

Performance Measurement 101

Performance is important information for a number of reasons, most notably as a measure of how your investments have fared over various time periods. You may have performance goals: perhaps a need to grow capital over inflation; or, perhaps you like to see how you're faring relative to "the market." For this, you need a number. The universal method of measuring performance is by using a rate of return.

Rates Of Return

A rate of return is the gain or loss of the value of a security over a certain period, including all income received, converted to a percentage. The benefit of a rate of return is that it transforms other measures of performance into units that are comparable. For example, you would not compare a 300-point drop in the S&P 500 Index to the same point drop for the Dow Jones because the starting levels of those indices are dramatically different. But convert them to percentages and you can make a valid comparison. Though extremely useful in this regard, there are several nuances related to their reporting, calculation and application that one should be aware of.

Reporting Rates of Return

There are various ways rates of return are reported:

"Calendar Year"

Calendar year returns represent your performance over 12 months ending December 31 of any particular year.

"Annual"

Also a return calculated over 12 months, but the 12-month period need not coincide with a calendar year.

"Annualized" or "Compound Average"

This represents the percentage return your portfolio gained or lost, expressed as an average *per year* (i.e. for each 12-month period) since the noted start date, taking into account compounding. By convention, returns for periods longer than one year are annualized, except for cumulative returns (explained below).

"Cumulative"

A cumulative return is the total return over a period of time *without* annualizing or averaging. For example, a 3-year annualized return of 5% means the account generated an average return of 5% in each of the three years. With compounding, this translates to a 15.76% cumulative return over the full three years.

Calculation Methodology

"Time-weighted"

In concept, a time-weighted return answers the question, "How has my *manager* performed this period?" This type of investment performance is unaffected by the timing of any deposits or withdrawals you made during the period or by the size of your account. Because of this, you can accurately evaluate it in comparison to other time-weighted rates of return such as a market index or benchmark, or to the performance of other investment managers. This is the most commonly reported measure of return.

"Dollar-weighted" or "Money-weighted"

A money-weighted return, conceptually, answers the question, "How has my *account* performed this period?" The money-weighted return is affected by the timing and size of your deposits to and withdrawals from the account.

The difference between these two returns may seem subtle, but they are quite distinct concepts. The timing of your deposits or withdrawals affects the money-weighted return. If you add to your portfolio just before the market rises, that fortunate timing has a positive impact on the money-weighted return, but has no impact on the time-weighted return. Money-weighted returns should not be used to compare your returns to market indices, benchmarks or other managers – only time-weighted return comparisons are valid.

Net vs. Gross

Net returns are reported *after* certain deductions of expenses from your portfolio. Most commonly, a net return refers to one that is calculated after management fees have been paid. However, other charges may be deducted, including fund expenses and taxes. Gross returns are reported *before* the deduction of management fees and various other expenses.

There are nuances related to the reporting of net vs. gross returns, particularly as they pertain to pooled or mutual funds. Fund managers decide whether fees and other expenses are charged directly to the funds or to client accounts. When comparing one fund's return to another, it is important to be aware of this distinction and adjust the comparison accordingly.

Currency

Make sure the returns you are comparing are in the same currency. For Canadian investors, non-Canadian investment returns should have a (C\$) or (US\$) beside them to denote which currency they're being reported in. And, even when you are sure you're comparing apples to apples, there could be differences in the exchange rate used for each return.

Time Periods

When comparing returns of a portfolio relative to an index or another manager, it is critical to do so over the same time period. A 5-year return is not directly comparable to a 10-year return, nor is a 5-year return ending November 30th comparable to a 5-year return ending December 31st. The time period must be the same and the period must have a common end-date for it to be a valid comparison. A difference of just one month between the time periods can make a surprisingly large difference in the returns.

How To Use Return Information Properly

Now that you know the basics of returns, what do you do with this information? Most commonly, returns are used to make comparisons between managers and benchmarks. However, you need to be very careful to compare apples to apples, or the comparison is invalid.

Benchmarks

A benchmark is a *“standard against which the performance of a security, mutual fund or investment manager can be measured. Generally, broad market and market-segment stock and bond indexes are used for this purpose.”* – Investopedia

There are many subtleties to benchmarks, and the concept is helpfully described by Nexus Principal and Portfolio Manager Jim Houston in his 2017 blog, “Benchmarks Explained” (www.nexusinvestments.com/benchmarks-explained).

In order to make an apples-to-apples comparison to a benchmark, a single asset class portfolio needs to be benchmarked to an index that appropriately reflects that asset class's geography, capitalization (size), sector and style. For example, you can compare a Canadian equity portfolio against the S&P/TSX Composite Index, but not

against the S&P 500. And, if you invest in a “balanced” portfolio (a mix of different asset classes), the correct benchmark is one that weights the respective indices proportionally to the target weight of each asset class in the portfolio.

There are other nuances when it comes to benchmarks. One is the difference between a “total return” and “price return”. A total return includes all income that has been reinvested in the index (e.g. dividends and interest income). A price return reflects only the gain or loss of the underlying assets. When dividend yields are high – as they are currently – the apples-to-oranges comparison of total and price returns is misleading.

Another nuance is that it is not possible to invest directly in a market index. Its return, therefore, is hypothetical, and assumes no fees or expenses. When comparing your portfolio to an index as a benchmark, you should use a gross-of-fees return.

Expectations

Another way to compare performance is against your own expectations. This way is very specific to the individual, so be careful not to compare your expected return with someone else's, as they could have a completely different risk tolerance and set of financial goals. If you have ever gone through a planning exercise, a return expectation has likely been set out for you as an “assumption” and can be used as an expectations-based benchmark.

Peer Group

An investor can also compare their manager's or fund's return to a “peer group universe.” Peer groups are collections of various investment managers' time-weighted investment returns. They are used for comparison to portfolios with similar asset classes and management styles and are often broken down into percentile ranks (first quartile, median, etc.).

It's All Relative: A Hypothetical Example

It is December 10, 2018 and you are chatting with a neighbour who proclaims, “I just got my November report and since moving to my broker ten years ago, my U.S. equity performance is 14% annualized!” You recall that you changed managers that year too, but in your November report your since-inception U.S. equity return was only 10%! Even though this return was much higher than your own expectations, you might feel shortchanged and think, “Hey! Why isn't my performance as good? I invested that same year!”

Cocktail party conversations like this are rife with the dangers of invalid comparisons. Without full and transparent information related to the returns themselves,

one can easily come to erroneous conclusions. In order to make a valid comparison, you need to make sure you're comparing apples to apples. There might well be a host of reasons to be suspicious of a simple comparison. Different underlying investments, currencies, inception dates, risk profiles, fees, calculation methodology and goals of a portfolio are all factors that can render a comparison useless. At worst, they can contribute to feelings of angst, disappointment and impulsivity to make a change, when there shouldn't necessarily be.

In this hypothetical case, your neighbour invested on November 30, 2008 and is quoting the return in Canadian dollars. His 14% return actually *underperformed* the S&P 500 Index by over 1% annually since inception. You, on the other hand, invested on April 30, 2008 and your return is quoted in U.S. dollars. Your 10% gain actually *beat* the S&P 500 Index by 1% annually since your inception! And, it turns out that his return is reported to him gross of his 1.5% management fee, while yours is net of your 1% fee, rendering the comparison even more invalid.

Differences such as these can certainly toy with an investor's emotions. You may feel poorly that your return was lower than your neighbour's. But it included seven of the worst months of the 2008 crisis – months that were not factored into your neighbour's return.

You don't know how he fared in those dire 7 months. If his risk profile was higher than yours, he would have likely fared worse than you. Perhaps his risk tolerance is miles above yours. He could have a portfolio of high-flying speculative stocks while your portfolio could be full of conservative, steady-growth companies with downside protection. And what of differences in portfolio goals? His main goal could be maximizing return without regard to volatility, while yours is tax-efficient capital preservation for long-term growth. These are two very different portfolios which are not easily compared.

Summary

The realm of performance measurement is complex and nuanced. It is important to make sure you are making valid comparisons when assessing or discussing investment returns. Understanding the intricacies surrounding them is key, and will help control emotions and possibly prevent hasty, and even foolhardy decision-making.