WHITEOAK
CAPITAL MUTUAL FUND

Understanding Portfolio Ratios

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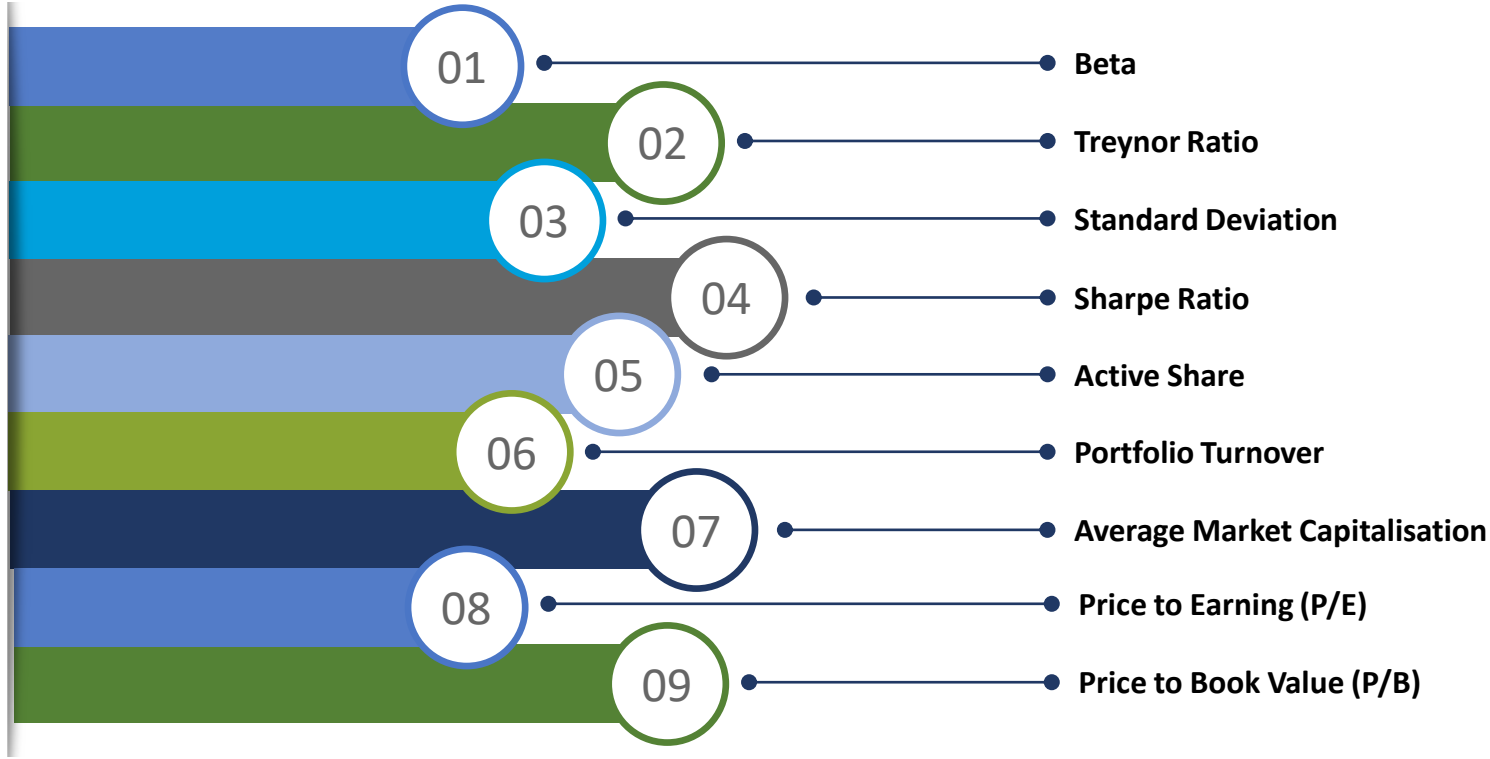

Beta

Definition: Beta (β) is a measure of the volatility compared to a market as a whole. The beta is used to help investors understand whether a stock moves in the same direction as the rest of the market. Funds with betas higher than 1.0 can be interpreted as more volatile than the market.

Formula:

Beta coefficient(β) : Covariance(Re,Rm) / Variance(Rm)

where:
Re : the return on an individual stock
Rm : the return on the overall market
Covariance : how changes in a stock's returns are related to changes in the market's returns
Variance : how far the market's data points spread out from their average value

Example: A Beta of 1.0 means it has been just as volatile as the broader market. If the index moves up or down 1%, so would the portfolio, on average. Betas larger than 1.0 indicate greater volatility. So, if the beta were 1.5 and the index moved up or down 1%, the fund would have moved 1.5%, on average.

Conclusion: Beta is used as a proxy for a stock's riskiness or volatility relative to the broader market. A good beta will, therefore, rely on your risk tolerance and goals. For example, if you want to replicate the broader market in your portfolio via an index ETF, a beta of 1.0 is ideal. On the other hand, if you are a conservative investor looking to preserve principal, a lower beta may be more appropriate.

Treynor Ratio

Definition : The Treynor ratio is a performance metric for determining how much excess return was generated for each unit of risk taken on by a portfolio. Risk in the Treynor ratio refers to systematic risk measured by a portfolio's beta.

Formula :

Treynor Ratio = $(R_p - R_f) / (\beta)$

where :
R_p : Fund Return
R_f : Risk Free Rate
β : Beta of the portfolio

Example : XYZ is a mutual fund with a rate of return of 15%. Its beta value is 1.3, meaning it's 30% more volatile than the market. And the risk-free return rate is 3%.

Thus, XYZ's Treynor ratio = (15% – 3%) / 1.3 = 9.23

Conclusion : The Treynor ratio shares similarities with the Sharpe ratio, and both measure the risk and return of a portfolio. In contrast to the Sharpe Ratio, which adjusts return with the standard deviation of the portfolio, the Treynor Ratio uses the Portfolio Beta. Investors can compare different funds to determine which would be ideal to their risk-appetite as well as the one that provides reasonable returns at a particular level of risk.

Standard Deviation

Definition: Standard deviation is a basic mathematical concept that measures volatility in the market or the average amount by which individual data points differ from the mean. If the data points are further from the mean, there is a higher deviation within the data set; thus, the more spread out the data, the higher the standard deviation. Standard deviation is often used as a measure of the relative riskiness of an asset.

Formula:

Standard Deviation = $\sqrt{\frac{\sum (r_i - r_{avg})^2}{n-1}}$

r_i - Return observed in a specific time frame (say one year or three years)
r_{avg} - Average returns observed over this time frame
n - The number or the sample size

Example: If a mutual fund scheme has a standard deviation of 5 and average returns of 15%, the returns can deviate by 5% on the higher side (i.e., 20%) or 5% on the lower side (i.e., 10%).

Conclusion: A standard deviation is a number that can be used to show how much a fund's returns are likely to deviate from its average annual returns. When applied to historical returns over a period, the standard deviation can be used to measure a fund's volatility. Higher the standard deviation, the higher the volatility.

Sharpe Ratio

Definition: Sharpe ratio measures excess fund return over the risk-free rate relative to its standard deviation. Typically, the 90-day Treasury bill rate is taken as the proxy for the risk-free rate. A fund with a higher Sharpe ratio is considered superior relative to its peers.

Formula:

Sharpe Ratio = $(R_p - R_f) / \sigma_p$

where :
R_p : Fund Return
R_f : Risk Free Rate
σ_p : Standard Deviation of Portfolios Excess Return

Example: Investment Manager A generates a return of 15%, and Investment Manager B generates a return of 12%. It appears that manager A is a better performer. However, if manager A took more significant risks than manager B, manager B may have a better risk-adjusted return.

To continue with the example, say that the risk-free rate is 5%; manager A's fund has a standard deviation of 8%, while manager B's fund has a standard deviation of 5%. The Sharpe ratio for manager A would be 1.25, while manager B's ratio would be 1.4, which is better than that of manager A. Based on these calculations, manager B was able to generate a higher return on a risk-adjusted basis.

Conclusion: Sharpe ratios above 1 are generally considered "good," offering excess returns relative to volatility. However, investors often compare the Sharpe ratio of a fund with those of its peers or market sector. So, a fund with a Sharpe ratio of 1 might be found lacking if most peers have ratios above 1.2, for example.

Active Share

Definition: Active Share measures the percentage of security holdings in a manager's portfolio that differs from the benchmark index. It tracks the disparity between a portfolio manager's holdings and its benchmark index.

Description :

Name of the Security	Portfolio Weight	Benchmark Weight	Difference	Active Share
Security A	80%	50%	30%	
Security B	10%	50%	40%	
Security C	10%	0	10%	
Total	**100%**	**100%**	**80% / 2 =**	**40%**

Portfolio Manager can add Active Share by:

- Being **underweight or avoiding** securities present in the benchmark
- Being **overweight securities** present in the benchmark
- **Adding** securities that are **not part** of the benchmark

- Active Share of ~**50% or higher** is generally considered **Active Management**
- An Active Share of ~**20% to 50%** is considered **Closet Indexing**
- And an Active Share of **less than 20%** is considered **Passive**

Conclusion : A high Active Share is one of the necessary ingredients to generate potential alpha over the benchmark. **A low Active Share** score indicates that a portfolio manager is **closely replicating** the target index (Benchmark) and engaging in a **passive investment strategy**. **A high Active Share** score suggests that a portfolio's holdings diverge from the target index (Benchmark) and the **portfolio manager actively manages the portfolio**. As a result, managers with high Active Share have the **potential to outperform their benchmark indices**.

Portfolio Turnover

Definition: Portfolio Turnover Ratio is the frequency with which the assets held under a fund have changed over the years. A high portfolio turnover rate means high churning of assets.

Formula:

Portfolio turnover ratio can be calculated by taking the minimum of either bought or sold stocks under a fund and divide them by the average Assets Under Management (AUM).

Example: Suppose an equity fund purchased stocks worth Rs. 375 Cr and sold stocks worth Rs. 450 Cr, and the average AUM of the fund is Rs.1500 Cr. In this case, the Portfolio turnover ratio of the fund is 25%, which means one-fourth of the stocks were traded.

Minimum stocks bought or sold (Rs.375 Cr)) / Average AUM (Rs.1500 Cr) = Portfolio Turnover Ratio (25%)

Conclusion: There is no ideal turnover ratio. It isn't a reliable indicator of a fund's performance. Neither will it say how a fund will perform in the future. Generally, actively managed equity funds have a high turnover rate. Note that a higher turnover ratio fund may have higher transaction costs. A fund with a low turnover rate indicates that it is sticking with the same stocks. Passively managed funds, including exchange-traded funds (ETFs), have a low turnover ratio.

Price to Earnings (P/E)

Definition: The Price to Earnings Ratio is the ratio of the current price of a company's share to its earnings per share (EPS). At the fund portfolio level, the price/earnings ratio can gauge the fund's investment strategy in the current market climate and whether it has a value or growth orientation.

Formula :
P/E Ratio : (Current Market Price of a Share / Earnings per Share)

A fund's (P/E) ratio is the weighted average of the price/earnings ratios of all the stocks in a fund's portfolio.

Example:
For example, consider that the market price of a share of the Company ABC is Rs 90, and the earnings per share are Rs 9. P/E = 90 / 9 = 10. It can be seen that the P/E ratio of ABC Ltd. is 10, which means that investors are willing to pay Rs 10 for every rupee of company earnings.

Conclusion:
A high P/E usually indicates that the market will pay more to obtain the company's earnings because it believes in the firm's ability to increase its earnings. Companies in industries enjoying a surge of popularity tend to have high P/E ratios, reflecting a growth orientation. Conversely, a low P/E indicates the market has less confidence that the company's earnings will increase; however, a fund manager or an individual with a 'value investing' approach may believe such stocks are undervalued and can have a potential for appreciation.

It is essential to note that the goodness of a ratio varies depending on the current market conditions, the industrial average of P/E ratios, the nature of the industry, etc. Therefore, when investors assess different P/E ratios, they should consider how the other companies in the same industry with similar characteristics and in the same growth phase are performing.

Price to Book (P/B)

Definition: The price-to-book (P/B) ratio measures the market's valuation of a company relative to its book value. The price-to-book ratio compares a company's market value to its book value. The market value of a company is its share price multiplied by the number of outstanding shares. The book value is the net assets of a company.

Formula:

P/B ratio = Market capitalisation / Book value of assets

A fund's price/book (P/B) ratio is the weighted average of the price/book ratios of all the stocks in a fund's portfolio.

Example: Assume that a company has INR 100 Cr in assets on the balance sheet and INR 75 Cr in liabilities. The book value of that company would be calculated simply as INR 25 Cr (100 Cr – 75 Cr).

If there are 10 Cr shares outstanding, each share will represent INR 2.50 of book value. Therefore, if the share price is INR 5.0, the P/B ratio would be 2x (5 / 2.50).

Conclusion: A lower P/B ratio could mean the stock is undervalued. However, it could also mean something is fundamentally wrong with the company. As with most ratios, this varies by industry. High-growth companies will often show price-to-book ratios well above 1.0. Conversely, under certain circumstances of financial distress, bankruptcy, or expected plunges in earnings power, a company's P/B ratio can dive below a value of 1.0. Traditionally, a value under 1.0 is considered a good P/B for value investors, indicating a potentially undervalued stock.

Average Market Cap

Definition: Market capitalisation refers to the total number of outstanding shares of a company in the market multiplied by the current price of each share. Market capitalisation of a fund indicates in what type of stocks -- large, mid or small -- it has invested.

Formula:

Market Cap of a stock = Outstanding shares x price per share

Average market cap of a portfolio = Weighted average of each stock's market cap

Example: Suppose that ABC Company has 20,000 outstanding shares in the market and each share of ABC Company is priced at Rs 20. Then, the market capitalisation of ABC Company will be calculated as follows:

Outstanding shares x price per share = 20,000 x 20 = Rs 4,00,000

Therefore, the market cap of ABC Company is Rs 4,00,000.

Conclusion: The average market capitalisation of a fund measures the size of the companies in which it invests. According to SEBI's rules, all companies listed on the stock exchanges are ranked based on their market cap. The top 100 companies are categorized as large-cap companies. The companies from rankings 101 to 250 in terms of market capitalization are known as mid-cap companies, while all the companies that are ranked from the 251st position onwards in terms of market cap are automatically categorized as small-cap companies. The fund's average market cap indicates towards which category (Large, Mid & Small) the fund is tilted.

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