The Benchmark Gap: Why UK Pension Savers Deserve a Market Standard for Private Markets

Closing the fiduciary blind spot with privateMetrics®— A true private market indices

October 2025

Executive Summary

A revolution is underway: UK pension schemes are committing up to 10% to private markets under the Mansion House Accord, representing a historic £400+ billion shift in capital allocation that will reshape Britain's investment landscape for decades to come. This is an increase from the Mansion House Compact where the Compact focused on a 5% allocation to unlisted equities without a domestic requirement. This shift will require tools and data to select and benchmark private asset funds.

Benchmarking funds and fund managers using peer group benchmarks is fundamentally flawed: Traditional quartile rankings fail to distinguish between market-driven returns and genuine manager skill, creating dangerous blind spots that mask underperformance and justify unjustifiable fees. privateMetrics® indices are built using a bottom-up approach and create the missing market standard by isolating pure market outperformance (alpha) from a fund's beta (market risk), enabling truly informed investment decisions. **This supports not only improved manager selection but can also help tie compensation to genuine value added (alpha), reducing fees.**

Manager selection trumps asset allocation as the first order question: Our analysis of 600+ buyout funds reveals that there is a huge performance gap between top and bottom-tier managers, overshadowing any potential gains from strategic asset allocation decisions alone. Picking the wrong managers (or their funds) can have material consequences for an individual pensioner, leading to a shortfall in savings when reaching retirement age.

The cost of inadequate benchmarking is considerable: Failing to identify and select managers with genuine alpha-generating capabilities may lead to an individual pensioner having substantially less wealth at retirement age. Based on our case study of an individual DC plan participant, **this shortfall can range from £215 thousand to £339 thousand by retirement.** This could reduce monthly pension draws by £1,300 to £2,000. This case assumes the individual invests in a target date solution, like NEST Pensions' default option, but with a private equity sleeve, under varying alpha scenarios.

The Mansion House Mandate: What is the most important question now?

The UK Government's ambition to channel Defined Contribution (DC) pension savings into productive investment has reached a significant new milestone with the announcement of the Mansion House Accord. Building on the 2023 Mansion House Compact, the Mansion House Accord unites 17 of the country's largest pension providers around a shared commitment: to allocate at least 10% of their default DC funds into private markets by 2030, with half of this capital directed into UK-based assets.[1] This is double the allocation planned under the previous plan, which called for on a 5% allocation to unlisted equities, without any domestic requirement.

The UK Government expects the new agreement to create £50 billion of new investment in the economy and to contribute to raising productivity (UK Government, 2025). From the perspective of the pension system, the plan is expected to help diversify portfolios and potentially enhance returns, as illustrated by the experience of pension plans in Australia and Canada, that have historically allocated high proportions of their portfolios to their domestic private markets and reported attractive returns.[2]

Investment professionals know well that with most traditional asset classes, choosing an allocation target is the most important question they have to answer: over the long term, asset allocation drives 90% of investment outcomes,[3] first because the risk-adjusted profile of a portfolio is a determined by its exposure to rewarded risk (betas) and, second because risk premia revert to the mean over time.

However, when it comes to private markets, this wisdom does not hold. Investors cannot "buy the market" or ensure an exposure to a broad, diversified portfolio of private equity or private infrastructure investments. **Instead, investing in private market means exposure to a concentrated basket of individual bets that may or may not pay off. By construction, private market investment is more about Alpha, and selecting funds and managers who generate positive alpha is now the first order question.**

Given the very significant dispersion of outcomes found in private investment funds, and the difficulty to build robust, informative peer group benchmarks, the best way to select private asset managers and funds that can deliver the objective of improving risk-adjusted portfolio returns based is to measure their alpha relative to the underlying market they invest and the exposure to market risk (the fund beta).

[1] https://www.abi.org.uk/globalassets/files/subject/public/lts/2025/mansionhouseaccordmay2025.pdf
[2] Australia's superannuation funds typically allocate 15-25% of their portfolios to private markets, with significant domestic investment.
[3] Brinson, G. P., Hood, L. R., & Beebower, G. L. (1986). "Determinants of Portfolio Performance." Financial Analysts Journal, 42(4), 39–44. https://doi.org/10.2469/faj.v42.n4.39. Brinson, G. P., Singer, B. D., & Beebower, G. L. (1991). "Determinants of Portfolio Performance II: An Update." Financial Analysts Journal, 47(3), 40–48. https://doi.org/10.2469/faj.v47.n3.40

Manager selection in private markets sometimes relies on peer group benchmarking, using quartile rankings of Internal Rate of Return (IRR) or Total Value to Paid-In (TVPI). This is flawed on at least two counts: first, it does not distinguish between beta and alpha but instead conflates all sources of performance that may explain the fund return. This makes it impossible to know if a manager is skilled or lucky. Second, there is typically too little peer group data available to create robust benchmarks, which are either very noisy or not representative of the funds being benchmarked.

Instead, private asset funds and managers should be selected on the basis of their ability to (1) deliver at least the market return (beta) and (2) outperform the market.

Recent research confirms that performance in private markets is far more dependent on manager selection than on asset allocation decisions alone.[4] This research shows that, when benchmarked against the relevant underlying market for private assets, the average private fund returns zero net alpha. Moreover, half the funds in a large sample spanning the past decade return negative alpha i.e., less than the market return.

While investing 10% of UK pension plans in private markets is a good idea at a high level of generality, in practice, if not done using the right reference benchmark to select the best funds and fund managers, it could lead to massive underperformance and opportunity cost for the average pensioner.

In this white paper, we show first that using peer groups of historical fund metrics is a non-starter for benchmarking private funds effectively and that using existing datasets essentially boils down to selecting funds by taking very risky bets. We then introduce the privateMetrics® and infraMetrics® indices and discuss the advantages of using these asset level indices to benchmark private asset funds. A practical example of this can be found in *The 2025 Private Markets Alpha Report* (see: here), which documents the returns and beta vs alpha of more than 600 funds with vintages from 2013-2023. Finally, we explore the impact of including a private equity sleeve in an individual DC plan offered through a target date solution. The “average” pensioner can face materially different outcomes in retirement based on the performance of the private equity sleeve alone.

[4] Blanc-Brude, F., Farid, M., Gupta, A., (2025) Benchmarking Private Market Performance.

The Myth of Peer Benchmarks

Peer group benchmarks are a gamble

Selecting a fund based purely on its quartile ranking in past performance is *akin to* gambling because investors tend to treat it as a predictive indicator. Indeed,

- **Past performance is not indicative of future results:** The standard disclaimer in nearly all investment materials. Markets are dynamic, and what drove a fund to the top quartile may not exist or could even be detrimental in the next.
- **Quartile rankings are relative and backward-looking** and only tell you how a fund performed *relative* to a group of peers in a specific *past* period. They do not assess the fund's absolute performance or its future strategy.
- **Quartile rankings ignore risk:** A fund might have landed in the top quartile by taking on excessive risk. This strategy could backfire spectacularly in different market conditions, leading to significant losses. Focusing solely on returns without considering the risk taken to achieve them is a recipe for disaster.
- **Market cycles and trends change:** Investment styles and sectors fall in and out of favour. A fund that thrived in a growth market might stumble in a value market, and vice-versa. Quartile rankings do not account for these cyclical shifts.
- **Manager and strategy changes:** A fund's success might be tied to a specific manager or strategy. If the manager leaves or the strategy is altered, past performance becomes even less relevant. Quartile rankings don't reflect these critical changes.

Moreover, quartile ranking becomes *equivalent to gambling* if fund selection is *solely* based on its quartile ranking if LPs:

- **Expect past winners to always repeat their performance**: This is a fallacy. Market conditions, fund management, and investment strategies are all subject to change.
- **Ignore the fund's investment exposure to market risk** which is crucial for understanding the source of past fund performance.
- **Chase short-term performance without a long-term perspective**: Short-term performance chasing often leads to poor decision-making.
- **Do not consider their own risk tolerance**: A high-performing, high-risk fund might be unsuitable if you have a low-risk tolerance or are investing for a short-term goal.

The odds of peer group benchmarks

When using peer group benchmarks, investors can only take one of two alternative approaches: either maximise the sample size at the expense of relevance or try to build a representative peer group at the expense of robustness.

Let's consider both approaches with the data described above.

First, we consider all buyout funds of all types and geographies for the 2011-2016 vintages i.e. funds that are either completed or winding down and have by now returned their investment to LPs. This yields a broad sample of 280 buyout funds, which should be robust. Table 1 shows the IRR boundaries of the sample and the corresponding 95% confidence intervals.

Table 1: IRR Quartile Boundaries and Confidence Intervals, 2011-2016 Vintages, 280 Global Buyout Funds

	IRR	**95% Confidence**
Top quartile boundary	24.9%	[21.9%, 27.7%]
Q3/Q2 quartile boundary	14.7%	[12.0%,16.7%]
Bottom quartile	3.4%	[1.8%,5.9%]

These confidence intervals are not here to decorate the table. They are *very* important: because investors observe a sample of fund data, they cannot be certain of the exact value of the quartile boundary, but they can have statistical confidence that the true 25th, 50th and 75th percentiles of the population from which the sample was drawn are within the confidence interval range.

Consider the top quartile: any fund with an IRR above 24.9%. By definition, 25% of the data in the sample are above this top quartile boundary. However, some of these observations fall within the confidence interval i.e., we cannot be sure that they are above or below the quartile limit. This is illustrated in Figure 1. Even with a large sample of 280 fund IRRs over multiple vintages, about 20% of the data cannot be classified as belonging to a specific quartile with certainty, as the quartile boundaries themselves are not known with precision. Table 2 shows the proportion of observations that are classified in each quartile but also fall within the range of the quartile boundary confidence interval and could be misclassified depending on the true (and unknown) value of the quartile boundary.

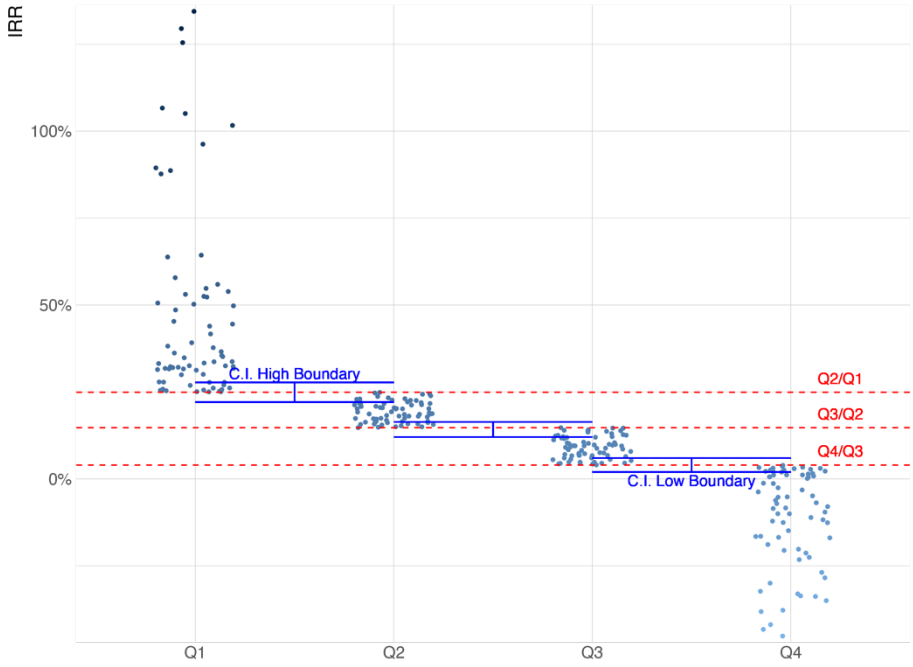
With such a large sample the betting odds (to get the fund quartile rank right) remain excellent: like Manchester City vs. a lower division team or the Boston Celtics (when they are on a hot streak) playing at home against a bottom-ranked team. Still, it is a gamble to consider 20% of the best ranked funds as top quartile when they may not be. Even great teams can lose home games.

The problem is that **this broad peer group is not very useful**: it includes all buyout funds in all sectors and geographies across multiple vintages. This is not relevant enough and, while statistically robust, unlikely to yield predictive information about the performance of the single US Tech fund investors want to benchmark.

Table 2: IRR Quartile Confidence Interval – 2011-2016 Vintages, 280 Global Buyouts Funds

	Observations within the boundary confidence	Observations outside of the boundary confidence	Betting odds of getting the quartile
Top quartile data	20%	80%	1:4
Second quartile	25.7%	74.3%	1:2.9
Third quartile data	20%	80%	1:4
Fourth quartile	20%	80%	1:4

FIGURE 1: IRR DISTRIBUTION BY QUARTILE AND QUARTILE CONFIDENCE INTERVALS – 2011-2016 VINTAGES, 280 GLOBAL BUYOUTS FUNDS



Next, we consider a narrower and much more relevant set of peers for the same 2013 US Buyout Tech Fund and restrict the sample to the relevant sector (Tech) and vintages (2012-2016). This yields a peer group of 19 funds. This much smaller sample should feel much more familiar to investors trying to use peer groups to benchmark their fund investments.

The gain in relevance of the peer group is so costly in terms of robustness that it turns the entire benchmarking exercise into **a very aggressive gamble**. Table 3 shows the proportion of the data that is found to be within the quartile boundary confidence interval, and that which can be safely considered outside of these limits. At 3:2 chances of picking a true top quartile fund, it is you who are playing the Boston Celtics on their home turf now!

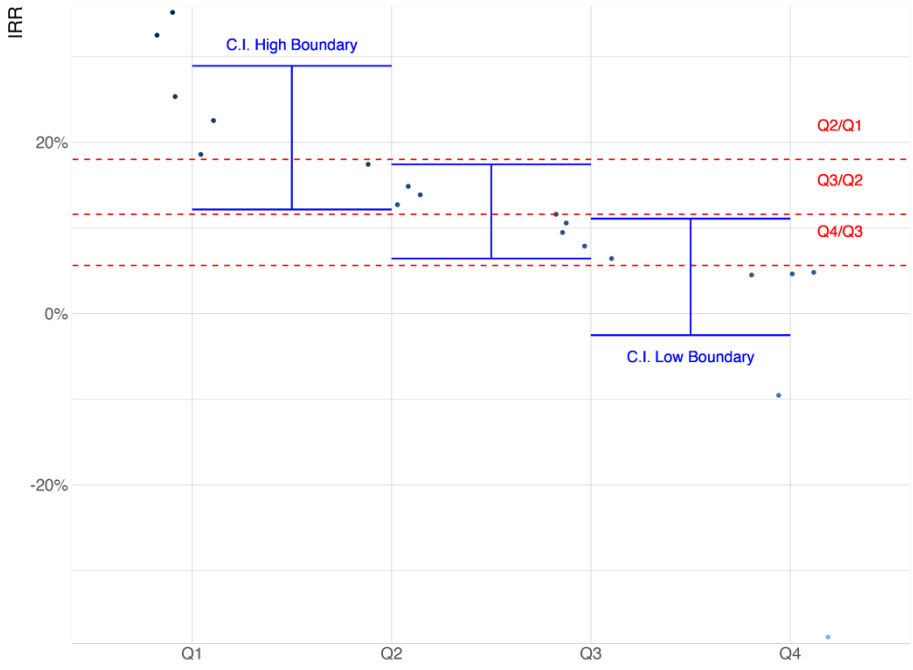
Figure 2 confirms how unlikely investors are to get it right with 19 datapoints: the confidence intervals of the quartile boundaries are now so large that almost all the data sits within them. Consultants may tell you that 19 datapoints is a “robust, representative

set of peers" – and it may seem so to investors inside the cave, looking at reflections of reality. In the real world, it is completely meaningless.

TABLE 3: IRR QUARTILE CONFIDENCE INTERVAL – 2012-2016 VINTAGES, 19 TECH BUYOUTS FUNDS

	Observations within the boundary confidence interval	Observations outside of the boundary confidence interval	Betting odds of getting the quartile right
Top quartile data	60%	40%	3:2
Second quartile	100%	0%	N/A
Third quartile data	80%	20%	4:1
Fourth quartile	60%	40%	3:2

FIGURE 2: IRR DISTRIBUTION BY QUARTILE AND QUARTILE CONFIDENCE INTERVALS – 2012-2015 VINTAGES, 19 TECH BUYOUTS FUNDS



Thus, **LPs choosing fund managers based on peer groups really are gamblers**: depending on the quality of the peer group data, they take significant risk of misclassifying funds as top quartile when they are not. The more specific the peer group, the less data, the larger the chance of making the wrong call.

Conversely, much larger datasets allow less reckless – but still uncertain – decisions to be made when it comes to fund manager ranking. However, such decisions remain ill-informed because a very large peer group is… not a peer group anymore.

The privateMetrics Indices: A Market Baseline

Institutional investors can improve their fund and manager selection process by using an appropriate private equities' benchmark to assess the performance of the fund managers they invest with. A market index has the following characteristics:

(1) A market index shows the risk and the performance of the market for underlying assets and can therefore be used to distinguish the impact of the market (beta) on fund performance (which sectors or factors performed well to begin with) from that of managers and their own choices and value-add (skill or alpha).

(2) A market index relies on a construction methodology to create a weighted average of a representative set of assets trading in the market of interest. Such a portfolio of assets is almost always more robust than a peer group dataset built from ad hoc data contributed to a database by a changing cast of managers. This is the role of the privateMetrics® and infraMetrics® indices, which provide market-representative, asset-level benchmarks for private equity and infrastructure, respectively.

The infraMetrics® and privateMetrics® Indices

The infraMetrics and privateMetrics indices and benchmarks are not fund manager benchmarks. They are built using a bottom-up approach, at the asset level, following a process that is not dissimilar to that of many public equities and bond indices. These indices are based on assets that are repriced monthly and show no serial correlation or smoothness, exhibit a reasonable risk-return profile (Sharpe ratio) and therefore provide a much more robust form of risk measurement.

The infraMetrics and privateMetrics indices employ a robust, data-driven approach that leverages asset-level information to construct benchmarks that accurately reflect market conditions in a multi-stage process:

- Comprehensive Data Collection: privateMetrics gathers a vast amount of asset-level data, including financial information, transaction details, and TICCS/PECCS classifications, for hundreds of thousands of private companies from various sources including fund manager reports, and other publicly available sources with **no reliance on fund-reported NAVs**.
- Multi-Factor Asset Pricing Model: This data is then fed into a sophisticated multi-factor asset pricing model that identifies key factors driving private infrastructure and private company valuations.
- Dynamic Calibration: The model is calibrated monthly using the latest transaction data to ensure its continuous alignment with the evolving market dynamics. This dynamic calibration helps to capture shifts in investor preferences and market conditions, reflecting them in the updated valuations.
- Shadow Pricing: Utilizing the calibrated model, infraMetrics and privateMetrics calculates "shadow prices" for a wide range of private companies, including those

not actively traded. This process involves applying the model's factor prices to the specific characteristics of each company.

- Index and Benchmark Construction: These shadow prices form the basis for constructing various indices and benchmarks that track the performance of different segments of the private infrastructure and the private equity market. For example, the infra300 index provides a representation of the global private infrastructure universe by TICCS segment, geography, and corporate structure. While the private2000 index tracks the performance of the top 2000 private companies by size.

Figure 3 shows a monthly historical time series for the infra300 and the private2000 indices. Both are registered with the European Securities and Market Authority (ESMA) as market benchmarks, indicating that they follow rigorous index construction standards and governance and comply with IOSCO guidelines. Updated monthly and using a fixed list of constituents which is managed by a dedicated Index Committee, these indices reflect market dynamics accurately and consistently. Table 4 shows the risk-return summary of these market indices, both the infra300 and private2000 indices demonstrate a strong risk-return profile, with private2000 delivering higher long-term returns (10.25% over 10 years) alongside greater volatility 17.39%, while infra300 offers stable returns (7.38% over 10 years) with lower risk of 13.04%.

FIGURE 3: INFRAMETRICS AND PRIVATEMETRICS MARKET INDICES HISTORICAL PERFORMANCE.

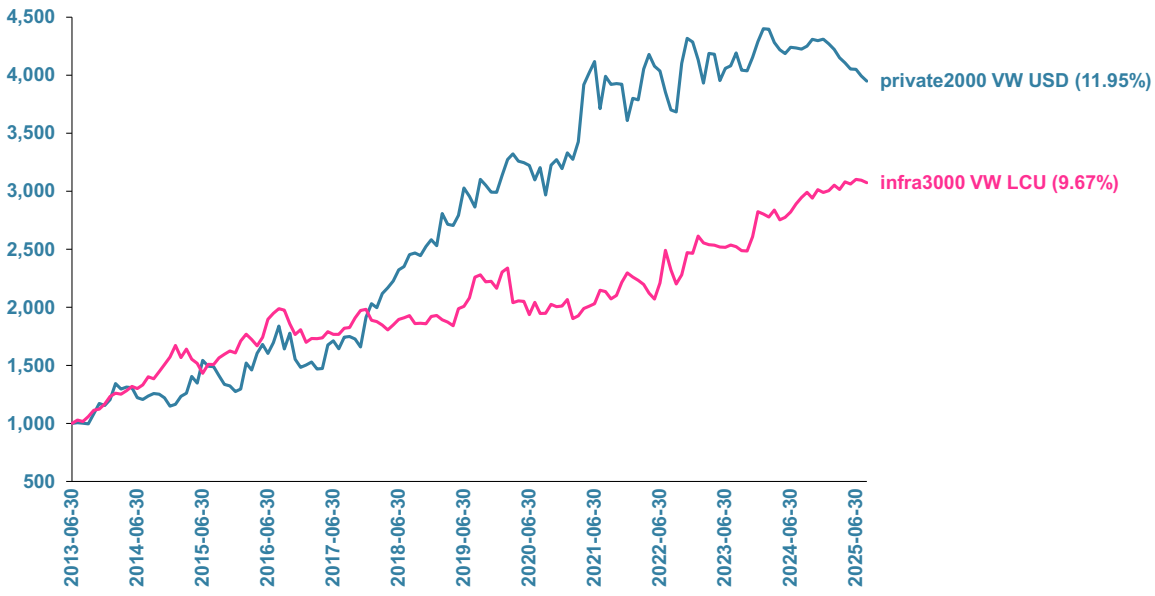


TABLE 4: INFRAMETRICS AND PRIVATEMETRICS MARKET INDICES HISTORICAL RISK/RETURN PERFORMANCE (TO AUG 31, 2025)

index	3Y Return	5Y Ann. Return	10Y Ann. Return	5Y Ann. Volatility	10Y Ann. Volatility
private2000, VW USD	2.19%	4.27%	10.25%	14.86%	17.39%
infra300, VW LCU	9.80%	9.56%	7.38%	12.35%	13.04%

Source: privateMetrics, infraMetrics

The privateMetrics and infraMetrics flagship indices were used to benchmark over 600 funds for the Private Markets Alpha Report (see: here). The findings of the study showed that while there was significant alpha dispersion among funds and managers, the median alpha for funds was approximately zero. That is, half of the funds outperformed, and half underperformed. This should not be a surprising result. However, it highlights the importance of benchmarking funds against the correct "market" index. An investor in a fund should only be concerned how their funds have performed against the correct benchmark. By taking advantage of the thematic and custom indices within privateMetrics and infraMetrics, funds can be benchmarked against an index that best captures the strategy of the fund (e.g. UK middle market buyout funds). This is where the taxonomies show their value.

The Role of Taxonomies

Taxonomies like The Infrastructure Company Classification Standard (TICCS™) and The privatE Company Classification Standard (PECCS™) provide a structured framework for classifying and segmenting private companies based on essential characteristics that drive their valuations. These characteristics go beyond traditional industry classifications and capture multiple dimensions of risk and return.

- TICCS: Focuses on classifying infrastructure companies based on factors such as Industrial Activity, Business Model, Geo-economic Classification, and Corporate Structure. This taxonomy recognizes the unique risk and return characteristics of different infrastructure asset classes.
- PECCS: Classifies private companies along five key pillars: Industrial Activity, Revenue Model, Lifecycle Phase, Customer Model, and Value Chain. By considering these diverse factors, PECCS provides a more nuanced and insightful view of the private company universe.

Creating Representative Indices: The use of these taxonomies enables the construction of indices and benchmarks that accurately reflect the composition and dynamics of the private equity and infrastructure markets. By grouping companies with similar risk and return profiles, these taxonomies facilitate the calculation of meaningful average valuations.

Granular Benchmarking: The granularity offered by TICCS and PECCS allows investors to construct benchmarks that are tailored to their specific investment strategies or portfolios. For example, an investor focused on technology companies with a subscription-based revenue model in the United States can create a benchmark that specifically tracks the performance of companies fitting that profile.

Transparency and Comparability: Taxonomies bring transparency and comparability to private market investments. They provide a common language for describing and analyzing private companies, facilitating communication between investors, fund managers, and other stakeholders.

Enhancing Valuation Accuracy: By using taxonomies to segment the private company universe and identify comparable companies, investors can leverage the privateMetrics asset pricing model to generate more accurate shadow prices. These shadow prices, in turn, provide a robust basis for constructing indices and benchmarks.[5]

DOES THE ALPHA GENERATION JUSTIFY THE FEES?

For pension funds, a recent analysis by The People's Pension estimates that up to £1.5 billion per year could be spent by UK DC master trusts on private market fees by 2030, assuming 10% of assets are allocated to these investments.[6] However, without the correct benchmarking tools (market index) to assess performance, pension schemes risk paying high fees for market beta, under the false belief that they are investing with alpha generating funds. This can be a serious drag on net returns and pension savings. Fund quartile rankings, as discussed, will not reveal whether a fund has generated alpha. We explore how misleading and confusing this problem can be. Switching to asset level market indices helps to resolve this problem.

Consider GI Partners Fund IV, a $2 billion US tech buyout fund launched in 2013. When evaluated against a narrowly defined peer group, US buyout tech funds of the same vintage and size, the fund ranks in the top quartile. However, this peer group includes just six funds, a sample far too small to produce statistically meaningful quartile boundaries. Broadening the peer group to include global tech or general US PE funds, where the number of funds in the peer groups are 36 and 89 funds respectively, the fund drops to the second or third quartile, depending on the definition. In such a situation, the pension fund may be misled to believe that they have invested in a top performing fund, justifying high management or performance fees, when in reality the fund may be just average when evaluated against a more representative group.

TABLE 5: QUARTILE RANKINGS FOR GI PARTNERS FUND IV

Peer Group Description	Top quartile	Median	Bottom quartile	No. of Funds	Quartile Rank
US PE Funds of vintage 2013	23.53%	15.06%	10.15%	89	2
Global PE Tech Funds of vintage 2013	29.55%	15.62%	10.70%	36	3
US PE Buyout Tech Funds of vintage 2013 and greater than $1bn size	15.34%	14.09%	10.15%	6	1

This example reveals how peer benchmarks can be easily manipulated or misinterpreted, particularly when fund groups are narrowly or selectively defined.

To prevent this mispricing of skill and cost, pension funds must abandon peer group benchmarking and instead adopt market-representative indices such as privateMetrics and infraMetrics. These indices are based on asset-level data, not self-reported fund

[5] More details on the PECCS and TICCS taxonomies are available in the Appendix.
[6] Report by The People's Pension is available here

returns, and therefore provide a much more accurate, diversified, and objective measures of market performance. This is because privateMetrics enables funds to:

- Separate market beta from true manager alpha, allowing trustees and fiduciaries to make distinction on the fund performance driven from broad market performance or fund manager allocation decisions, using the Direct Alpha approach of Gredil et al., (2023) a form of the Private Market Equivalent (PME) of Kaplan and Schoar, (2005).[7]
- Measure the fund's alpha net of fees, providing transparency on fund manager value add.
- Track style drift or underperformance early with indices that are updated monthly, enabling proactive re-evaluation and estimation of the risk-return level of the market in a timely manner.
- Most importantly, the ability to negotiate fees based on measured performance, rather than vague quartile ranking approaches.

In addition to this, by using TICCS/PECCS granular benchmarks, the fund alpha can be disentangled between two components: (1) allocation alpha obtained by selecting sector tilts different from the broad market, and (2) pure alpha generated by selecting, structuring and timing investments. A fund manager that is not only able to achieve a positive alpha in general and positive pure alpha in particular, but also persistence in generating alpha with their next fund.

In addition to this, conventional fund performance rankings that are based on Internal Rate of Return (IRR) assume that all managers operate with comparable market exposure. Under this framework, a higher IRR is equated with superior manager skill, while a lower IRR is interpreted as underperformance. However, this assumption ignores a critical distinction, the presence of variations in beta, or market exposure, across funds.

Figure 4 illustrates this issue by showing the distribution of Fund-Level IRR (top panel) and Fund-Level Market Return (bottom panel) across a dataset of 800+ buyout funds. The top chart reveals a wide and skewed distribution of IRRs, with a long right tail, showing the presence of very high IRR in the sample. However, the bottom chart shows a much tighter, more symmetric distribution of market returns (beta), highlighting that most funds are exposed to different degrees of systematic market risk.

Table 6 demonstrates this with two funds of the same vintage (2014), sector focus (Diversified) and geographic focus (North America), that had very different private equities beta exposure, explaining 1020bps of the return differential between the two funds. This difference could push one fund into the top quartile and the other into the second or third, even if both delivered the same alpha. In essence, one fund appears to outperform simply because it had higher beta exposure during a favorable market cycle.

[7] Kaplan, S. N., & Schoar, A. (2005). Private Equity Performance: Returns, Persistence, and Capital Flows. The Journal of Finance, 60(5), 1791-1823. https://doi.org/10.1111/j.1540-6261.2005.00780.x

One the other hand, table 7 demonstrates two funds with the same vintage (2013) and same geographic focus of North America. While both funds have almost the same market return of c.17%, the driver of the difference in performance is the total alpha rather than the market as in the previous example.

FIGURE 4: FUND LEVEL IRR AND MARKET

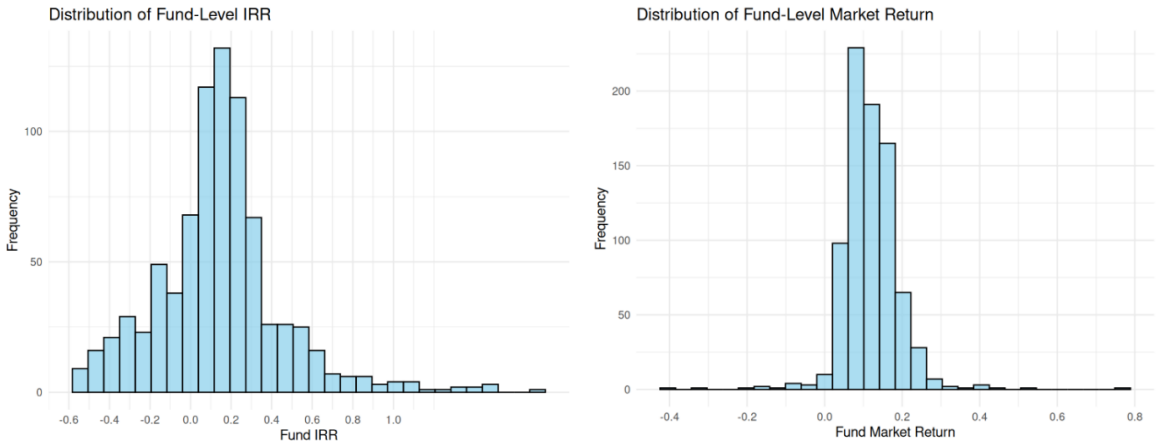


TABLE 6: 2014 VINTAGE DIVERSIFIED FUNDS COMPARISON.

Fund	IRR	Market Return	IRR Quartile	Total Alpha	Alloc. Alpha	Pure Alpha
The Resolute Fund III	31.3%	27.6%	1	3.7%	4.8%	-1.1%
TowerBrook Investors IV	20.9%	17.4%	2	3.5%	6.0%	-2.5%

TABLE 7: 2013 VINTAGE NORTH AMERICA FUND COMPARISON.

Fund	IRR	Market Return	IRR Quartile	Total Alpha	Alloc. Alpha	Pure Alpha
Insignia Capital Fund I	25%	17.3%	2	7.7%	6.7%	1%
Silver Lake Partners IV	22.5%	17.8%	2	4.8%	1.2%	3.6%

This demonstrates the core flaw of IRR-based rankings: they conflate alpha with beta, resulting in misattribution of the performance to manager skill when it may simply reflect rising market conditions. Traditional peer group benchmarks do not adjust for this variability, making them an unreliable and incomplete measure of true value creation.

Therefore, for pension trustees and investment committees, relying on raw IRR or peer rankings without accounting for beta will not only lead to misguided manager selection, but also unjustified performance fees. Instead, performance should be benchmarked against the true market of the fund using privateMetrics indices, which decompose fund returns into market return, allocation alpha, and pure alpha, offering a granular, market-consistent view of manager performance.

When decomposing the performance of these two funds, we separate allocation alpha - arising from decisions about sector or geography relative to a broad market index - from pure alpha, which measures a fund's performance relative to a benchmark that mirrors its sector and geographic strategy. Pure alpha takes into account the manager's asset selection and structuring skills. In this case, both managers had negative pure alpha,

demonstrating that the outperformance of the funds was not driven by manager skill, but by market performance.

Applying this analytical framework to any fund under consideration gives trustees a powerful alternative to relying solely on IRR or peer group rankings. With access to monthly updated privateMetrics indices and a fund's actual cash flow data, trustees can calculate a fund's alpha and decompose performance into market return, allocation alpha, and pure alpha. This deeper insight allows them to distinguish the sources of outperformance or underperformance, assess whether fees are truly justified, and negotiate from a position of strength based on objective, measurable outcomes.

Case Study: How Does Manager Selection Impact Total Savings At Retirement?

This section explores how a plan participant's retirement savings and monthly pension could be impacted based on different alpha outcomes in the private equity sleeve of their retirement portfolio. As previously discussed, dispersion in returns for private equity funds is substantial, introducing the possibility of missing savings goals for retirement if invested in underperforming funds. We detail this by looking at the returns of several notable UK based private equity funds, documenting how performance has diverged in the past. We then translate this into a range of outcomes for a pensioner, assuming they contribute to a target date retirement fund such as the default NEST Pensions Scheme retirement date fund[8].

We begin by looking at the performance of major UK based private equity firms with vintages between 2012 and 2019. To align with the Mansion House Accord, the focus is on managers that invest in the UK, but many of the managers will have some allocations across Europe.

Figure 5 shows the IRRs and TVPIs of several well-known UK based funds as of the end of 2024. The median net IRR for the 21 funds was 15.4%, with most managers falling between 10-20%. There are outliers on the high and low side. Among these funds, the dispersion between top and bottom performer is over 3300bp, with an interquartile range of ~700bps. Even a 500-1000bps differential on a small private equity allocation can translate into very different terminal wealth (pension) outcomes.

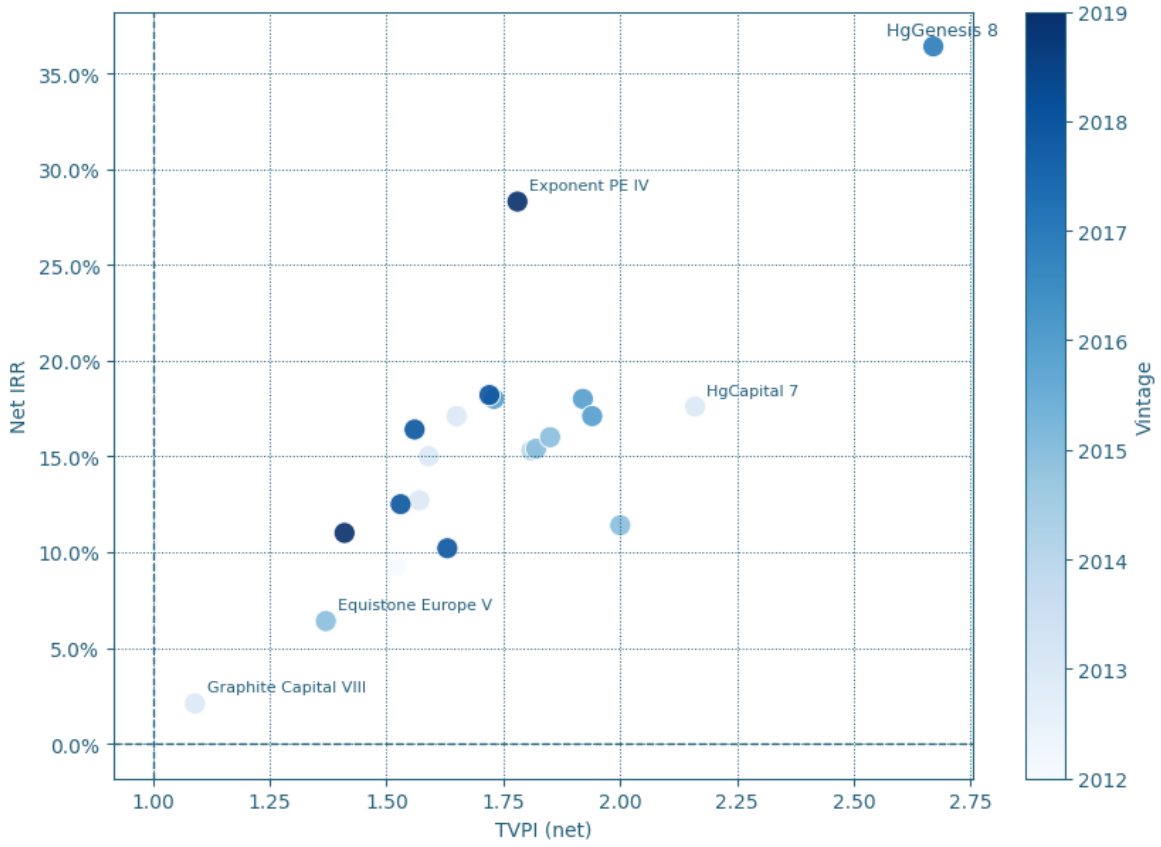
Figure 6 provides the IRR data and the names of the individual funds.

For example, had a pension scheme been overweight an allocation to BC European Capital X and IX instead of HgCapital or Cinven's funds of similar vintages, the long-term impact would be material. Return dispersion combined with long fund lives means that it is critical to get manager selection right.

[8] Retirement Date Fund | Nest Pensions

A review of Evergreen (or semi-liquid) vehicles also shows considerable dispersion in returns. On a 1yr return basis, there was a 1700bp differential between the top and bottom performer. At the 3 yr return horizon, the gap was over 1300bp [reference EIPA paper]. Regardless of whether a PE portfolio is constructed with funds and co-investments, or Evergreen vehicles, significant return dispersion will exist. This means the average pensioners outcome will be impacted by the investment decisions in the private equity sleeve. Unlike listed markets, there are no index product that tracks the market with limited tracking error. Therefore, outcomes can be very different depending on manager selection.

FIGURE 5: UK BASED PE FUNDS (2012-2019 VINTAGES) IRR VS TVPI



SOURCE: PEI

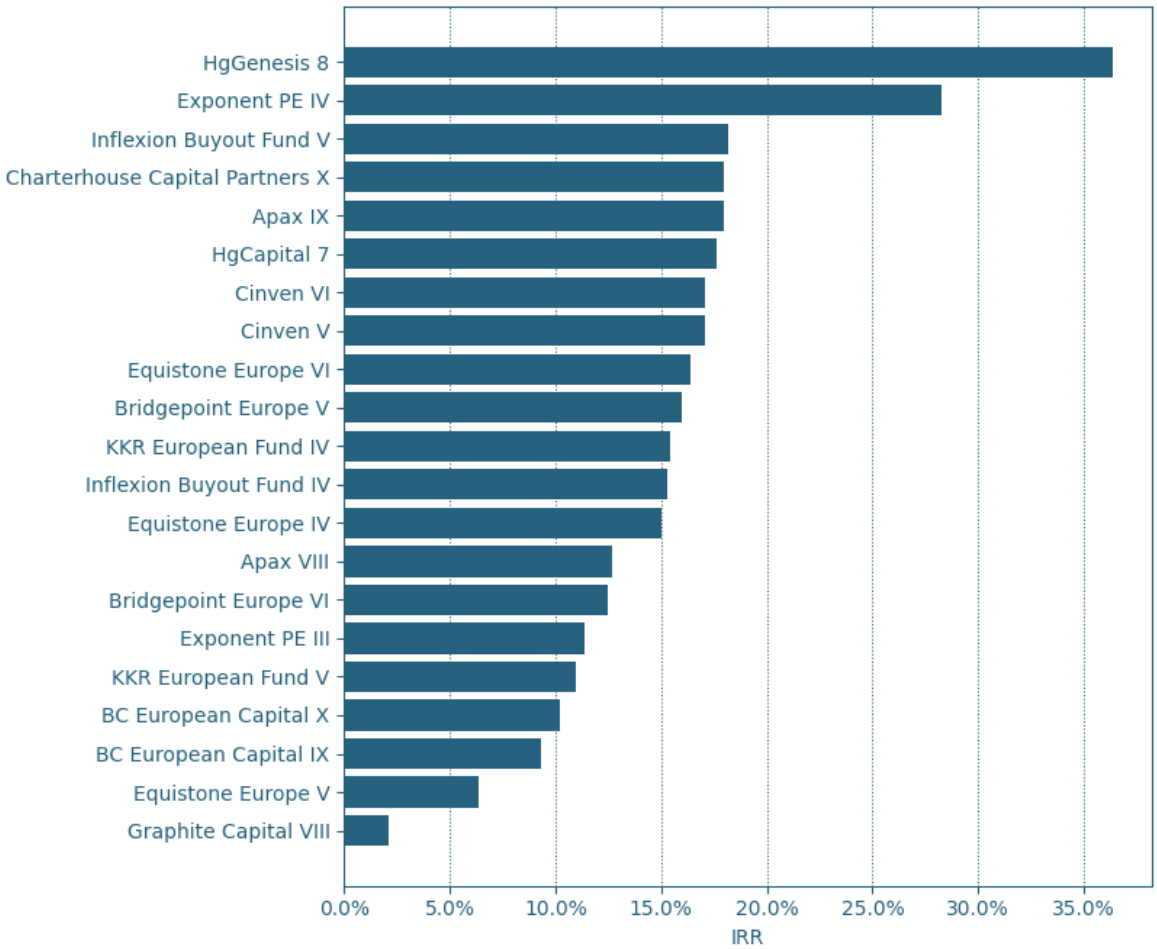
To drive this point home, we explored outcomes for an individual DC pension plan participant using a target date fund series. We used NEST PENSIONS' default target date series as a reference point and assumed this would be a default choice. We made the follow assumptions in forecasting the future path of the portfolio:

- Participant contributes to plan from ages 25-65, after which, they move the value to an annuity returning 4%/annum, and draw monthly sums until exhausted by age 85
- Initially salary of £32.5 thousand, growing 3% per annum. 8% contribution rate with growth but capped at 12%. Employer contributes 50% up to 6%

- Initial asset allocation: Listed Equities (50%), Corporate & Government Bonds (30%), Real Assets (10%), Private Equity (10%)
- Glidepath has Equities declining beginning 10 years from retirement, dropping to 30% at retirement. Private Equities weight drops in half during this period

Asset class returns: Listed Equities (6.5%), Bonds (3.5%), Real Assets (7.5%), Private Equities scenarios (5%, 10%, 15%). Private Equities returns assume the latest privateMetrics® expected returns[9] (12.5%) and +/- 500bps of alpha. We can think of the private equities' assumptions as a baseline market return (0 alpha), and two edge cases, one with +500bps of alpha, and the other with -500 bps of alpha over the period.

FIGURE 6: UK BASED PE FUNDS (2012-2019 VINTAGES) NET IRR



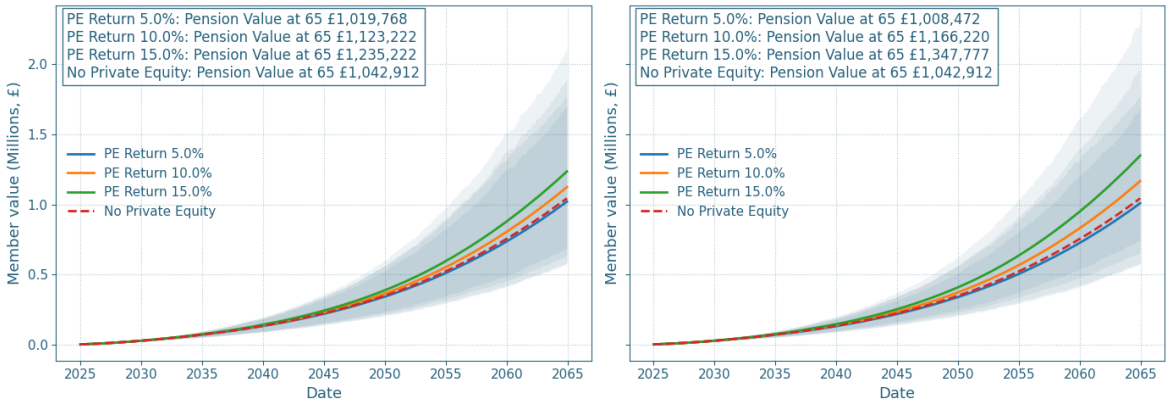
SOURCE: PEI

Figure 7 details the results. In the case of a 10% allocation to private equities, the difference between the portfolio holding the high vs low performing private equity sleeve is over £215 thousand by the age of 65. For the portfolio with a higher weight to private equity (15%), the difference is £339 thousand. Despite private equity being relatively small weights in the portfolio, the impact on final wealth from 40 years of compounding is

[9] Median private2000 Expected returns of 12.5% as of 30 September 2025. Index is gross of fees. With fees of 250bps, net return of 10% for pensioner.

substantial. This outcome is a very real possibility given the high dispersion in returns among private equity funds and managers.

FIGURE 7: ENDING PENSION VALUE FOR 10% PE ALLOCATION (LEFT) AND 15% PE ALLOCATION (RIGHT)

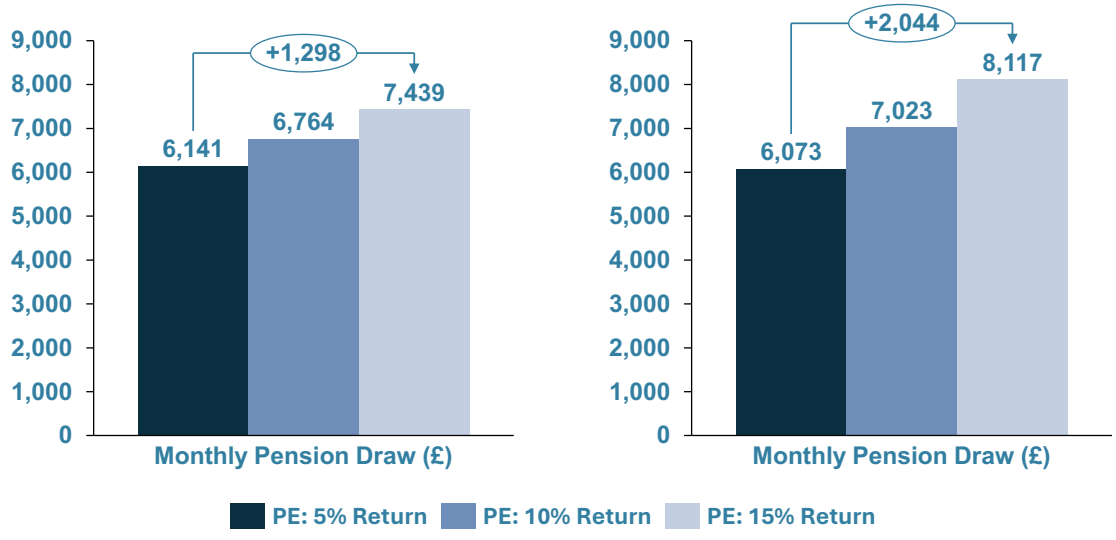


SOURCE: CALCULATIONS BY SIPA. CI – 95% (SHADED AREA).

The impact would be felt through the monthly draw during retirement. Figure 8 shows the monthly pension draws of a retiree under these scenarios. For the portfolio with a 10% weight to private equity, the difference in monthly draw during retirement may be up to £1,300/month, while this figure could reach over £2,000/month for a portfolio with a higher private equity sleeve. Moreover, including private equity can lead to better outcomes than a portfolio that excludes it.

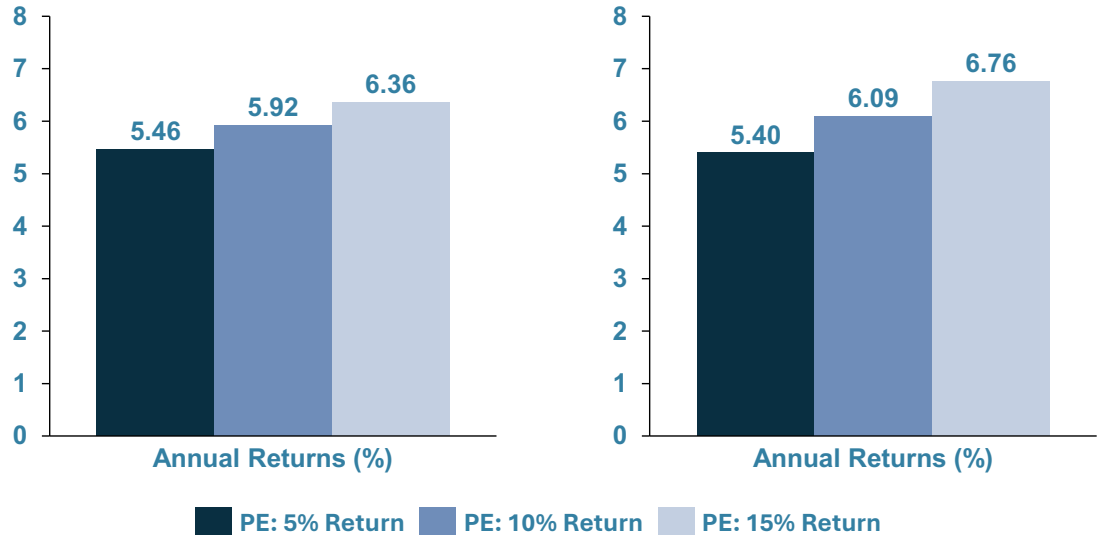
Figure 9 provides the returns of the portfolios under the various assumptions. For a portfolio with 10% allocation to private equities, the higher performing sleeve has a 90bps annualized return advantage over the low performing sleeve (6.36% vs 5.46%). The difference is wider for the portfolio with a higher private equity weight (6.76% vs 5.40%).

FIGURE 8: MONTHLY PENSION DRAW FOR 10% PE ALLOCATION (LEFT) AND 15% PE ALLOCATION (RIGHT)



SOURCE: CALCULATIONS BY SIPA

FIGURE 9 ANNUALISED RETURNS FOR 10% PE ALLOCATION (LEFT) AND 15% PE ALLOCATION (RIGHT)



SOURCE: CALCULATIONS BY SIPA

Call to Action

The implementation of the Mansion House Accord represents a key moment for the UK pension industry. As pension funds increase their allocation to private markets, the stakes for scheme members have never been higher. The manipulation from the use of peer group benchmarking along with the return dispersion illustrated in this case study underscore the urgent need for a fundamental shift in how pension funds evaluate and select private market managers. This includes abstaining from the use of peer benchmarks as the sole reference point for manager evaluation along with using the appropriate market benchmarks such as privateMetrics to measure the risk/return of the market alongside the fund manager's alpha generating skills. privateMetrics indices are fiduciary tools that can be used to distinguish the top performers fund managers, empowering pension funds to fulfill their fiduciary duty to scheme members. **Moreover, without accurate benchmarking, there is a risk of overpaying for market exposure. privateMetrics can help quantify alpha and support fee negotiations with managers.**

In the case study above, the impact to the individual pension is material. Even with a 10-15% private equity sleeve, the pensioner can face very different cash draws in retirement based on the performance of this part of the portfolio. As the Mansion House Accord accelerates the flow of pension capital into private markets, the adoption of sophisticated evaluation tools like privateMetrics becomes not just advantageous but essential.

Appendix A: privateMetrics API integration

Access all privateMetrics data programmatically and build your own applications for private market investing and reporting

Index Catalogue

Browse our catalogue of hundreds of private equity, infrastructure and infra debt indices, inc. market indices like the infra300 and private2000, and thematic indices representing specific market segments.

Taxonomies

Query the PECCS® and TICCS® taxonomies used to create the privateMetrics universe. Access class codes, names and definitions to build your own index and comps customisations applications.

Index Data

Access a comprehensive set of performance and risk metrics for hundreds of private equity, infrastructure and infra debt indices tracking numerous geographies and segments.

Custom Benchmarks

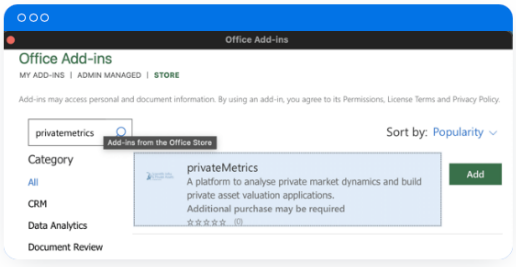
Build custom benchmarks setting target weights by PECCS, TICCS, style and geography that align with your strategy. All index metrics are recalculated for you.

Custom Comps

Create customised comp sets using PECCS® and TICCS® segments, geography and systematic risk profiles. Get metrics like discounts rates and EBITDA multiples.

Yield Curves

Query risk-free rates for a given pricing and maturity date to support discounted cash flow (DCF) calculations, valuation models, and other financial analyses.



Install our MSExcel Add-in

With the **SIPA Assets Excel add-in**, you can integrate market data about private asset markets directly into your investment workflow.

privateMetrics Excel Add-in Documentation

Appendix B: The privateMetrics® Valuation Model

Our approach to the valuation of private companies is designed to maximise the available transaction and financial data in private markets and provide a standardised and systematic manner to update prices with every observed transaction.

First, we construct a multi-factor model of prices using a sample of observed transactions over time which can infer the unbiased and precise factor prices that investors pay for different characteristics of a private asset. Although every transaction is idiosyncratic or unique, in a large sample of transactions, the individual errors in each transaction price can be diversified away to discern the price attributable to each factor. Factor prices refer to the premium (or discount) that an investor is willing to pay to seek exposure to a specific factor of return in private companies. For example, observing the relationship between size and valuation among reported transactions, it can be inferred how much premium or discount an investor is willing to pay for purchasing a larger private company.

Second, an important and key application of this approach is that, with the estimated factor prices, say for size, it would then be possible to price unlisted private companies whose size information is available, irrespective of whether they are traded or not. This approach provides a more robust estimate for FV and enables the creation of representative indices of private companies.

Our approach's novelty is calibrating the model to newly observed transactions obtaining the factor price evolution over time, which allows us to update the valuation for all tracked unlisted private companies.

Common Risk Factors

If investors trade unlisted private companies from each other in mutually negotiated transactions, there must be some common characteristics that at least partially explain prices. For example, private companies that have higher profits or growth opportunities may be more valuable to investors than those that are not.

To arrive at a potential list of factors, we follow simple criteria that there needs to be an economic rationale for the factor to affect valuation. The factor should also be statistically related to the valuation. Moreover, the factor should also be objectively observable or measurable. With a potential list of factors, our factor selection is the result of a statistical approach, where the factors that can satisfactorily explain the variation in observed transaction valuations are included in the final model while trading off being parsimonious with being able to explain a higher variance in valuation. The privateMetrics asset pricing model uses five key risk factors as below:

- **Size**: Larger companies may be more complex, have higher transaction costs, and be less liquid, all of which can make them trade at a lower valuation per $ of revenue.

- **Growth**: As traditional PE strategies rely on growing the entry multiple, that may involve both increasing its top and bottom lines, i.e., revenue and profits. Thus, companies that can grow faster can be more sought after, making them more valuable.
- **Leverage**: Leverage can make a company riskier as it increases the risk of default. However, there is also a signaling effect of leverage, as companies with stable consistent cash flows can support a higher leverage, and vice versa. Thus, leverage is expected to influence the valuation of a company.
- **Profits**: More profitable companies have more predictable (less risky) future payouts and hence attract a lower risk premium, making them more valuable.
- **Maturity**: Younger companies have fewer track records and face higher information uncertainty. Studies have shown that firms with high uncertainty tend to be overvalued and earn lower future returns. Thus, the maturity negatively affects valuation.
- **Country risk**: Investors may require a high return when investing in a high-risk country, thus depressing the current valuation. In other words, in countries with lower risk, investors may be willing to purchase assets at a higher valuation as government policies may be more predictable with lower macroeconomic risks.

TABLE A1: KEY FACTORS, THEIR EFFECT ON VALUATION, & THE ECONOMIC RATIONALE FOR INCLUDING THEM IN THE MODEL

Factor	Definition (Proxy)	Effect on price	Economic Rationale	References
Size	Revenues	Negative	Larger firms are more illiquid and trade a lower price	Fama & French (1993)
Growth	Change in Revenues	Positive	Companies with higher revenue growth trade at a higher price	Fama & French (1992), Petkova & Zhang (2005)
Leverage	Total debt / Revenues	Positive	Companies that can borrow more have a lower cost of capital and a higher value	Gomes & Schmid (2010), George & Hwang (2010)
Profits	Ebitda Margin	Positive	Companies that have higher profits have a higher value	Novy-Marx (2013), Hou et al. (2015)
Maturity	Years since incorporation	Negative	Companies that are mature exhibit less growth potential and trade a at a lower price	Jiang et al. (2005)
Country Risk	Term Spread	Negative	Companies in high-risk countries face more uncertain prospects	Chen & Tsang (2013)

SOURCE: CALCULATED USING OVER 10K DEALS FROM PITCHBOOK, CAPITALIQ, FACTSET, AND OTHER PRIMARY SOURCES BETWEEN 1999-2022

Our factors have been documented in prior academic studies to be associated with valuation. We also include factors that have been identified as key determinants of valuation from a survey of private equity practitioners that we conducted in 2023. Table A1 summarises the key factors that we use in the model, how they are measured, each factor's effect we document in the data on average, the economic rationale for their inclusion, and citations for the work that underpins their inclusion.

Model Set Up

The privateMetrics asset pricing model uses the Price-to-Sales ratio of observable transactions (the entry price multiple) as the modelled variable. The model is estimated

as the linear sum of the product of factor exposures and factor prices. The estimation can then separate the systematic part of the valuation while leaving out "noise" in each valuation.

$$\frac{P}{S} = a + \sum_{k=2}^{K} b_k l_k + e$$

Following standard asset pricing notation, the factor exposure or factor loading is called a beta (β), and the factor premium is called a lambda (l) for the k factors in the model. a is the intercept and e is the noise or idiosyncratic part of the valuation.

Model Calibration

The privateMetrics model uses a carefully curated dataset of more than 10k+ unlisted private company investments going back two decades sourced from a wide variety of datasets including PitchBook, Factset, Capital IQ, fund manager reports, and other publicly available data sources.

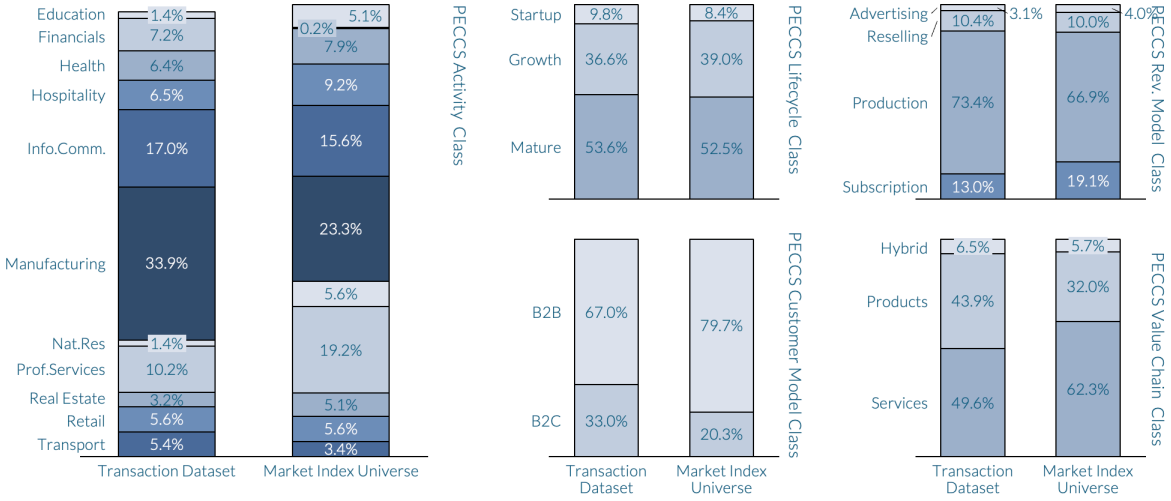
We calibrate this model using new observations monthly to update its estimation of the price of risk of each factor. In other words, each transaction observed is then used to 'update' this model (i.e., obtain new ls) through a dynamic estimation (using a Kalman filter), which retains the memory of past ls while also allowing the new transaction to influence the relationship while keeping the average e close to zero. More details on the implementation of the model are available in our online documentation and Selvam and Whittaker (2024). The dataset covers all key segments of the market as shown in Figure1.

A good application of using the model to value unlisted private companies is to create a representative marked-to-market index of private companies that are regularly valued. The privateMetrics index universe in Figure 1 includes the constituents of the private2000® index constructed by Scientific Infra and Private Assets, which is developed on this shadow pricing idea and captures the performance of private companies in 30 countries globally that are important for private equity investors (read more about the index here).

How Precise are the Predictions across PECCS® Pillars?

To examine how closely the predicted valuations track the raw modelled valuations in transactions, we compute the average estimation errors of the full sample, and also by classes within each PECCS® pillar. What stands out is that although the model by design is expected to have lower estimation errors in the full sample, the within PECCS® class estimation errors are also very small. All the errors are within ±10%, reassuring that the model predictions on average even within each segment of PECCS® are reasonable. The errors are summarised in Table A2.

FIGURE A1: PRIVATEMETRICS TRANSACTION DATASET COMPARED TO THE PRIVATEMETRICS INDEX UNIVERSE BY PECCS PILLAR & CLASS



The most commonly used metric of valuation in private markets is EV/EBITDA as PE owners have the flexibility to alter the capital structure of their holding company and hence are more interested in operational profitability without factoring interest costs. However, our model is based on P/S because P/S is statistically better, stable, and not affected by loss-making companies. Thus, one may be concerned whether our predictions for EV/EBITDA might be biased.

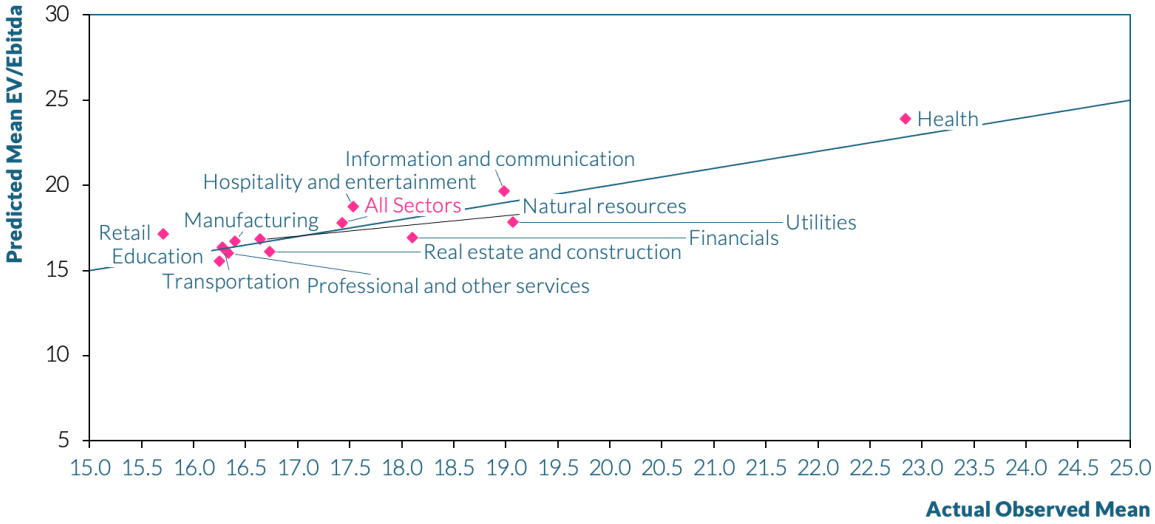
To ensure that is not the case, we compute the EV based on the book value of debt and predicted equity valuation and divide the sum by the EBITDA to get a predicted EV/EBITDA and compare it to transaction implied ratios. Figure A2 presents the average predicted and observed EV/EBITDA by PECCS® activity classes. We find that the predictions are very close to the observed values, thus mitigating this concern.

TABLE A2: AVERAGE ESTIMATION ERRORS ACROSS PECCS® CLASSES, BASED ON THE DIFFERENCE BETWEEN TRANSACTED VALUATIONS AND FACTOR MODEL PREDICTIONS

PECCS Pillar	PECCS Class	Mean Estimation Error	PECCS Class	Mean Estimation Error	PECCS Pillar
PECCS Activity	Education and public	0.9%	Startup	0.1%	PECCS Lifecycle Phase
	Financials	1.8%	Growth	-1.7%	
	Health	2.6%	Mature	2.8%	
	Hospitality and entertainment	-1.1%	Advertising	1.2%	PECCS Revenue Model
	Information and communication	-4.4%	Reselling	4.6%	
	Manufacturing	2.5%	Production	2.9%	
	Natural resources	9.4%	Subscription	-6.9%	
	Professional and other services	3.3%	B2B	1.5%	PECCS Customer Model
	Real estate and construction	1.9%	B2C	0.9%	
	Retail	0.5%	Hybrid	0.6%	PECCS Value Chain
	Transportation	7.2%	Products	1.1%	
Full Sample		**1.1%**	Services	3.4%	

SOURCE: CALCULATED USING OVER 10K DEALS FROM PITCHBOOK, CAPITALIQ, FACTSET, AND OTHER SOURCES BETWEEN 1999-2022

FIGURE A2: PREDICTED VERSUS ACTUAL EV/EBITDA RATIOS BY PECCS® ACTIVITY CLASSES



SOURCE: CALCULATED USING OVER 10K DEALS FROM PITCHBOOK, CAPITALIQ, FACTSET, AND OTHER SOURCES BETWEEN 1999-2022

About Scientific Infra & Private Assets

Our products come from the cutting-edge R&D of the EDHEC Infrastructure & Private Assets Research Institute, established in 2016 by EDHEC Business School. In 2019, we transformed this academic research into a commercial enterprise, providing services like private market indices, benchmarks, valuation analytics, and climate risk metrics. We take pride in our unique dual identity, bridging scientific research and market applications.

The EDHEC Infrastructure & Private Assets Research Institute (EIPA) continues to advance academic research and innovate with technologies in risk measurement and valuation in private markets, especially utilising artificial intelligence and language processing. Our company, Scientific Infra & Private Assets (SIPA), supplies specialised data to investors in infrastructure and private equity.

Merging academic rigor with practical business applications, our dedicated team excels in integrating quantitative research into private asset investing. Our products, infraMetrics® and privateMetrics®, are unique in the market, stemming from thorough research rather than being ancillary services of larger data providers. We are the Quants of Private Markets, leading with innovation and precision.

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