

# Portfolio Performance Evaluation

INSIGHT  
WEALTH  
MANAGEMENT



Workshop Presented by  
Bob Pugh, CFA

To

American Association of  
Individual Investors

Washington, DC Chapter

May 31, 2008

# Introduction

- Evaluating portfolio performance is important for all investors, whether they are managing their own assets or have hired help.
- If an investor can get better after-fee and after-tax risk-adjusted results by purchasing an index fund and some bank CDs, they should. Results matter.
- Techniques covered in this workshop are appropriate for all types of investors – fundamental, technical, active, passive, etc.

# Introduction

- What **NOT** to do:
  - Ric Edelman's Secret #5 in "Ordinary People, Extraordinary Wealth":
  - "It does not matter how the S&P 500 performs – or any other index, for that matter . . . What matters instead is that the performance of your investments are (sic) matching the Individual Investor Index (I<sup>3</sup>)."
  - "The most common way our clients evaluate their overall portfolio is by examining the percentage gain for the year."
  - Describes the S&P 500 as, "some external, arbitrary standard"

# Introduction

- Edelman's Individual Investor Index is a return goal only that does not reflect the risk taken attempting to get that return or allow for an unbiased evaluation of the quality of the services he delivers.
- Investors need an objective measure of their portfolio's performance compared to relevant benchmarks to evaluate their advisor's or funds' performance, or to determine if their own self-managed strategies are working.

# Introduction

- Calculate time-weighted (geometric) return adjusted for cash flows
- Calculate risk measured as standard deviation of returns
- Evaluate risk-adjusted return (Sharpe ratio)
- Determine appropriate benchmarks and compare portfolio return and risk to those benchmarks
- Evaluate results of active management strategies (Information Ratio)

# Time-Weighted (Geometric) Return

- Basic measure of return is simply the percent change in the portfolio's value during the measurement period:

$$return_1 = \frac{\text{Portfolio Value}_1 - \text{Portfolio Value}_0}{\text{Portfolio Value}_0}$$

$$return_1 = \frac{113,434.59 - 100,000.00}{100,000.00} = 13.43\%$$

# Time-Weighted (Geometric) Return

- Use the basic measure of return (adjusted for cash flows) for sub-periods, and time-weighted returns for multiple periods.
- Reflects compounding of returns.

$$\text{return} = [(1 + r_1)(1 + r_2)\dots(1 + r_n)] - 1$$

$$[(0.995)(0.965)(1.025)(1.001)(0.997)(1.013)(0.987)(0.999)(1.007)(1.043)(1.042)(1.031)] - 1 = 10.77\%$$

# Time-Weighted (Geometric) Return

- For average periodic returns, use geometric averages, which reflect compounding, rather than arithmetic averages:

$$\text{return} = [(1 + r_1)(1 + r_2)\dots(1 + r_n)]^{\frac{1}{n}} - 1$$

$$\text{return} = [(1.1077)^{\frac{1}{12}} - 1] = .086\%$$



# Risk

- Investment risk is typically measured as standard deviation of returns.
- Standard deviation is calculated easily with a spreadsheet or financial calculator.
- See example in handout.

# Risk-Adjusted Return

- Many measures of risk-adjusted return exist but the Sharpe Ratio is most often used.
- Measures how much excess return (total portfolio return minus the risk-free, or cash rate) the portfolio earns for the amount of risk taken, measured as standard deviation of returns.

$$S = \frac{r_p - r_{rf}}{\sigma_p}$$

$$S = \frac{10.77 - 3.00}{2.32} = 2.05$$

# Benchmarks

- Compare risk and return to relevant benchmarks
- Characteristics of good benchmarks:
  - ***Unambiguous*** about the securities and their weights in the benchmark
  - ***Appropriate*** to the portfolio's style and investing approach
  - ***Measurable***
  - ***Investable***
  - ***Specified*** in advance
  - ***Accountable*** to the portfolio's manager
  - ***Reflective*** of current investment best practice

# Assessing Active Management

- Information Ratio (IR) measures the consistency of an investor's ability to beat indexes or benchmarks (active management).
- IR is the ratio of the average periodic excess returns of the portfolio compared to its benchmark, to the standard deviation of the excess return.
- IR of .50 is OK and an IR of 1.00 or above indicates consistently successful active management.

# Assessing Active Management

- In the example we are using, the IR is only 0.079. This indicates a failure of active management and that the investor should shift to passive management using index funds.

$$\text{IR} = \frac{\text{Average Periodic Excess Return (ER)}}{\sigma_{\text{ER}}}$$

$$\text{IR} = \frac{0.18}{2.30} = 0.079$$

# Conclusions

- Measure your investing results objectively and make changes as needed. Otherwise, you are driving blind and might go off a cliff.
- NEVER deal with an advisor who won't provide objective performance analysis using industry standard techniques (not just account statements) of both your portfolio and the firm's aggregate results.