Concept of Portfolio Evaluation

Importance of Portfolio Evaluation

Benchmarking and its Limitations

Conventional Method of Benchmarking

Sharpe Ratio

Treynor’s Ratio

Jensen’s Alpha
Portfolio Management

• The management of owned securities and assets done professionally is referred to as portfolio management. In this the investor is assisted to meet his goals or objectives of making the investment.

• The process of portfolio management:

  - Identify the objectives
  - Hatch out a strategy
  - Execution
  - Revision
  - Evaluation
Portfolio Evaluation

- Portfolio evaluation involves the inspection of the performance of the portfolio manager and to what degree the objectives identified in the IPS (Investment Policy Statement) have been accomplished.
- Portfolio evaluation also brings about the need for rebalancing in the portfolio.
- The evaluation results determine fees to be paid to the portfolio manager and also if the portfolio manager is apt for the job.
Achieved Returns

- Satisfactory
  - Expertise
  - Luck
- Unsatisfactory
Portfolio Evaluation

• When the returns achieved are more than or equal to the benchmark then we say the portfolio performance has been good or satisfying.
• Satisfactory results have to be further evaluated to know whether it was the manager’s expertise or it was due to luck.
• Evaluation needs to be compared with other similar portfolios as well, to understand where the portfolio manager stands in competition with his peers.
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Importance of Evaluation

- Evaluation of portfolio is needed by individual investors, portfolio managers and other competing managers of mutual funds.
- Self - At the stage of evaluation the investor can rectify and understand his own portfolio. Evaluation will bring out the real performance of the investor. His skill, expertise or luck will be reflected in the evaluation result.
- Portfolio Manager - Evaluation gives us an idea of the better managers in the business. Manager’s compensation also depends on the returns he has accomplished.
Importance of Evaluation

- Mutual Fund - Mutual funds are the best place for middle class people to put their money in. Mutual funds cannot be evaluated on the basis of absolute return as different funds are exposed to different risks and follow different strategies of investing. Therefore, portfolio evaluation helps to compare funds on the basis of risk adjusted return and also provides for an appropriate benchmark to compare the fund results.
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Benchmarking

• Benchmarks are comprised of unmanaged indices, mutual funds or Exchange Traded Funds (ETFs) that represent the several investment asset classes.

• The asset classes in a benchmark can be incorporated with broad measures, specific asset classes such as small cap growth stocks, high-yield bonds or emerging markets or an integration of different asset classes.
BM Benchmarking

• An appropriate benchmark is of vital importance as if evaluation is made in comparison to a wrong benchmark then it would give a false implication of the skills of the portfolio manager.

• The asset allocation and security selection of the portfolio must be considered for benchmark selection.

• After a benchmark has been set, comparison between the existing portfolio and benchmark needs to be executed.
Limitations of Benchmarking

• A diversified portfolio has to be compared with a diversified benchmark. However, often diversified portfolios are unknowingly matched with an undiversified portfolio. This creates confusion and criticized issues in the investment industry.

• In a hard hurdle rate clause, the management gets denied of any compensation except for the management fees.
Different Measures of Portfolio Evaluation

Conventional Methods

Sharpe Ratio

Risk Adjusted

Treynor Ratio

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**Conventional Method of Benchmarking**

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Conventional Method

• The performance of the portfolio manager is compared to a broad market index.
• If the portfolio return is more than the benchmark return for the same time period then the portfolio manager is said to have outperformed the markets.
Conventional Method

- It is simplistic yet problematic.
- The performance measurement is done against a passive index whereas the portfolio might be managed actively with a different asset allocation due to which the risks might not be identical.
- As higher risk is rewarded by higher return, the portfolio outperformance might be on account of the higher risk taken.
Conventional Method

• Portfolio might also be compared according to their styles of investing.
• The different styles of investing are:
  ◦ Value style i.e. the investment is made in securities which have low price multiples.
  ◦ Growth style i.e. buying stocks with high price multiples.
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**Sharpe Ratio**

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Sharpe Ratio

- Sharpe Ratio is used to rank all portfolios on the basis of evaluation measure.
- It computes the excess return of the investment portfolio per unit of total risk of the portfolio.
- Excess return is the return of the portfolio less the risk free return rate of the interest.
- The total risk is the standard deviation of returns of the portfolio.
Sharpe Ratio Formula

Sharpe Ratio = \( \frac{R_p - R_f}{\sigma_p} \)

Where

\( R_p \) = Realised return on portfolio

\( R_f \) = Risk free rate of return

\( \sigma_p \) = Standard deviation of the portfolio
Asset class mix with highest Sharpe Ratio

Your portfolio

Stocks

Bonds

$r_f$

0

Return

Standard Deviation
Limitations

• The use of past data in the calculation of expected return and standard deviation may make the results invalid as there might be change in macroeconomic conditions leading to change in market scenario.

• It uses standard deviation as a measure of risk. The risks are not always normally distributed and thus the standard deviation can be misleading.
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**Treynor’s Ratio**

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Treynor’s Ratio

• The Treynor’s ratio is a portfolio’s excess return per unit of systematic risk.
• It calculates excess return per unit of non-diversifiable or systematic risk, thus, beta is used for this calculation. The security characteristic line is used for the calculation of beta.
• It is also known as reward to volatility ratio.
Treynor’s Ratio Formula

Treynor Ratio = \( \frac{(R_p - R_f)}{\beta_p} \)

Where,

\( R_p \) = Realised return on portfolio
\( R_f \) = Risk free rate of return
\( \beta_p \) = Portfolio beta
The Treynor Ratio is the slope of the dashed line. The SML (Security Market Line) shows the relationship between expected return and risk. The point RP(B)/Risk(B) represents the expected return for Partner B relative to its risk. The point RP(Partner A) represents the expected return for Partner A. The risk-free rate is indicated on the vertical axis, and risk is indicated on the horizontal axis. The diagram illustrates how the Treynor Ratio is calculated by comparing the return of a portfolio to its risk relative to the market.
Limitation

- Treynor ratio is backward looking in nature. Investments almost always behave differently than what they did in the past.
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• Jensen attempts to construct a measure of absolute performance on a risk adjusted basis.
• It is based on Capital Asset Pricing Model (CAPM) model.
• It measures the portfolio manager’s predictive ability to achieve higher return than expected for the accepted riskiness.
• The alpha represents the amount by which the average return of the portfolio deviates from the expected return given by the CAPM.
CAPM Formula

\[ E(R_p) = R_f + \beta_p (R_m - R_f) \]

Where,
- \( E(R_p) \) = Expected portfolio return
- \( R_f \) = Risk free rate
- \( R_m \) = Return on market index
- \( \beta_p \) = Systematic risk of the portfolio
- \( R_m - R_f \) = Market Risk premium
Jensen’s Alpha Formula

$$\alpha_p = R_p - E(R_p)$$

Where,

$$\alpha_p = \text{Differential return earned}$$

$$R_p = \text{Actual return earned on the portfolio}$$

$$E(R_p) = \text{Expected return}$$
Slope = Treynor measure for Portfolio P

E(R)

R_p

R_m

R_f

β

M

Jensen's alpha

SML
Jensen’s Alpha

• A positive alpha would indicate that the returns were superior to those expected and the same may be because of the manager’s skill.
• A negative alpha would indicate that the performance was worse than that of the market.
“The essence of portfolio management is the management of risks, not the management of returns. Well-managed portfolios start with this percept.”

– Benjamin Graham