

IS YOUR NAV FAIR?

Addressing valuation lag and investor fairness in monthly priced funds

January 2026

Executive Summary

Need For Monthly NAVs. The proliferation of Evergreen products across private equity and infrastructure equity requires more frequent data and valuations, given monthly subscriptions and quarterly redemptions. Existing practices still rely on the quarterly valuations from investee funds, often with significant delay to quarter end (45-60 days). This means, without adjustment, investee fund valuations can be up to 5-6 months stale. As a result, there is a high likelihood that the interim monthly NAVs are incorrect, disadvantaging either new investors (overvalued NAV), or existing investors (undervalued NAV). Eventually regulators will start looking at this uneven treatment of investors.

Inconsistent Practices. Reviewing prospectuses of the leading private equity and infrastructure funds, the best we can say is that the practices are “bespoke”. There is no market standard for how NAVs are adjusted between receipt of quarterly valuations from investee funds. For fund interests (primaries and secondaries), we argue that there should be a market adjustment factor to account for dynamic valuation changes month to month. Current practices adjust for net capital changes and FX movements, but the application of a market adjustment factor seems more ad hoc and not explicitly defined or disclosed if applied consistently. For direct portfolio company holdings, a less formal valuation update takes place in interim monthly updates.

privateMetrics and infraMetrics Market Adjustment Factor. Both privateMetrics and infraMetrics produce monthly asset level indices that capture the systematic risk of the private equities and infrastructure equities markets, respectively. The monthly returns of the broad market indices can be used as a proxy or market adjustment factor to update the value of fund interests or a portfolio of co-investments during interim months. This ensures that the interim NAVs used to accept new monthly subscriptions adjust for broad market movements in private and infrastructure equities. Additional idiosyncratic components known to the Advisor can further adjust the NAVs. Both privateMetrics and infraMetrics indices produce monthly data at T+10¹, comfortably aligning with the T+21/22 monthly settlement (NAV release) observed at many semi-liquid funds.

Avoids Unfair Treatment: Using a well-defined and disclosed process for updating monthly NAVs can help to avoid concerns over gaming. In the current setup, some parties may be more aware of valuation practices than others. The playing field should be level for all participants, including wealth and retail, so that certain parties do not get to enter before a revaluation, or certain gains are released in the fund.

¹ Month-end plus 10 days vs settlement of month-end plus 21-22 days.

Data and Methods

Both **infraMetrics®** and **privateMetrics®** databases can be used to download monthly index prices for private infrastructure equities and private equities, respectively. The flagship indices, **infra300** and **private2000**, represent broad market indices diversified by sector, geography, and risk profile, best capturing the systematic risk of their respective markets. Both represent excellent starting points for Market Adjustment Factors in each asset class. Find **infraMetrics** indices ([here](#)) and **privateMetrics** indices ([here](#)). Further, our **MSEExcel Add-in** allows for seamless download of the index data (see [here](#)).

A brief description of each index is below:

The infra300 index is a representative set of 300 unlisted infrastructure companies. The companies are selected to form a representative sample by **TICCS®** categories from an underlying universe of close to 9100+ firms in 27 countries. The index is represented globally in both corporate and project finance companies. Additionally, we look at the industrial superclass level based on **TICCS** to show expected returns at a more granular level.

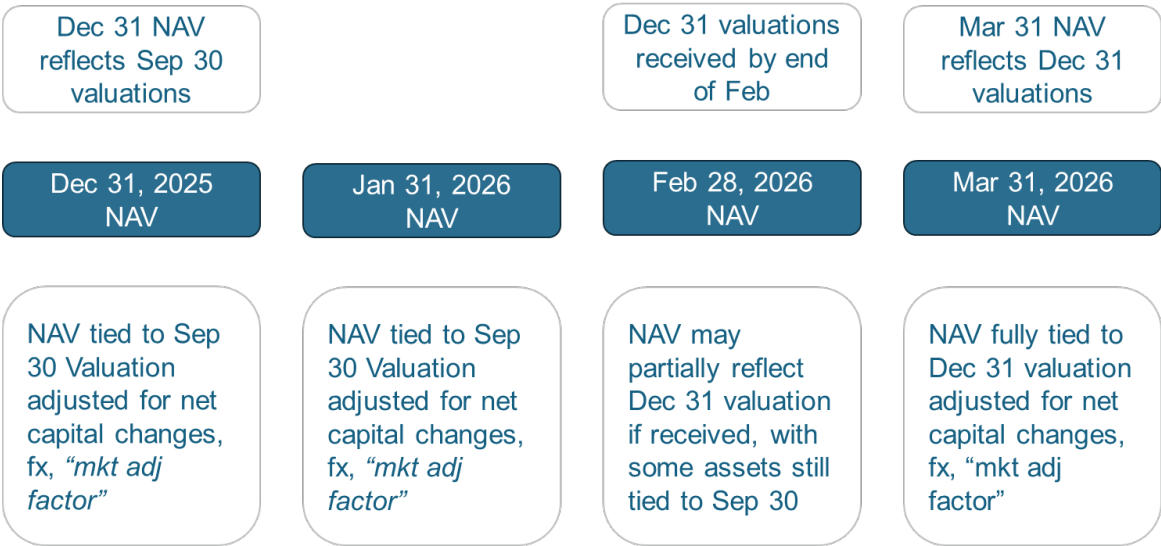
The private2000 index includes the top 2000 private companies by value across 30 countries and diversified by sector. Further, utilising **PECCS®**, we evaluate expected returns at the Industrial Activity Class level. By providing discount rates at the sector level across infrastructure and private equities, we differentiate ourselves from the marketplace, which only offers asset class data.

Thematic and custom indices can be built to derive a more representative index that captures the particular Evergreen funds' strategy. This includes controlling for geographic or sector exposures, company stage, or other risk factors (size, leverage, growth, etc).

Timing Challenge with Monthly NAVs

Relying on quarterly valuation processes while issuing units monthly creates a challenge for Evergreen funds in striking a fair NAV for all stakeholders (buyers and existing holders of units). Figure 1 details the issue that most Evergreen funds face. The NAV struck for December 31, 2025, will not yet have received the real-time valuations for December 31. Instead, the NAV will be tethered to the latest valuation (September 30, 2025) and adjusted for net capital changes (calls, distributions) and foreign exchange. Depending on the manager, a market adjustment factor may also be applied to update the September 30, 2025, NAV for market movements to the end of December. Rolling forward to January and February, the Evergreen fund must continue to strike a monthly NAV relying on very stale valuations. The December 31, 2025, valuations are not received until the end of February, meaning they are not incorporated until the February NAV (partially) or the March NAV (fully). This means that NAVs can be upwards of 5-6 months stale, necessitating use of a market adjustment factor to compensate.

FIGURE 1: MONTHLY NAV CYCLE



Source: SIPA, Evergreen Fund Prospectuses

Outside of complying with fair value accounting principles (relying on practical expedient), there is no uniform standard to account for market adjustments during these periods. All funds will update NAVs for net capital changes and foreign exchange, but accounting for market movements is less certain. In some cases, managers do not make any adjustments until receiving new valuations from fund managers. They would only do more frequent adjustments if there was a liquidity event, funding round, or if a security was listed. In other cases, managers claim to incorporate a market adjustment factor but do not disclose what reference market is used, nor whether it has actually been implemented in a particular month. We can only observe the monthly NAV movements posted by the Evergreen funds themselves and deduce that very few adjustments appear to be taking place.

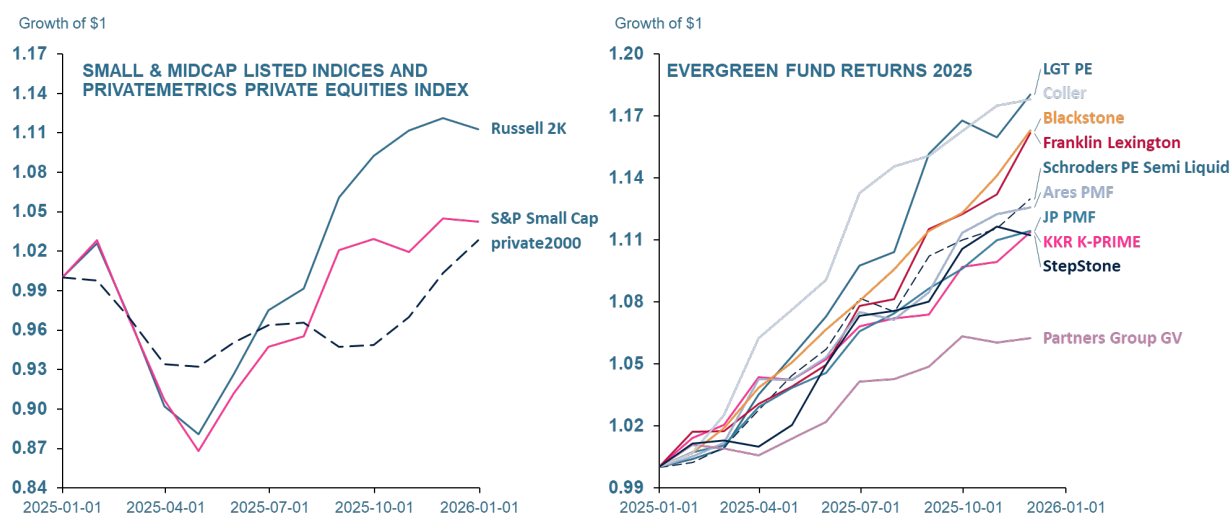
Funds vs Market Returns

From reviewing documentation of Evergreen funds, most fund managers indicate that some sort of market adjustment factor is considered when striking monthly NAVs, to account for the valuation lag discussed in the last section. If we look at the return cadence by month of ten major Evergreen Funds (US and EU domiciled) for 2025, we find that there was very limited downside volatility as shown in Figure 2 (right). These ten Evergreen funds are among the largest in the market, and include the top three in Europe (Schroders, LGT PE, and Partners Group), as well as large US players including KKR, Blackstone, and Stepstone. Additionally, there is a mix of direct and secondary focused strategies. For a more comprehensive list please see the Appendix, which provides monthly returns for 25 major Evergreen funds, consistent with the findings of this sub-group.

Figure 2 (left) shows the return path for the Russell 2000, S&P Small Cap 400, and privateMetrics® flagship index, the private2000®, for 2025. While small to mid-cap listed

indices fell 5-6% in February and a further 6-7% in March, there was no such drawdown in the Evergreen funds. The private2000 index showed returns of -2.8% and -3.6% for the same months, capturing the changing risk premiums in private equities. With risk premiums increasing, captured both by listed indices and private market transactions (reflected in private2000), Evergreen fund assets should have experienced a similar valuation change across their portfolios. Instead, the maximum monthly drawdown across all ten funds for the year was -0.7%. This has implications for funds that are issuing monthly (and redeeming quarterly) as the monthly NAVs should reflect market prices at that time. Overall, just two of twenty-five funds examined showed monthly returns below negative one percent during the February to April sell-off.

FIGURE 2: MONTHLY NAV CYCLE



Source: privateMetrics, Bloomberg, Fund factsheets, Annual filings.

NAVs, Market Prices, and Transaction Prices

With listed investment trusts, we can observe how NAVs have moved over time relative to their market cap, and if this relationship has changed over time. Further, we can observe how this compares with price movements in the private2000 index. Given there was a recent take-private of an investment trust (Apax Global Alpha Plus), we can observe the NAV, market price, transaction price, and the private2000 index levels.

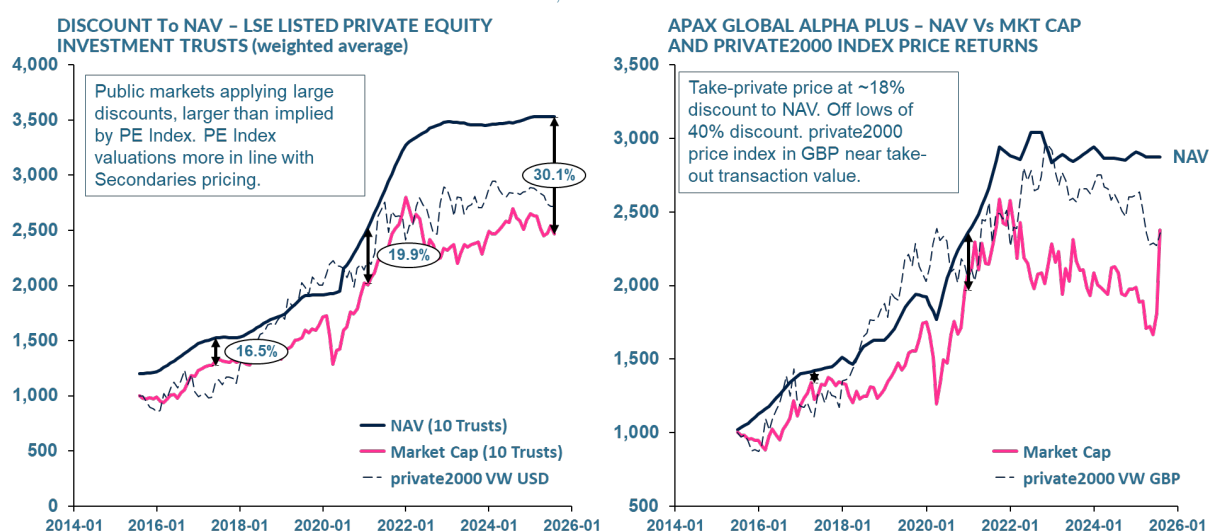
In Figure 3 (left), we observe the weighted average NAV and market cap of the ten largest investment trusts on the LSE. Discounts were 15-20% from 2015-2020, having widened to 25-30% over the last few years. The private2000 index prices imply a less severe discount currently than listed markets, at ~19% vs 30%. According to Jefferies², discounts averaged 10% of NAV through H1 2025, though this varies based on fund age and strategy. In Figure 3 (right), the history of one investment trust – Apax Global Alpha Plus – is shown. In this case, the discount had widened to >40% of NAV. The discount

² Jefferies H1 2025 Secondary Report

implied by the private2000 index in local currency (GBP) was closer to 20%, aligned with the transaction price. The trust was acquired by the GP³ (Apax) with investment from Ares, indicating market participants believed it was undervalued. The take-private price took place at ~18% discount to the latest NAV, and very much in line with the private2000 index implied market valuation.

In this particular case, the private2000 index captures the arms-length transaction price well. The index is designed to capture transaction prices (on average), or fair value. Individual cases may vary, but this holds true for a large sample. In theory, the NAV is also intended to reflect an exit or transaction price, but in practice, most secondary transactions of fund interests happen below the reported NAV.

FIGURE 3: LISTED INVESTMENT TRUSTS: NAV Vs MARKET CAP, PRIVATE2000 INDEX



Source: privateMetrics, Bloomberg, Fund factsheets, Annual filings.

Using privateMetrics® and infraMetrics®

We can use privateMetrics and infraMetrics to establish a market adjustment factor for private equity and infrastructure equity funds that deal monthly. This factor can be applied to the equity investments portion of the fund as part of the NAV roll-forward. The roll-forward calculation would look something like Figure 4:

FIGURE 4: MONTHLY NAV VALUATION ADJUSTMENT



Source: SIPA

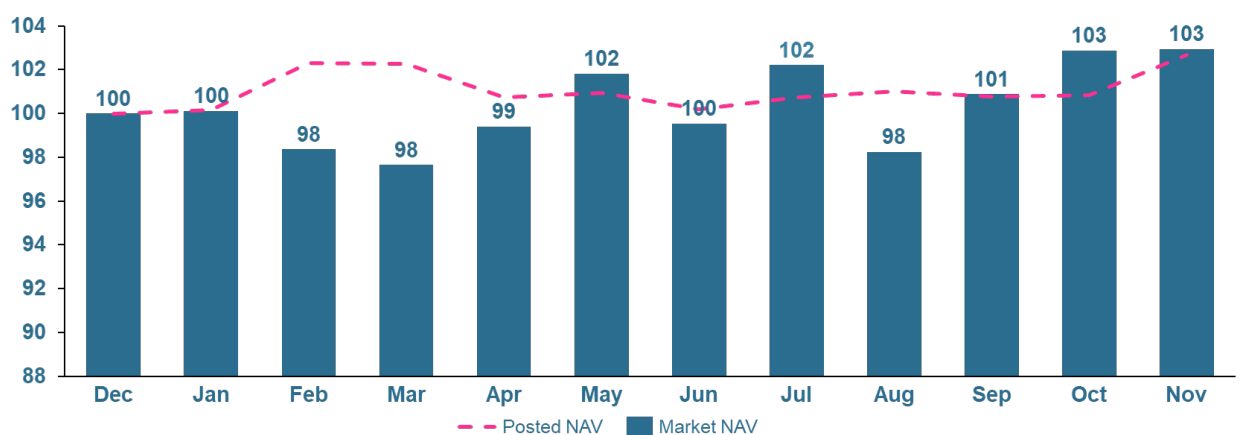
³ Apax Partners to buy Apax Global Alpha in \$1.1 billion deal | Reuters

In practice, most funds capture net capital changes, fx, and idiosyncratic components if the data is available. Idiosyncratic returns would include the markup of secondaries purchased at a discount, a portion of returns that would not be captured with a market adjustment factor. The application of a market adjustment factor is less well documented and as we showed in the prior sections, does not seem to incorporate the changing risk premiums observed in either listed or private equities indices. Instead, it appears that funds seek to minimize volatility in the interim months, releasing gains/losses into NAV when new quarterly valuations are received. Ignoring changes in risk premiums can lead to new investors overpaying when risk premiums have risen, or underpaying when they have declined. Either way, one side is harmed.

An alternative approach is to systematically incorporate a market adjustment factor into the monthly NAV process. In Figure 5, we provide the posted monthly NAVs for a Luxembourg domiciled Evergreen fund focused on private equity secondaries and co-investments. The fund disclosed that interim NAVs rely partially on the valuations received from investee funds (with a lag) and thus can be quite stale. We apply a market adjustment factor to the portion of the NAV exposed to private equities using the private2000 index returns in Euros to capture the dynamic changes in pricing. The effect of this is that the NAV is more volatile, more in line with the risk of the asset class. For February and March, the market NAV captures the weakness in the market, implying investors would have overpaid for units if buying at the posted NAV. Conversely, in other periods, the posted NAV was below that implied by market movements. Issuing and redeeming at stale NAVs ignores the underlying changes in the market and disadvantages either new buyers or existing holders.

FIGURE 5: EVERGREEN FUND (EUR)

NAV/Unit EUR



Source: privateMetrics, Fund factsheet and filings. NAVs standardised. Calculations by SIPA.

The advantage of using a market adjustment factor is that it will capture the systematic return component in the NAV, while still allowing the manager to adjust for asset specific changes, and net capital movements. Moreover, with privateMetrics and infraMetrics, the data is available monthly to allow for NAV updating prior to settlement of monthly

subscriptions. Investors today subscribe for units well in advance of month end, without knowing where the NAV will ultimately settle, so this aligns with current practices. Eventually regulators may take a closer look at precisely how these monthly NAVs are arrived at.

In this case, the NAV is updated using the flagship private2000 index (EUR). With knowledge of the funds geographic and industry allocations, a custom index can be built that tracks the precise allocations of the fund, providing the manager with a market adjustment factor most aligned with their funds exposure. More details on custom benchmarking can be obtained here ([Custom Benchmarks](#)).

Conclusion

As Evergreen private equity and infrastructure funds offer monthly dealing while relying on infrequent and delayed underlying valuations, the integrity of interim NAVs becomes a critical issue for investor fairness. Our review of market practices of several participants shows that, while net capital flows and FX adjustments are applied, the market return component may not be consistently incorporated in every monthly NAV, resulting in NAVs that are stale and inconsistent with risk premiums as of the date the NAVs are struck.

By using a market adjustment factor, such as that derived from privateMetrics® and infraMetrics®, the portion of the NAV exposed to private equity or infrastructure equity can be adjusted for market movements, ensuring that new and existing investors are treated fairly, with one group not subsidising the other. This can be seamlessly implemented with the existing valuation process, providing a solution for a practice that is certain to gain more attention. As regulators and investors increasingly scrutinise valuation practices in Evergreen structures, adopting a clearly defined and disclosed approach to monthly NAV updates may become a requirement.

Appendix: 2025 Returns

FIGURE A1: MONTHLY RETURNS IN USD FOR 25 PRIVATE EQUITY FOCUSED EVERGREEN FUNDS

| Evergreen Fund | 2025 Monthly Returns for Institutional Class in USD | | | | | | | | | | |
|--------------------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
| 1 Apollo AA | -0.02% | -0.18% | 2.29% | -0.26% | 0.11% | 2.28% | 0.17% | 0.20% | 1.90% | 0.00% | 0.20% |
| 2 Ares PMF | 0.53% | 0.66% | 3.05% | -0.04% | 1.03% | 2.10% | -0.35% | 1.24% | 2.64% | 0.81% | 0.31% |
| 3 Blackrock PIF | 0.50% | 0.25% | -0.25% | 1.98% | 1.78% | 2.23% | -0.23% | 3.27% | 0.98% | 1.79% | 2.13% |
| 4 Blackstone - BXPE | 0.70% | 1.20% | 1.90% | 1.20% | 1.50% | 1.30% | 1.40% | 1.70% | 0.80% | 1.60% | 1.90% |
| 5 CAPM SICAV | 3.10% | 0.86% | 1.45% | 0.59% | 1.67% | 2.71% | 0.56% | 0.87% | 1.65% | 0.31% | 0.93% |
| 6 Carlyle Alpinvest | 1.76% | 0.58% | 1.72% | 0.35% | 2.45% | 2.67% | 0.33% | 1.46% | 1.51% | 0.65% | 0.64% |
| 7 Carmignac | 0.15% | 2.13% | -0.02% | -1.50% | 0.22% | -0.75% | 0.53% | 0.28% | -0.24% | 0.06% | 1.84% |
| 8 Cascade | 1.24% | 1.40% | 0.46% | 1.38% | 3.45% | 3.17% | 1.11% | 2.88% | 1.94% | 1.65% | 1.08% |
| 9 Collier Capital | 0.69% | 1.83% | 3.62% | 1.30% | 1.33% | 3.87% | 1.13% | 0.44% | 1.04% | 1.07% | 0.24% |
| 10 EQT Nexus | 0.20% | 0.00% | 5.50% | 2.70% | -0.10% | 5.10% | -0.50% | 0.10% | 4.00% | -0.80% | -0.50% |
| 11 Franklin Lexington | 1.71% | 0.04% | 1.31% | 0.81% | 0.99% | 2.72% | 0.32% | 3.13% | 0.65% | 0.85% | 2.62% |
| 12 Future Standard | 0.32% | 1.21% | 2.63% | 0.54% | 0.23% | 2.47% | 1.28% | 0.82% | 0.22% | 1.03% | 1.46% |
| 13 Hamilton Lane PAF | 1.64% | 0.82% | 1.29% | 1.35% | 2.63% | 2.59% | 0.37% | -0.67% | 1.99% | 1.85% | 0.00% |
| 14 JPMorgan PMF | 0.74% | 0.32% | 1.83% | 0.92% | 0.68% | 1.92% | 0.83% | 1.12% | 0.86% | 1.28% | 0.40% |
| 15 KKR - Prime | 1.42% | 0.63% | 2.26% | -0.13% | 0.97% | 1.51% | 0.35% | 0.16% | 2.15% | 0.22% | 1.33% |
| 16 LGT PE | 0.40% | 0.50% | 2.60% | 1.80% | 1.80% | 2.30% | 0.60% | 4.30% | 1.40% | -0.70% | 1.80% |
| 17 Meketa | 1.25% | -2.00% | -1.47% | -1.14% | 4.40% | 0.07% | 0.41% | 0.96% | 0.27% | 0.61% | -0.40% |
| 18 NB Access | 1.59% | 0.66% | 0.03% | -0.31% | 0.63% | 0.89% | 1.30% | 2.33% | 0.98% | 1.15% | 1.20% |
| 19 Pantheon AMG | 1.84% | -3.19% | -1.71% | 1.74% | 2.85% | 3.62% | -0.04% | 0.26% | 0.34% | -0.85% | 0.37% |
| 20 Partners Group GV | 1.10% | -0.20% | -0.30% | 0.80% | 0.80% | 1.90% | 0.10% | 0.60% | 1.40% | -0.30% | 0.20% |
| 21 PGPE | | | 1.67% | | | 6.10% | | | 2.36% | | 2.02% |
| 22 Pomona | | | 1.13% | | | 3.14% | | | 1.80% | | |
| 23 Sagard | 0.00% | 0.89% | 1.65% | 2.11% | 6.02% | 5.29% | -0.33% | 2.12% | 0.11% | 3.47% | 2.17% |
| 24 Schroders Semi Liquid | 0.22% | 0.73% | 1.78% | 1.63% | 1.24% | 2.34% | -0.63% | 2.51% | 0.70% | 0.50% | 1.30% |
| 25 Stepstone PMF | 1.16% | 0.14% | -0.29% | 1.04% | 2.83% | 2.26% | 0.22% | 0.44% | 2.34% | 0.99% | -0.38% |

Source: Factsheets, filings. For Pomona and PGPE – only quarterly returns are provided, the rest are monthly.

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.



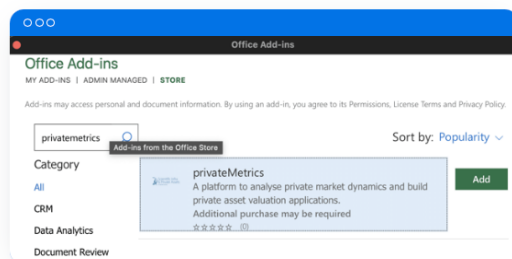
Custom Comps

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

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 at 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 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.

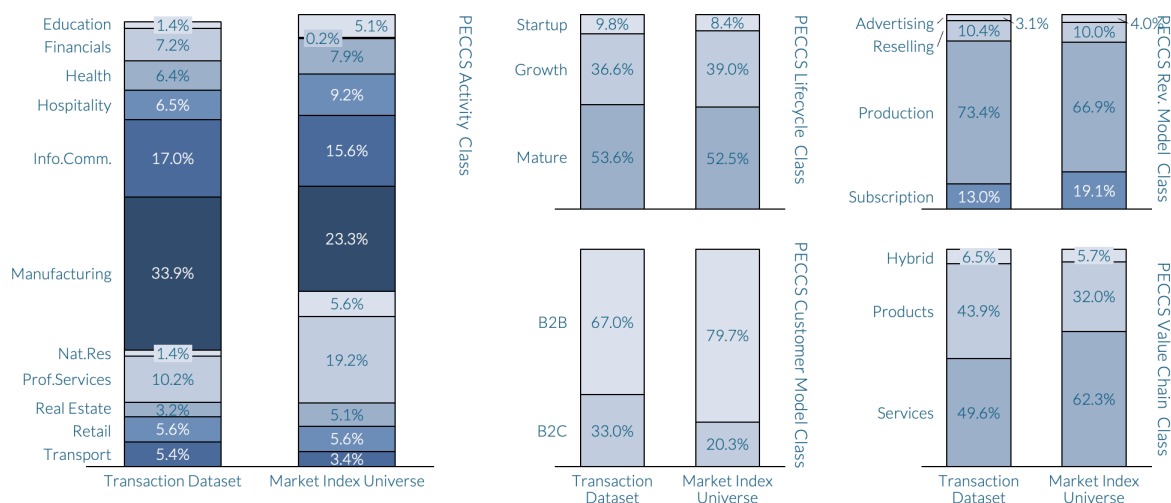
We calibrate this model using new observations monthly to update its estimation of the price of risk of each factor. In other words, each transaction observed is then used to ‘update’ this model (i.e., obtain new l s) through a dynamic estimation (using a Kalman filter), which retains the memory of past l s 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 Figure 1.

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 $\pm 10\%$, 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.

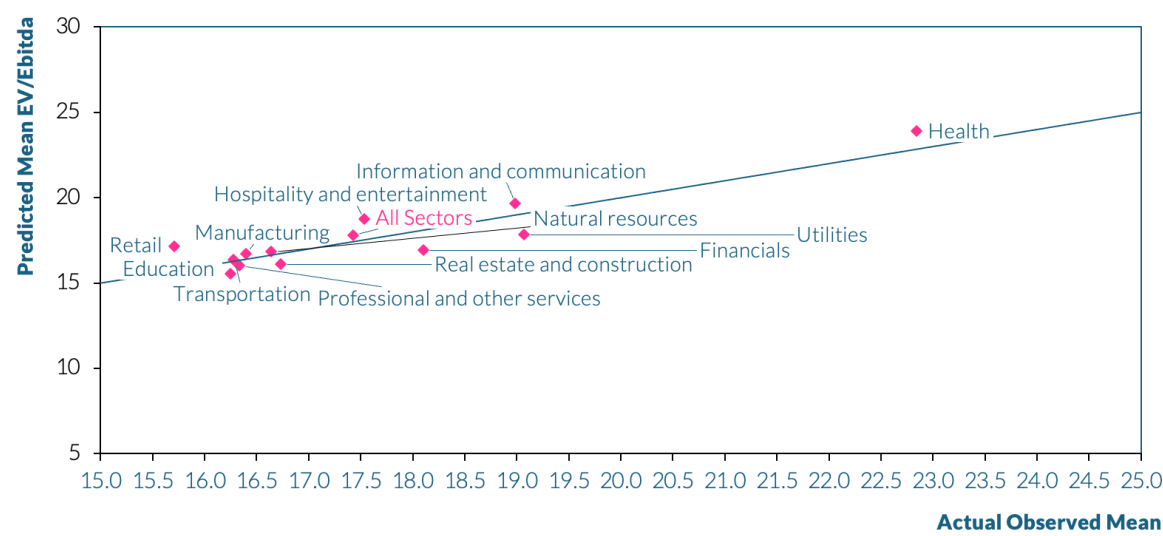
To ensure that is not the case, we compute the EV based on the book value of debt and predicted equity valuation and divide the sum by the EBITDA to get a predicted EV/EBITDA and compare it to transaction implied ratios. Figure A2 presents the average predicted and observed EV/EBITDA by PECCS® activity 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% | PECCS Customer Model |
| | Professional and other services | 3.3% | B2B | 1.5% | |
| | 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

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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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