

## A New Look at Performance

*Over the last decade, we have seen the concept of performance evolve from a mere calculation of investment returns to a significant part of the investment process. Whether you are a consultant, client, or asset manager, it has become increasingly important to know how your assets are being evaluated. In addition, compliance with the Global Investment Performance Standards (GIPS®) and how much risk is being taken have also become important. This article will tackle three important aspects of performance measurement: suitable methodology for calculating returns, performance attribution, and risk adjusted performance.*



Susan Agbenoto, CIPM  
Manager, Investment  
Performance

### Money-weighted versus time-weighted returns: which one is more suitable for my assets?

A money-weighted return is the discount rate which sets the present value of the cash flows equal to the initial investment. This includes contributions and withdrawals. Internal rate of return (IRR) is a typical example of a money-weighted return, being sensitive to the weight of the cash flow. This method is generally suitable when the manager is in control of the cash flows, such as the case with pooled funds and closed-end funds. A time-weighted return is not sensitive to contributions and withdrawals, which are usually not within the control of the manager. It is the geometric mean of periodic returns linked together over a time period. An example of a time-weighted return is the Modified Dietz. This has become a preferred method for a large number of asset classes evaluated using time-weighted returns<sup>1</sup>. Identifying the right methodology suitable for your assets will depend on the type of asset classes involved, the investment strategy, as well as the pattern of cash flows, among other factors. Typically, pooled funds would be evaluated using money-weighted returns such as IRR. Portfolios consisting of traditional equity and traditional fixed income products, on the other hand, would typically be evaluated using time-weighted returns, as suggested by the GIPS Standards<sup>2</sup>.

### Performance attribution: do I need to know all the details?

Another increasingly important subject is performance attribution. This consists of analysis to explain why a portfolio's return differs from the assigned benchmark. This answers the question, is it skill or luck on the part of the manager?

**Exhibit 1:** Sample attribution of a fixed income portfolio versus its benchmark

|                    | Portfolio     |              |              |             | Benchmark     |              |             |             | Performance Attribution |                      |                     |                 |
|--------------------|---------------|--------------|--------------|-------------|---------------|--------------|-------------|-------------|-------------------------|----------------------|---------------------|-----------------|
|                    | Port          | Port         | Port         | Total       | Bench         | Bench        | Bench       | Total       | Duration<br>Effect      | Allcoation<br>Effect | Selection<br>Effect | Total<br>Effect |
|                    | Avg           | Duration     | Residual     |             | Avg           | Duration     | Residual    |             |                         |                      |                     |                 |
| <b>Total</b>       | <b>100.00</b> | <b>-3.34</b> | <b>10.73</b> | <b>7.40</b> | <b>100.00</b> | <b>-3.42</b> | <b>8.69</b> | <b>5.28</b> |                         |                      |                     |                 |
| CORPORATE          | 50.29         | -3.76        | 12.05        | 8.30        | 20.62         | -3.40        | 11.26       | 7.86        | -1.22                   | 0.70                 | 0.38                | -0.14           |
| GOVERNMENT-RELATED | 21.93         | -2.77        | 9.96         | 7.19        | 6.72          | -3.32        | 8.47        | 5.15        | -0.27                   | -0.04                | 0.29                | -0.02           |
| SECURITIZED        | 21.13         | -2.93        | 10.13        | 7.20        | 36.04         | -3.35        | 8.80        | 5.45        | 0.61                    | -0.01                | 0.27                | 0.87            |
| TREASURY           | 6.36          | -3.68        | 7.19         | 3.51        | 36.61         | -3.48        | 7.14        | 3.65        | 0.97                    | 0.46                 | 0.01                | 1.44            |
| [Cash]             | 0.30          | 0.03         | 4.61         | 4.64        | --            | --           | --          | --          | 0.00                    | -0.03                | --                  | -0.02           |

Source: Opus Investment Management, Inc.

Many formulas have been developed to break down returns into components that explain the different facets of investment returns. Gary Brinson and David Carino<sup>3</sup> developed arithmetic attribution models. Carl Bacon<sup>4</sup> enhanced the concept of geometric attribution, in addition to other models such as risk-based attribution, which takes into consideration risk factors and non-benchmark attribution. There are models for equity assets as well as models for fixed income. Meaningful attribution results are generated when the assigned benchmark is appropriate, whether it is a well-published index, liability-based benchmark, or a calculated figure based on the

For more information,  
please contact:

Kevin Seabury,  
Director of Business  
Development  
508-855-3112  
kseabury@  
opusinvestment.com

unique circumstances of the client. Meaningful attribution results are also obtained by utilizing the right model that mirrors the asset management process. The more common attribution models look at two components of excess return: asset allocation and issue selection. Fixed income models would usually have a duration effect component as well. Looking at these components for every security is not beneficial and doing so is impossible when there are large volumes of portfolios. Performance attribution results, when presented, should generally inform the user as to whether the choice of sectors added to or subtracted from performance relative to the benchmark, and whether the security choices within each sector were ideal. Over time these results tell the story of the manager's skill.

#### **Risk-adjusted performance: buzz phrase or relevant metric?**

In the past, your investment return was all that mattered; however, we feel how much risk you take to get that return is significant. We believe the shift to 'how' has been fueled by the increasing availability of more sophisticated ways of calculating portfolio risk, and the introduction of asset manager databases has opened the door to compare managers and products within several different categories. Metrics<sup>5</sup> that compare apples to apples in the area of risk have grown in popularity:

- **Standard Deviation:** Identifies your average performance over a period and measures the dispersion around that mean. It speaks to the volatility of the portfolio returns. Time periods greater than two years are preferred.
- **Sharpe Ratio:** Developed by William Sharpe, it takes the difference in returns between your portfolio and the risk-free rate, then divides by the standard deviation. This provides the performance per unit of risk. The higher this number, the more performance is being generated for each level of risk taken. The weakness of the Sharpe Ratio is that it uses the risk-free rate rather than a benchmark.
- **Tracking Error:** Calculates the standard deviation of your portfolio's excess return versus its benchmark. It evaluates the consistency of your portfolio compared to the benchmark over a given period of time.
- **Information Ratio:** Takes your portfolio's excess return over the benchmark and divides it by the Tracking Error to measure both the excess return per unit of risk and the consistency of manager. A negative information ratio is an indication of consistent underperformance, zero reflects flat performance relative to the benchmark, while a number close to 1 indicates consistent outperformance of the manager.

*As performance standards evolve and become global, together with growing interest in asset manager data warehouses, the how and what of performance have become more important to clients and managers alike. It is no longer adequate to focus only on the reported returns of a potential manager, but it becomes important to make sure that the methodology being used is suitable for your assets, that performance attribution reports are obtained to adequately explain the return versus the benchmark and that the amount of risk being taken to generate the stated returns are appropriate based on risk-based returns, calculations and ratios.*

#### **Sources:**

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2. [www.gipsstandards.org](http://www.gipsstandards.org)
3. Cariño, David, "Combining Attribution Effects Over Time," Journal of Performance Measurement, Summer 1999, pp. 5-14
4. Bacon, Carl, "Excess Returns – Arithmetic or Geometric?," Journal of Performance Measurement, Spring 2002, pp. 23-31
5. [www.evestment.com](http://www.evestment.com). Performance Reporting: IRR vs TWR.

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