IFM Investors

Optimising for uncertainty: Private debt's role in institutional investor portfolios

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Executive summary

This paper examines the strategic role of private debt within institutional portfolios, with a particular focus on its contribution to portfolio defensiveness, diversification and robustness.

Building on our earlier research into private market asset allocations, we explore how private debt—especially in the form of IFM Investors' Private Debt Portfolio (PDP)—can enhance risk-adjusted returns across varying investor risk appetites.

Our analysis is motivated by the growing institutional interest in private credit, driven by its potential to deliver stable income, downside protection, and diversification benefits in an increasingly uncertain macroeconomic environment. Using a utility-maximising framework, we construct optimal portfolios for three representative investor types—Defensive, Balanced, and Growth—and assess the impact of introducing private market exposures, including private debt, infrastructure, real estate, and equity.

Key findings include:

- Private debt plays a foundational role in defensive portfolios, offering superior risk-adjusted returns compared to traditional fixed income and other private market assets.
- IFM's PDP consistently outperforms generic private debt benchmarks, due to its conservative risk profile, sectoral diversification, and disciplined portfolio construction.
- Diversification benefits are most pronounced for risk-averse investors, with diminishing marginal utility as risk appetite increases and allocations shift toward higher-growth alternatives.
- Portfolio construction within private debt matters—the choice of strategy and underlying exposures significantly influences the magnitude of performance enhancement.
- The results reinforce the case for a more prominent strategic allocation to private debt, particularly for investors seeking to enhance portfolio resilience amid evolving market dynamics.

1. The motivation

Our publication series to date has focused on the potential benefits that private market asset classes – and specifically unlisted infrastructure – can offer an investor in portfolio construction. In our most recent paper earlier this year, Optimising private market asset allocations (2025), we examined private market portfolio construction taking into account different investor risk appetites. One of our findings in that paper, that we intend to now examine in detail, was the potentially prominent role of private debt in the construction of a relatively defensive portfolio - adhering to the principles of the total portfolio approach.

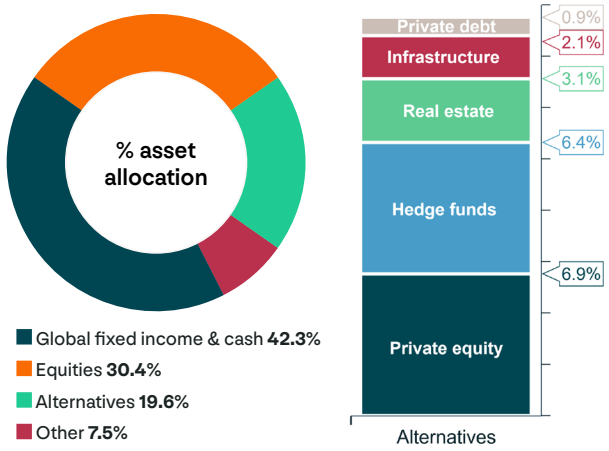
The examination of private debt as an asset class is particularly timely given the expansion of interest from investors. And further the conflicting narratives prominent in the market around potential risk and returns. Our examination here seeks to aid and inform investors who are building out private market exposures to deal with uncertainty in the global environment.

In the global institutional investor space this building out has focused on higher yielding and higher risk asset classes like private equity, hedge funds and real estate (see Graph 01). The potential for private market investors is to expand their strategic exposures to private infrastructure and private debt. In our previous paper we sought to provide evidence that unlisted infrastructure should play an increasingly prominent part in institutional investor strategic asset allocations and here we will seek to make a similar case for private debt.

1.1 The approach

To briefly reprise the approach from our previous work that is applied in this paper. We seek to examine the optimal allocation of private market assets that 'undiversified'/listed market investors should be guided by for their strategic asset allocations. These allocations will match three risk appetites from defensive, balanced through to growth. This might reflect investor preference or indeed portfolio requirements of, in the pension fund case, the characteristics of members and beneficiaries. As with previous papers we look to assess the performance of private debt as an asset class in the portfolio context using a prominent benchmark and then compare the results to what can be achieved using the portfolio of assets maintained in the private debt space by IFM.

GRAPH 01 **GLOBAL INSTITUTIONAL ASSET ALLOCATION**



Source: IFM Investors, Preqin. Data as at December 2023 covering 4,255 investors and US$21.1 trillion funds under management.

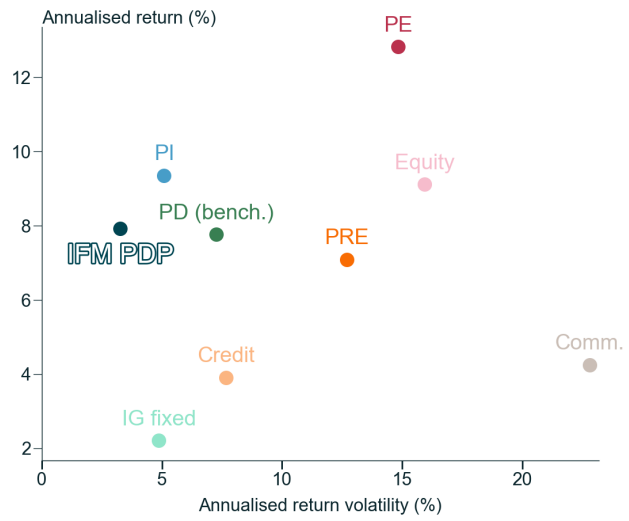
1.2 Asset class overview

The first step in our analysis is to define our asset class universe. We again take the approach to include a number of indices to represent each asset class benchmark to minimise the impact of any potential benchmark selection bias (we detail the component indices of each in the Data Appendix). The asset classes in the private market space are IFM's private debt portfolio[1] (IFM PDP), and representative generic benchmarks for private debt, private infrastructure, private equity and private real estate. In the public market space we use investment grade fixed income, sub-investment grade fixed income, equities and commodities. The risk-free rate/cash is proxied by US 3-month treasury bills and euro treasury bills. The time period for analysis is since 2014 with the availability of all data series the limiting factor preventing a longer window.

We apply our two-stage unsmoothing process to the return series of the private market data. The impact of which can be observed in the Appendix section on return unsmoothing. The key conclusion from the unsmoothing process is that private debt returns require much less adjustment than higher risk more volatile growth asset classes like private equity. Intuitively this makes sense for a number of reasons: (1) private debt valuations are based on cash flows (that are predictable) based on largely contractual interest payments and loan performance rather than quarterly appraisals, EBITDA multiples, discounted cash flows and market comparisons that may overly 'smooth' returns; (2) private debt is much less sensitive to market cycles economic growth and investor sentiment than growth assets particularly in senior secured or floating rate structures; (3) Default and recovery dynamics are different, private debt even when in distress usually has recovery rates and collateral that can cushion losses leading to more stable valuations; and (4) The use of leverage is different – private equity for example can often be highly leveraged amplifying both upside and downside volatility - while in private debt leverage might exist, especially in mezzanine or leveraged loans, but it's generally lower and more controlled especially for senior and secured debt. Private real estate is also impacted by this process sharing some of the above characteristics of private equity and also suffering uniquely as an asset class due to the pandemic period with a relatively high starting return volatility.

The simple unsmoothed risk return characteristics of the asset class universe in Graph 02. The average risk/return profile is broadly as we would expect as an investor accepts higher volatility of returns. For the reasons noted above the 'unsmoothed' private equity and real estate points are 'pushed' materially to the right indicating a higher return volatility similar to public market assets. Other public market asset class points much less so.

GRAPH 02 **AVERAGE ASSET CLASS RISK/RETURNS**



Source: IFM Investors

It is notable that IFM's PDP returns are adjusted least in the unsmoothing process, including compared with the generic private debt benchmark. This is unsurprising given the characteristics of the asset class we have described already and also the distinguishing characteristics of this portfolio compared to private debt more broadly. Notably a more conservative approach to risk that gives more protection to the investor through structures and covenants and also a narrower geographical focus.[2] We should also note at this point that the IFM PDP that we consider is 'unlevered'.

This differentiation is highlighted again in Graph 03 in what we dub a correlo-dendrogram (combining the concept of an ordered correlation matrix and dendrogram). This analysis is useful in assessing the diversification potential of each asset class in this investment universe. The dendrogram is informative about group level/structural relationships and seeks to maximise diversification by allowing an investor to avoid an over-concentration of 'like' assets that respond similarly to the same or similar factors (macroeconomic or otherwise). The correlation matrix[3] is particularly informative as to the strength of potential pairwise relationships between asset classes over time.

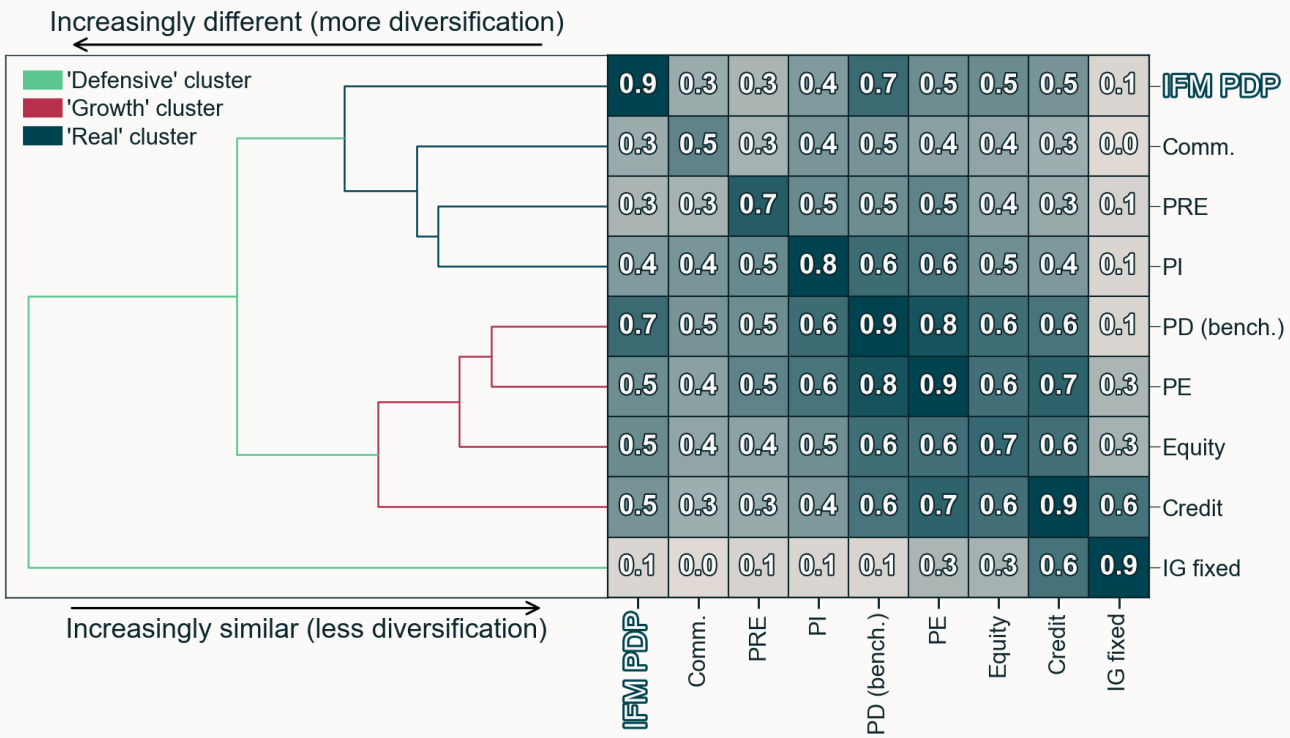
To briefly remind the reader as to the interpretation of the dendrogram, how far to the left various asset clusters 'split' is important – the further to the left a split in the diagram, the more differentiated is the co-movement of that asset (or group of assets) from the others. This will tend to also be reflected in lower correlation coefficients.

[1] IFM's PDP includes its APAC Master, Sub-IG Composite and Sub-IG structured credit, details in data appendix.

[2] More information on these differences can be found in a previous paper – The opportunity in Australian private debt markets

[3] Note that the correlations in the diagonal are not one – as is usually the case – because we are averaging the correlations within each asset class.

GRAPH 03 **ASSET CO-MOVEMENT: CORRELO-DENDROGRAM ANALYSIS OF DIVERSIFICATION POTENTIAL**



Source: IFM Investors

What can be identified is three broad clusters: 'real assets', higher-risk/higher-return 'growth' assets, and more 'defensive' lower return assets. These clusters are identified as being substantially different in terms of return co-movement. There are several key takeaways from this:

- the '**Defensive**' cluster is comprised of only IG fixed income. Its node separation from all other assets is immediate, highlighting it as a the most differentiated asset class from all others in this study. This underpins its role as the bedrock of a defensive portfolio that is public market-based (e.g. the traditional 60:40 portfolio) or one diversified with private market assets.

- the '**Growth**' cluster is adjacent to the 'defensive cluster, it is comprised of both private and public asset classes. Interestingly, credit has the highest correlations with the other growth assets despite relatively lower returns. This is likely driven by credit spreads being strongly related to factors that drive equity market movements. Also interesting is that private equity and private debt asset classes are at least somewhat distinct from public equity markets (with the node splitting from them just before the assets find their own branch) supporting what we intuitively would suspect to be the case. However, this co-movement between private equity and generic private debt could arguably be a drawback as an investor looks to diversify a private market portfolio.

- The '**Real**' cluster contains private infrastructure, property and commodities. Interestingly this cluster also contains IFM's private debt portfolio that has exposure to the economic cycle (on an unlevered basis) but is also heavily diversified across sectors and credit risk. It is notable that the node where IFM's PDP separates from other real assets is further to the left than the other real assets suggesting that it, unsurprisingly, offers a different profile of diversification in the real asset cluster. IFM's PDP is also materially differentiated in terms of correlation and the dendrogram from both the private benchmark and private credit, highlighting differences at the asset class level and with portfolio construction.

Our analysis shows IFM's PDP is quite distinct from both other private market assets and other private debt and fixed income asset classes"

2. The portfolios

Armed with these insights we now seek to construct a number of portfolios that have access to these asset classes. We again adopt a utility maximising framework, in which we define and consider three 'representative' investor 'types', one at either end of the risk-return spectrum and one in the middle. We employ the concept of 'revealed preferences' (inferring investors' preferences and the models they use for making investment decisions based on their actual behaviour in the market) to estimate for each, in the first instance, a starting listed asset only portfolio defined by their risk appetite. These 'undiversified' portfolios for each investor type give us the utility frontier in Graph 04. For each it is notable that:

- **Defensive investors** are, by definition, heavily invested in IG fixed income with around 75% allocation to this asset class – limiting the impact of shifting economic circumstances on the portfolio. Here we assume this IG asset class takes on the role of cash as well where in this analysis we have assumed cash as the risk-free rate over which excess returns are made. Credit is not a significant enough returns 'diversifier' worth the accompanying risk to be allocated to materially and therefore comprises a small part of the portfolio with equities (14% allocation) and commodities (7% allocation) from the 'growth' and 'real' clusters balancing the portfolio. This impact on credit continues as we move up the risk curve and equities exposure effectively crowds out the need for exposure to credit.

- **Balanced investors** have an almost equal allocation to IG fixed income and equity (at around 45% of the portfolio each) with commodities accounting for around 9%. The credit allocation is almost negligible.

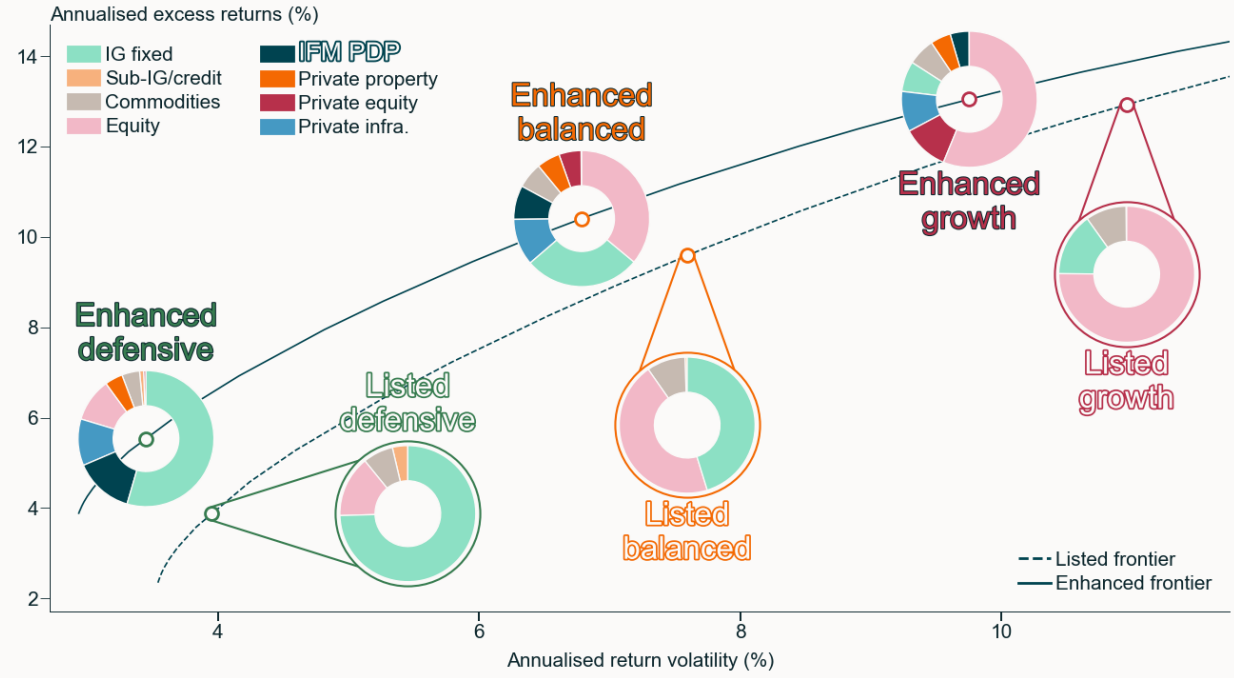
- **Growth investors** are heavily invested in equities (~75% of the allocation) and commodities leveraging into the economic cycle. Diversification in this portfolio is via IG bonds with no credit exposure.

We can now take these public market allocations and build private market portfolios that complement their risk profiles in a total portfolio approach. We limit this allocation to 30% of the portfolio and observe the impact in Graph 04 with improved utility being achieved with all portfolios reflecting higher and less volatile returns – suggesting the portfolio has been better diversified and has become more robust for each investor cohort.

- **Defensive investors** see a marked reduction in the reliance on IG and sub-IG credit (noting the former is still prominent). This is taken up by a material allocation to IFM's PDP of around 14%. For comparison this is significantly higher than the current allocation that prevails in the Australian superannuation sector (around 1.5%). Exposure to more volatile asset classes has been reduce – notably equities and commodities – without sacrificing absolute (excess) returns. It is notable for the defensive investor that private debt is central to the private market asset portfolio with higher allocations than both infrastructure (11%) and property (4%)

- **Balanced investors** have material allocations to IG fixed income (28%) and equity (36%) with an commodities exposure of 6%. The credit allocation is almost negligible. IFM's PDP still plays a material role having an 8% allocation but given the additional risk appetite mid-risk alternatives such as infrastructure assume a more prominent role (11%). And notably private equity enters this portfolio with a 5% allocation.

GRAPH 04 **UTILITY MAXIMISATION FRONTIER**



Source: IFM Investors

- **Growth investors** are still heavily invested in equities and there is an increased prominence of private market high growth alternatives, notably private equity (11%) and infrastructure (10%). While there is a small role for defensive IG fixed income, there is none for the sub-IG space with IFM's PDP assuming this role with an allocation of 4%.

A table detailing the allocation of the listed/undiversified portfolio and the private market diversified portfolios, including the generic benchmark and IFM PDP asset classes is located in Table 05 in the Appendix.

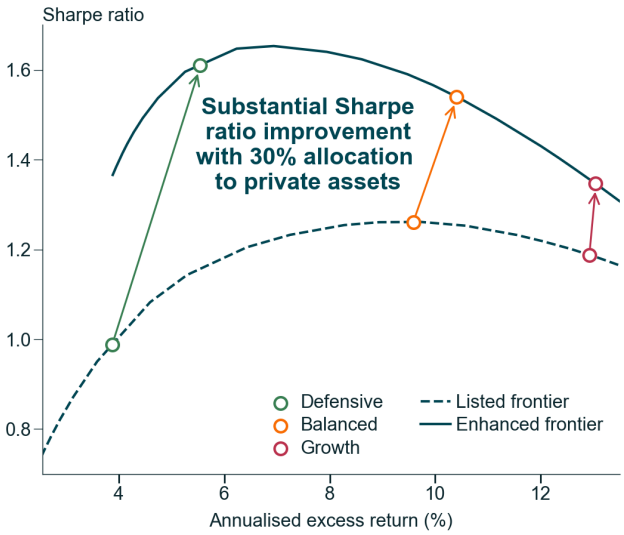
2.1 Decomposing the result

We can readily observe this transition of the private market asset allocation from 'Defensive' to 'Growth' in Graph 05. In this example we have allowed the IFM PDP and the generic private debt benchmark to 'compete' for an allocation in the portfolio. Due to the greater diversification benefit and lower return volatility with similar returns level the IFM PDP dominates the allocation. This supports the assertion that while the generic private debt asset class can provide an overall portfolio benefit the curated portfolio of private debt assets in IFM's PDP does outperform.

The flow of allocation weights in the private market portfolio also defines the improvement in the Sharpe ratio as we move up the investor risk spectrum. As can be observed in Graph 04, each investor to some extent improves their level of return and decreases their level of return volatility. Graph 06 measures the extent of this improvement. What is immediately obvious is that the greatest 'benefit' to a Sharpe ratio from the allocation to a 30% portfolio weight of private market assets is for the 'Defensive' investor. Indeed, the benefit to this investor is twice that for a 'Balanced' investor and three times that for the growth investor. This is because private market assets tend to have higher returns than defensive public market asset classes but not a materially higher level of returns volatility. Whereas at the other end of the spectrum the 'Growth' investor gets a more modest reduction in volatility exposure when accessing higher return private market assets. Graph 07 demonstrates this effect. Both IFM's PDP and generic private infrastructure contribute materially to the Sharpe ratio improvement at the defensive end of the private market allocation. They provide greater diversification benefit and solid returns without being a material draw on an investor's risk budget.

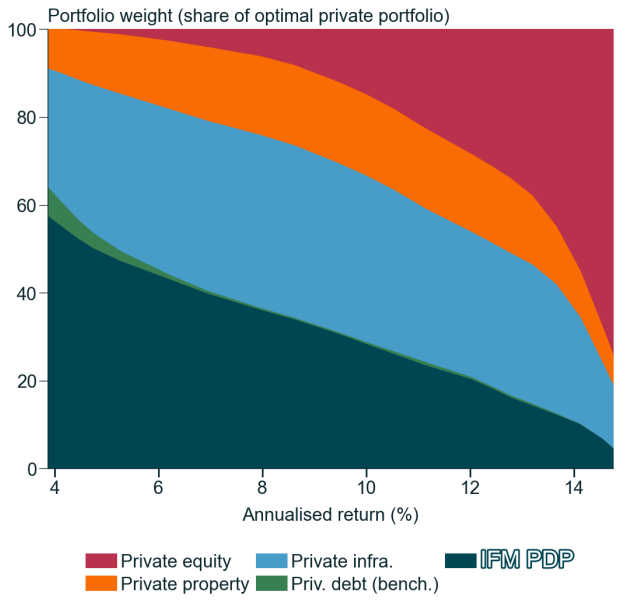
But this impact fades as the investor appetite rises to target higher returns. The diversification benefit of the private market portfolio wanes at higher returns – this is because the diversification benefit of private equity (that can achieve those higher returns) is not a large against public equities as private debt and infrastructure are against asset classes at similar risk levels.

GRAPH 06 PRIVATE MARKET SHARPE RATIO IMPACT



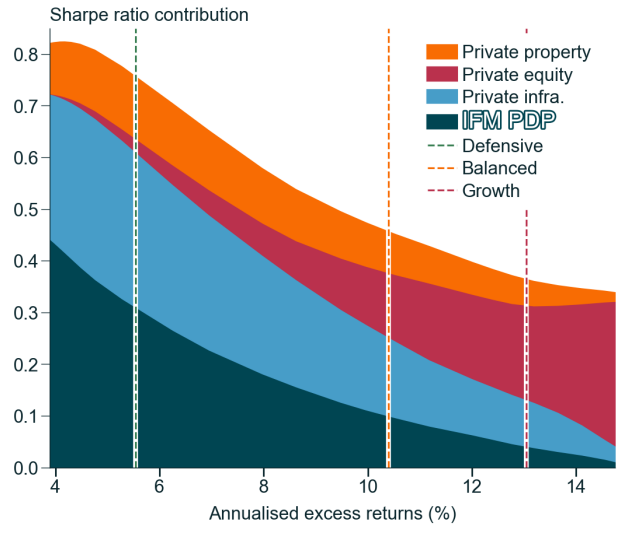
Source: IFM Investors

GRAPH 05 PRIVATE MARKET ALLOCATION FLOW



Source: IFM Investors

GRAPH 07 SHARPE RATIO CONTRIBUTIONS



Source: IFM Investors

What may be interesting here would be to consider a levered private debt asset class that would allow the investor to 'dial up returns' should doing so be within their risk budget. This might see the asset class play a stronger role in the private market portfolio at greater risk appetites as it offers a greater diversification benefit.

Similarly, the introduction of higher return infrastructure asset classes notably what is called 'value add'. An asset class that while having more volatile returns, targets higher levels that 'core' infrastructure. We'd note that with many infrastructure-based private market assets the risk profile of the underlying assets is often more defensive. This suggests that value-add infrastructure may be a diversifying complement for private equity for less risk averse investors.

From this we can assert that private market asset classes can also be useful in the context of pension fund investors by catering to members that are in different phases of their lifecycle. For example, in Australia most superannuants default into portfolios that are 'balanced' in the accumulation phase. But equally private market assets have a role to play in more defensive pension phase portfolios where a reliable income stream becomes more important. This role has historically been assumed by core public fixed income products – but we'd argue that that position may be well complemented by private market debt.

3. The IFM difference

The analysis above demonstrates the effectiveness of including private debt as a strategic allocation in a portfolio. And in particular those properties that differentiate IFM's PDP from generic private credit benchmarks. We note that our comparison here takes place between a 'portfolio' of IFM's debt products that are heavily focused on direct lending whereas the generic benchmark is comprised of indexes comprising not only direct lending but also distressed debt, mezzanine and special situations. However, given that we choose to optimise each benchmark on the basis of risk-adjusted returns this selection bias is overcome (and if anything gives the generic benchmark an allocation advantage that is unrealistic given these are asset classes that are for the most part still illiquid). Despite this, it has been clear early on in this analysis that portfolio construction within the private debt asset class is important. In Graph 02 we observed that IFM's PDP generated comparable returns to the generic benchmark with lower volatility of those returns. Portfolio construction generates those returns even when compared against the generic benchmark where investors are 'allowed' to take more risk within the private debt universe.

Nonetheless, the IFM PDP outperforms as observed in Graph 05 when we allowed the model to have the private market benchmarks 'compete' for portfolio space. Not only does our analysis suggest that private debt has a prominent place in portfolios we can also assert, what is intuitively obvious, that choice of private debt style matters as to the magnitude of the exposure. In Graph 08 we evidence this comparing the optimal level of allocation in the portfolio across investor risk appetite (as defined see Graph 07).

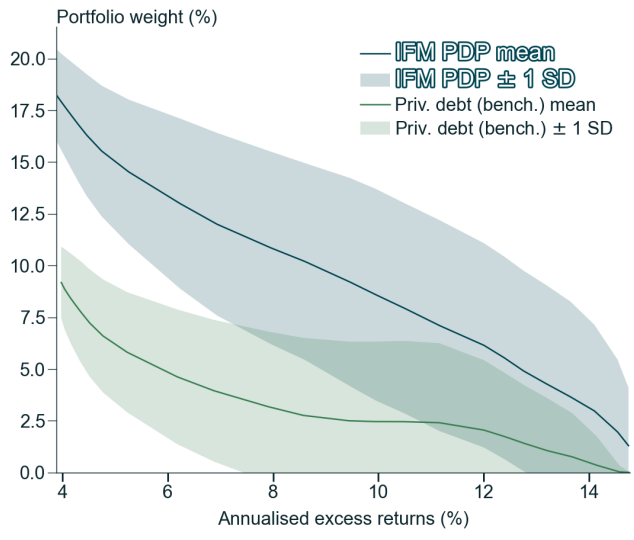
For the 'Defensive' investor the optimal allocation to IFM's PDP is 14.1%, which is over 2.5 times greater than the allocation to the generic benchmark (5.5%). This pattern persists for some time as risk tolerance increases but allocations begin to convergence at higher risk appetites as allocations to private debt are substituted toward more risky asset classes (again see Graph 07).

The reason for this is that IFM's PDP is a more impactful diversifier than generic private debt. This improves the risk-adjusted returns of the portfolio to a greater extent, as can be observed in Graph 09. Again, this emphasises the greater impact of IFM's PDP and for investors with more conservative risk appetites.

The beneficial impact of IFM's PDP of an investor's portfolio compared with both the benchmark-enhanced portfolio and the 'undiversified portfolio' is detailed in Table 02. What is immediately evident that irrespective of private debt exposure the portfolios diversified with private market assets perform far better than undiversified listed portfolios across all metrics outperforming in terms of risk-adjusted returns and also clearly providing downside protection of returns.

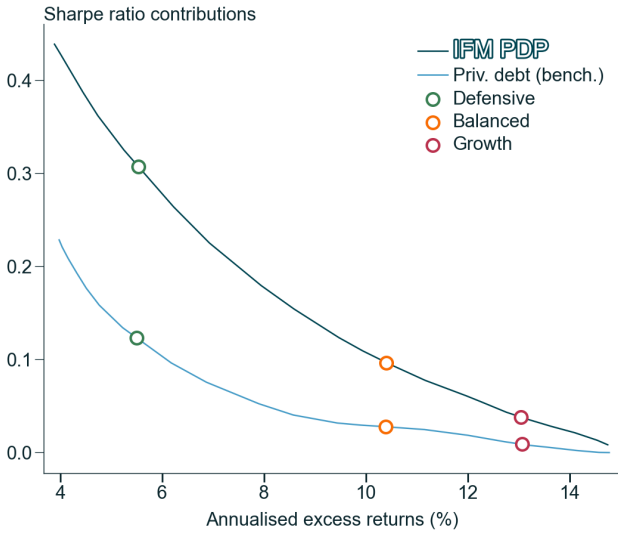
Further, IFM PDP's outperforms the generic private debt portfolio on these metrics. We have already explored superior risk-adjusted return profile but it performs equally as well on a number of other metrics. It assists the portfolio with downside protection: reducing maximum drawdown of the portfolio; reduced downside is also reflected in a higher Sortino ratio (risk-adjusted return relative to downside risk), a higher Calmar ratio (return to maximum drawdown ratio); and Omega ratios across return thresholds (ratio of probability of returns above and below the stated threshold).

GRAPH 08 **OPTIMAL ALLOCATION TO PRIVATE DEBT: IFM PDP VS BENCHMARK ACROSS RISK PROFILES**



Source: IFM Investors

GRAPH 09 **IFM VS BENCHMARK PRIVATE CREDIT SHARPE CONTRIBUTIONS**



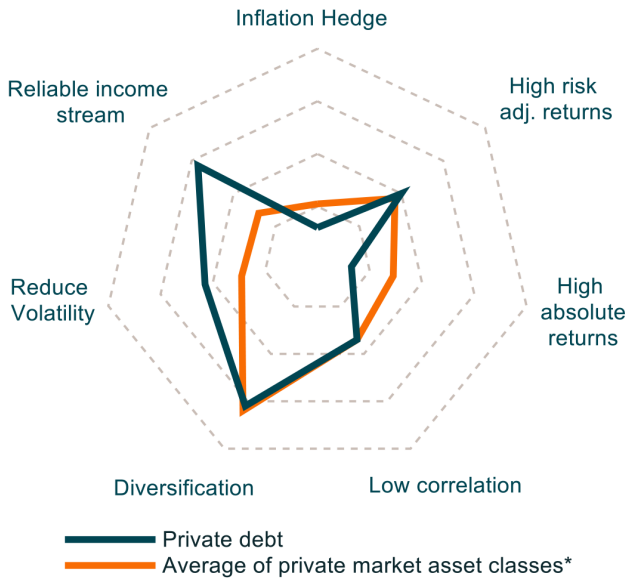
Source: IFM Investors

4. Conclusions

The outcomes from this analysis reinforce the compelling case to be made for private markets and private debt with that space. Interest from investors in private debt as an asset class continues to rise. Moody's estimates that assets under management will increase from the current US$1.6 trillion to US$3.0 trillion by 2028. This comes as investors look to improve the robustness of their portfolios in an increasingly uncertain economic and geopolitical environment. A survey of institutional investors highlights that private debt is attractive, compared with other private market assets, due to its reliable income stream, diversification properties and relatively high risk-adjusted returns (Graph 10). And as we have shown these attributes see private debt as an asset class be particularly impactful for more defensive investors. This is an interesting result as the experience in recent years is that core fixed income products have lost some of their defensive properties. This due to the economic environment, notably markets pricing stagflation and also fiscal slippage that is pushing longer duration bond yields higher. And also the composition of many popular fixed income indexes that reduce an investor's ability to take strong strategic positions. Again, underscoring that a more prominent place in strategic allocations is potentially warranted, particularly for the risk averse investor.

What is also clear is the importance of portfolio construction and being able to understand the risk profiles of the underlying assets. We have demonstrated in this paper the importance of this aspect with IFM's PDP that consistently outperforms the generic benchmarks. This highlights that the private debt investor can tailor their exposure to the asset class based on their desired risk-return characteristics. In the case of the undiversified defensive investor, IFM's PDP materially improves the return outcome, reduces volatility and improves portfolio robustness – all attributes that investors seek to ensure their portfolio's deliver in an increasingly uncertain investment environment.

GRAPH 10 **INSTITUTIONAL INVESTORS' MAIN REASON FOR INVESTING**



Source: IFM Investors, Preqin

* Survey taken in Preqin Investor Outlook: H1 2025, private market asset classes surveyed were private equity, private debt, venture capital, hedge funds, real estate and infrastructure.

Table 02: Resampled back-tested portfolio performance metrics (5-year holding period)

	Defensive			Balanced			Growth		
Metric (median)	Listed	Generic Priv. debt	IFM PDP	Listed	Generic Priv. debt	IFM PDP	Listed	Generic Priv. debt	IFM PDP
Return (%)	3.7	5.4	5.5	8.7	9.7	9.7	11.8	11.7	11.9
Volatility (%)	3.7	3.5	3.3	8.1	7.4	7.2	11.6	10.3	10.2
Sharpe ratio	0.87	1.46	1.58	1.07	1.24	1.31	1.01	1.13	1.15
Max drawdown (%)	-4.0	-2.9	-2.7	-8.8	-6.8	-6.7	-12.3	-10.2	-9.8
Sortino ratio	1.39	2.22	2.23	1.68	2.04	2.02	1.31	1.62	1.60
Calmar ratio	1.05	1.84	2.08	1.07	1.34	1.41	1.00	1.13	1.14
Omega ratio (0%)	3.72	6.71	7.51	4.19	5.14	5.31	4.33	4.68	4.79
Omega ratio (5%)	0.66	1.24	1.33	2.08	2.54	2.63	2.59	2.82	2.88
Omega ratio (10%)	0.12	0.18	0.17	0.94	1.08	1.10	1.50	1.53	1.54

Source: IFM Investors

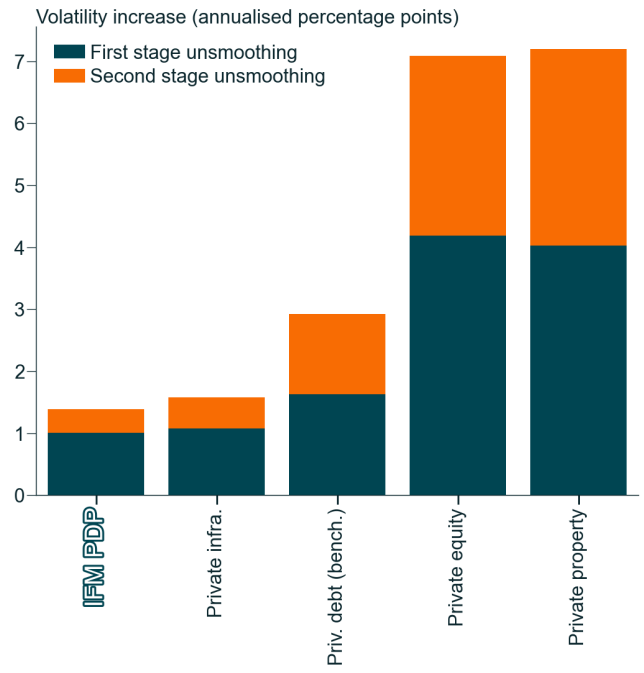
Note: that the 'listed' figures are included as reference points, statistical significance has been calculated only for benchmark vs enhanced (green means statistically significantly better above 1%, orange is opposite, grey is no statistical difference). Further, the Wilcoxon rank-sum test does not directly compare medians such that small differences in medians do not necessarily imply no statistical difference (see Omega (10%) for example). In these instances, though statistical significance might be achieved, the result may not be practically meaningful.

Appendix

4. Return unsmoothing

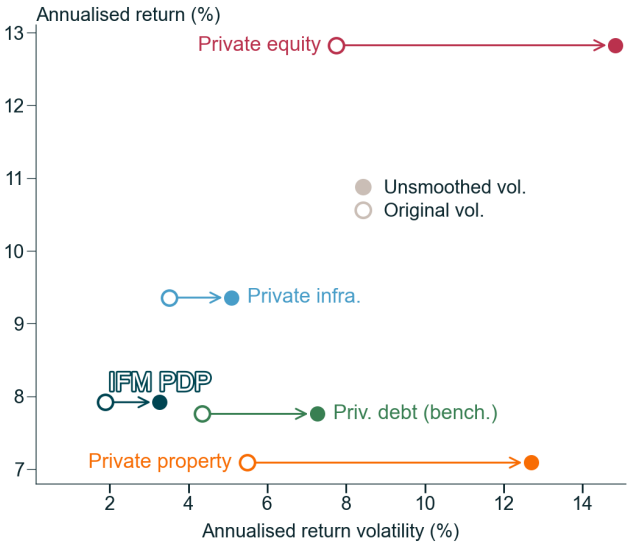
Return unsmoothing: levelling the playing field. Graphs 11 & 12 highlight the impacts of our unsmoothing approach on estimated volatilities[5]. It is worth noting that the estimated volatility increases are subject to parameter instability given the nature of the statistical estimation procedures employed. Specifically, in our previous paper Optimising private market asset allocations we estimated parameters based on a dataset spanning roughly 2005-2024 whereas, due to data limitations, this analysis spans Q2 2014 – Q2 2024. Changes in the underlying return/volatility profiles over time and changes in benchmarks (e.g. number of assets per benchmark, improvements in data gathering/reporting) can impact estimates. Furthermore, the shorter window in this paper compared to our previous paper has allowed us to use private market proxies from an additional data provider. This means we can use a more compact set of proxies for each private asset class as we have access to data from three different private market universes, as opposed to our previous approach where we cut the data from our two available universes into different groupings in an attempt to extract a clearer signal. The other benefit of this approach is that the number of representative assets within each private market group (three) is the same across groups and limits any potential bias introduced by having different numbers of assets within each group.

GRAPH 11 UNSMOOTHING IMPACTS



Source: IFM Investors

GRAPH 12 IMPACT ON ASSET CLASS 'RISK'



Source: IFM Investors

[5] For a more detailed technical discussion of the unsmoothing approach please refer to Technical box 1 in the Appendix of our previous paper Optimising private market asset allocations.

5 Analytics comparison

Below are tables presenting details of the portfolios represented in Graph 03 and an additional portfolio using the generic private debt benchmark that was not represented.

Table 03: Optimal portfolio performance from Graph 03

		Return	Vol.	Sharpe
Defensive	Listed	3.9	4.0	0.99
	Generic priv. Debt	5.5	3.6	1.54
	IFM PDP	5.5	3.5	1.61
Balanced	Listed	9.6	7.6	1.26
	Generic priv. Debt	10.4	6.9	1.52
	IFM PDP	10.4	6.8	1.54
Growth	Listed	12.9	11.0	1.19
	Generic priv. Debt	13.1	9.9	1.34
	IFM PDP	13.0	9.8	1.35

Source: IFM Investors

Table 04: Optimal portfolio weights from Graph 03

	Defensive			Balanced			Growth		
	Listed	Generic Priv. debt	IFM PDP	Listed	Generic Priv. debt	IFM PDP	Listed	Generic Priv. debt	IFM PDP
IG fixed	74.6	56.5	54.5	45.2	28.9	27.7	15.0	7.7	7.2
Sub-IG/credit	3.7	1.0	1.0	0.5	0.2	0.2	0.2	0.1	0.1
Equity	14.6	8.9	10.3	45.1	35.0	36.0	75.1	55.7	56.2
Commodities	7.2	3.6	4.2	9.2	6.1	6.2	9.7	6.5	6.5
IFM PDP	-	-	14.1	-	-	8.1	-	0.0	4.5
Priv. debt (bench.)	-	5.5	-	-	2.5	-	-	1.2	-
Private infra.	-	16.4	11.1	-	13.9	11.1	-	10.7	9.6
Private equity	-	1.9	0.6	-	7.0	5.3	-	12.9	11.0
Private property	-	6.2	4.3	-	6.6	5.5	-	5.2	4.9

Source: IFM Investors

6. Data appendix

Table 04 details the total returns series used in this analysis to proxy benchmark returns.

Table 05: Asset proxies

Asset	Proxy
Risk-free rate	ICE BofA US 3-Month Treasury Bill Index
	ICE BofA Euro Treasury Bill Index
Investment grade (IG) fixed	Bloomberg Global Aggregate Corporate Total Return Index (Hedged, USD)
	Bloomberg Global Aggregate Government Total Return Index (Hedged, USD)
	Bloomberg Emerging Markets Investment Grade Total Return Index (Unhedged, USD)
	Bloomberg Global 1-3 Year Total Return Index (Hedged, USD)
	Bloomberg Global Aggregate 3-5 Year Total Return Index (Hedged, USD)
	Bloomberg Global Aggregate 5-7 Year Total Return Index (Hedged, USD)
	Bloomberg Global Aggregate 7-10 Year Total Return Index (Hedged, USD)
	Bloomberg Global Aggregate 10+ Year Total Return Index (Hedged, USD)
Sub-investment grade fixed income/Credit	Bloomberg US Corporate High Yield Total Return Index (Unhedged, USD)
	Bloomberg Pan-European High Yield Total Return Index (Hedged, USD)
	Bloomberg EM Hard Currency Aggregate Total Return Index (Hedged, USD)
	Bloomberg Global Aggregate Credit Total Return Index (Hedged, USD)
Listed equity	MSCI World Diversified Telecommunication Services Net Total Return Local index
	MSCI World Consumer Staples Net Total Return Local Index
	MSCI World Consumer Discretionary Net Total Return Local Index
	MSCI World Energy Net Total Return Local Index
	MSCI World Financials Net Total Return Local Index
	MSCI World Health Care Net Total Return Local Index
	MSCI World Industrials Net Total Return Local Index
	MSCI World Information Technology Net Total Return Local Index
	MSCI World Materials Net Total Return Local Index
	MSCI World Utilities Net Total Return Local Index
	MSCI World Infrastructure Net Total Return Local Index
	S&P Global REIT U.S. Dollar Net Total Return Index
Commodities	Bloomberg Precious Metals Subindex Total Return
	Bloomberg Industrial Metals Subindex Total Return
	Bloomberg Agriculture Subindex Total Return
	Bloomberg Petroleum Subindex Total Return
Private credit*	MSCI Global Private Credit Closed-End Fund Index
	Preqin Private Debt Index
	Bloomberg Debt Private Equity Index
Private equity*	MSCI Global Private Equity ex-Venture Capital Closed-End Fund Index
	Preqin Private Equity excl. VC Index
	Bloomberg Private Equity Index (average of Buyout Private Equity Index and Bloomberg Growth Private Equity Index)
Private real estate*	MSCI Global Private Real Estate Closed-End Fund Index
	Preqin Real Estate Index
	Bloomberg Real Estate Private Equity Index
Generic infra.*	MSCI Global Private Infrastructure Closed-End Fund Index
	MSCI Global Quarterly Private Infrastructure Asset Index
	Preqin Infrastructure Index
IFM PDP	APAC Master
	Sub-IG Composite
	Sub-IG structured credit

* [TBC]

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