

BlackRock®

Sizing Private Market Investments

A more nuanced approach to
multi-alternative portfolio construction

September 2025



A more nuanced approach

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Key takeaways

Our research suggests that traditional approaches to position sizing in private markets may benefit from refinement.

By focusing on investment outcome probabilities, we've identified a few principles that guide a more precise and realistic framework for sizing investments within multi-alternative portfolios.

When sizing positions in private market portfolios, it is important to move beyond "high risk" and "low risk" labels and instead consider the full spectrum of potential return outcomes. This should be considered in conjunction with investors' long-term return goals.

At the same time, investors need to weigh the benefits of diversifying their portfolios against the operational complexity that it can introduce.

Finally, understanding how different asset classes interact is essential for making informed sizing decisions especially in multi-alternative portfolios.

Redefining portfolio construction for multi-alternatives

Private markets are no longer a niche corner of the investment world; they are now central to building modern portfolios. From private equity and private credit to infrastructure and other alternative strategies, these asset classes are reshaping how investors access growth, generate yield, and diversify risk. With privately-owned companies representing a growing share of the economy and offering more ways to express differentiated views, private markets have become an essential tool for long-term investors.

While the opportunity set has expanded, so too has the complexity. As access improves and investors adopt more flexible approaches—combining funds, co-investments, secondaries, and evergreen vehicles, we are presented with an opportunity to update traditional portfolio construction techniques. This shift away from funds-only portfolios means that investors need to understand how individual investments behave and the impacts that they have on the portfolio. Simply put, traditional frameworks built for public markets don't map cleanly to the private side.

However, most private markets research focuses on how funds behave, giving portfolio managers very little information on how to allocate to individual deals.

This paper aims to fix just that. Our goal is to give asset allocators a better understanding of how to build well-diversified co-investment programs.

Improving upon traditional portfolio theory

Modern Portfolio Theory (MPT), pioneered by Harry Markowitz, provides a widely accepted framework for portfolio optimization: balance riskier and safer assets to achieve the highest return for a given level of volatility. Under MPT, portfolio risk is defined by the statistical variance of asset returns and their correlations. But in private markets, this model breaks down. Here is why:

1. Return distributions in private markets are skewed i.e., less normal
2. Volatility is an incomplete risk measure
3. Liquidity and timing risks are critical in private markets investing

Because of these differences, applying public market tools like mean-variance optimization to private portfolios can lead to misallocated risk, overconfidence in diversification, and missed opportunities.

A more nuanced approach

While we agree with the foundational principle that diversification is essential, our approach rethinks how to diversify and what to optimize for when constructing private market portfolios.

Instead of relying on volatility as a stand-in for risk, we focus on probability-based outcomes. We analyze how each additional deal affects a portfolio's downside risk and return certainty, and we use real deal-level data to guide allocation decisions. This includes not just how many investments to hold, but also how large each position should be within and across asset classes like private equity, credit, and infrastructure.

Importantly, our analysis moves beyond fund-level heuristics. Most industry research focuses on pooled fund returns, which can obscure the wide dispersion of individual deal outcomes. With access to proprietary deal-level data across multiple vintages, we can model the full range of return outcomes, exit timelines, and risk exposures, giving us a much sharper lens into how private markets behave in practice.

As a result, we view position sizing as a dynamic exercise in a world where investors have a much larger toolkit of options for customizing their asset allocations. Our research leads us to five conclusions about private market position sizing:

1. Position sizing should reflect return distribution shape, not just volatility
2. "High risk" vs "low risk" labels can mislead sizing decisions
3. Long term return targets should be a direct input into position sizing
4. Investors should understand the tradeoffs between diversification and operational complexity
5. Understanding correlation between asset classes is imperative to sizing investments in a multi-alternative framework

Source: BlackRock as of August 2025. There is no guarantee that any forecasts made will come to pass. Past performance is not a reliable indicator of future performance.

Challenging what we think we know about private equity

We start by discussing private equity, specifically buyout, because it is one of the most well-known and researched alternative asset classes – this gives us a lot of data to work with. Buyouts also provide a useful case study because they epitomize the high-risk/high-reward nature of private investing.

The chart below illustrates the distribution of IRRs for a single buyout deal based on thousands of historical outcomes. The curve is anything but the symmetric bell curve of a normal distribution. Instead, it is bimodal and skewed – there is a significant probability of very low or negative returns, and a smaller but meaningful probability of very high returns, with a long tail on the right. For instance, there is a 7% chance of losing all capital, but on the other hand, a 14% chance of earning an IRR of 50% or more.

Essentially, buyouts have a few significant outperformers that pull the mean return higher but still have high probability of extreme outcomes on either side. The median IRR for a single buyout in our dataset is approximately 11%, whereas the average IRR is higher, about 19%, pulled up by those few big winners.

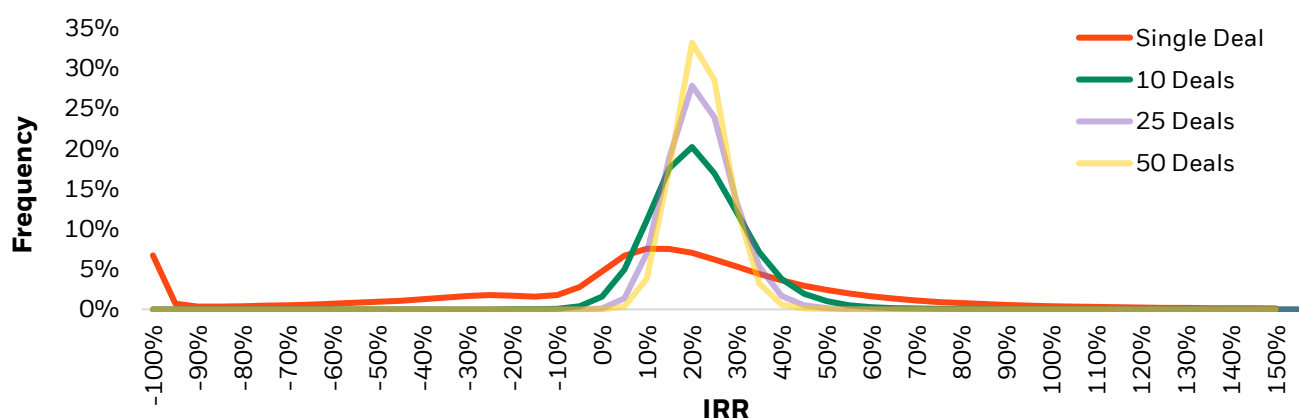
This gap between the mean and median underscores the skew – if you pick one deal at random, you are more likely to land around 11% (the typical outcome) than 19% (the higher average boosted by outliers). This is why doing multiple deals is helpful – you bring that return closer to the average by making the range of outcomes more balanced i.e., less skewed towards outcomes on either side.

These figures highlight a sobering reality: an investor in any single private equity deal faces a material risk of a poor outcome (possibly even a complete loss), even though the expected return might look attractive. Moreover, the uncertainty isn't just in how much you might make, but also when you might get it. While industry convention often assumes a ~5-year holding period on average, the actual data shows a skewed timeline: many deals do exit around 4–6 years, but there is a long right tail with some deals taking 10, 12, even 15+ years to reach liquidity. Infrequent but significant outliers – those that drag on far longer than expected – drive this tail. This timing uncertainty compounds the risk of single deals, since delayed exits can hurt an investor's ability to recycle capital or meet liquidity needs (especially if several deals linger or underperform simultaneously).

The clear lesson is that diversification is critical in private equity. By increasing the number of independent positions, an investor can dramatically improve the consistency of outcomes. When we simulate a portfolio of 25 buyout investments and plot its IRR distribution, the picture changes substantially. The portfolio's return distribution, while still not perfectly normal, more closely resembles a bell curve compared to the single-deal curve. The chance of earning an IRR of 0% or less drops from 28% for a single buyout to 0.1% for a portfolio of 25 buyouts. The “fat tails” are trimmed considerably by diversification. The median portfolio IRR rises to around 18–19%, much closer to the mean, indicating that holding a basket of deals pulls your realized return toward the law of averages, whereas one deal could be far above or below average.

A wide range of outcomes for private equity

IRR distribution for a single buyout versus portfolios of buyouts



Source: Preqin & BlackRock Analysis as of March 31, 2024. Model using 100,000 buyout simulations based on a custom distribution fitted on the universe of liquidated buyout investments with investment dates between 2000 and 2010. Chart is for illustrative purposes only and does not represent the actual performance of any BlackRock portfolio. This is not a recommendation to invest in any particular financial product. Past performance is not a reliable indicator of future performance.

Putting this into perspective...

Another way to view the power of diversification is to look at how the risk of losing capital declines as more deals are added. An investor is expected to lose capital in over 25% of single buyout deals, but this chance drops to around 5% with a portfolio of 5 assets and near 0% thereafter. Meanwhile, the portfolio’s return distribution becomes tighter and more symmetric with each additional investment. By ~15 deals, the diversification benefits for buyouts start to plateau – adding a 16th or 20th deal only marginally reduces volatility or downside risk. This illustrates a familiar concept in traditional investing: diminishing marginal benefits of diversification. Initially, each extra asset greatly reduces risk, but eventually you’ve captured most of the benefit.

Importantly, these improvements come without sacrificing upside potential unduly – you still capture those few big winners in a 15-deal portfolio, they just get averaged in with the rest. In fact, the portfolio’s standard deviation of IRRs in our study is about 9% (absolute IRR percentage points) versus over 100% standard deviation for single deals.

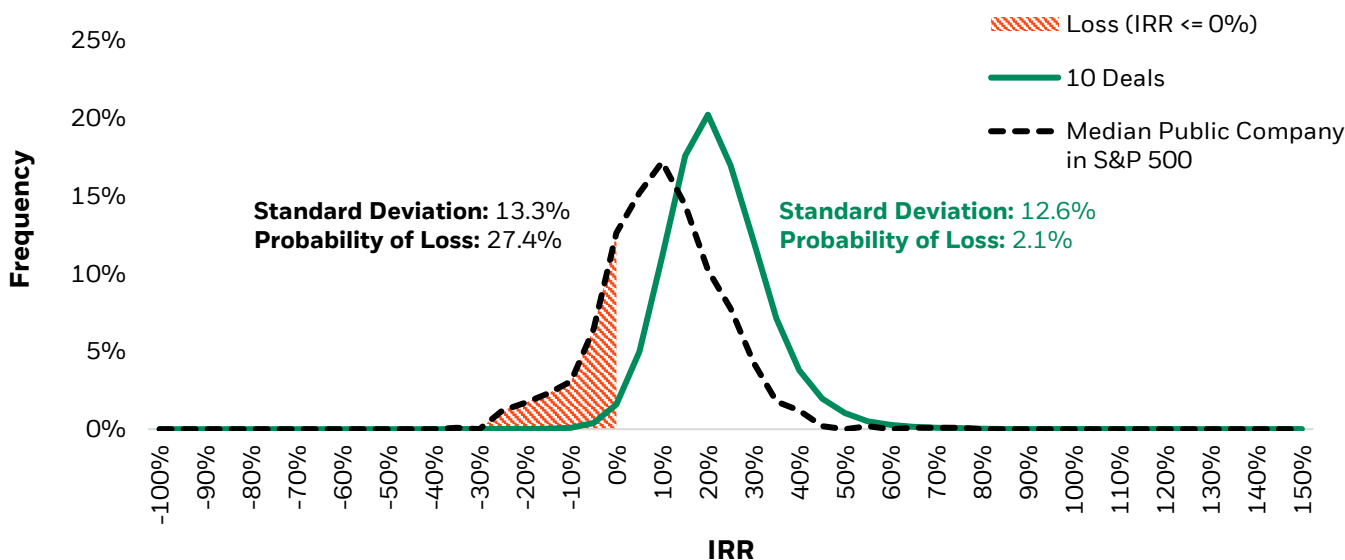
In other words, by holding 15 or so private companies, an investor can tamp down idiosyncratic risk enough that the overall ride is not much bumpier than the stock market – all while potentially enjoying a higher return per deal on average.

Let’s dive into the public market comparison a little more closely. We found that a 10-investment buyout portfolio (shown below) exhibits almost the same volatility as a typical company within the S&P 500 index over the past 10 years. That is; by investing in the private market portfolio, you have a lower chance of losing capital but earn a median return that is more than double at the same time.

The takeaway for private equity is straightforward: don’t put all your eggs in one basket (or a few baskets). For buyouts, our empirical finding is that ~15 investments yield a well-diversified outcome in terms of return distribution. Fewer than 5 is clearly too few (risk remains extremely high), and beyond 15–20 the incremental benefits trail off. This “sweet spot” might vary slightly for other strategies, which begs the question – what about other private asset classes? Do they behave differently, and should the diversification strategy differ accordingly? We address that next.

What have you got to lose?

Returns distributions for a 10-investment buyout portfolio versus the median S&P 500 company



Source: S&P Global, Preqin & BlackRock Analysis as of May 1, 2025. Model using 100,000 buyout simulations based on a custom distribution fitted on the universe of liquidated buyout investments with investment dates between 2000 and 2010. Annualized 5-year returns for S&P 500 companies from April 2015 to April 2025. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise or even an estimate of future performance. Past performance is not a reliable indicator of future performance.

But not all asset classes behave the same way

The table below summarizes return distributions for buyouts, private credit, and infrastructure equity deals. The goal was to compare how the distribution of outcomes differs across these asset classes and what that implies for portfolio construction.

Two key observations emerge from this comparison:

- 1. The range of potential outcomes is broad for all private asset classes, but the “shape” of the risk differs.
- 2. You are “paid” for the risk in each case, but the nature of that risk needs to be managed differently.

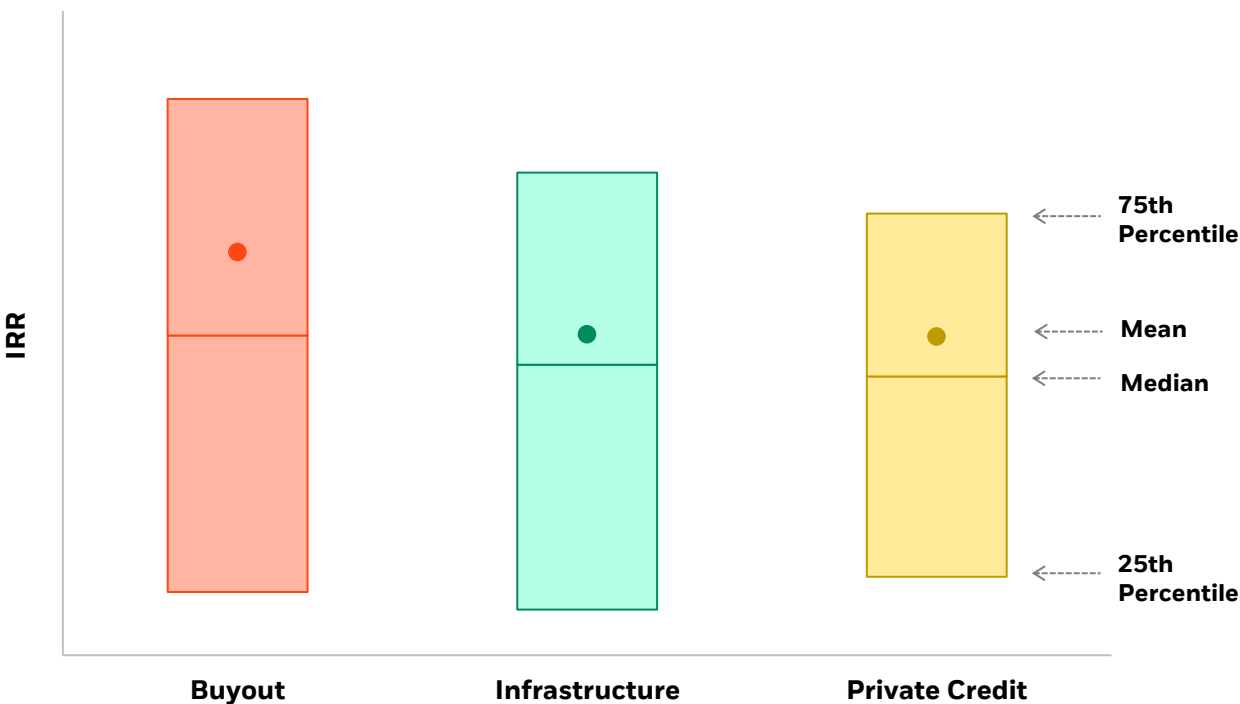
The private credit percentiles highlight that most of the returns fall within a narrower range and are relatively less skewed than are the others. Most private debt deals tend to deliver IRRs in a relatively constrained band – say, high single digits to mid-teens – reflecting the contractual nature of loans (interest and principal repayments).

The downside tail in credit is truncated by the fact that many loans have assets backing them and recovery processes in case of default, not to mention often being senior in the capital structure. The upside tail is also capped – a loan typically can only return so much (you receive your interest and principal, maybe a small equity kicker, but you’re rarely going to earn a 5x or 10x return like an equity might).

Buyouts on the other hand, typically only return capital following a sale or IPO and have the fattest tails, meaning they have higher upside potential but also the highest downside risk. Infrastructure equity falls somewhere between buyouts and credit. These are equity investments in projects or assets like roads, power, or utilities – they have cash-flowing characteristics, but also equity upside and risk. Consequently, infrastructure deal returns in our sample show moderately wide dispersion: more spread than credit, but typically less extreme than corporate buyouts.

A wide range of outcomes among private market asset classes

Interquartile ranges by asset class



Source: Preqin & BlackRock Analysis as of March 31, 2024. Model using 100,000 buyout, private credit, and infrastructure equity simulations based on custom distributions fitted on the universes of liquidated buyout investments with investment dates between 2000 and 2010 and liquidated private credit and infrastructure equity investments with investment dates between 2000 to 2011. Chart is for illustrative purposes only and does not represent the actual performance of any BlackRock portfolio. This is not a recommendation to invest in any particular financial product. Past performance is not a reliable indicator of future performance.

A new approach to diversification

What does this mean for an investor allocating across these asset classes? It suggests that the optimal diversification strategy might not be identical for each. If you have capital to deploy across these areas, where should you “spread it thin” and where can you “lump it” more? Our analysis indicates you should spread it thinner in private credit (more positions) and you can afford to be a bit more concentrated in infrastructure, with buyouts in between.

This is somewhat counterintuitive relative to the traditional Markowitz-based approach which suggests that one can allocate more to lower risk investments like credit, and less to higher risk investments like buyouts. The reason for this contradiction is that Markowitz assumes normality of returns and uses variance as the measure of risk, which as we have seen is not always the most appropriate approach in private markets. Investors without access to deal-level information may fall back to the tenants of Markowitz, which would lead them to non-optimal sizing decisions.

To quantify this, we looked at the marginal diversification benefits of adding additional positions in each asset class, shown below. In general, as the number of positions in the portfolio increases, the marginal diversification benefits of each additional deal decreases.

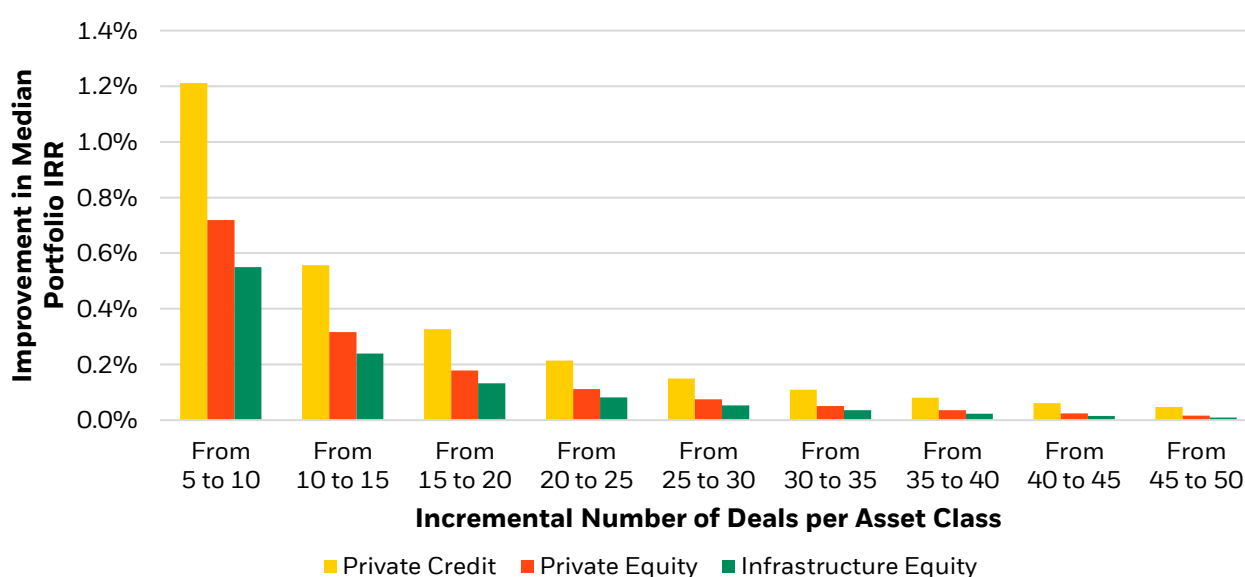
For private credit portfolios, the marginal benefit of increasing the number of positions is largest compared to private equity or infrastructure. This is because credit’s upside is naturally capped, so you are primarily diversifying away downside (default) risk by adding more loans – a highly beneficial trade-off. By contrast, adding more buyout deals certainly helps a lot initially (as we saw), but each new deal also slightly dilutes the impact of a potential huge winner. If you have one superstar out of 5 deals, it boosts the whole portfolio a lot; if you have one superstar out of 50 deals, it moves the needle less.

Our analysis shows that as a rule of thumb; the optimal average private credit position size should be around 0.8x that of buyout. Additionally, we found that the optimal average infrastructure equity investment should be around 1.2x that of buyout. In practice, each investor should consider the incremental costs of including more investments in their portfolios (legal, operational, etc.) against the marginal benefits illustrated above to determine an optimal position size.

Having explored single-asset-class position sizing, we now bring it all together for a multi-alternative portfolio. How should an investor split their attention and capital to build a well-rounded program? What does an “optimized” portfolio look like compared to a naive one? The following case study addresses these questions.

Measuring the diversification benefit

Incremental improvements in median portfolio IRR as number of deals increase



Source: Preqin & BlackRock Analysis as of March 31, 2024. Model using 100,000 buyout, private credit, and infrastructure equity simulations based on custom distributions fitted on the universes of liquidated buyout investments with investment dates between 2000 and 2010 and liquidated private credit and infrastructure equity investments with investment dates between 2000 to 2011. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise or even an estimate of future performance. Past performance is not a reliable indicator of future performance.

Tying it all together – What our approach looks like in practice

Consider the case study below following a multi-family office that has decided to build out a private market co-investment program. **Its goal is to complement its core holdings in public investments and fund commitments in private markets, driven by growing client demand and the recognition that private assets can enhance returns and diversification.**

Suppose this family office plans to allocate its private markets program **equally across three areas** – private equity buyouts, private credit, and infrastructure equity – targeting roughly one-third exposure to each in the long run. The family office has access to top-tier fund managers and co-investment opportunities in each category, giving them flexibility to choose how to implement their allocation.

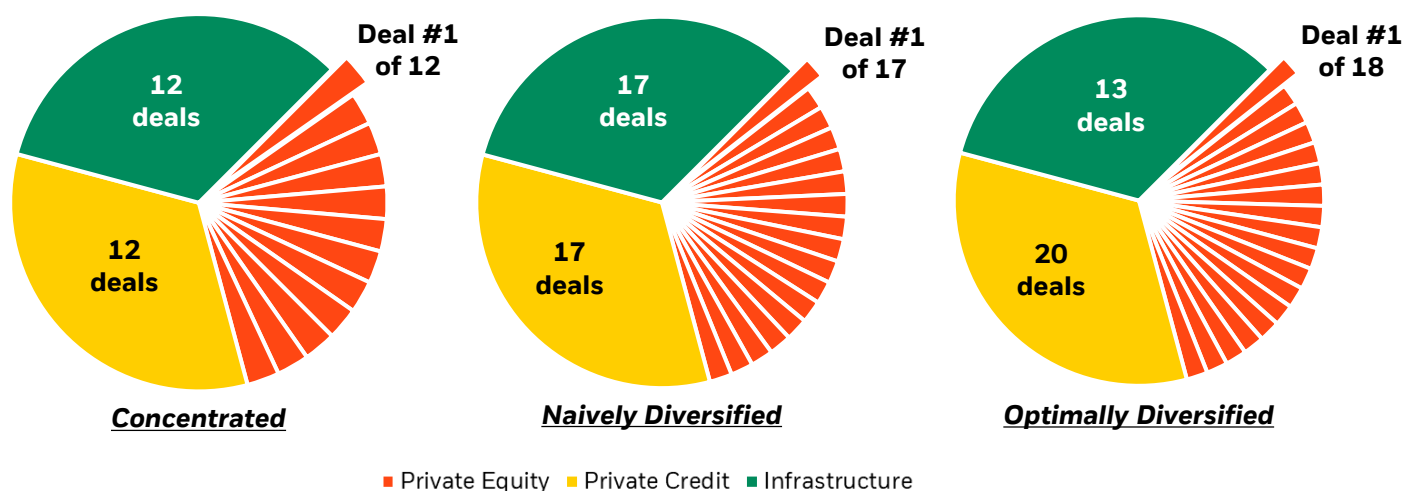
They want to balance between not concentrating too much (to avoid the idiosyncratic risk of any single deal) and not over-diversifying to the point of diluting returns or creating operational drag.

Two straightforward approaches are outlined as a starting point in the table below. For comparison, we also develop a third portfolio – an “Optimized” approach – using the insights from our earlier analysis on marginal diversification benefits. In this approach, the family office would allocate a different number of positions to each asset class based on how much diversification each additional deal provides in that asset class.

It’s not just that you diversify, but how you diversify

Number of deals in each asset class for different levels of diversification

| No. of Deals | Concentrated | Naively Diversified | Optimally Diversified |
|----------------|--------------|---------------------|-----------------------|
| Private Equity | 12 | 17 | 18 |
| Private Credit | 12 | 17 | 20 |
| Infrastructure | 12 | 17 | 13 |
| Total | 36 | 51 | 51 |



Source: BlackRock as of August 2025. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise or even an estimate of future performance.

Optimizing for multi-alternatives

As an illustrative example for the purpose of our case study, the chart below shows that a concentrated portfolio unsurprisingly shows the highest volatility and lowest median return of the three. With only ~12 investments in each asset class, the portfolio is not fully tapping into the diversification potential. The naively diversified portfolio fares better. Its median outcome is higher and volatility lower than the concentrated version, thanks to diversification. This portfolio benefits from the fact that each asset class on its own is more diversified, so within each sleeve the risk is reduced. However, it treats buyout, credit, and infrastructure the same in terms of number of positions.

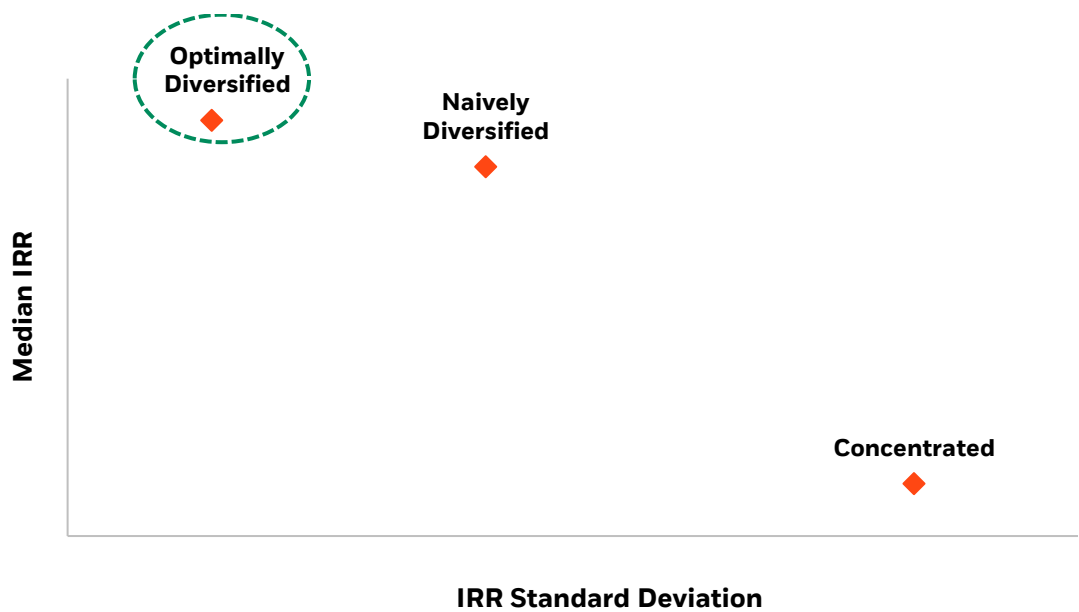
A portfolio with investment sizing based on the marginal diversification benefit of each asset has both the highest median return and the lowest volatility. By sizing positions in proportion to each strategy’s diversification benefit, this portfolio slightly tilts towards what each asset does best.

In effect, the optimized approach recognizes that not all diversification is created equal: one more loan in a credit portfolio buys you a bigger reduction in risk than one more equity deal in an already diversified equity portfolio. So, the optimal allocation of “diversification budget” (i.e., how many slots to fill with deals) is skewed to the area of highest payoff – here, private credit. The result is a portfolio that, on a risk-adjusted basis, outperforms the other two. It achieves a comparable or higher return with lower volatility.

From a practical client perspective, what does this mean? The family office can already gain a significant increase in returns while reducing volatility by just employing the naïve approach. Moreover, the optimal strategy can further diversify the portfolio, offering the best risk-adjusted outcome. In our case study, this looks like a strategy of many small credit investments, a moderate number of buyouts, and a slightly more concentrated infrastructure allocation.

Where more risk ≠ more reward

Illustrative median IRR versus IRR standard deviation for different levels of portfolio diversification



Source: Preqin & BlackRock Analysis as of March 31, 2024. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise or even an estimate of future performance. Past performance is not a reliable indicator of future performance.

Conclusion

Building a successful private market co-investment program is far from the simplistic exercise of allocating a fixed percentage to “alternatives” and selecting a few funds. Our approach embraces the nuances of each asset class’s risk-return profile and emphasizes being intentional about how many investments to hold and at what sizes. By doing so we challenge traditional portfolio construction techniques and highlight pitfalls in its application to private markets.

Several key insights that emerge from our research include: the importance of considering the shapes of private market returns distributions when sizing positions, questioning preconceived risk labels, incorporating long-term return targets into sizing decisions, recognizing when less (diversification) is more, and the importance of understanding correlations across alternative asset classes. Note, while our approach, for simplicity, only considers 3 asset classes, this framework lends itself to scalability across any number of asset classes.

Position sizing in private markets is both an art (practical constraints and market views) and a science (understanding distributions and correlations). Private markets, when thoughtfully harnessed, can indeed offer that elusive combination of higher returns with managed risk – a proposition that has driven their surge in popularity. A well-constructed private portfolio can be more than the sum of its parts, delivering a smoother ride than a single fund or deal ever could.

Our research also challenges the use of the traditional Markowitz approach to portfolio construction in private market portfolios. We find that our probabilistic approach more holistically estimates true downside risk compared to relying solely on returns variances. We also show that alternative investment returns violate Markowitz’s normality assumption and may not be well suited to this approach.

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