PICKING WINNERS

How privateMetrics® Indices and Tools Help Identify Alpha Generators

September 2025

Executive Summary

Predicting fund outperformance: Using privateMetrics® to estimate total alpha and alpha persistence scores as of year-end 2018, we find a clear pattern: managers with the strongest persistence scores were much more likely to generate alpha in subsequent vintages (2019–2023), while those with weak alpha persistence scores were more likely to underperform.

Backing managers with high persistence scores increased the odds of achieving future alpha—2:1 versus a coin-flip 1:1—compared with just 1:2 odds for managers with low persistence. This is not a subtle edge; it's the equivalent of playing with home-court advantage in the NBA, where home teams win more than 60% of the time[1].

Tracking realized outcomes confirms: managers flagged with higher persistence went on to deliver positive alpha more than 60% of the time, versus only 40% for those with low persistence scores.

Picking Alpha Generating Funds: The measurable value-add for any allocator or fund of funds manager is the ability to consistently identify and invest in alpha-generating managers. Since the median alpha for private equity funds is near zero[2], demonstrating the ability to select managers and funds that deliver consistent, positive alpha is valuable. Conversely, shedding negative alpha funds, through secondaries, or by not re-upping, can also improve overall returns.

Demonstrating Outperformance with privateMetrics® and Direct Alpha: A fund manager can show its value-add (and justify its fees), by quantifying the alpha of the portfolio, and at the individual fund level. This requires an appropriate private equities asset level benchmark. Using the privateMetrics® indices and fund level cashflows, a fund of funds manager can calculate the alpha of its portfolio of funds returns against that of a broad market index such as the private2000®, or a custom index that closely mirrors the geographic and industry makeup of the fund(s).

2025 Private Market Alpha League Tables: Much like the opportunity set facing a private equity funds investor, our Private Market Alpha League Tables (here) evaluated ~600 buyout funds across ~150 fund managers with vintages covering 2013 to 2023. Released in early 2025, the results ranked individual funds by alpha generation, and fund managers by a combination of alpha generation and alpha persistence across funds. The funds universe was diverse, covering all size ranges, generalist and specialist funds, and various geographical exposures

[1] Home Field Advantage: Chicago Booth Review
[2] Benchmarking Private Market Performance

Data and Methods

Earlier this year, we released the **2025 Private Market Alpha League Tables**. To access a copy, please see Alpha League Table. The League Tables ranked private equity buyout managers and their funds, covering a period from 2013 to 2023, with all vintages represented. In total, there were 600 funds in the rankings, spread across 150 fund managers. There was good representation across vintages, and styles, with coverage of small, lower mid-market, mid-market, and large buyout funds. Table 1 provides key statistics for the broad buyout funds universe used for the rankings.

Table 1: KEY STATISTICS FOR 2025 PRIVATE MARKETS ALPHA LEAGUE TABLE UNIVERSE

Fund Stats by Vintage			# of Funds by Size Bucket			# of Funds by Geography		
Vintage	# Funds	Size (M)	< 1 Bn	1-5 Bn	>5 Bn	Americas	Europe	Asia
2013	62	644	37	19	6	44	8	8
2014	58	652	35	18	5	46	9	2
2015	68	991	35	30	3	44	17	5
2016	92	871	53	28	11	68	17	6
2017	68	982	34	20	14	53	12	3
2018	89	1,100	40	36	13	67	15	6
2019	104	1,071	48	47	9	86	10	6
2020	83	1,700	33	29	21	63	12	7
2021	94	1,027	46	39	9	74	17	3
2022	61	1,400	24	19	18	48	10	3
2023	41	870	22	15	4	30	10	1

Source: privateMetrics®. Preqin.

In some respects, the alpha league tables ranking process is similar to the fund selection process of a fund of funds manager. Building out a fund of funds portfolio for an institutional fund or a separately managed account (SMA) will require allocating across a number of vintages, fund sizes, and geographies. Fund managers can benefit from better tools and data to benchmark prior funds returns and evaluate and convey the performance of their own portfolio(s) of funds. This can complement the fund managers existing strategy and due diligence process to uncover alpha generating managers.

With the privateMetrics® indices (see the index factsheet here), one can use the Direct Alpha method to calculate the alpha of the individual funds, split between allocation alpha and pure alpha (or selection alpha). Similar to the public market equivalent (PME), we use the private market equivalent (PtME) and assume that cash flows for each fund were invested in the private2000® Value Weighted index at the same dates the capital calls were drawn for investments into portfolio companies of the fund. This result produces a total alpha figure for the fund. Then, a thematic or custom benchmark can be developed with privateMetrics that reflects a funds particular strategy (industry weights, geography, business model characteristics). Employing Direct Alpha with this second index provides a pure alpha figure. The difference between the first and second benchmarks is what we call allocation alpha. This is summarized below:

Fund IRR = Market Return + Total Fund Alpha, where:

Total Fund Alpha = Allocation Alpha + Pure Alpha

Please see the appendix for a more detailed explanation of the direct alpha method and how this can be calculated with privateMetrics® Excel Add-in tool (here).

Following this approach, the 600+ funds were then ranked based on their alpha performance. The fund managers were also ranked, taking into consideration both the returns of prior funds, and a persistence score, which attempts to predict the likelihood of alpha generation in future funds. Funds with more consistent alpha generation, rather than one-hit wonders, were accorded higher scores. More discussion on the method is available in our white paper on Alpha available (White Paper).

This can be implemented in the privateMetrics excel Add In tool (see here on how to use the add-in in Excel). Within the excel Add In, one can query the monthly index levels and returns for the flagship index and a number of pre-built thematic indices, covering different geographies, and sectors. The custom benchmark tool within the Add In allows one more flexibility to build an index that more closely represents the strategy of a fund. Any combination of geographies, industries, revenue model, lifecycle, can be used to tailor an index to the particular allocations of a fund. This can be useful if a fund has allocations the deviate meaningfully from the pre-built indices, or for specialist managers that focus on a particular sector, or sub-sector within a specialty. An example would be a mid-market healthcare buyout fund. A custom benchmark may more accurately capture the value add of this fund than the flagship alone.

Improve Odds of Finding High Alpha Funds with privateMetrics®

Our Alpha League Table Rankings evaluated the alpha of funds and performance persistence of fund managers as of September 30, 2024. We re-computed the alphas as of December 31, 2018, using the fund cash flows and net asset value (NAV) at that date. The objective was to evaluate whether managers that had high persistence scores as of that data went on to generate positive alpha in subsequent funds.

The fund managers were ranked by persistence score (highest to lowest). In total, there were 45 fund managers with high persistence scores as of December 31, 2018. This included all the funds in the sample from vintages 2013 to 2018. We explored whether managers that had delivered mean positive alpha to that point did so in subsequent funds. Similarly, we evaluated whether managers that had low persistence scores went on to produce negative alpha in future periods. Of the 45 managers with the highest persistence scores, 30 managers raised funds after 2018 that were captured by our study.

The persistence measure followed the same approach as our white paper. Given that each fund manager has too few funds to compute the odds of delivering alpha, a beta distribution was used (two parameter distribution that can take a value between 0 and 1) and assumed that the informed prior was 0.5. That is, each manager was assumed to have a 1:1 odds (50/50) of delivering alpha without any additional information. With more fund results, the informed prior was updated to reflect the performance. The more results, the more accurate the measure.

What we found is that fund managers with higher alpha persistence scores as of 2018, went on to produce alpha in subsequent funds at a higher rate than those with lower scores. This suggests that manager alpha may persist, underscoring the importance of measuring it accurately.

Figure 2 (top) details the mean manager fund alphas for funds with vintages from 2019-2023. 19 of the 30 (~63%) fund managers with the highest persistence measures in 2018, went on to produce positive mean alpha (blue bars) across funds for the 2019-2023 fund vintages. At the fund level, these 30 managers collectively raised 52 funds, of which 60% produced positive alpha for the same period.

A number of familiar names from our 2025 Private Markets Alpha League Tables show up in Figure 1. Smaller funds such as Shore Capital Partners, Alpine Investors and GTCR. In the middle market, Wynnchurch Capital displayed persistence measures and fund performance at the end of 2018 that may have helped an investor pick their subsequent funds. Similarly, upper middle market specialist, Audax Private Equity, showed consistent alpha.

Large fund managers that ranked highly in the League Tables, such as Brookfield, KKR, and Blackstone, showed strong performance and persistence as of the end of 2018. This suggests that alpha does persist across the top performing managers. Notably, for Brookfield, KKR, and Blackstone, we had numerous funds in our sample, improving the accuracy of the alpha persistence measures.

On the other side of the coin, In Figure 2 (bottom), we track the out of sample performance of the fund managers that had low alpha persistence scores. As shown, there was a much higher percentage of negative alpha (red bars) across this group. Funds with poor performance showed a lower likelihood of reversing the trend in subsequent funds. Given the huge dispersion in returns, it is critical to measure fund and manager alpha, and probability of repeat performance.

FIGURE 2: FUND MANAGER MEAN FUND TOTAL ALPHA FOR 2019-2023 VINTAGES

Source: privateMetrics, SIPA calculations.

Table 2 provides a summary of these results. The group is split between those fund managers with high persistence scores and those with low persistence scores as of 2018. Approximately 63% of fund managers showing high persistence scores of the end of 2018, subsequently delivered positive mean alpha across their 2019-2023 funds. For the underlying funds that these GPs managed, that figure was 60%. The same metrics for fund managers with low persistence as of the end of 2018 were 40%, and 43%, respectively.

TABLE 2: FREQUENCY OF OUTPERFORMANCE FOR FUNDS WITH 2019-2023 VINTAGES

Category	#	Initial Odds YE 2018	# of Positive Alpha (2019-2023)	# of Negative Alpha (2019-2023)	% Positive Alpha (2019-2023)
High Alpha					
Managers	30	~2:1	19	11	63%
Funds	54		32	22	60%
Low Alpha					
Managers	101	~1:2	41	60	40%
Funds	151		65	86	43%

Source: privateMetrics, SIPA calculations.

Using privateMetrics and the Direct Alpha tool, this performance analysis can complement a fund of funds existing due diligence efforts and strategy, to tilt the balance of probabilities in their favor in the hunt for alpha generating funds. This can be particularly useful in the small to mid-market segment of the market, in which there are thousands of funds and performance dispersion is the greatest. In this segment, it's not just about finding alpha generators, but also avoiding serious value destroyers, as we show in the next section. This represents a difficult segment of the market for many institutional investors to navigate and an area where a double layer of fees associated with fund of funds may be more justifiable.

Small and Mid-Market Funds – Fertile Ground

In this section, we discuss performance across various fund sizes using the same dataset of fund returns as of September 30, 2024. We found that small to mid-market funds produced the highest median alpha across the entire group for vintages 2013 to 2023. Median alpha was highest for fund sizes under $500, with fund sizes of between $500 million to $1 billion, the next highest. Table 3 details the median alpha by size bucket.

The alpha opportunity in the smaller and lower middle market is desirable to most institutional investors, but the teams often do not have the bandwidth to navigate the market internally. Accessing this segment via a fund of funds drawdown vehicle or an SMA is more practical. The higher fee burden needs to be balanced against the greater alpha opportunity and the differentiated exposure.

The opportunity does not come without risk. In addition to the higher median alpha in small and middle market buyout funds, the dispersion was significantly greater. A lot of sizeable outperformers, but also many funds that performed very poorly. Figure 3 shows the alpha across these 4 size buckets for this group of funds.

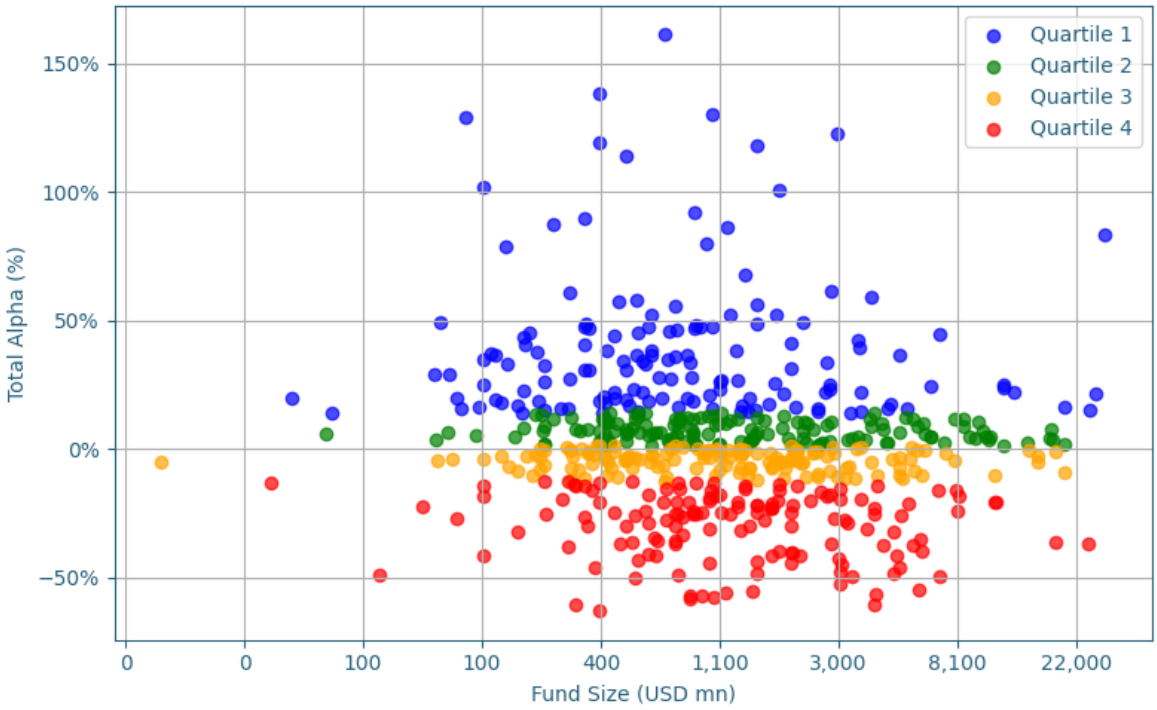
TABLE 3: IRR AND ALPHA BY SIZE IN AMERICAS 2013-2023 VINTAGE

(2013-23 Vintage)		IRR			Total Alpha		
Size Buckets	Fund Size	Bottom Decile	Median	Top Decile	Bottom Decile	Median	Top Decile
1 (154)	<500Mn	-11.1%	21.3%	57.3%	-19.4%	5.56%	43.7%
2 (137)	500Mn-1Bn	-29.3%	16.9%	57.2%	-30.2%	3.68%	44.9%
3 (225)	1-5Bn	-32.5%	10.1%	39.9%	-36.9%	-1.56%	25.9%
4 (70)	>5Bn	-22.2%	13.5%	28.3%	-35.2%	1.77%	21.7%

Source: privateMetrics

More extreme positive alpha is observed in smaller funds. As fund sizes increase to $5 billion and beyond, extreme outperformance is less frequently observed but the overall return dispersion profile narrower. Fewer outsized returns but also fewer major negative alpha funds. This is also true on the downside where more pronounced negative returns are observed in smaller funds.

FIGURE 3: TOTAL ALPHA VS FUND SIZE – AMERICAS 2013-2023 VINTAGES



Source: privateMetrics

A nightmare scenario for an institutional allocator to this segment of the market is that they gain exposure but select poor performing funds. As we can observe from the fund alpha dispersion, there is a non-trivial probability of that happening. A fund of funds manager can demonstrate their value add by showing the alpha they have delivered through fund selection in this segment of the market. Given the higher alpha potential, and de-risking by using a manager, the strategy can hold appeal. For a full copy of the report on returns and fund size, please click (here).

Conclusion

Despite the increased competition from the Secondaries market and Evergreen funds, there is still a differentiated role for a fund of funds manager. The former can only allocate to those opportunities for sale in the market, while the fund of funds can access the entire primary funds market (and secondaries if in the mandate), diversifying by vintage. They have more control and latitude over portfolio construction.

By back testing alphas as of 2018 and tracking subsequent vintages through 2024, we find that some managers display persistence, even if on average this is not the case. Managers with high positive alpha and persistence scores went on to deliver future outperformance in subsequent funds at a higher rate than the rest of the group, while those with negative scores did so at a lower rate. These results suggest that using the privateMetrics® indices and applied tools such as Direct Alpha and Custom Benchmarking, can help fund managers in picking funds and measuring fund performance. This can augment the existing fund selection process, potentially improve

the odds of outperformance—particularly in the small and mid-market segments where return potential is greatest, but risk of capital loss is also greatest.

Fund of funds can continue to justify their role by identifying alpha-generating managers and avoiding value destroyers in an increasingly competitive private markets landscape.

Appendix

Direct Alpha Explanation

A simple way to the use a market benchmark to decompose the performance of private funds is the Direct Alpha approach of Gredil et al. (2021) by which a fund IRR can be written as:

$$Fund\ IRR = Market\ Return + Total\ Fund\ Alpha$$

The Direct Alpha calculations are described in the appendix.

Next, the alpha of each manager can be broken down into multiple sources. Fund managers generate alpha through a combination of strategic decision-making and execution capabilities. Broadly, these efforts fall into three categories: asset allocation, asset selection, and structuration. Asset allocation involves making strategic bets on different market segments, such as sector and geographic focus. Asset selection involves choosing specific investments and determining the optimal timing for distributions, aiming to maximise returns. Lastly, structuration includes adjusting leverage or reducing market risk through mechanisms such as preferential exit strategies, which can enhance returns while managing exposure.

We extend this approach to distinguish between sources of alpha. Using a broad market benchmark to measure Total Fund Alpha in combination with a strategy-specific benchmark e.g. mid-market US Tech, to control for the impact of Asset Allocation decisions, it is straightforward to split Total Fund Alpha into two components: Asset Allocation Alpha and Pure Alpha.

The difference between Total Fund Alpha and Pure Alpha is the Allocation Alpha,

$$Allocation\ Alpha = \text{Total Fund Alpha} - \text{Pure Alpha}$$

The total fund net IRR is written:

$$Fund\ net\ IRR = Market\ Return + Asset\ Allocation\ Alpha + Pure\ Alpha - Fees$$

Or

$$Fund\ net\ IRR = Market\ Return + Asset\ Allocation\ Alpha + Net\ Pure\ Alpha$$

Asset Allocation Alpha represents the portion of returns attributable to the fund manager's choice of market segment or style exposures (sectoral, geographic or factor tilts). Net Pure Alpha isolates the value added by the manager's investment selection and structuring skills, which includes timing of distributions, leverage decisions, and exit strategies, after fees. This shows how fund managers create value and enables investors to assess which proportion of market outperformance stems from specific strategic decisions or operational and investment expertise.

Calculating Alpha with privateMetrics

Approach

Compound the fund cash flows by the return of the private market index from the date of the cash flow to the calculation date. Then calculate the internal rate of return of the adjusted cash flows, which is the *Private Market Equivalent*. Inputs required: Fund's historical cash flows and NAV, Private Market Index

Step 1: Adjust the cash flows

$$\tilde{C}_t = C_t . \frac{V_b(T)}{V_b(t)}$$

C_t: Cash flow at time t (positive for distributions, negative for contributions)

$V_b(T)$: Value of the private market index on the calculation date T

$V_b(t)$: Value of the private market index at the initial time t

$\tilde{C}_t$: represents the adjusted fund cash flow

Step 2: Solve for the rate α equation linking the adjusted cash flows and the NAV:

$$\sum_{t=0}^{T} \frac{\tilde{C}_t}{(1+\alpha)^t} + \frac{NAV}{(1+\alpha)^T} = 0$$

α is the Direct Alpha rate (analogous to IRR). A *Private Market Equivalent* greater/lower than 0 indicates that the fund has outperformed or underperformed the private market index. We have made it easy to calculate alpha of a private equity or Infrastructure fund using the privateMetrics API and a pre-defined excel template. It involves three simple steps:

1. **Select the relevant broad market and strategy benchmarks:** Given a private fund, select a corresponding privateMetrics broad market index, for example the private2000 index for global private equities and a strategy index corresponding to the fund's style e.g., US Tech Mid-Cap.
2. **Get the fund data needed to compute Direct Alpha:** For the same fund, all historical cash flow and NAV data are required to apply the Direct Alpha methodology.
3. **Find Total Alpha, Style Alpha and Pure Alpha for the fund:** Using the two privateMetrics benchmarks selected above and the fund cash flow and NAV data, it is possible to compute Total Fund Alpha (relative to the Broad Market, Pure Alpha (relative to the Style Benchmark) and Style or Asset Allocation Alpha (the difference between Total and Pure Alpha)

Refer to this use case for more details.

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

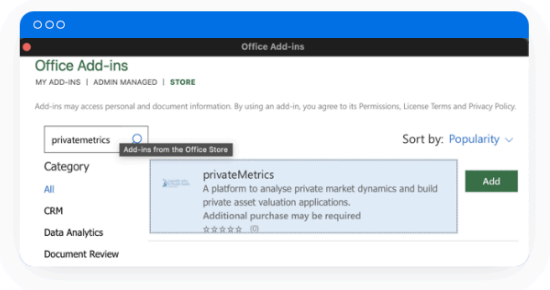
Build custom benchmarks setting target weights by PECCS, TICCS, style and geography that align with your strategy. All index metrics are recalculated for you.

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 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.

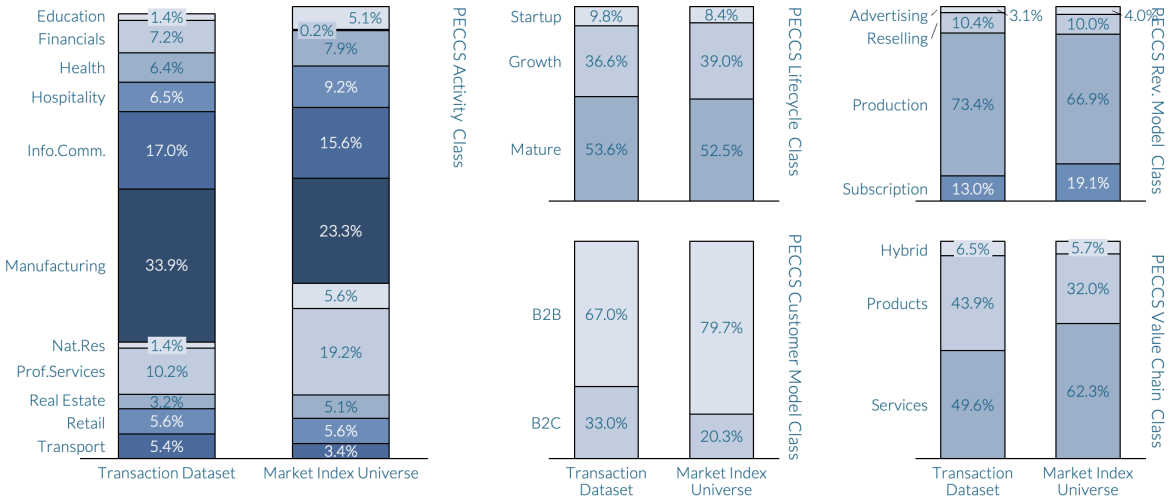
We calibrate this model using new observations monthly to update its estimation of the price of risk of each factor. In other words, each transaction observed is then used to 'update' this model (i.e., obtain new ls) through a dynamic estimation (using a Kalman filter), which retains the memory of past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

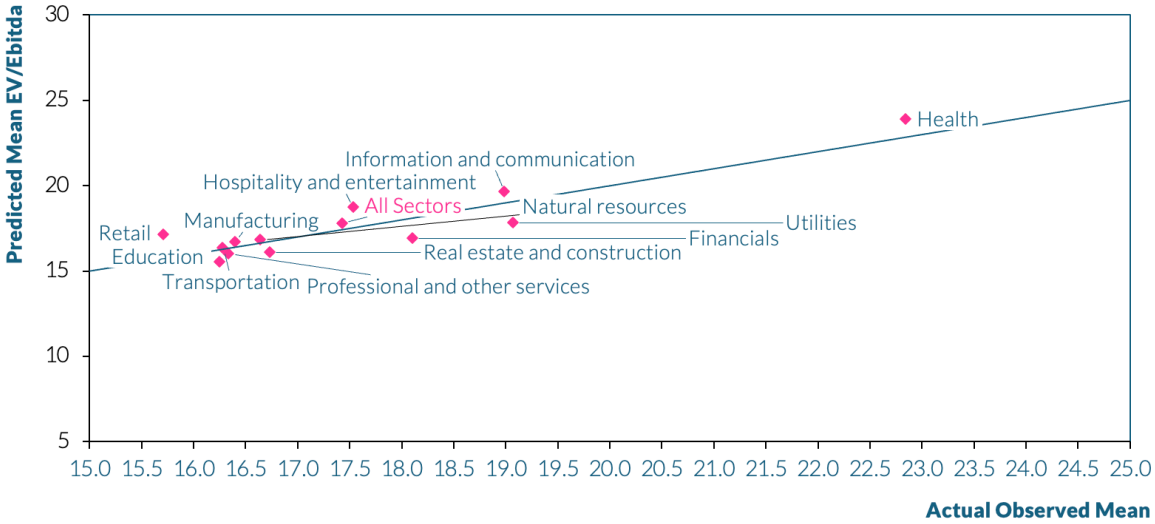
To ensure that is not the case, we compute the EV based on the book value of debt and predicted equity valuation and divide the sum by the EBITDA to get a predicted EV/EBITDA and compare it to transaction implied ratios. Figure A2 presents the average predicted and observed EV/EBITDA by PECCS® activity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