to a broadly defined "illiquidity premium," but less attention is paid to the ways in which that illiquidity imposes costs on other parts of the asset allocation. Recognizing and attributing these costs can help investors make clearer judgments about appropriately allocating capital between public and private markets.
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## Part one

# Making a fair comparison between public and private equity

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Every investor understands that public equity can deliver high long-term returns; this is the primary reason this asset class forms the largest component of most return-focused allocations. But potential performance is not the only attraction. Public equity's key benefits include deep and liquid markets, a high degree of financial transparency and legal certainty, and the presence of many low cost passive and skilled active managers.

Of course, there are some downsides as well: high short-term volatility, potentially severe drawdown (or "left-tail") risk and pronounced cyclicity of returns. But asset allocators have found adequate means of addressing these risks, and public equity's role in diversified portfolios is secure.

With respect to private equity (PE), high long-term returns are also the primary draw for investors, but there are other positive attributes. Most notably, private equity has exhibited greater stability in observed returns across time, presenting a favorable contrast to the volatility and cyclicity of public equity.

Private equity's drawbacks – which include illiquidity, limited transparency,<sup>1</sup> operational complexity, manager selection risk and higher fees – are often recognized by investors, yet they barely register in asset allocation models. Even after adjusting volatility to better reflect private equity's embedded risks and constraining the PE allocation to reflect its illiquidity, allocation models will almost always maximize private equity exposure to the extent allowed.

It's easy to understand the source of that appeal: At no point in the 20-year period 2000–20 were private equity returns negative, even for the lowest quartile of managers (**Exhibit 1**). Median returns for vintage years (the year of fund inception) across those two decades ranged from the high single digits to more than 20%. This legacy of strong performance is the main driver of interest in private equity.

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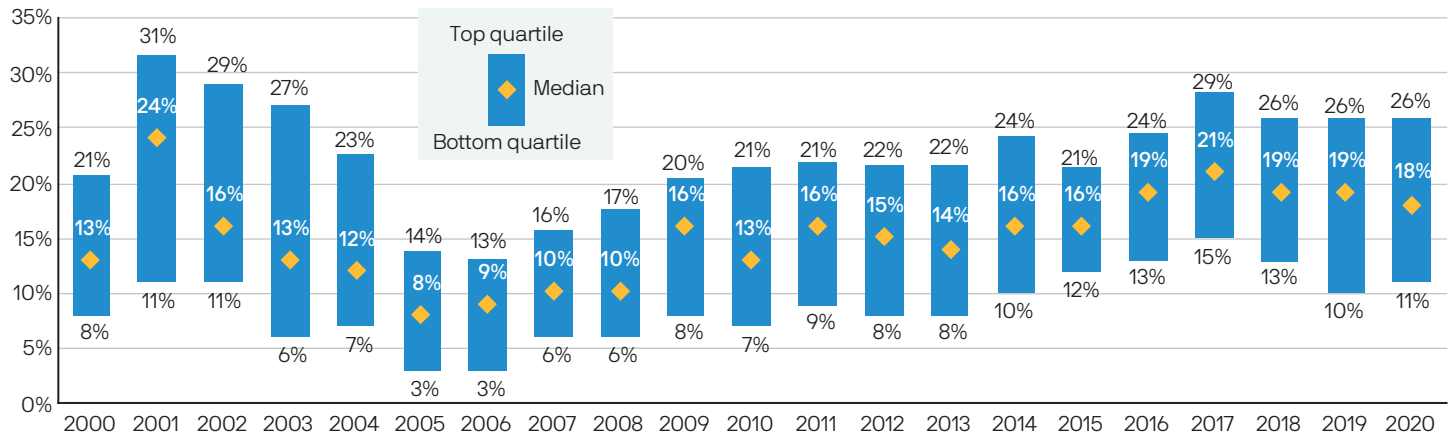
<sup>1</sup> With respect to transparency, investors in private equity (and closed-end private funds broadly) face "blind pool risk," which is the inability to know – at the time of commitment – what the fund will end up purchasing. Investors are placing their faith in the general partner to identify attractive investments.

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## Private equity's manager dispersion is greater than its return volatility

EXHIBIT 1: GLOBAL PRIVATE EQUITY RETURN DISPERSION BY VINTAGE YEAR (2000–2020)



Source: Burgiss, J.P. Morgan Asset Management; data as of September 30, 2023. Global private equity is represented by global buyout funds.

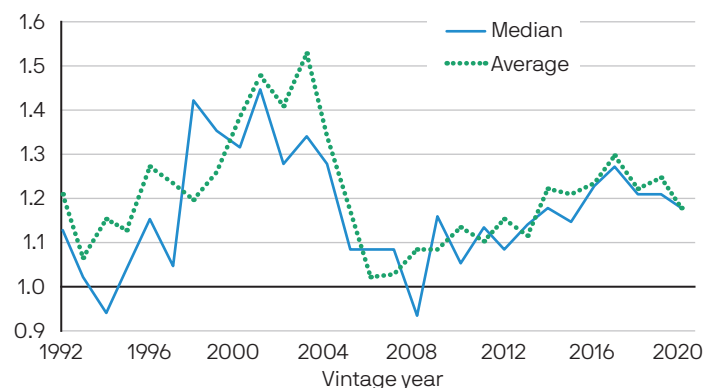
Exhibit 1 offers a great deal of useful insight into the benefits and risks of the asset class:

- Manager selection is a more critical factor in private equity investing than in any other asset class. The performance dispersion between first quartile and fourth quartile managers is extreme, ranging from just under 1,000 basis points (bps) to more than 2,000bps.
- Concerns about cyclicalities are reasonably bounded. Certain vintage years may have been less well timed than others, but the long period over which a typical fund makes its investments and harvests its returns smooths out shorter-term macro and market swings.
- The use of IRRs as the basis for comparing one private equity fund with another is generally valid, but it may be less appropriate for comparing private equity returns against those of other asset classes – particularly public equity.

When comparing public and private equity performance, it's better to use alternative metrics such as public market equivalent (PME) analysis, which aligns public market investment timing with private market capital calls and distributions.<sup>2</sup> Exhibit 2 shows a generally positive ratio of private vs. public performance, though the degree of positive performance varies greatly by vintage year.

## The broad private equity market has generally outperformed public equity

EXHIBIT 2: RATIO OF PRIVATE EQUITY TO U.S. PUBLIC EQUITY PERFORMANCE (1992–2020)

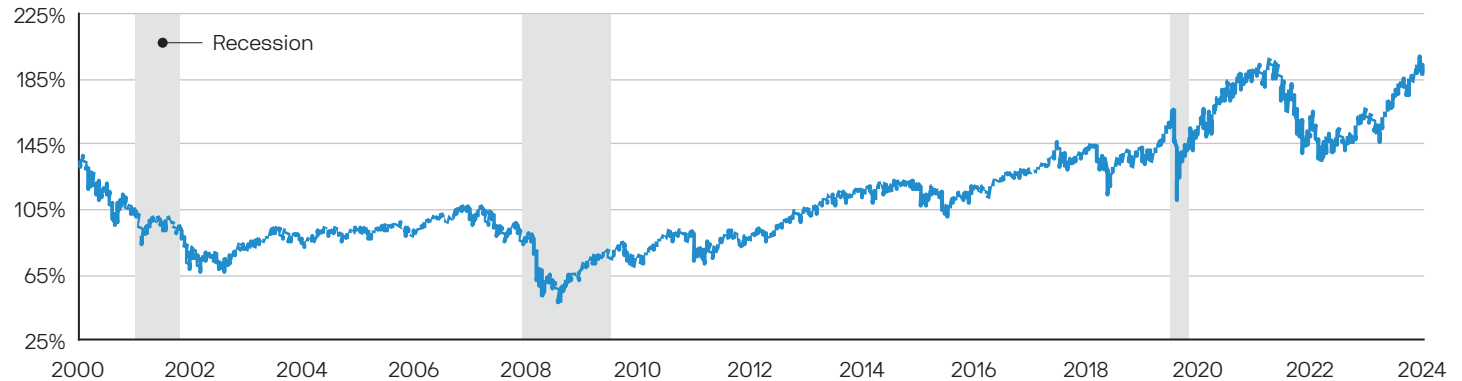


Source: Steve Kaplan (University of Chicago Booth School of Business), Burgiss, J.P. Morgan Asset Management; data as of April 30, 2024.

<sup>2</sup> In addition, the use of net long-term multiple on invested capital (MOIC) offers better cross-asset class comparability.

## The size of the U.S. equity market has grown steadily across time

EXHIBIT 3: U.S. EQUITY MARKET CAPITALIZATION AS A % OF GDP (1999–2023)



Source: Bloomberg, J.P. Morgan Asset Management; data as of August 1, 2024.

### Exploring the relationship between market size and investment opportunity

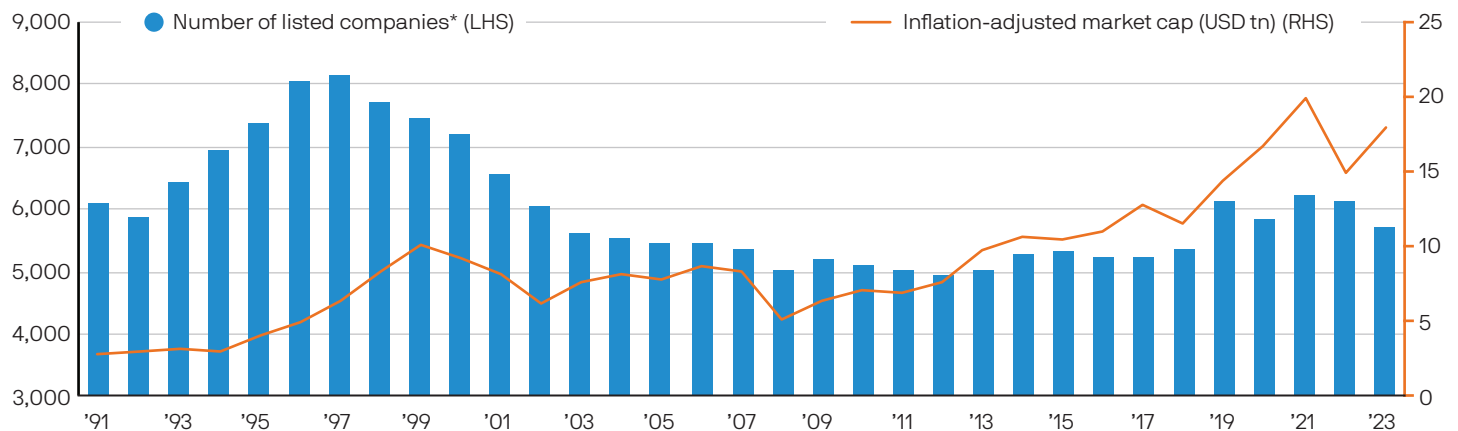
Asset allocators place considerable importance on relative returns, but they are not the only consideration. Relative market size may also be a factor when assigning weights to individual portfolio components. The vast size of global public equity markets, with a market capitalization of approximately USD 100 trillion, helps ensure that investor demand is met with adequate supply. Further, the transparency of the pricing mechanism makes valuation levels observable in real time. **Exhibit 3** shows the historical market capitalization of the U.S. equity market as a percentage of GDP..

Despite the U.S. public equity market's vast size, concerns have arisen about the declining number of public companies. One possible explanation for this phenomenon is that the decline in public listings reflects some management teams' preference to operate privately – a trend that could conceivably diminish public markets' attractiveness to investors over the long term. While some firms may indeed choose to avoid the regulatory and accounting burden of a public listing, evidence of this preference remains largely anecdotal.

**Exhibit 4** compares the number of listed companies in the U.S. with the market capitalization of the S&P 500. Although the number of listings is certainly well below its

## The long-term decline in the number of public companies has not hurt market capitalization

EXHIBIT 4: POPULATION OF PUBLIC U.S. COMPANIES RELATIVE TO THE CAPITALIZATION OF LARGE FIRMS



Source: FactSet, Jay Ritter, University of Florida, Russell, World Federation of Exchanges, J.P. Morgan Asset Management; data as of December 31, 2023.

\*Number of listed U.S. companies is represented by the sum of number of companies listed on the NYSE and the NASDAQ.



peak in the late 1990s, it has risen in recent years – an indication that public markets have not lost their appeal as a place to raise capital. And while the population of sponsor-backed companies has grown along with the PE sector overall, many of these firms will eventually enter (or reenter) public markets, either through initial public offerings (IPOs) or via sales to already-public companies.

It's important to note that the companies that remain in the public markets have become collectively more valuable, as shown in the line representing the S&P 500's rising market capitalization. Looking at this data, we expect public equity markets to remain the largest, most transparent and best-capitalized component of the global capital markets for the foreseeable future. And if some investors are truly concerned about the flow of companies from public to private ownership, they have a ready solution: They can invest in private equity.

## What does market size suggest about optimal allocations?

Private markets are a fraction of the size of their public counterparts, even after the massive growth over the past few decades. Private equity, which includes buyout, venture and growth equity subcategories, is the largest component of private markets, representing approximately USD 8 trillion in invested capital (**Exhibit 5**).

The ratio of market capitalization is approximately 10x to 20x between public equity and private equity, yet the ratio of allocated capital within institutional portfolios is often much narrower, even after accounting for the constraints imposed on alternative assets. Investors' apparent preference for private equity is strong evidence that they collectively perceive it as the superior asset class. The benefits, including higher potential returns and lower realized volatility, implicitly outweigh the drawbacks, such as illiquidity, complexity and fees.

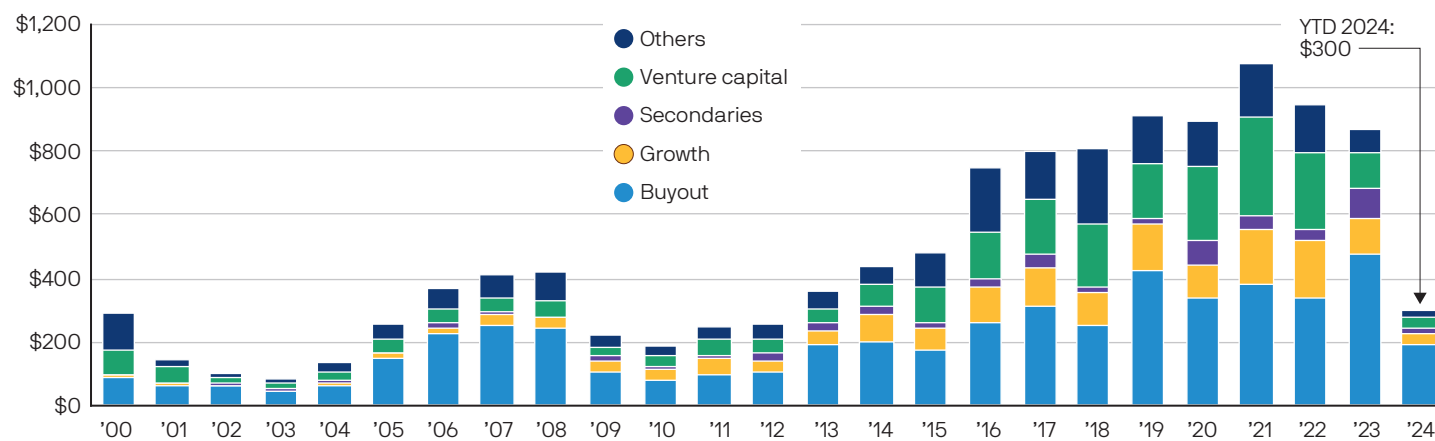
## Private opportunities may improve beyond the reach of public markets

The link between market capitalization and investment opportunity is particularly tenuous in private equity sectors that target emerging companies, where market capitalization is highly subjective. Specifically, the venture capital (VC) and growth equity sectors aim to deliver exceptional returns by investing early in a firm's life cycle, when growth prospects and uncertainty are highest.

The diverse fund complex that targets such opportunities has grown in scale and complexity over time. Today, emerging companies can access capital in sequential stages as their businesses develop, on terms that reflect confidence in their business models and growth potential. This ecosystem also provides investors

## Global private equity assets represent the largest component of all private markets

EXHIBIT 5: CAPITAL COMMITMENTS TO GLOBAL PRIVATE EQUITY ACROSS TIME (USD, BN)

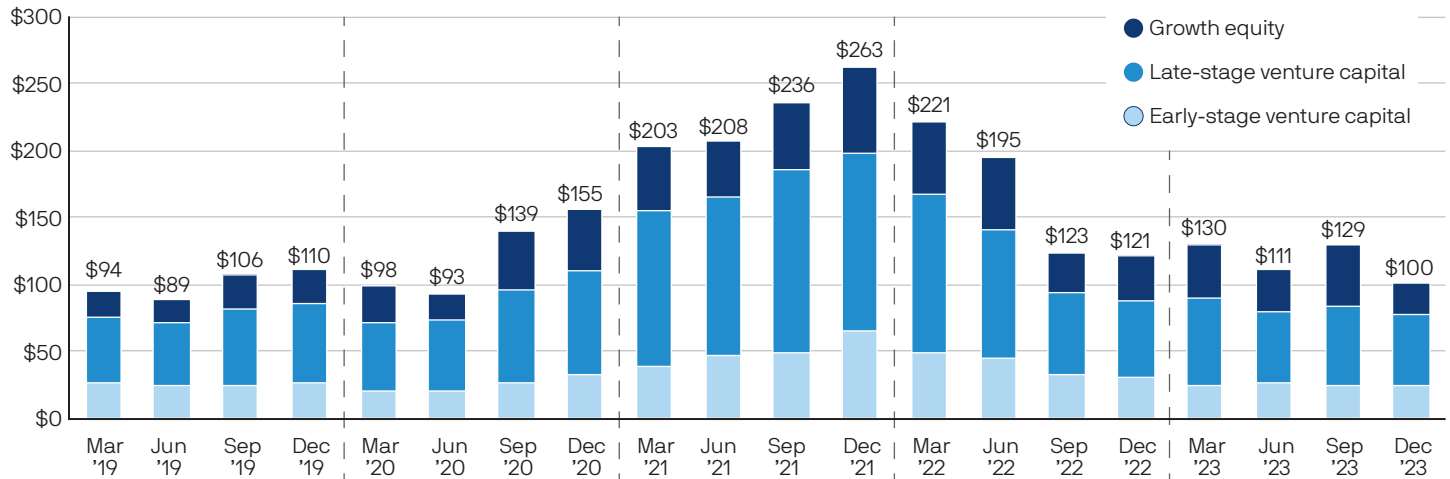


Source: Preqin, J.P. Morgan Asset Management; data based on availability as of May 31, 2024.

Notes: Buyout funds: Acquire all or a significant amount of equity in their target company, often financed by a high proportion of debt; Growth equity funds: Take minority stakes in companies, financed by all-equity deal structures; Secondary funds: Purchase existing stakes in private equity funds from other limited partners (LPs); Venture capital funds: Invest in early-stage companies with high growth potential; Others: Includes funds raised for restructuring or turnaround deals that use a combination of debt and equity financing.

## The venture and growth equity sectors allocate capital to maturing businesses

EXHIBIT 6: BREAKDOWN OF VENTURE AND GROWTH EQUITY INVESTMENT (USD BN)



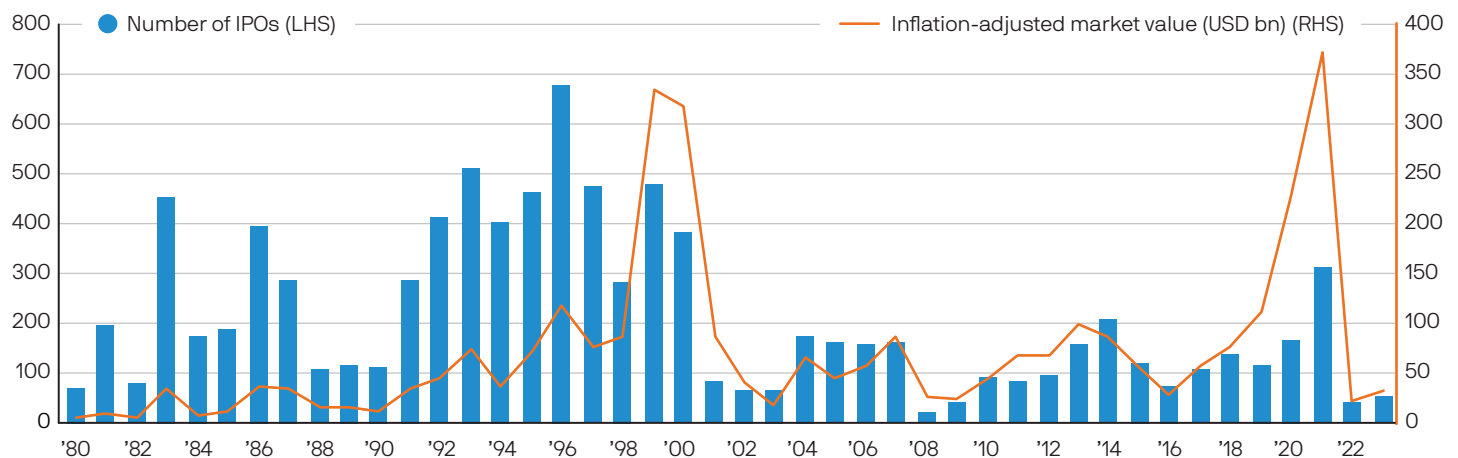
Source: Bain & Co., J.P. Morgan Asset Management; data as of December 31, 2023.

with multiple opportunities to value, reinvest and/or exit by selling their stakes to other entities. Collectively, these funds are investing around USD 100 billion per quarter, and sometimes much more, with the majority of the capital targeting more mature later-stage private companies (Exhibit 6).

The evolution of these markets has reached the point that emerging companies can now achieve greater scale and maturity while remaining private – or question the need to go public at all. Over time, companies' median market size and age at IPO has grown significantly (Exhibit 7). "Unicorns," a term for private startups with valuations in excess of USD 1 billion, have become quite common. Ultimately, this is supportive of a larger strategic allocation to venture and growth equity.

## Venture and growth equity markets are enabling the development of larger and more mature private firms

EXHIBIT 7: THE INCREASING SIZE AND MATURITY OF PRIVATE FIRMS AT THE TIME OF IPO

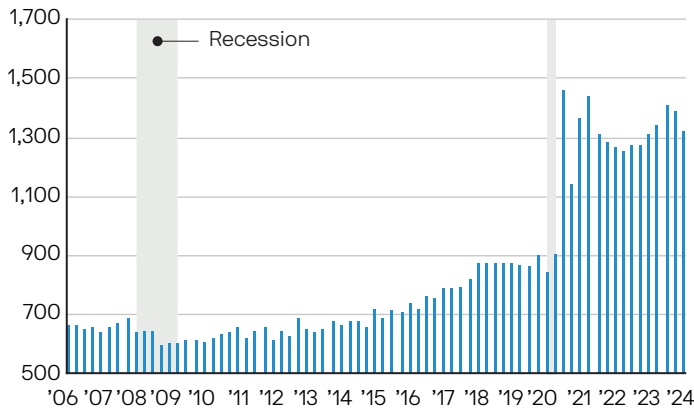


Source: FactSet, Jay Ritter (University of Florida), Russell Investments, World Federation of Exchanges, J.P. Morgan Asset Management; data based on availability as of May 31, 2024.



## The opportunity set of small and midsize private enterprises is healthy

EXHIBIT 8A: NEW BUSINESS FORMATION IN THE U.S.



Source: Bureau of Labor Statistics, U.S. Census Bureau, J.P. Morgan Asset Management; data based on availability as of May 31, 2024.

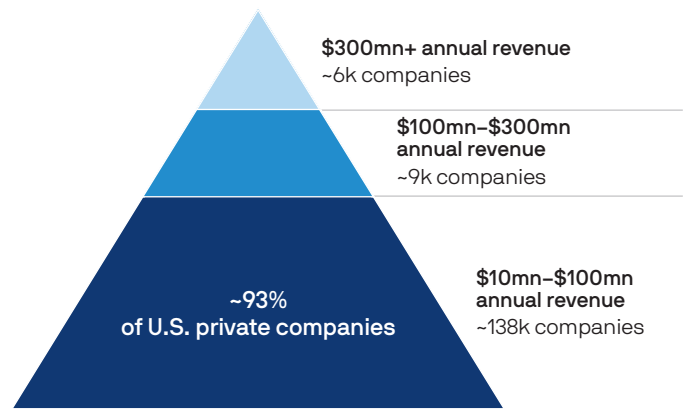
Private equity targets a second category of promising companies that have not entered the public markets: small and midsize private enterprises. These companies may have achieved viability as stand-alone businesses but lack either the capital or the in-house management skill needed to operate effectively at a larger scale. Private equity firms can provide both.

Such funds often combine multiple smaller firms into a larger business (a “roll-up” or “add-on”) rather than simply relying on organic growth from a small base. The ultimate endpoint is either a strategic sale to another company (often another sponsor-backed private firm) or a public market IPO. New businesses’ formation – and the overall population of small and middle market enterprises that have survived to become potential targets for private equity engagement – form an economic engine that powers this part of the market.

Signs indicate that this opportunity set is healthy: New business formation is at or near all-time highs (**Exhibit 8A**), and this activity supports a large population of small and midsize private companies in the U.S. (**Exhibit 8B**).

Does targeting this subset of smaller portfolio companies lead to differentiated investment performance? The answer appears to be yes (**Exhibit 9**). The top quartile of private equity managers is heavily populated by those

EXHIBIT 8B: DISTRIBUTION OF PRIVATE COMPANIES IN THE U.S. BY REVENUE (USD)

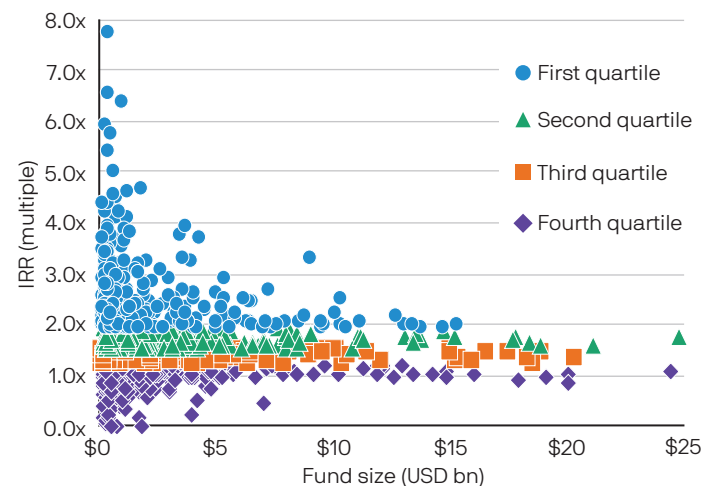


Source: FactSet, PitchBook, J.P. Morgan Asset Management; data based on availability as of July 31, 2024.

with fewer assets under management (although the same can be said of the bottom quartile). For investors, the key takeaway may be that they’re less likely to find top-performing managers among the largest funds.

## Top-performing private equity funds are generally smaller in size

EXHIBIT 9: DISTRIBUTION OF PRIVATE EQUITY MANAGER PERFORMANCE BY QUARTILE AND FUND SIZE (USD, BN)



Source: PitchBook, J.P. Morgan Asset Management; data as of September 30, 2023.

Notes: Sample size analysis of 1,690 global private equity funds, vintage years 2003 to 2021, fund sizes between \$100mm and \$25bn USD.

We see some logical reasons for this performance bias:

- Smaller funds that want to maintain sufficient diversification in their portfolios must operate within this universe of small and midsize target companies.
- Smaller target firms are more likely to be capital constrained, inclining them to respond favorably to the addition of growth capital.
- Strategic M&A opportunities are more abundant, given the number of competitors and potential for geographic expansion.
- A sponsor's operational expertise can fill gaps that the legacy in-house management cannot.







## Part two

# Comparing public and private equity is not so simple

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How should investors think about the magnitude of the performance differential between public and private equity? To begin with, even comparing historical performance can be challenging, given the different methods for characterizing PE returns and the complexities involved in constructing a representative benchmark across time.<sup>3</sup>

Nonetheless, backward-looking analysis suggests that private equity's average annual outperformance relative to passive public equity benchmarks has been approximately several hundred basis points across time. As noted, this range masks potentially significant manager dispersion, and in some cases the private equity performance data is drawn from the returns of sophisticated investors that have been able to achieve above-median performance.<sup>4</sup>

But is a passive public benchmark even the best basis for comparison, considering that PE funds are in no way trying to replicate the risk characteristics of the broader equity market? Investors have the ability to employ more tailored approaches to public equity that capture sector weights and individual firm characteristics similar to those targeted by buyout funds. This type of active public equity portfolio could potentially narrow the return differential to private equity.

To explore these questions, we ran an analysis of private equity funds' investments to identify sector over- and underweights as well as firm-level financial characteristics. When combined in a proxy benchmark, this tailored, "PE-like" public market portfolio appears to offer a meaningful improvement vs. a passive approach. While not enough to fully offset the performance advantage of private equity, it suggests that the gap can be narrowed.

## Leveraged buyout strategies offer the clearest overlap with public equity markets

Unlike managers in the venture and small-market buyout sectors that focus on opportunities largely outside the public markets, leveraged buyout (LBO) managers frequently target companies that are already public. This presents

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<sup>3</sup> Market participants use a range of methods for calculating PE returns, including IRR, MOIC, time-weighted rates of return and public market equivalents.

<sup>4</sup> To cite two examples, Cliffwater offers a comparison of 23-year returns (2000–23) between public equity (the Russell 3000 Index) and an equal-weighted average of 19 state pension funds that reported private equity returns over the period. At the end of 2023, the return differential was 480bps annualized. Cambridge Associates, using a broader data set including more than 9,000 PE funds across 2,300 managers, arrived at a 25-year performance advantage vs. the Russell 3000 of 445bps annualized.

an opportunity to analyze a large sample of these “take-private” transactions for insights into LBO funds’ preferences for sectors and financial characteristics.

We compared the sector alignment of private equity portfolio companies with the sector exposures of the Russell 2000 Index, identifying preferences by sector over- and underweights. Technology constituted the largest sector overweight by far, while financials, energy, real estate and utilities accounted for the largest underweights (**Exhibit 10**).

### There are clear differences between private funds’ holdings and passive benchmarks

**EXHIBIT 10: SECTOR WEIGHTINGS ACROSS PUBLIC EQUITY AND PRIVATE EQUITY MARKETS**

GICS sector	U.S. private equity	Russell 2000
Technology	37.1%	12.7%
Industrials	15.1%	14.7%
Health care	14.1%	16.4%
Consumer discretionary	10.5%	9.9%
Financials	7.4%	17.1%
Communication services	5.9%	2.9%
Materials	3.4%	4.0%
Consumer staples	3.3%	3.6%
Other*	3.2%	18.6%

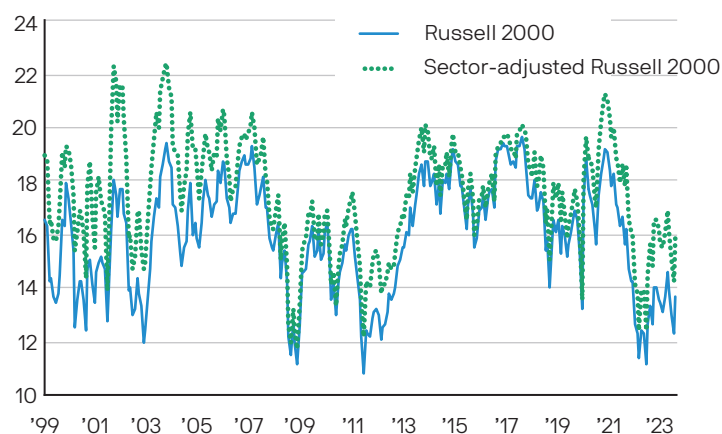
Source: J.P. Morgan Asset Management; data as of June 30, 2022.

\*Other includes real estate, utilities and energy.

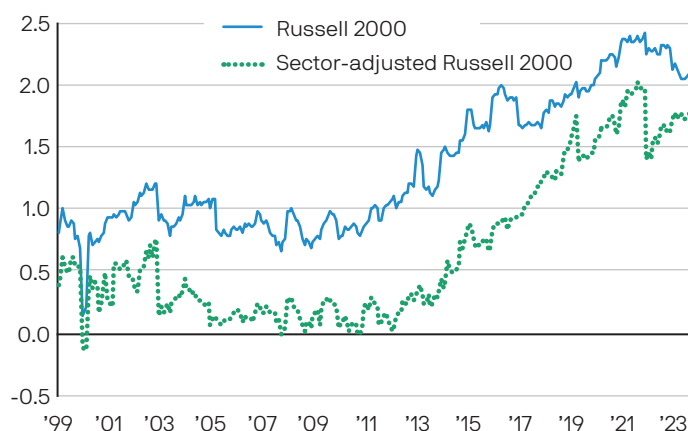
To see what effect these different sector weights would have on a diversified portfolio of public stocks, we reweighted the Russell 2000 at the PE sector weights and evaluated the impact on key financial metrics (**Exhibits 11A, 11B and 11C**). Over time, the reweighted portfolio exhibited consistently higher valuations, along with less leverage and higher interest coverage. This pattern was broadly consistent with firms in higher growth sectors that had conservative balance sheets and strong cash flow – a rational combination for most LBO transactions.

### Over time, private equity’s preferred sectors exhibit differentiated financial characteristics

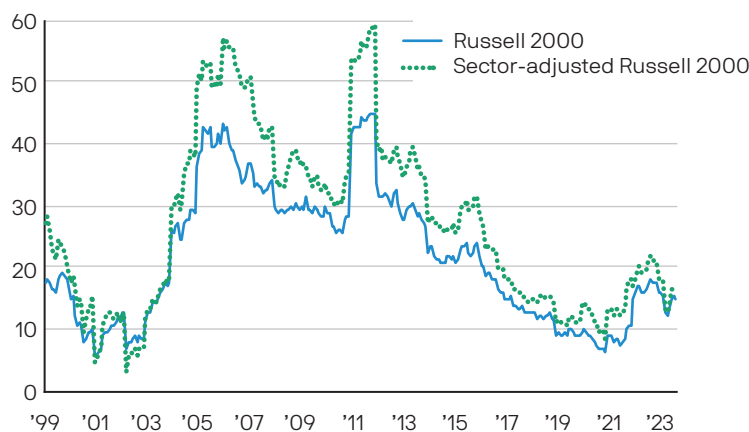
**EXHIBIT 11A: INDEX VS. SECTOR-ADJUSTED P/E RATIO**



**EXHIBIT 11B: INDEX VS. SECTOR-ADJUSTED NET DEBT-TO-EBITDA RATIO**



**EXHIBIT 11C: INDEX VS. SECTOR-ADJUSTED INTEREST COVERAGE RATIO**



Source: FactSet, Russell 2000 & Sector-adjusted Russell 2000 data as of November 30, 2023.



Selecting stocks like a private equity manager

In the second phase of the analysis, we homed in on the business characteristics of actual LBO acquisition targets. To do this, we examined roughly 6,000 M&A transactions by private equity firms since 1993 and identified approximately 1,000 public-to-private transactions (with a minimum value of USD 10 million). We then isolated the financial characteristics of the companies in this subset.

We found that private equity managers generally targeted firms that had higher sales and profitability, and lower capital expenditure needs – two attributes that suggest an ability to support the leverage required in an LBO transaction.

We then went a step further, to determine whether a subset of these companies would outperform the broader market. Using the top quintile (20%) of stocks that best fit our sample’s characteristics, we created a synthetic “private equity” index and compared its performance with that of the Russell 2000. From 2000–23, the synthetic index delivered annual returns of 12.85% relative to the Russell 2000’s 9.37%.

Volatility metrics also differed markedly. Although the synthetic index’s volatility over that time horizon was higher than the Russell 2000’s (22.22% vs. 20.47%), the return improvement nonetheless produced a higher Sharpe ratio, a measure of excess return relative to investment risk over time (Exhibit 12).

A portfolio designed to mimic private equity LBO targets may outperform the broader public benchmark

EXHIBIT 12: PERFORMANCE COMPARISON OF THE FULL MARKET VS. SYNTHETIC PE SUBSET (JANUARY 2000–DECEMBER 2023)

Performance metric	Russell 2000	Synthetic PE
Annual return	9.37	12.85
Volatility	20.47	22.22
Sharpe ratio	0.46	0.58

Source: J.P. Morgan Asset Management; data as of December 31, 2023.

Our purpose in this analysis is not to suggest that using historical data on PE transactions is the best way to build forward-looking equity portfolios. But the data do suggest that some of private equity’s outperformance is actually the result of measuring it against a public benchmark that differs in key respects.

A concentrated public market portfolio following the basic logic of private investing may be able to capture a portion of the outperformance normally attributed to private equity investment skill. This is a potentially significant finding: The case for private equity remains compelling, but its advantages over the public markets may not be as strong as the standard view has held.

But returns are only part of the picture – what about private equity’s lack of volatility? While it is true that a private equity portfolio may exhibit much lower realized volatility than public stocks, this difference is largely the result of infrequent valuations rather than lower investment risk. Adjusting for this phenomenon by unsmoothing PE valuations often leads to “modeled volatility” in the mid-teens.

Even at this higher volatility, the case for investing in private equity remains very strong. But a simple comparison of historical returns and volatilities may miss the point: Public and private equity – with their differing liquidity, complexity and manager dispersion – are distinct asset classes with advantages and disadvantages that fall outside the scope of traditional asset allocation models.



## Part three

# The challenge of maintaining an efficient private equity allocation

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Private equity places unique demands on managers (general partners) and investors (limited partners) looking to capture the potentially exceptional returns of this asset class. To reach their desired return targets, both managers and investors must execute a series of complex operations. Capital must be raised, called, invested, monetized and distributed within a finite time horizon and against a changing macroeconomic and market environment.

Recent signals indicate that private equity's finely tuned mechanism, which delivered steady returns for decades, is running below its potential. The current market environment has thrown sand in the gears: Uninvested capital ("dry powder") is building up, investment time horizons are extending due to declining exit activity, and distributions to investors have slowed. The net effect of these forces will be downward pressure on returns.

To illustrate the challenges, we consider several phases of this process in sequence:

1. Capital raising and the accumulation of dry powder
2. Financing costs and deal economics
3. Adding value prior to exit
4. Distributing capital to limited partners

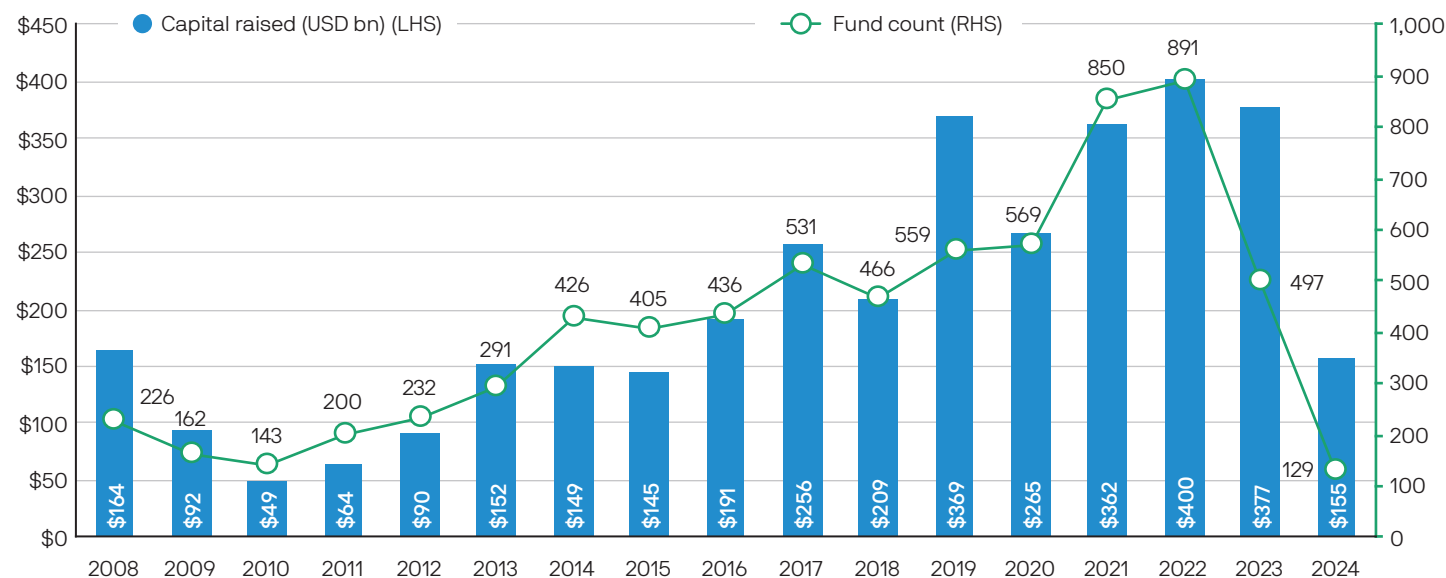
### Step 1: Capital raising and the accumulation of dry powder

Recent market volatility has had only a modest impact on the private equity industry's ability to attract investor capital. **Exhibit 13** shows the growth of PE fundraising over the past decade, including both the total amount and the number of funds in the market. In the most recent year, 2023, the total capital raised was just below the all-time high, set in 2022. Data for the first half of 2024 suggests that inflows may be starting to slow, but only relative to recent years' historically high levels.

Clearly, investors have a powerful appetite for the asset class. The sharp decline in the number of funds, however, suggests that investors are favoring larger commitments to larger funds in today's market environment. The challenge for these managers, therefore, is not sourcing capital but, rather, identifying attractive investments. To some extent, this difficulty is a natural result of a larger industry, with more managers hunting for deals. It also reflects a market environment in which financial conditions make the economics of leveraged acquisitions more challenging.

## Investor appetite to commit capital to private equity remains strong

EXHIBIT 13: U.S. PRIVATE EQUITY FUNDRAISING ACTIVITY (USD, BN) AND FUND COUNT



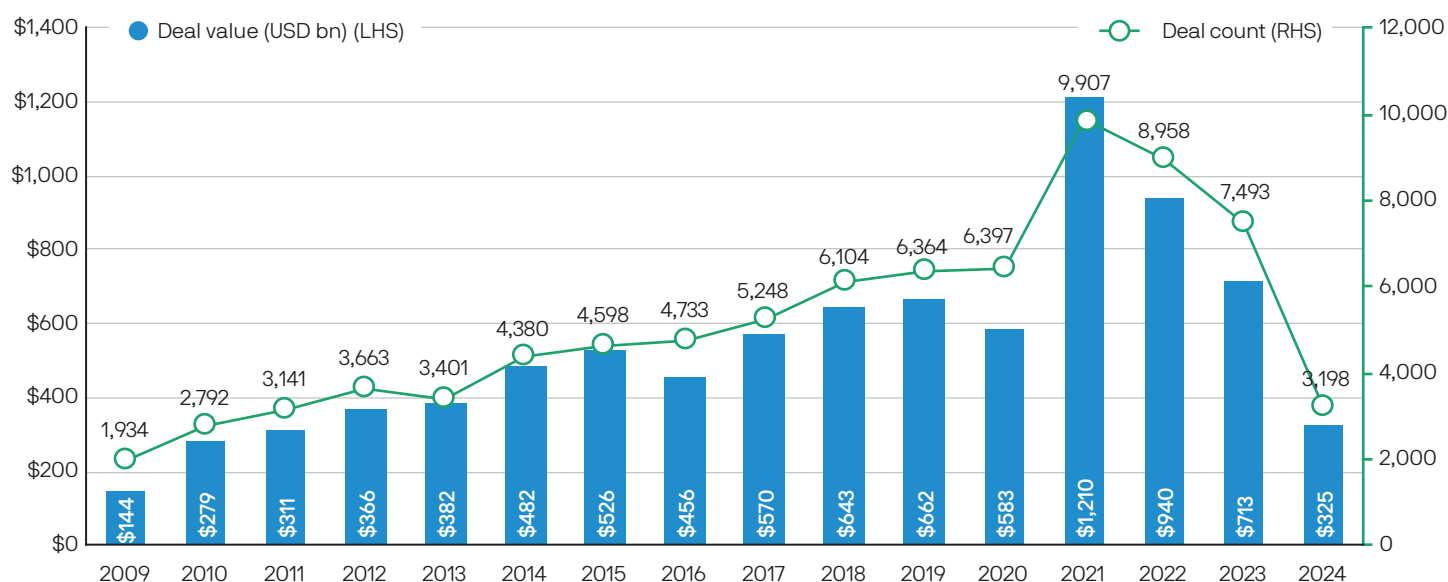
Source: PitchBook, J.P. Morgan Asset Management; data as of July 24, 2024.

The difference between capital raised in recent years and capital invested is dry powder. Whereas Exhibit 13 showed that the inflow of capital remains healthy, **Exhibit 14** illustrates the recent decline in deal

activity in global buyout funds. Since a massive spike in 2021, deal volume has declined sharply. Without a return to much higher levels of activity, the backlog of uninvested capital will become harder to clear.

## The recent decline in deal activity presents a long-term challenge

EXHIBIT 14: U.S. PRIVATE EQUITY DEAL ACTIVITY BY VALUE (USD, BN) AND DEAL COUNT

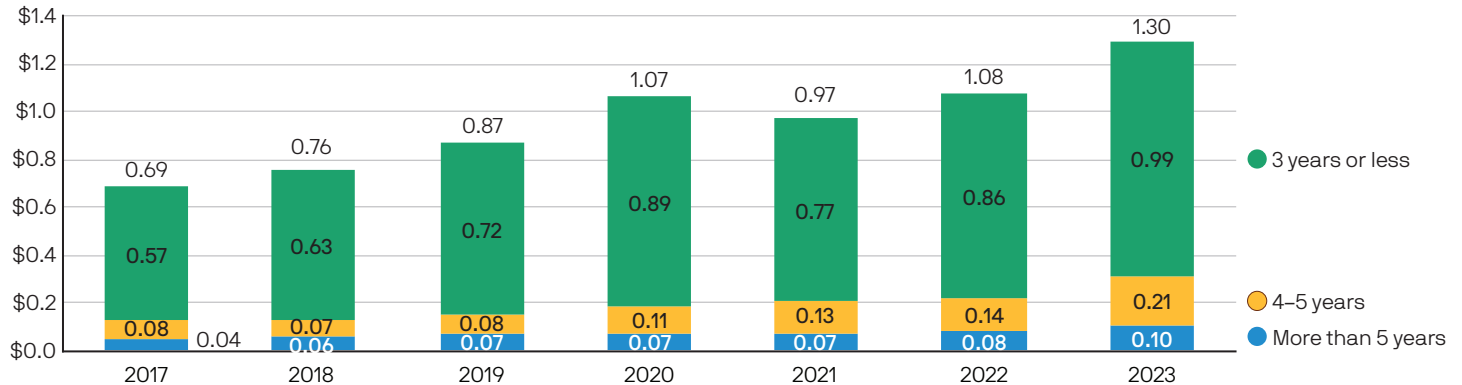


Source: PitchBook, J.P. Morgan Asset Management; data as of July 24, 2024.



## Uninvested dry powder has been growing (stale)

EXHIBIT 15: GLOBAL DRY POWDER, BY YEARS SINCE THE CAPITAL WAS RAISED (USD, TN)



Source: Bain & Co, J.P. Morgan Asset Management; data as of December 31, 2023.

The net result? Across the industry, dry powder is becoming increasingly stale as it sits uninvested for years (**Exhibit 15**). The impact on stated fund returns may appear modest, since the IRRs only account for returns on invested capital, but limited partners may pay a real price over time in the form of lower returns as their capital remains uncalled and must be stored elsewhere. In many cases, investors also pay fees on committed capital that has yet to be called.

## Step 2: Financing costs and deal economics

One factor that may be delaying the investment of committed capital is the substantial increase in the cost of financing as interest rates have risen and the syndicated loan market has declined (**Exhibits 16A and 16B**). In the past two years, LBO financing costs have risen from less than 6% to more than 10%, radically changing the economics of the business by reducing expected returns and making marginal deals unattractive. At the

## Financing leveraged buyouts has become more costly as loan issuance has declined

EXHIBIT 16A: LBO FINANCING YIELDS

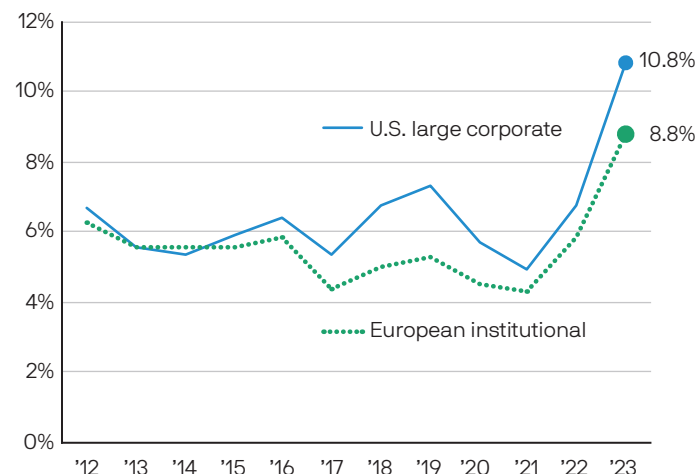
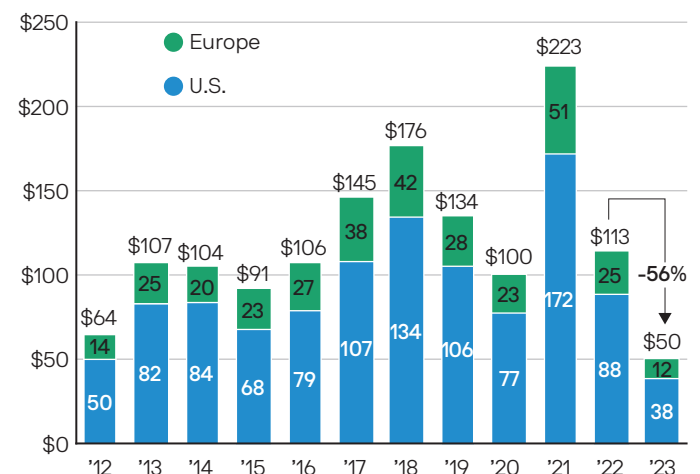


EXHIBIT 16B: SYNDICATED LBO LOAN ISSUANCE (USD, BN)

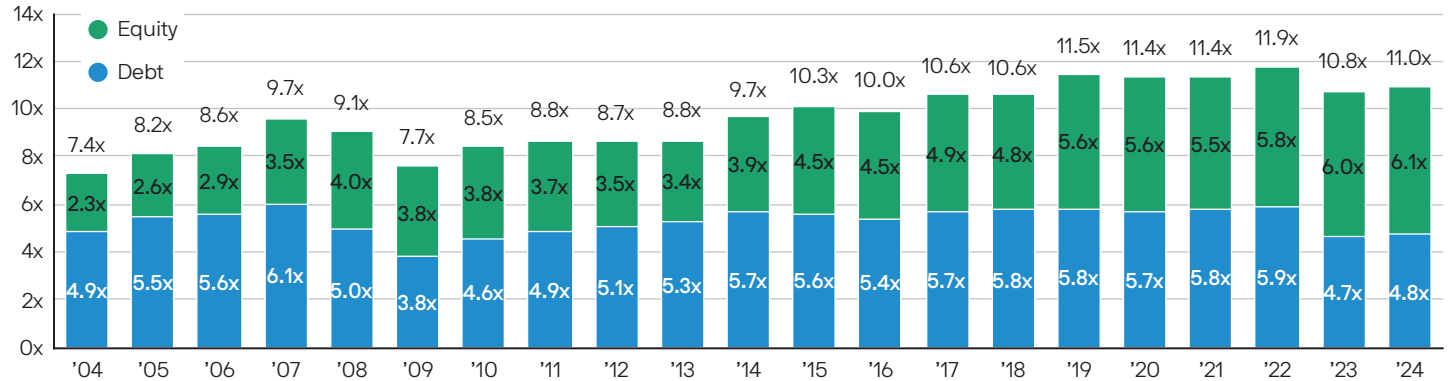


Source: Bain & Co, Leveraged Commentary & Data, London Stock Exchange Group, J.P. Morgan Asset Management; data as of December 31, 2023.

Notes: European institutional spread includes all tracked LBO deals, regardless of size; U.S. large corporate defined as LBOs with more than USD 50 million in EBITDA; European syndicated loan volume converted using euro/USD conversion rate of 1.076.

## As financing costs have increased, the use of leverage has declined

EXHIBIT 17: LEVERAGED BUYOUT FINANCING AND PURCHASE MULTIPLES



Source: Golub Capital, PitchBook, LCD, J.P. Morgan Asset Management; data as of March 31, 2024.

same time, the pivot from bank-led syndicated loans to private direct lending has tilted financing terms in favor of lenders. It is not a coincidence that investors have been eagerly allocating to private credit funds that are positioned to capture a greater portion of the economics.

With borrowing more costly, LBO deals are using less leverage and sponsors are committing more equity.

**Exhibit 17** illustrates both the mix of debt and equity used to finance acquisitions and the leverage ratio expressed as the level of debt and equity over trailing EBITDA.

While declining, leverage in private equity is materially higher than in most public companies and relies more on floating rate financing. Reducing leverage may be a necessary response to higher borrowing costs, but that shift will reduce potential returns unless sponsors can find other means of increasing value.

Going forward, the dispersion of private equity fund performance will be driven to a greater extent by differences in managers' ability to improve operations, which is less dependent on borrowing. Conversely, financial engineering may play a reduced role.

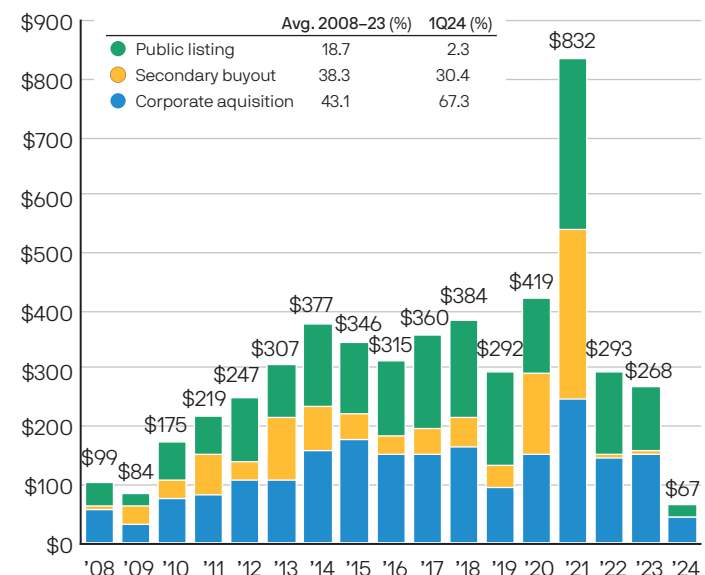
### Step 3: Adding value prior to exit

The clock starts for a fund's performance at the time capital is invested. Managers must make a concerted effort to add value and exit individual holdings at a positive multiple of invested capital. The sooner they can sell at a reasonable multiple, the higher the IRR generated by the fund.

Today's challenge is that higher levels of initial equity – and reduced initial leverage – make it more difficult to reach an attractive exit multiple. Meanwhile, exiting has become appreciably harder: The IPO window has been restricted for two years, and the limited number of deals taking place have been secondary sales to other buyout firms or corporations (**Exhibit 18**).

### Exit activity – most notably via the IPO window – has fallen off in recent years

EXHIBIT 18: PRIVATE EQUITY EXITS BY SIZE (USD, BN) AND TYPE



Source: PitchBook, J.P. Morgan Asset Management; data are as of March 31, 2024.

Step 4: Distributing capital to limited partners

Inevitably, lower exit activity results in a decline in the amount of capital being distributed to limited partners. That distribution total is now less than the amount of capital being called (**Exhibit 19**). This difficult dynamic challenges investors’ ability to maintain vintage year diversification and limits their ability to rebalance out of private markets and back into public markets.

Although net flows are not quite at their lowest levels ever, the last time they were equally weak was during the global financial crisis of 2008–09. Considering how much the private equity industry has grown, the cash flow problem may be far more consequential today.

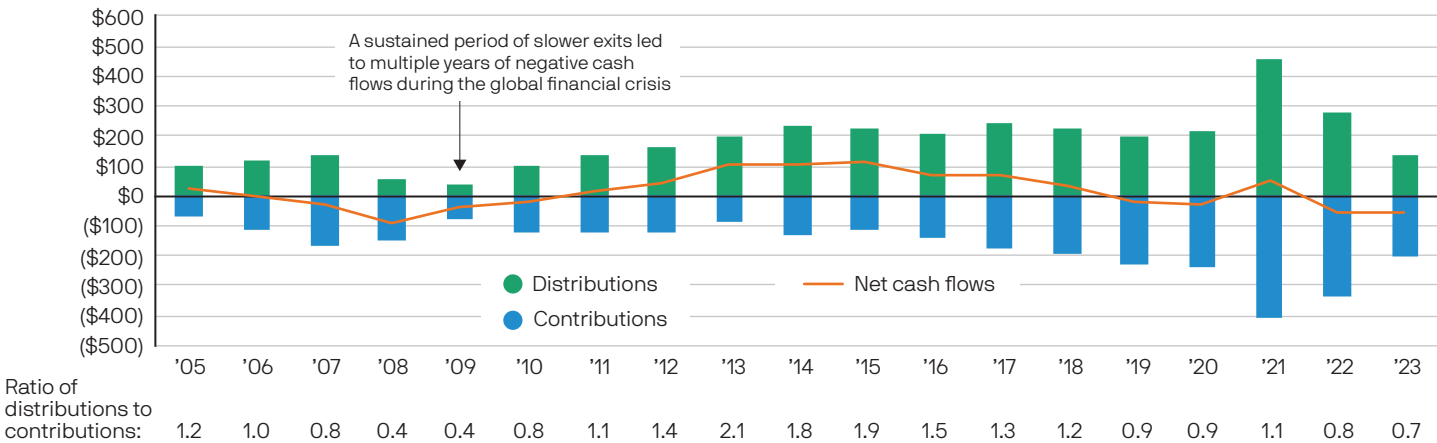
In fact, the underlying liquidity conditions for private equity funds may be worse than Exhibit 19 implies, because the industry has been ramping up the use of borrowing against fund assets to maintain capital distributions even at this limited level. These loans, which are generally cross collateralized across a fund’s holdings, represent a great opportunity for private lenders but are much less compelling for fund investors. Borrowing at high cost against one’s own assets to maintain the pace of distributions is an inefficient capital allocation decision.

In short, today’s private equity market could use some recalibration. A large amount of dry powder awaits investment, slowing the deployment of future fund vintages. Higher financing costs and less generous lending terms are depressing the number of deals, while holding periods extend as exits become more difficult. As a result, distributions have dropped off, often leading to costly borrowing against the fund.

Are these challenges permanent? Probably not. Will they take several years to work through the system and leave investors with returns below those of recent decades? Almost certainly yes. But predicting the returns on current fund vintages that still have many years to run is a difficult task at best. Underlying investment opportunities remain, and general partners that have demonstrated their ability to add value at the operating level should be able to exit profitably in the future. In our view, counting out private equity as an asset class would be a mistake.

Declining distributions have resulted in a negative net cash flow to limited partners

EXHIBIT 19: PRIVATE EQUITY NET DISTRIBUTIONS (USD, BN)



Source: Bain & Co., MSCI, J.P. Morgan Asset Management; data based on availability as of March 31, 2024. Note: 2023 represents aggregation of distributions, contributions and net cash flow 1Q–3Q 2023.





## Part four

# The consequences and costs of illiquidity

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Allocating capital to illiquid private strategies may improve returns and diversification, but it can also impose costs that are felt elsewhere in the asset allocation. Starting from the baseline assumption that private assets earn higher returns in part because of their illiquidity, it stands to reason that these costs should be booked, in a sense, against that illiquidity premium. In extreme circumstances, these costs may, at least temporarily, outweigh the return advantage of private assets.

Illiquidity in private assets imposes costs in three ways:

1. **Strategic allocation drift:** During periods of extreme market volatility, the relative size of the private asset portfolio may increase as public market holdings decline in value – the so-called denominator effect – leaving the overall portfolio out of balance with its desired strategic allocation and unable to rebalance.
2. **Paying for liquidity:** The need for ready liquidity to pay obligations, and the limited ability to obtain that liquidity from private markets, forces investors to use public market portfolios to manage liquidity across time, regardless of current market conditions or allocation considerations.
3. **Opportunity costs:** During a market downturn, when attractive entry points in public markets increase the probability of high future returns, investors may be limited in their ability to source capital from private strategies to take advantage.

The combined sell-off in stocks and bonds in 2022 provided a real-world demonstration of how illiquidity can contribute to portfolio imbalances and constrain investors from responding in the most effective ways.

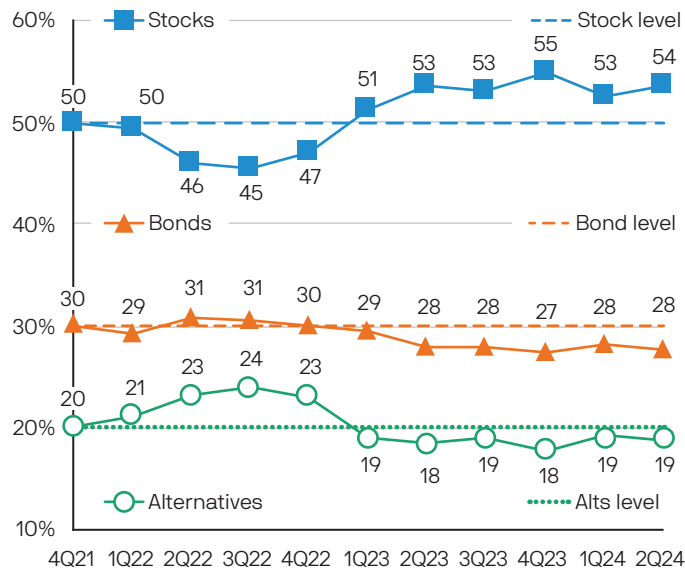
### The denominator effect

**Exhibit 20** illustrates the allocation drift in 2022, showing how a hypothetical asset allocation with a 20% target for alternatives would have seen a 5 percentage point drift to 25%, or a 25% increase relative to its own starting point.

It's possible that some investors may view this drift as immaterial or are willing to remain misallocated relative to their strategic benchmark for long periods, but deciding to adopt such stances after the fact is clearly suboptimal. In fact, Exhibit 20 likely understates the problem, because most institutions have regular obligations (pension benefits, institutional support, grants and charitable donations) that must be paid out on a fixed schedule. Satisfying these obligations from public market assets pushes the allocation even further out of alignment and prolongs the period of time in which the portfolio is misallocated.

## When markets turn volatile, the relative size of the PE portfolio may increase

EXHIBIT 20: THE DENOMINATOR EFFECT ON A 50/30/20 PORTFOLIO\* OVER TIME



Source: Bloomberg Finance LP, Burgiss, FactSet, National Council of Real Estate Investment Fiduciaries (NCREIF), S&P Global, J.P. Morgan Asset Management; data based on availability as of June 30, 2024.

Notes: Analysis shows change in portfolio weightings due to market performance on a quarterly basis. The 50/30/20 portfolio represents starting weights of 50% equity, 30% bonds and 20% alternatives, with 6.7% in real estate, private equity and hedge funds. Data for the private equity allocation in 2Q24 equals the 1Q24 figure. Examples used are hypothetical and shown for illustration purposes only.

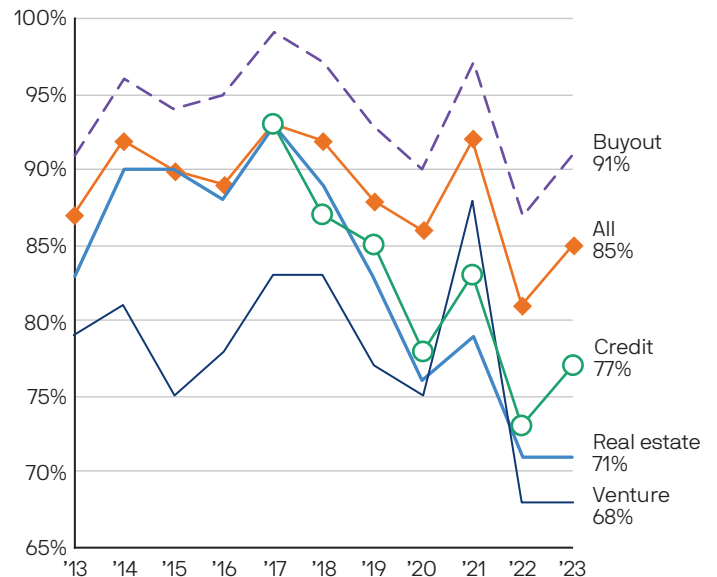
## Paying the cost of maintaining liquidity

Investors understand that private alternatives are not meant to provide a source of ready liquidity and that other parts of the portfolio – specifically, public markets – are better suited to this purpose. But allocation models don't assign a positive value to this critical function.

What if private assets had to provide liquidity? It's not a hypothetical: The cost of short-term liquidity in private markets can be observed in the prices of secondary market transactions of limited partner stakes. **Exhibit 21** shows the prevailing prices for secondary transactions across a range of alternative investment categories, these assets often trade at a significant discount to their stated net asset value. The sharp decline in secondary market prices in 2022 effectively put this potential source of liquidity off limits.

## A sharp decline in secondary pricing in 2022 affected a range of private assets

EXHIBIT 21: SECONDARY MARKET PRICING\* OF PRIVATE FUNDS



Source: Greenhill & Co., Jefferies Group, J.P. Morgan Asset Management; data based on availability as of May 31, 2024.

Note: Secondary pricing of limited partners' portfolios.

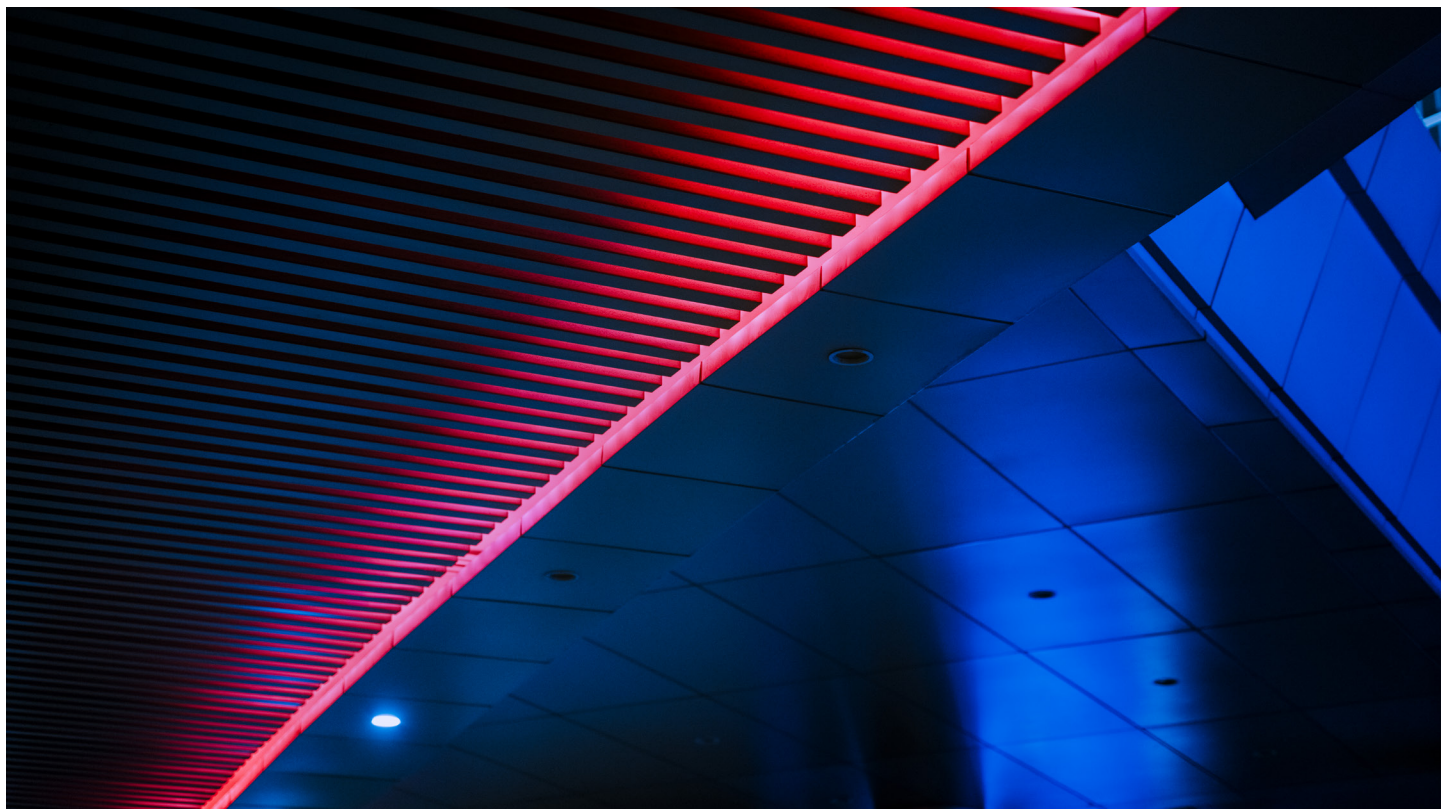
By allowing private capital to stay invested when obligations come due (or market conditions would favor a rebalancing) and thus avoiding costly secondary market transactions, the liquid portfolio is effectively subsidizing the illiquidity premium those private assets may earn over time. This is by design, of course, but it reinforces the fact that simple asset class return comparisons often miss key elements of how portfolios operate in the real world. Assuming a large return premium for private assets without simultaneously acknowledging the value of the subsidy may lead to inefficient capital allocations.

## The opportunity cost of delayed rebalancing

Strategic asset allocation relies on investors' ability to rebalance across time. Selling assets that have outperformed and buying assets that have underperformed can add significant value. But private investments are largely excused from this process because they cannot provide liquidity in real time or at a reasonable cost.

But the opportunity cost associated with being unable to rebalance increases during periods of market volatility. At such times, valuations may be extremely cheap and forward-looking returns may be high. What happened in 2022 is a textbook example: Capital invested in the S&P 500 at the market low in October would have earned more than 40% through May 2024 (before dividends).

The natural portfolio "overweight" at this moment was private assets, but investors found it hard to justify selling private funds because of the high transaction costs. As a result, many investors failed to rebalance and missed out on some historically attractive returns.





# Key conclusions

All equity investments – public and private – share fundamental drivers of returns. There is a powerful case to be made for including both public and private equity in strategic asset allocations, because each asset class has delivered strong returns over multiple market cycles. However, common asset allocation models have difficulty reconciling the fundamental differences in volatility and illiquidity that characterize them – leaving investors unsure of how to allocate.

Given the clear evidence that illiquidity can bring not only higher returns but also real costs, investors may want to deploy capital to private assets more selectively. Given this, private equity may be most valuable when it is directed toward sectors that have the least in common with public equity markets. Private equity sectors that overlap more directly with public markets may be less efficient on a relative basis.

Investors have become accustomed to thinking about the trade-offs between returns and volatility across asset classes, but they have been less focused on the trade-offs between liquidity and illiquidity. A more complete understanding of these complexities will no doubt improve the efficiency of the capital allocation process.

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