The Trials and Tribulations of Measuring
and Comparing Investment Performance

Measuring and comparing investment performance is not an easy task. Consider, for instance, something as simple as the daily comings and going of the stock market. One month the Dow Jones industrial average (DJIA) is up and the next month it's down. But do those changes really tell the whole story?

Not really. The continuous changes in the DJIA merely represent the change in the market value of the 30 stocks that make up the DJIA. The actual change would reflect not just the change in market value but the income from the dividends from the companies comprising the Dow. And since the DJIA currently has a dividend yield of 2.5 percent, the actual investment performance, or what some refer to as the actual total return of 30 stocks in the Dow, would be different from what is typically reported based only on price changes. In addition, the DJIA is a "price weighted" index, so that higher priced stocks have a higher impact on index performance. Most of the other common indexes are "market weighted," reflecting the relative market composition of the stocks in the index.

So what then are some of the best ways investors and planners should measure and compare investment performance?

According Herbert Mayo, author of a time-honored textbook on the subject of investments, the simplest way to calculate a return on an investment is by considering the flow of income, such as dividends, plus price gains (or loss) relative to the amount invested for a given holding period. So for example, if a person buys a share of stock for $40, collects a $2 dividend and then sells the stock for $50, the holding period return would be ($50 + $2 - $40) divided by $40. Thus the holding period "total" return would be 30 percent. A shortcoming of holding period returns, however, is the failure to consider how long it took to earn the return. After all, if the difference in time between buying and selling is 10 weeks, then a 30 percent return is great; if it is 10 years, 30 percent is not as impressive.

According to Mayo, this problem is avoided by calculating the so-called internal rate of return. A simple example of internal rate of return is the yield to maturity on a bond. Yield to maturity equates the present value of the cash flows (interest payments and principal repayment) with the present cost of the investment while assuming that interest income as received is reinvested at the same (yet to be determined) yield. Though a tad complicated, the key difference between a holding period return and compound annual return is that the latter return considers all cash inflows to an investor when they occur and compares them with the cost of the investment. But in comparing portfolio returns where money is being added and subtracted from holdings, we must decide how to weight the returns of the individual holdings.

Weighting the performance of each individual investment relative to the size of the investment *(a dollar-weighted return)* may give predominant weight to recent large investments and may not truly represent portfolio performance over an extended holding period

An alternative to this misrepresentation on the part of a dollar-weighted rate of return is the time-weighted rate of return. Simply computing the average of a series of returns can also be misleading. So, for instance, if an investor buys a stock for $40 and collects a $1 dividend in

year one and the stock closes the year at $42, the time-weighted return would be ($42 + $1 - $40) divided by $40, or 7.5 percent. If the investor held that very same stock for another year, closing at $50 and collecting another $1 dividend, the holding period return for that year would be 21.43 percent, or ($50 + $1 - $42) divided by $42. The simple average return would be 7.5 + 21.43 divided by 2 or 14.47 percent.

So which method of calculating is preferred? According to Mayo, there is no absolute right answer. Typically, the investor is concerned with the return earned on all the money invested, making dollar-weighted the more preferred method. However, Mayo says one can make the argument for the use of time-weighted returns to evaluate the performance of portfolio managers. By way of history, a study published in 1968 by what was then called the Bank Administration Institute (BAI) suggested that measurements of performance should be based on asset values measured at market, not at cost; the returns should be "total" returns; that is, they should include both income and changes in market value (realized and unrealized capital appreciation); the returns should be time weighted; and the measurements should include risk as well as return.

No matter the method of calculating investment performance, it's also especially important that planners and investors compare the investment performance of their portfolios to appropriate benchmarks. Typically, according to *The Financial Analyst's Handbook,* there are three useful standards against which portfolios can be measured, including comparison with an absolute goal; comparison with market indexes, and comparison with other portfolios. Of note, financial planners say that dollar-weighted returns compare very poorly against benchmarks when there are large cash flows; time-weighted returns are the only ones that are really appropriate for benchmark comparison purposes.

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