Long Term Investment Funds

Proliferation of Open-Ended Funds Will Drive Need For Benchmarking and More Frequent Valuations

November 2025

Executive Summary

Benchmarking and Valuations: The proliferation of Evergreens in Long Term Investment Funds will demand different benchmarking and valuation practices. **Both privateMetrics® and infraMetrics®, with monthly priced asset level indices, can be used to benchmark private equity and infrastructure Evergreen ELTIFs and LTAFs, or the equivalent sleeve within a fund**. Both indices are already registered with ESMA, and can be used to assess risk adjusted performance of the funds. Using listed indices as proxies can produce misleading results, as we have written about previously (see: here). Within the DC pension market in the UK, growth of LTAFs may eventually lead to mandatory benchmarking like that observed in Australia's DC system with APRA's Your Future, Your Super. Benchmarking should be a fiduciary consideration.

ELTIF 2.0: Revisions[1] to The European Long Term Investment Fund have led to renewed growth in a segment that had been slow to gain traction. The flexibility to supplement closed end funds with open end Evergreen funds that can pursue primaries, secondaries, and co-investments has led to a surge in new ELTIF offerings. Less onerous investment restrictions for the fund and lower minimums for retail investors may make ELTIF products more attractive. 2024 saw the highest number of new ELTIFs launched (55), with the majority of funds open-ended or Evergreen. With AUM of ~€21 billion across private equity, infrastructure, and private debt, this is still a small market but should expand rapidly in the coming years.

LTAFs: The UK's version of the Long Term Asset Fund was established in 2021 with a focus on the defined contribution pension market. Revisions in 2023 were made to broaden access to retail and Self invested pension plans. The market size is smaller[2] at £5 billion, but should see increasing flows with the growth of the DC pension market. Furthermore, the push for more private assets in DC plans (FCA) and the Mansion House Accord are both supportive of growth. There were 34 LTAFs with the FCA registry as of November 2025, offered by asset managers and insurance and DC pension providers. Unlike ELTIFs, LTAFs were open-ended evergreen structures from the beginning, to accommodate the ongoing flows from the DC pension market. A full discussion of ELTIFs and LTAFs is available in the appendix.

Evergreens: The non-ELTIF Evergreen fund AUM in Europe was approximately €63 billion at the end of 2024[3], with private equity and infrastructure evergreens accounting for approximately €25 billion and €8 billion, respectively. Offering Evergreens as ELTIFs and LTAFs will expand the market opportunity to retail and the DC pension market, from the existing wealth and institutional channels. Many asset managers that offer Evergreens

[1] https://www.alfi.lu/
[2] LTAF assets hit £5bn four years after launch
[3] Evergreen and Eltif fund markets soar to more than €83bn - Funds Europe

to the wealth market have launched ELTIFs and LTAFs, including Schroders (offering both) and EQT, which recently launched an ELTIF for its EQT Nexus Evergreen.

Data and Methods

We utilise privateMetrics® and infraMetrics® to obtain monthly index prices and time series of returns for the private2000 VW index (see the index factsheet here) and the infra300 VW index (see the index factsheet here). Both indices have monthly index pricing dating back to June 30, 2013, in the case of private equity and April 30, 2000, for the infrastructure equity indices. These indices capture the systematic risk of their respective markets and can be used to benchmark the performance of open-ended funds that produce monthly returns.

The data can be accessed using the privateMetrics and infraMetrics Excel Add-In tool (see here on how to use the add-in in Excel), which allows one to pull the data directly into Excel for further analysis. Data can also be access via python or R. In addition to the monthly return series, we can download risk data of the indices, including volatility metrics, value at risk, Sharpe ratios, and maximum drawdowns for both indices.

In this paper, we looked at two European private equity Evergreen funds and one infrastructure Evergreen fund, all domiciled in Luxembourg. The two funds are Schroders Capital Semi-Liquid Global Private Equity, a $2.7 billion private equity focused Evergreen, and Partners Group Global Value SICAV, a $9.2 billion Evergreen, the largest and longest standing one in Europe. For infrastructure, we evaluated the relatively new infrastructure secondaries fund from StepStone, called STRUCTURE.

With time series of monthly returns for the privateMetrics and infraMetrics indices, and Evergreen funds, annual and annualised since inception returns can be compared. The Direct Alpha tool can also be used to derive alpha against various flagship, thematic, and custom benchmarks, all accessible as a feature in the Excel add-in tool.

EU and UK Evergreens

The private asset Evergreen market in Europe (excluding ELTIFs and LTAFs) reached €63 billion at the end of 2024, with private equity focused evergreens accounting for over €25 billion of that figure. This compares to the US market, where Evergreen AUM was just under $400 billion at the end of 2024, with private equity focused Evergreens accounting for ~$70 billion.

Table 1 provides a non-exhaustive list of key Luxembourg domiciled Evergreen players across private equity and infrastructure equity. Within this group, there are European focused investors (Eurazeo, EQT), and global alternative asset managers that offer ’40 Act funds in the US for US investors, and Luxembourg domiciled equivalents for the non-US investor.

Return comparability depends on strategy, with secondary focused evergreens that have recently launched showing high returns (LGT Private Equity, CAPM SICAV).

Table 1: KEY LUXEMBOURG DOMICILED EVERGREENS

	Fund Characteristics			Return %		
Evergreen Fund	**Inception**	**AUM**	**Strategy**	**ITD**	**YTD**	**2024**
Partners Group GV	2009	$9.2B	PE Dir/Sec	10.3	6.4	6.7
Eurazeo PV 3 (EUR)	2018	€3B	PE/PD Sec	7.65	--	--
Schroders Semi-Liquid	2019	$2.7B	PE Co/Sec	19.1	11.0	5.9
NB Access	2022	$1.2B	PE Co.	12.4	9.0	9.6
STRUCTURE (EUR)	2022	$359M	Infra Sec	7.07	-2.64	14.83
EQT Nexus (USD)	2023	€1.4B	PE Pri/Co	14.9	18.0	6.7
SPRIM (EUR)	2023	$112M	PE Co/Sec	13.65	-6.16	13.53
LGT Private Equity	2024	$1.9B	Sec	29.3	16.7	34.4
EQT Nexus (EUR)	2024	€1.4B	PE Pri/Co	9.8	4.0	12.7
Pantheon PGPE	2024	$664M	PE Co/Sec	23.0	10.4	25.8
CAPM SICAV	2024	$1.3B	PE Dir/Sec	28.0	14.9	18.5
PG Infra Secondaries	2024	$1.3B	Infra Sec	19.9	11.1	20.1

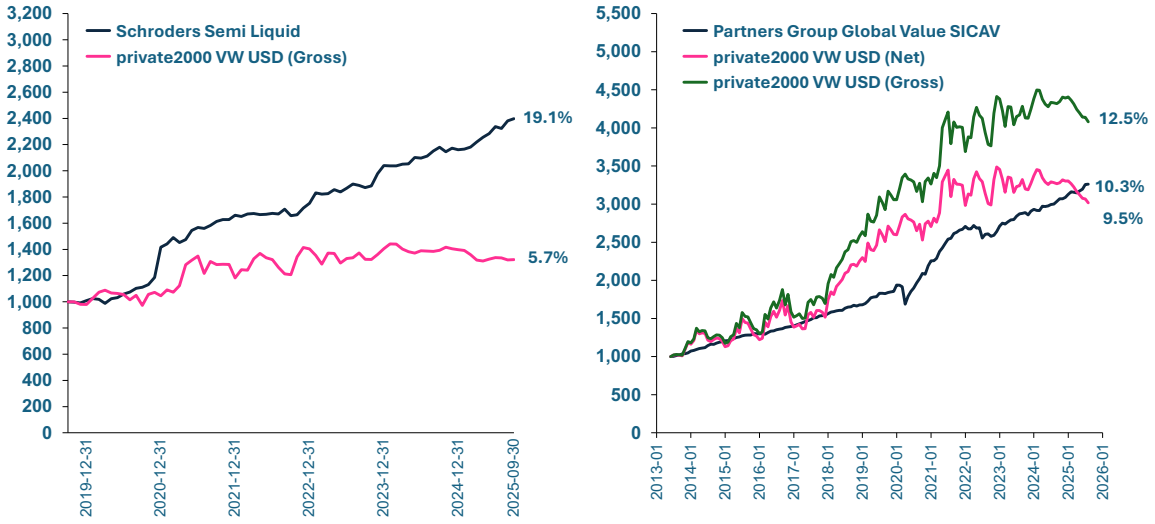
Source: factsheets, Financial Reports. As of 9/30 2025. For SPRIM and STRUCTURE, as of 6/30/2025. In USD unless otherwise stated.

A number of these players have recently launched Evergreen ELTIFS and/or LTAFs. This includes Partners Group, Eurazeo, Neuberger Berman, Schroders, Stepstone, and EQT. In the next section, we will explore how privateMetrics and infraMetrics indices can be used to benchmark the Evergreen funds. Both privateMetrics and infraMetrics provide asset level monthly returns series that line up with the monthly returns provided by the Evergreen funds.

Benchmarking Evergreen ELTIFs & LTAFs

Figure 1 (left) shows the evolution of the monthly reported returns for the Schroders Global Private Equity Semi-Liquid, one of the larger private equity Evergreen funds in Europe with AUM of $2.7 billion as of September 2025. Since inception, the fund has delivered a 19.1% CAGR, vs the private2000 index of 5.7% over the same period. The funds 40% return in 2020 and 17.3% return in 2021 are driving the high CAGR since inception. Figure 1 (right) shows the returns for Partners Group's Global Value SICAV, the Luxembourg domiciled fund, and the longest established and largest fund in Europe. Since inception, the fund has delivered a 10.3% CAGR, below the gross return of 12.5% for the private2000 index over the same period. Applying a 300bps fee charge to reflect fees at both the Evergreen and underlying manager level, reduces the private2000 returns to 9.5%.

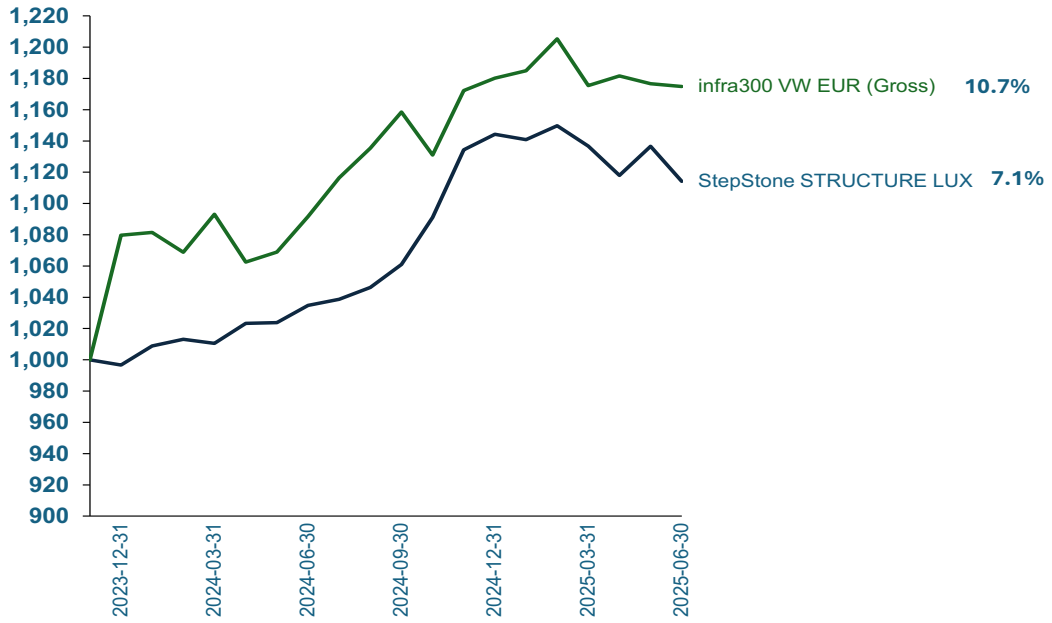
Figure 1: SCHRODERS SEMI LIQUID (LEFT) AND PARTNERS GROUP GV SICAV (RIGHT) VS PRIVATE2000 VW USD INDEX



Source: factsheets, privateMetrics. Calculations by SIPA

We can also evaluate infrastructure evergreen funds using the infraMetrics indices. Figure 3 looks at the recently launched (Dec 2023) Stepstone infrastructure fund, which has a secondaries focus. This fund is benchmarked against the infra300 value weighted index in Euros to match the Euro returns of the fund. StepStone's STRUCTURE fund has compounded at 7.1% since inception vs 10.7% for the infra300 index over the same time period. Though still early in the fund's existence, the infraMetrics index provides a better barometer to evaluate performance than listed proxies, that may not reflect the dynamics of the unlisted infrastructure market.

Figure 2: STEPSTONE STRUCTURE LUX VS INFRA300 VW EUR INDEX



Source: factsheets, infraMetrics. Calculations by SIPA

Valuation Considerations

The adoption of open-ended Evergreen style funds within DC plans introduces concerns related to valuations, namely, fair treatment of both existing unit holders in the fund, as well as new subscribers to units. This issue arises given the subscription periods (monthly) are more frequent than the underlying valuation cycle at private asset funds (quarterly). The open-ended funds offered within the DC space will need a well-grounded methodology to roll forward NAVs on at least a monthly basis, if not weekly or daily. Adjustments for capital calls, distributions, and fx is standard, but there must also be a market adjustment factor that reflects the ever changing risk premium in the private equities or private infrastructure equity market. Both privateMetrics and infraMetrics can play a role in providing a market factor adjustment between reported NAVs. Both indices capture the latest transaction metrics in their pricing, and thus represent an excellent proxy for the most current discount rates of their respective markets. Getting this wrong introduces potential liability, as one group of participants may end up subsidizing another, if the interim valuation approach uses a mis-specified market adjustment factor. Using listed proxies in particular is dangerous, given the differing dynamics between the two markets, especially over shorter periods. See our recent paper on this topic (here). NAV or appraisal based indices do not provide frequent data (quarterly), leaving a small sample size. Moreover, they are both stale and smoothed, and not likely to capture the current market dynamics. Combining a NAV or appraisal based index with a listed proxy may exacerbate errors, as an incorrect or stale NAV (starting point) is used alongside a much more volatile listed index with different market dynamics.

A second valuation concern, particularly in the context of the UK market, is the valuation difference observed between the investment trust market and the Evergreen and LTAF markets. In the former, most listed investment trusts trade at discounts to NAV of 30% or more, while in the latter, investors and DC participants will subscribe at the latest NAV, effectively paying a 40%+ premium (1/0.7) to buy the same or similar assets. The holdings and investment strategies are broadly similar and many of the key players listed in Table 1 have listed investment trusts with very similar strategies to their Evergreen, ELTIP, and LTAF offerings. Table 2 lists key LSE listed investment trusts, and their current valuation relative to NAV.

Table 2: KEY LISTED INVESTMENT TRUSTS ON LONDON STOCK EXCHANGE

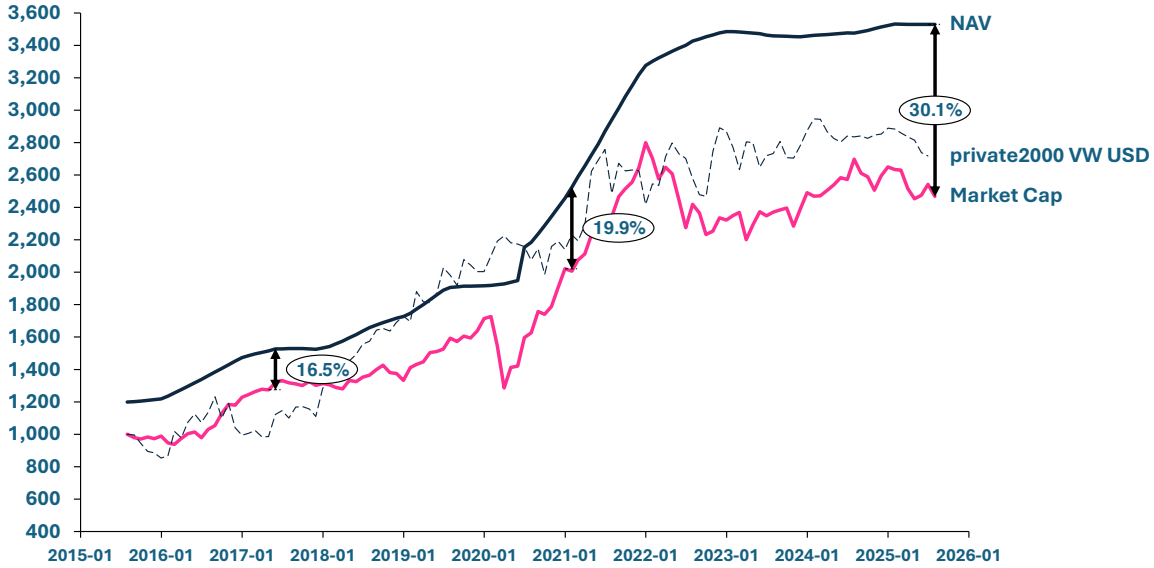
Investment Trust	Ticker	Market Cap	Price / Share	NAV / Share	Premium/ Discount
Pantheon Plc	PIN.L	1,588M	365.0	510.8	-28.5%
Partners Group	PEY.L	678M	9.86	14.08	-30.0%
Schroders SBO	SBO.L	56M	73.0	110.1	-33.7%
Neuberger Ber.	NBPE.L	654M	1556	2095	-25.7%
HarbourVest	HVPE.L	2,173M	3000	4306.0	-30.3%

Source: Factsheets, Bloomberg.

Schroders has one of the largest Evergreen funds and has recently registered LTAF and ELTIF products that will all have similar strategies and asset mix. Schroders Business Opportunity Trust is a listed equivalent trading on the LSE. Based on its recent trading levels, the Trust is trading at over a 33% discount to NAV. Though it is small, with just a £56 million market cap, we observe similar discounts for large, listed investment trusts with longer operating histories. All of the asset managers in Table 2 have Evergreen products and have developed or are in the process of developing ELTIF and LTAF offerings. Given the divergence in prices between the more liquid listed vehicle and the appraisal NAV market, this may create concerns around valuations and the prices DC pension plans or retail investors are paying for what is very similar exposure.

In figure 3, we can see the evolution of the NAV and the discount for ten listed investment trusts (NAV weighted). Additionally, we observe the private2000 VW index. As discussed, the market is pricing these assets at a substantial discount to NAV. The private2000 index also suggests that the NAVs may be inflated, reflecting more realistic market dynamics. The discounts observed in the secondaries further support this view.

Figure 3: NAV WEIGHTED INVESTMENT TRUSTS RELATIVE TO MKT CAP



Source: Factsheets, Bloomberg. Calculations by SIPA

Conclusion

The recent changes enacted in the ELTIF and LTAF regulations is encouraging the proliferation of Evergreen products across the retail and defined contribution pension market. Evergreens have already seen adoption in the wealth market throughout Europe but are relatively new as ELTIFs. As regulated funds offering products to retail and the pension market, benchmarking performance and ensuring timely and accurate valuations should be a fiduciary concern. Both privateMetrics and infraMetrics indices are ESMA registered and provide the only asset level benchmarks in the industry. Furthermore, both indices provide monthly returns that can be used to benchmark the monthly return series of private equity and infrastructure equity Evergreens. In addition, the monthly performance and index valuation metrics (multiples) can be used to provide a market adjustment factor to arrive at more frequent valuations. As discussed in the paper, there is a large gulf in valuations between the NAV based Evergreen subscription prices, and the market capitalisation of listed investment trusts. Eventually, someone may ask if the latter is correct.

Appendix: ELTIF and LTAF Background

European Long Term Investment Funds (ELTIFs) are Alternative Investment Funds with the ELTIF regulatory wrapper permitting offering the funds to a broader range of investors (retail) and geographies (EU passport) within the EU. The purpose of this category of funds was to unlock private savings to finance the real economy by channelling capital into infrastructure assets and projects, and SMEs across Europe. Unlike Long Term Asset Funds (LTAFs) in the UK, the primary agenda was to mobilise retail and wealth savings into private assets. For LTAFs, the initial motivation was to channel defined contribution (DC) pension savings into private assets through long term open-ended funds that could process ongoing contributions. Recent reforms allow extending the LTAF to retail and self-directed pension channels[4].

The first iteration of the ELTIF was introduced in 2015. Given the strategic objective of financing real assets and SMEs, ELTIFs would invest directly into projects or assets, not as fund investors, nor acquire funds in the secondary market. Even co-investments were prohibited. This meant that there was typically no liquidity and the fund length looked like tradition private equity or infrastructure funds (8-12 year fund lives), with investor capital returned at the end. Some infrastructure and real asset funds had longer terms (up to 35 years), while debt and private equity funds were generally below 10 years in tenor. Not surprisingly, adoption was muted, with just €7-8 billion of AUM by 2021 (Scope Research) across all of private equity, infrastructure, private debt, and multi-asset strategies. The appetite from retail investors to have capital locked up for 8-12 years in an unlisted fund with opaque and infrequent reporting was not there. Despite this, the AUM figure has grown to €20.5Bn by the end of 2024, showing signs of promise, following reforms that promote access and allow more investment strategies.

While most funds are domiciled in Luxembourg, distribution of AUM is heavily weighted to just a few countries – France, Italy, Germany, and Spain. In France, the largest ELTIFs were sold primarily to professional or institutional investors. Major asset managers and financial institutions such as Amundi, BNP Paribas, Meridiam, October, and Turenne have ELTIFs across infrastructure, private debt, and private equity.

In France, ELTIFs provided regulatory certainty for capital charges for insurers and reinsurance[5] firms or entities subject to Solvency II Directive, allowing them to be included in various insurance products offered to the retail market. Private asset ELTIFs would be subject to the lesser 38% capital charge, vs up to 49% potentially assigned to private asset funds under Solvency II. Further, the ELTIF was the only vehicle that allowed retail investment in direct loans. This spurred private debt ELTIFs.

The two largest ELTIFs in France are Meridiam Infrastructure Europe III SLP, which raised €1.3 billion, and GF Infrastructures Durables SLP, which raised just under €1 billion.

[4] PS23/7: Broadening retail access to the long-term asset fund | FCA
[5] Clarified rules provide long-awaited ELTIF boost

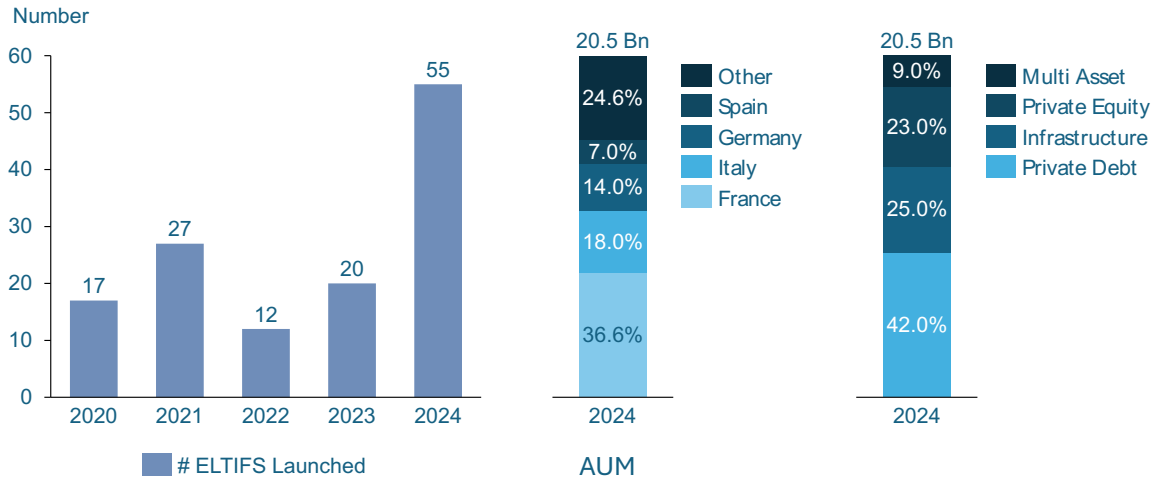
In Germany, there has not been much appetite for ELTIFs to date. The one exception is KlimaVest, an Evergreen ELTIF that was positioned as an impact fund (Scope 2022), investing in renewable power and sustainable infrastructure. KlimaVest was the first ELTIF offered in the German market and has ~€1.5 billion of AUM. Outside of its impact fund positioning, the more liquid nature of the product, though limited, may have added to its appeal.

Italy has consistently been the second largest market for ELTIF placements after France. In contrast to France, the Italian ELTIF buyer is predominantly retail. Tax incentives have played a role, with capital gains exemptions provided, but requires a certain percentage of investment in the Italian market. Asset manager Azimut is the biggest player in the space, having launched over 20 ELTIFs since 2015. One issue with country specific incentives (eg tax), is that the funds have to invest most of the assets within the country, potentially limiting scalability of the fund.

At the end of 2024, the largest ELTIFs across the EU remained Meridiam Infrastructure Europe III SLP, klimaVest and GF Infrastructures Durables SLP). They accounted for 17% of total AUM, though this percentage is declining. With the spate of Evergreen ELTIFs coming to market, this should change.

Figure 4 details the number of ELTIF launches by year (total = 155), AUM by country, and AUM by strategy. As this is for the end of 2024, shortly after ELTIF 2.0 became effective, these figures may look very different a couple of years from now.

Figure 4: ELTIF LAUNCHES BY YEAR (LEFT), AUM BY GEO. (MIDDLE), STRATEGY (RIGHT)



Source: Scope Research, ESMA, Financial Reports

One of the key advantages of the ELTIF is that there is an EU passport. Rather than expensive and lengthy regulatory approvals in each country, this was an efficient way to market the product in a large market, particularly to retail, where the ticket size is smaller. Additionally, the regulatory stamp was helpful, as it could be included in some insurance or other offerings. Despite this, the initial ELTIF rules were rather restrictive. The inability to invest in funds, secondaries, or co-investments, limited the number of managers that

could offer a product. Further, the closed-end structure, lack of liquidity, minimum investment sizes, and investment restrictions, made it difficult to navigate. ELITF 2.0 addressed many of these issues head on.

ELTIF 2.0

ELTIF 2.0 came into effect in early 2024 broadening access and permitting a wider range of investments, including primary and secondary fund interests, and co-investments, among other options such social infrastructure and green bonds. Previously excluded, this change will permit the rise of secondary focused ELTIFs, similar to the secondary focused Evergreens that exist in the wealth market, offered by alternative investment fund managers. This may impact the original purpose of the ELTIF but is likely to attract a large new supply of products to market.

The regulatory technical standards (RTS) only entered force on 26 October 2024. Since that time, a flurry of open-ended ELTIFs are now coming to market by fund managers pursuing secondaries and co-investments. Importantly, the ELTIF is a regulatory wrapper, not a product itself, thus permitting a broad range of strategies and fund structures to market (open or closed ended versions).

There were a number of changes that have enhanced the attractiveness of ELTIFS:

- Abolishing minimum investment amount of EUR10k and maximum exposure of 10% of assets
- Permit primary funds, secondaries, co-investments
- Option to structure ELTIF as open-ended or close-ended.
- Reduced requirement on Eligible investment assets from 70% to 55%. Eligible investments are unlisted assets such as private equity, infrastructure, private debt.
- Increased allowable concentration limits for investments.
- Differentiated investment restrictions and limits applied to retail vs professional investor.

Under the original ELTIF regime, most of the funds launched were closed ended and gathered small levels of AUM (sub €100 million). The three largest ELTIFs are all infrastructure or renewable energy focused.

With the ELTIF 2.0 refinements now effective, there has been a wave of new ELTIFs registered, predominantly open ended, and pursuing strategies consistent with what is taking place in the broader Evergreen market. Groups such as Hamilton Lane have registered a private market access ELTIF, that has a proposed asset allocation, terms, and fee structure that looks very similar to their flagship Private Access Fund Evergreen Offering. Likewise, Schroders has registered an ELTIF that will look very similar to its flagship Evergreen fund, the Schroders Global Private Equity Semi-Liquid fund. EQT's Nexus Evergreen Fund, which invests in EQT's funds and co-invests alongside deals, also has a similar version offered as an ELTIF. On the infrastructure side, KKR has

recently registered an infrastructure ELTIF that is similar to its Evergreen K-Prime Infrastructure strategy. In an upcoming section, we will look at the performance of several European based Evergreen funds as this will be the most common vehicle going forward.

Table 3 lists the asset managers with either the largest number of ELTIFs registered with ESMA as of November 2025, or having large AUM across a particular fund.

Table 3: # OF ELTIFS LAUNCHED BY ASSET MANAGER WITH STRATEGIES

Asset Manager	**# of ELTIFs**	**Strategies**
Amundi	11	PE, Real Assets, Debt
Apollo	4	PE, PD, Diversified
Azimut	24	PE, Infra, VC, PD
BlackRock	7	PE, Infra, Diversified
BNP Paribas	7	Infra Debt, Debt, PD
Eurazeo	6	PE, PD, RE
Generali (GF Infra Durables SLP)	1	Large Infra Fund
Goldman Sachs	3	PE, Diversified
KlimaVest (Commerz Real)	1	Large Daily Deal Infra/Renewables
Meridiam (Infra Europe III SLP)	1	Large Infra Fund
Neuberger Berman	6	PE, Infra
October Factory	4	PD
Oquendo	10	PD
Partners Group	6	PE
Waystone Mgmt (Schelcher)	4	Infra Debt
Schroders	4	PE, Credit
Swiss Life	1	Infra

Source: ESMA Register

LTAF Overview

Like the EU, the UK developed a Long Term Asset Fund (LTAF) with similar goals[6] in mind, namely, to help finance infrastructure and other real asset projects, and invest in SMEs in the UK. The original ELTIF model in the EU was not a good fit in the UK and the FCA pursued their own version with the LTAF. While ELTIFs were slow to take-off, only showing rapid growth since the implementation of the new ELTIF 2.0 rules, the LTAF market is still nascent, with the first fund launched in 2023 and just 34 LTAFs filed with the FCA according to the FCA Registry[7] as of November 2025. In contrast with ELTIFs, LTAFs were developed in large part to channel the rapidly growing DC pension assets into private assets. One of the largest workplace pension providers, NEST Pensions, has recently committed[8] to allocate 30% of its DC pension assets to private assets by 2030. NEST currently manages £50 billion of assets, but that is expected to grow to more than £100 billion by 2030. NEST has invested £1.5 billion with Schroders in a bespoke private equity Evergreen product that is offered via its default retirement date fund[9].

Given the goal of attracting DC pension assets, an open-ended vehicle is more suitable that can absorb flows on a periodic basis. The LTAFs look very much like Evergreen funds, with similar terms and fee structures. The investment restrictions are more flexible than with ELTIFs, but a minimum of 50% of assets are to be invested in eligible assets (private equity, venture capital, infrastructure, loans, real estate). The FCA takes a more principled approach with no hard limits on diversification or allocations.

In 2023, the Financial Conduct Authority (FCA) moved to re-classify LTAFs as “Restricted Mass Market Investments” (RMMIs). This opened up LTAFs to retail and self-invested personal pensions (SIPPs). Nonetheless, there has been slow adoption by retail[10]. An additional challenge in the UK is that there is a long established listed investment trust market where retail can gain similar private assets exposure, at a discount to NAV, with daily liquidity. Buying into a less liquid LTAF at NAV is a more difficult proposition.

Table 2 lists the main asset managers, insurance and pension managers, that have authorised LTAFs with the FCA. Schroders accounts for eight of the LTAFs registered with the FCA, with 7 of 8 targeting the DC market and one opened up for retail and wealth, which would feed into its larger semi-liquid private equity fund. Several insurers and pension providers in the UK have launched LTAFs including Aviva Investors, which offers 5 LTAFs targeting the DC market, across private equity, private debt, and real estate.

[6] PS21/14: A new authorised fund regime for investing in long term assets | FCA
[7] Fund search
[8] UK Nest pension fund says pledge to invest 30% in private markets ‘not guaranteed’
[9] Schroders Capital receives £500m from Nest for further private equity investment
[10] https://www.ftadviser.com/alternative-investments/2025/11/18/ltafs-yet-to-take-off-for-retail-investors/

Similarly, Legal & General and Scottish Widows offer a diversified private asset LTAF for the DC market.

Table 4 lists managers of 27 of the 34 LTAFs registered with the FCA as of November 2025. As mentioned, most of the products are geared towards attracting DC pension assets, though there are several LTAFs that have been launched to target the retail/wealth market. As most of these funds launched from 2024 onwards, it is early to comment on performance. Instead, we can point to Evergreen funds of the managers, often with longer track records. Some of the registered LTAFs will feed into such vehicles.

Table 4: NUMBER OF LTAFs LAUNCHED BY ASSET MANAGER WITH STRATEGIES

Firm	# of LTAFs	Strategies
Schroders	8	PE, Infra, Climate, Venture
Aviva Investors	5	PE, PD, Infra, RE
Fidelity	1	Diversified (PE, PD, Infra, Liquids)
BlackRock	3	Diversified (PE, PD, Infra, Liquids)
Legal & General	2	Diversified (PE, PD, Infra, RE)
Scottish Widdows (CG)	3	Diversified (PE, PD, Infra, RE)
Fulcrum Asset Mgmt (Waystone)	2	FoFs
Arcmont	2	PD
Partners Group	1	PD

Source: FCA Register

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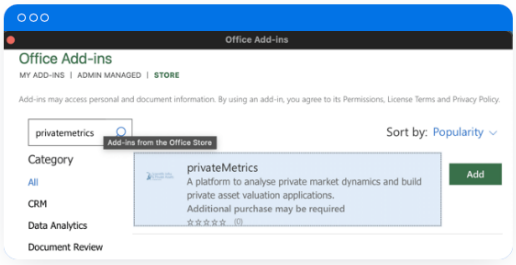

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Our approach to the valuation of private companies is designed to maximise the available transaction and financial data in private markets and provide a standardised and systematic manner to update prices with every observed transaction.

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.

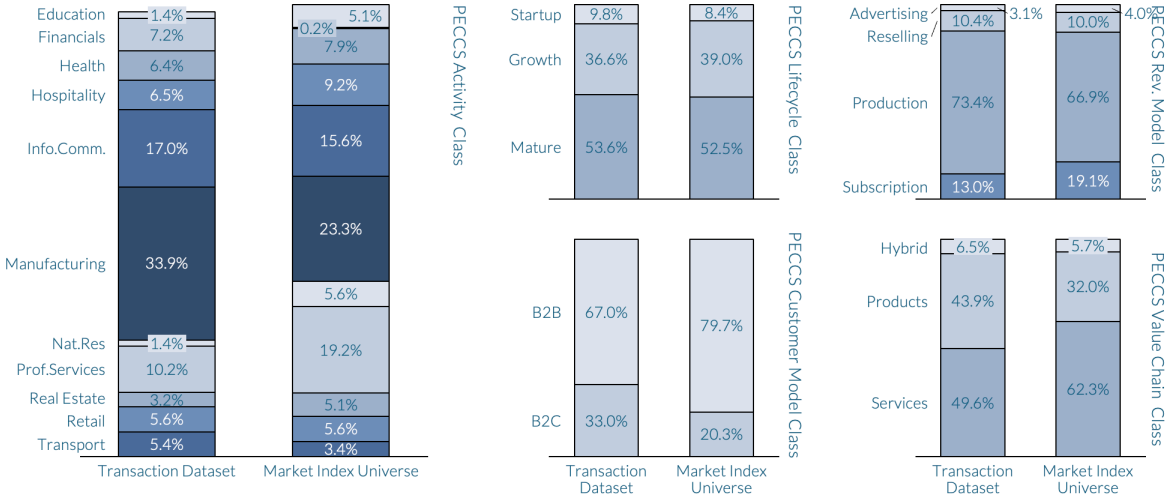
We calibrate this model using new observations monthly to update its estimation of the price of risk of each factor. In other words, each transaction observed is then used to 'update' this model (i.e., obtain new ls) through a dynamic estimation (using a Kalman filter), which retains the memory of past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

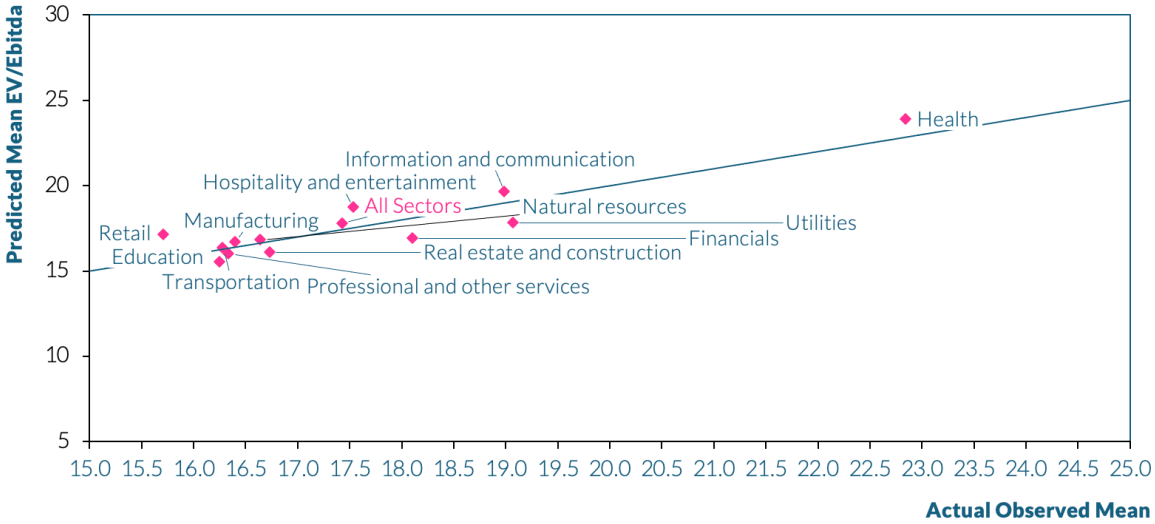
To ensure that is not the case, we compute the EV based on the book value of debt and predicted equity valuation and divide the sum by the EBITDA to get a predicted EV/EBITDA and compare it to transaction implied ratios. Figure A2 presents the average predicted and observed EV/EBITDA by PECCS® activity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

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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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