

PRIVATE EQUITY: THE TYRANNY OF IRR: PART 5 – MIRR NOT PERFECT BUT BETTER THAN IRR

We are, thankfully, at the end of this series on the adequacy of the standard performance metric (the internal rate of return or IRR) typically used to evaluate private equity and the related topic of its relevance to retail investor portfolios. Today we will consider an alternate return methodology for calculating the performance of PE, proposed some years back by Professor Ludovic Phalippou of Oxford University: the Modified Internal Rate of Return (MIRR).

After Part 1 was published a number of NBR readers emailed and said words to the effect that "OK, you are not happy with IRR, but you haven't come up with a better alternative". MIRR is an alternative measure. It is not perfect but it is better as it solves one of the big problems of IRR as regards the unrealistically high numbers that can result from large returns of capital early in a PE fund's life.

So let's get on with it: as discussed in part 2 a private equity fund's IRR can be supercharged through large early distributions but, as per Professor P's analysis, these high numbers invariably do not translate to commensurately high returns for investors. Even my financial modelling text books from 1982 warned of this issue: *"standard internal rate of return computations determine a discount rate whereby the present value of returns for a project exactly equals the present value of investment. Both returns and investment are discounted at the rate determined thus for a project with an internal rate of return of 25% a \$10,000 return in year 2 is equivalent to \$10,000*

x 1.25⁴ in year 6, ie \$24,400. This implicitly assumes that the \$10,000 return in year 2 will be reinvested at a rate equal to the internal rate of return. However that may or may not be a reasonable assumption – it depends upon the rate of return for the current project also being available for other potential investment opportunities at the time of reinvestment. In other words it assumes you will keep finding new projects as good as this one. That may not be a valid assumption." With top quartile PE firms quoting IRRs of 50% - 90%, as per part 2, it's a reasonable guess that, in these cases, "that is definitely not a valid assumption."

In his January 2026 paper, "The Tyranny of IRR," published in the Journal of Portfolio Management, Professor P makes a number of suggestions to improve prospective PE investors understanding of historic performance. The easiest of these to understand is arguably the MIRR methodology and in a paper published back in March 2008, The Hazards of Using IRR to Measure Performance: The Case of Private Equity, he outlines MIRR. Fortunately this paper is available free of charge at <https://ssrn.com/abstract=1111796>. Here Professor P introduces MIRR as a potential improvement to IRR in that it allows one to make the model solution compound early distributions at a more realistic rate than the IRR.

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The simple example below illustrates:

Date	Year	Cash flows	IRR Inputs	Assumption
1-Jan-26	0	-1000	Finance rate	6%
1-Jan-27	1	600	Reinvestment rate	8%
1-Jan-28	2	0		
1-Jan-29	3	0		
1-Jan-30	4	1000		
		IRR	19.1	
		MIRR	15.1	

So in the example we see that the IRR is 19.1%. That is a high return, chiefly because of the big, \$600, cash inflow in year one. MIRR at 15.1% is much lower because we assume that the interim cash flow in year one is reinvested at a more realistic 8% pa compound rather than the 19.1% of the IRR. I chose 8% for the reinvestment rate because that's what most unconflicted experts believe is the long term expected return of the US stock market at today's valuations. I got to 6% for the finance rate simply because it is less than 8%.

MIRR isn't perfect because it requires the person in charge of the model to make two important assumptions:

- The first assumption is in respect of a reinvestment rate at which all positive interim cash flows are reinvested.
- Secondly a finance rate needs to be nominated at which all negative cashflows are financed.

I contacted Professor P and by email he said that whilst MIRR requires two discount rates – a financing rate and an earning rate he uses the same rate for both for simplicity. *"Some people argue that you should use the yield curve for the capital calls as they are certain. But in that paper it just said, as the hurdle rate is 8% just use 8% for both rates, that makes PE look a bit better but not much and it is simpler"*.

In the 2008 paper Professor Phalippou outlines his use of MIRR as follows: "To compute a modified IRR, one assumes that the capital committed to a fund is put on an 'account' that earns the hurdle rate (e.g. 8% per year). The capital called by a fund is taken out of this account and capital distributed goes to this 'account'. When the fund liquidates, the MIRR is computed as the amount on the account at liquidation divided by capital committed to the power one over duration. This basically boils down to calculating NPV but gives a per annum number." He concludes the paper below: "In this article, it is first shown that IRR is probably the worst performance metric one may use in an investment context. It exaggerates the variation across funds, exaggerate the performance of the best funds, can be readily inflated and provide perverse incentives to fund managers. The objective is to open a debate and to invite more work towards a more acceptable performance reporting standard." All that is probably not going to make much sense to most people but the key takeaway for KiwiSaver members is that private equity returns may not be all that they seem and, as always, keeping things simple is often the best policy for non-expert investors. For any trustees of pension funds who might be reading this there is a lot more detail in Professor Phalippou's 2008 paper and if anyone has access to the Journal of Portfolio Management, the 2026 paper is definitely worth reading too.

For some perspective on PE in NZ I asked the NZ Super Fund a few questions on the above. Questions and answers are detailed below:

What is the NZ Super Fund's NZ dollar exposure to PE?

- Our NZ dollar exposure to PE is \$5.5bn.

What percentage of NZ Super Fund's assets are in PE?

- Our PE exposure is c. 6.3% of fund NAV.
- Of note, we have recently made the decision to reintroduce Buyout investments

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to our portfolio. Our Buyout exposure is only 0.1% of fund NAV, but we are actively assessing deployment opportunities and these may rise to total c. 1.5% of the Fund in the next several years.

Who are the PE managers in respect of your three largest PE fund investments?

- About half of our Private Equity assets are directly managed by Guardians.
- The three largest external investment managers are Carlyle, Columbia Capital and Pioneer Capital. Note that these can span multiple fund investments.

What performance metric does the Super Fund use when assessing PE funds' performance?

- All metrics have advantages and drawbacks and therefore we choose to rely on a range to form a comprehensive view on performance. The metrics include (but are not limited to) the following:
 - Internal Rate of Return (IRR)
 - Total Value to Paid-In Capital (TVPI)
 - Distributed to Paid-In Capital (DPI)
 - Public Market Equivalent analytical measures, such as Direct Alpha & Kaplan-Schoar (KS-PME)
- PE fund performance is typically assessed against:
 - Aggregated asset class performance which can be filtered by sector, geography, and fund size;
 - The performance of individual comparable funds; and
 - Our funding cost & investment hurdle for the PE fund. (This framework is common to all investments, in both public and private markets.)
 - Our investment hurdle represents our required return for an active investment. The hurdle is comprised of the opportunity cost of funding the investment (i.e. the expected return of public equities & income/cash assets that would be

sold/used to fund the investment) & other risk premia (such as illiquidity).

- Our funding cost, i.e. the mix of equities & incomes/cash assets used to fund an investment is calculated through determining the equity beta of the asset.
- We also note that there are a number of non-performance related factors that feed into our assessment of PE funds, such as alignment, consistency in strategy, strength of processes, and culture.

The spokesperson added that they follow Professor Phalippou's research and have attended conference presentations he has made.

Brent Sheather is a Financial Advice Provider. A disclosure statement is available upon request. Brent Sheather may have an interest in the companies discussed.