# Private Equity Performance Metrics

Because private equity funds call and distribute capital over time, the standard approach used to evaluate traditional stock and bond funds is not appropriate. Instead, several other metrics provide understanding and insight about fund performance.

While the compounded time-weighted return is the preferred metric for evaluating the performance of traditional investments such as stock and bond funds, it is inappropriate to use as a measure of alternative investments' performance such as private equity and private debt funds.[1] That is because the time-weighted return calculation does not reflect the timing and size of the contributions to, and distributions from, a fund. Yet they are crucial to measuring the performance of private equity funds. As a result, the industry uses several other metrics to describe fund performance.

In this Viewpoint, we will examine these metrics, the information that they provide to private equity investors, and how to meaningfully interpret the metrics in context throughout the private equity fund's lifecycle.

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## Internal Rate of Return

Internal Rate of Return (IRR) measures the annualized rate of return that investors in a fund earned from inception through the time of the calculation. It may be one year or many years. It captures the size and timing of an investor's cash flows (capital calls and distributions).[2] The IRR can be calculated any time during a fund's life but is most useful for mature and fully realized funds.

A weakness of the IRR is that early in a fund's life the reported value of the fund's assets (its NAV or Net Asset Value) will dominate the calculation. If the assets are being valued at cost, as they often are[3], the IRR will usually understate the fund's "true" return. Often, we see low IRRs early in a fund's life, with the IRR rising as the fund matures, and the appreciation in the assets' values are recognized and gains are realized. Another limitation in using IRR is that it is subject to the J-curve effect.[4] This effect occurs early in a fund's life when management fees tend to be large relative to recognized asset appreciation. This leads to IRR being less informative in the early years of a private equity investment.

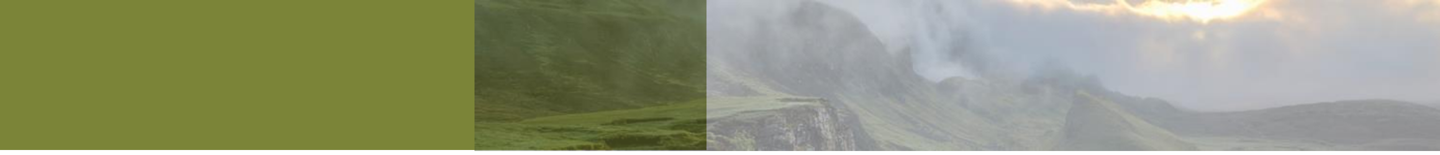
The strength of the IRR relative to the other performance metrics (described below) is that it reflects the timing of cash flows and the time value of money. A limitation is that the calculation assumes that the rate of return was constant over the life of the fund. Some worry that IRRs can be manipulated if a manager uses leverage to delay calling capital.

## Multiple of Invested Capital

Multiple of Invested Capital (MOIC) measures the value of a fund and the amount of money distributed relative to the amount of capital invested. As a simplified example, a fully realized fund that ultimately distributed $200 million but only called $100 million would have a MOIC of 2.0X (the "X" representing a "multiple"). In the case of a fund not fully realized, consider a $100 million investment in a fund that has distributed $50 million and has remaining NAV of $100 million. Such a fund would have a MOIC of 1.5X. Note that early in a fund's life, the MOIC heavily depends on the valuation of the fund's assets.

The strength of MOIC (and other ratios we'll discuss) is that they offer a simple, intuitive way to evaluate performance. Their weakness is that they do not reflect the time value of money. In other words, the ratios do not differentiate between a high-returning fund that distributed assets early, versus a fund that had multiple extensions and returned most of the capital late in its life.

MOIC is also referred to as Money on Money (MoM), Total Value to Paid In (TVPI), and Return on Investment (ROI).



## Distributed to Paid in

Distributed to Paid in (DPI) is the ratio of money distributed to LPs relative to their contributions to the fund. A DPI of 1.5X means that investors in a fund have received distributions equal to 1.5 times their contributions. One should expect a low DPI early in a fund's life.

Later, a low DPI can be due to:

- Gains being reinvested rather than distributed,
- The general partner is slow to sell portfolio companies, or
- The fund is performing poorly.

DPI does not rely on the valuation of a fund's investment, unlike MOIC. The DPI is most relevant when a fund is well into its harvest period, when the value of the fund's remaining assets is relatively small. The DPI converges to the MOIC at the end of a fund's life.

## Public Market Equivalent

The Public Market Equivalent (PME) compares an investor's return from investing in a private equity fund to investing in a public market (e.g., a Russell 2000 Index fund) instead. The PME is intended to answer the question: What would the return have been if all the capital calls and distributions were made into and redeemed from a public stock market index? A PME of 1.5X means that the investment in the private equity fund returned 150% of the value that would have been obtained by investing the same amounts on the same dates in the public index. While there are several commonly accepted methods used to calculate a PME,[5] their basic approaches are the same. They replicate the private investment's cash flows with investments in a public market index.

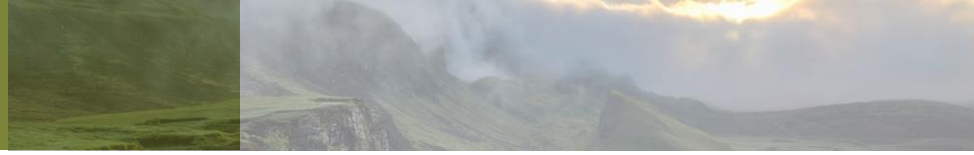
The benefit of using the PME is that it explicitly measures the benefit from investing in private versus public assets. While the IRR also reflects the time value of money, it may not be sufficient to understand whether the investor would have been better off investing in the public or private market. Let's assume that a 2007 vintage private equity fund returned 10% during its 12-year life from 2007 through 2018. The Russell 2000 returned 6% during the same period. The fund's IRR makes it appear that it added value. However, the Russell 2000 returned 12% per annum between 2009 and 2018. If most of the fund's assets were not called until 2009, the relative performance is much less attractive. The PME captures this effect.

## Summary

Because private equity funds call and distribute capital over time, the standard time-weighted return approach that is used to evaluate traditional stock and bond funds is not appropriate. Instead, several other metrics are used. The IRR measures the dollar-weighted average rate of return over the life of the fund. In addition, there are several ratios such as the MOIC which compare the magnitude of the assets returned to the investor relative to the capital contributed. Lastly, the PME compares the value created by investing in the private equity fund to the value that would have been created if the assets had been invested in a public market index.

The IRR and the MOIC and DPI ratios are best used to measure funds' absolute returns, and to compare against other private equity funds. PMEs are designed to compare the performance of private to public equity.

Each of the metrics has its uses and may provide insights that the others may not. In addition, their utility may depend on where a fund is in its life cycle. As a result, best practice for private equity investors is to evaluate multiple metrics in context to understand how well the fund is performing or has performed.



## Endnotes

1. Note that this discussion is focused on evaluating individual funds. The time-weighted return may be appropriate to evaluate the longer-term performance of an investor's overall private equity program once it has reached steady-state.
2. Mathematically, the IRR is the discount rate that sets the present value of the cash flows in and out of a fund to zero.
3. To be conservative. Many general partners will carry assets at cost until there is concrete evidence that they have appreciated, or until they are sold.
4. The J-curve is a common phenomenon in private equity investments. It describes how the returns during initial years of a fund's life show low or negative returns. The J-curve effect occurs because private equity investments take time to mature, and the value of the investments often decreases in the early years as the PE firm incurs expenses related to managing and improving the portfolio companies.
5. Two of the more frequently used are the Long-Nickels PME which compares IRRs, and the Kaplan Schoar PME which compares the dollar value of the investment.

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