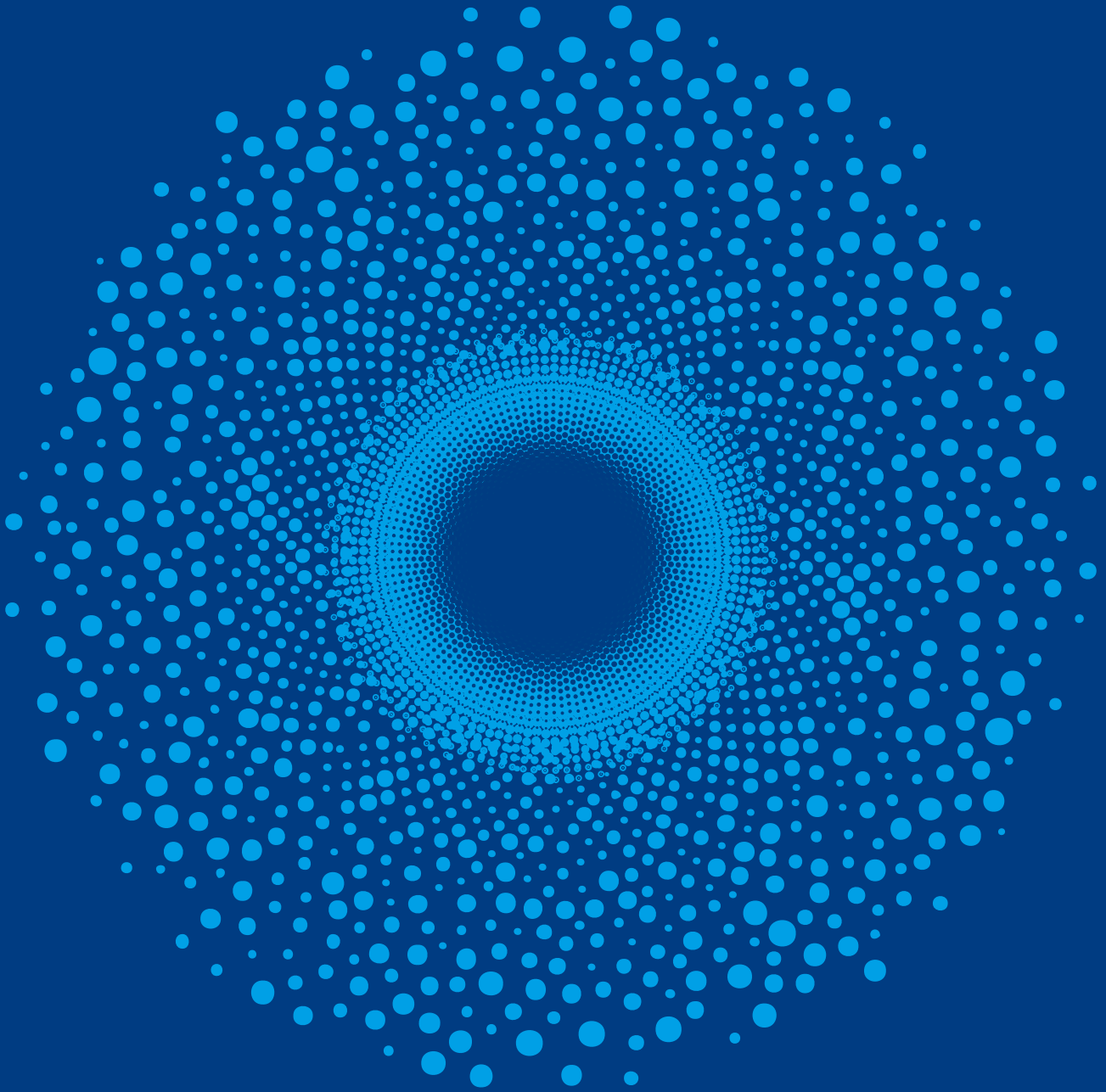


GOLDING



Quantifying the diversification effect of private market funds of funds

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The current environment is defined by inflationary, economic and geopolitical fears, which increasingly puts portfolio risks in the spotlight. Fund of fund structures become even more relevant in these circumstances, thanks to their diversification effect.

This paper looks at the risk effect of private market funds of funds and is based on a study carried out by Golding in June 2022. Because although it is intuitively clear that funds of funds contribute to

greater diversification and so can reduce portfolio risk, it appears that the effect has never previously been quantified at this scale and with such precision. The difficulty lies in the fact that the investments are private and as a result there is a lack of publicly available market data. The results of the analysis are surprisingly unambiguous and ought to be reflected in both practical investment policy and the regulatory framework.

Key findings

- ➔ Funds of funds reduce the volatility of quarterly returns by around 90 per cent compared with individual investments.
- ➔ The vast majority of funds of funds generate a positive long-term return, whereas a significant portion of individual investments may turn out to be a loss for their investors.



Study design

The study measures the performance of investments in funds of funds compared with investments in primary funds and individual investments, such as direct equity stakes in companies. It examines both the short-term and long-term performance over the entire life of the investment, or to put it more precisely, the quarterly return and the multiple of money achieved (TVPI, Total Value to Paid-In). In addition, the transactions are broken down into the segments buyout, infrastructure (equity) and private credit.

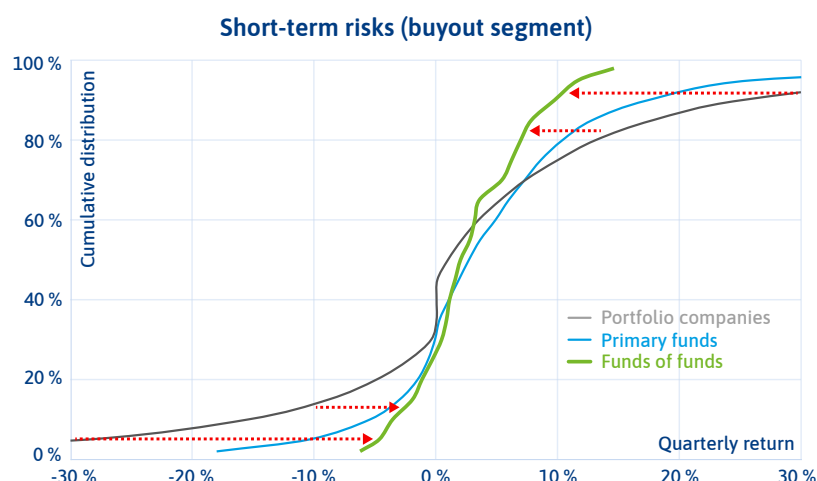
A vital part of the study was to assemble a representative data set, because information about private market investments is not publicly

available – in contrast to the liquid and publicly traded financial markets. This data set comes from a proprietary database compiled by Golding, with performance data from funds of funds that are both still active and already wound up, primary funds and portfolio companies (direct investments) from the three private market segments. The database is highly granular and at the lowest level comprises some 100,000 quarterly data points from the years 2001 to 2021. Another database from Cambridge Associates with historical data at the level of fund of funds and primary funds for the years 2000 to 2021 is used as a benchmark.

Results

An analysis of the data for the buyout segment is shown exemplarily below. The effects of diversification can be seen from both a short-term and long-term perspective.

Analysis of quarterly return distributions



Cumulative distribution of historical quarterly returns for different investment levels. The comparison is made at the level of portfolio companies (in grey, 26,823 underlying data points), primary funds (in blue, 2,897 underlying data points) and funds of funds (in green, 236 underlying data points). **The diversification effect of the funds of funds compared with individual portfolio companies is indicated by the red arrows.**

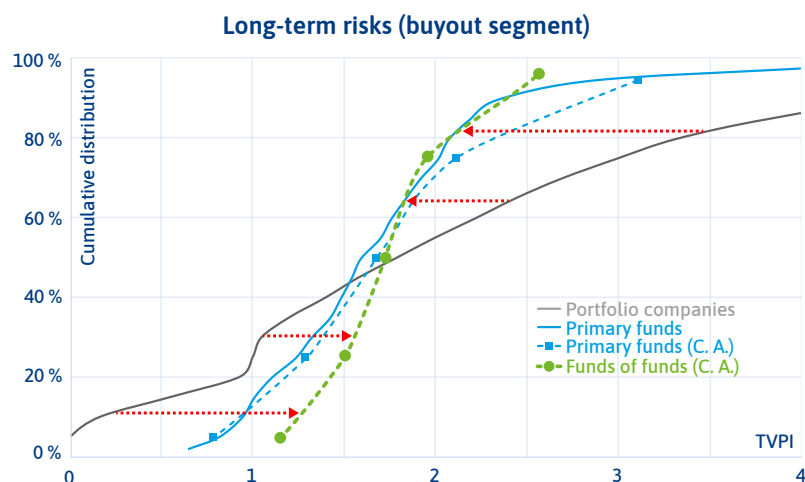
| Risk metrics quarterly returns | Portfolio companies | Primary funds | Fund of funds | relative change |
|--------------------------------|---------------------|---------------|---------------|-----------------|
| Standard deviation | 72% | 26% | 5% | -93% |
| Quantile/Value at Risk | | | | |
| 80% confidence level | -5% | -2% | -1% | -76% |
| 85% confidence level | -9% | -3% | -2% | -78% |
| 90% confidence level | -15% | -5% | -4% | -77% |
| 95% confidence level | -28% | -10% | -5% | -84% |
| 98% confidence level | -50% | -18% | -6% | -88% |

The short-term analysis shows that funds of funds can significantly reduce the risks of loss. So investors with 15 per cent of their investments in portfolio companies reported a negative quarterly return of around -9 per cent or more. For individual funds the risk was -3 per cent and for funds of funds just -2 per cent. In more extreme scenarios a fund-of-funds investment paid off even more clearly; investors in individual companies had a probability of around 2 per cent of experiencing a negative quarterly return of -50 per cent or more, and the risk with a single primary fund was still -18 per cent. For a fund of

funds the risk was just -6 per cent, which represents a risk reduction of almost 90 per cent.

It should also be emphasised that while the short-term return of private market investments does enable some conclusions to be drawn about their current performance and stability, the gains or losses are hardly realised in the short term, because investors and asset managers – particularly for closed-end funds – typically (are obliged to) plan for the long term.

Analysis of total return distribution



Cumulative distribution of historical TVPI for different investment levels: The comparison shows distributions based on the Golding data at the level of portfolio companies and primary funds (solid grey and blue lines) and data from Cambridge Associates (C.A.) at the level of primary funds and funds of funds (blue and green data points with dashed lines). **The diversification effect of the funds of funds compared with the individual portfolio companies level is indicated by the red arrows.**

| Risk metrics | Portfolio companies | Target funds | Fund of funds |
|------------------------|---------------------|--------------|---------------|
| TVPI | | | |
| Standard deviation | 5.46 | 0.76 | 0.50 |
| Quantile/Value at Risk | | | |
| 80% confidence level | 1.00 | 1.23 | 1.50 |
| 85% confidence level | 0.56 | 1.00 | - |
| 95% confidence level | 0.01 | 0.80 | 1.15 |
| 98% confidence level | 0.00 | 0.64 | - |

The trends described above are even more pronounced in the long-term analysis based on TVPI. Whereas a quarter of all investments in the portfolio companies in the database returned no more than the invested capital, investments in primary funds had the same probability of achieving a multiple of money of 1.23, and for funds of funds the factor was up to 1.5. In 5 per cent of the observed cases the investments in portfolio companies turned out to be a complete write-off, whereas investments in portfolio funds experienced a loss with a TVPI of 0.8. By contrast, funds of funds in this quantile still generated a positive multiple of money of up to 1.15. A look at the distribution function for the observed data provides an impressive demonstra-

tion of how a fund of funds' diversification sharply compresses the variance of overall returns and significantly reduces the loss risk in particular. Since the underlying data still include active investments that may still have their peak appreciation ahead of them, the expectation is that the final statistics will be even more significant.

Data analysis produces a similar picture for both the databases used, from a short-term as well as a long-term perspective. Cambridge Associates in particular has comprehensive statistics on buyout funds of funds, which enables a long-term analysis of overall returns.

Risk reduction in the asset classes infrastructure and private credit

In the infrastructure and private credit segments the distributions are similar. Compared with buyouts, however, both segments are fundamentally less risky, so the risk reduction effect is less marked. Infrastructure funds of funds in particular are a

relatively young asset class and therefore do not have a long-term return history, but the quarterly returns observed nonetheless exhibit a similar pattern to that of the buyout segment.

| Segment | Risk metrics quarterly returns | Portfolio companies | Target funds | Fund of funds | relative change |
|----------------|--------------------------------|---------------------|--------------|---------------|-----------------|
| Infrastructure | Standard deviation | 57% | 9% | 3% | -95% |
| | Quantile/Value at Risk | | | | |
| | 95% confidence level | -8% | -8% | -3% | -59% |
| | 98% confidence level | -21% | -14% | -6% | -73% |
| Private credit | Standard deviation | 77% | 19% | 11% | -85% |
| | Quantile/Value at Risk | | | | |
| | 95% confidence level | -27% | -7% | -5% | -83% |
| | 98% confidence level | -60% | -17% | -10% | -83% |

Implications

The extent to which funds of funds reduce portfolio risk by means of diversification (by sector, region, currency and fund manager, among other factors) is likely to come as a surprise to many market participants. In the current environment, which is characterised by great uncertainty in terms of the economy, monetary stability and geopolitical developments, the study gives investors compelling arguments for highly diversified private market investments such as funds of funds. Especially for risk-averse investors, who are increasingly turning to private markets because of the sometimes unfavourable risk-return profile of liquid markets, a fund of funds can help to limit the risks associated with investments in buyouts, private credit or infrastructure.

The study is also intended to provide support for efforts to modify banking regulations. At the moment there is a proposal to increase the risk

weightings for capital requirements under CRR III, which is due to take effect in 2025. In some cases these increases in risk weightings are substantial, particularly for equity investments, as is typically the case for buyout or infrastructure investments, but also for listed equities. Even for long-term strategies with no speculative purpose, banks would have to hold between 67 per cent and 150 per cent more equity for each investment in future. However, the proposal completely ignores the fact that thanks to their significant diversification, funds of funds make a key contribution to reducing risk, as the present study show.

Legislators are therefore thwarting their own aim of reducing the risks in banks' balance sheets. Because CRR III could incentivise banks to invest in primary funds, which are generally riskier, or even to make direct equity investments in individual companies.



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Christian Schnabel has been with Golding Capital Partners since 2008 and as Managing Director, Head of Product Finance, he is responsible across asset classes for fund accounting, performance measurement, risk assessment and reporting. Previously Christian Schnabel spent four years with the auditing firm KPMG, auditing the financial statements of banks, investment companies and investment funds. He obtained a degree with distinction in banking and finance management from Baden-Württemberg Cooperative State University Ravensburg and is a CFA Charterholder.



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