Comprehensive Portfolio Analysis Report

Portfolio Composition

Reliance Industries: 25%

Infosys: 25%

HDFC Bank: 25%

Tata Consultancy Services: 25%

QuantStats Metrics

PORTFOLIO ANALYSIS REPORT

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Total Return: 758.69%

Annual Return: 11.52%

Annual Volatility: 19.41%

Sharpe Ratio: 0.9283

Sortino Ratio: 1.3362

Maximum Drawdown: -36.69%

Calmar Ratio: 0.3139

Value at Risk (95%): -1.94%

Expected Shortfall (95%): -3.09%

Win Rate: 0.5250

Best Day: 9.94%

Worst Day: -11.52%

Average Win: 0.89%

Average Loss: -0.83%

Profit Factor: 1.1811

Common Sense Ratio: 1.2728

Tail Ratio: 1.0777

Skewness: -0.4252

Kurtosis: 8.6624

Note: Could not calculate monthly/yearly breakdowns: module 'quantstats.stats' has no attribute 'yearly_returns'

Comprehensive Portfolio Analysis Report

AI Analysis

1. OVERALL PERFORMANCE SUMMARY

The overall performance summary is a quick snapshot of the portfolio's success. In this case, the total return is 758.69%, which is an excellent result. The annual return of 11.52% is also good, as it outperforms many investment options. However, the annual volatility at 19.41% indicates that there is some risk associated with this portfolio.

2. RETURN ANALYSIS

The return analysis provides details on the performance of the investments in the portfolio. The best day's return was 9.94%, which means that on the best trading day, the portfolio increased its value by nearly 10%. However, the worst day's return was -11.52%, indicating a significant loss during the worst trading day. The average win was 0.89% and the average loss was -0.83%, suggesting that the portfolio tends to make small gains but also experiences minor losses. The profit factor of 1.1811 indicates that the portfolio generates more than one unit of profit for every unit of risk taken, which is a good sign.

3. RISK ANALYSIS

The risk analysis provides insight into the potential downside risks associated with the portfolio. Annual volatility at 19.41% indicates that there's some degree of uncertainty in the portfolio's performance. The maximum drawdown of -36.69% shows the worst loss experienced during a specific period, which is a key risk metric to consider. The Calmar Ratio (0.3139) measures the relationship between return and risk, and a value below 1 indicates that the portfolio's returns may not fully compensate for its risk level.

4. RISK-ADJUSTED PERFORMANCE

The risk-adjusted performance metrics help us understand if the portfolio is generating good returns relative to the risk it takes. The Sharpe Ratio (0.9283) and Sortino Ratio (1.3362) are both positive, suggesting that the portfolio generates a good return for the level of risk taken. However, the Calmar Ratio (0.3139) is below 1, indicating that the returns may not fully compensate for the risk.

5. DRAWDOWN AND RECOVERY ANALYSIS

Drawdowns represent the peak-to-trough decline during a specific period. The maximum drawdown of -36.69% shows how much the portfolio's value declined from its peak to its lowest point. A higher value indicates more risk exposure. The recovery time tells us how long it took for the portfolio to recover from this drawdown, which is not provided in the

report.

6. STATISTICAL MEASURES

The Value at Risk (95%) of -1.94% indicates that there's a 95% confidence that the portfolio will not lose more than 1.94% over a specific time period. The Expected Shortfall (95%) of -3.09% shows the average loss exceeding the Value at Risk, which is concerning. The Tail Ratio (1.0777) indicates how often extreme events occur; a higher value suggests that extreme losses are less likely. Skewness (-0.4252) and Kurtosis (8.6624) measure the distribution of returns; negative skewness means that downside risk is more pronounced than upside potential, and high kurtosis indicates more extreme events than normal distribution.

7. KEY INSIGHTS AND RECOMMENDATIONS

The portfolio has a strong overall performance with a total return of 758.69% and an annual return of 11.52%. However, the risk profile is also substantial, with an annual volatility of 19.41%. The Calmar Ratio below 1 indicates that returns may not fully compensate for the risk taken, suggesting that the investor should consider diversifying or reducing risk exposure to improve the portfolio's overall risk-adjusted performance.

Monthly Performance Analysis

1. Best/Worst Performing Months:

The best performing month in the portfolio was December 2020, with a return of 0.088198 or 8.82%. This may be due to strong stock performance in that month, possibly driven by factors such as positive news about the companies, overall market trends, or economic conditions. On the other hand, the worst performing month was July 2015, with a return of -0.064328 or -6.43%. This decline could be attributed to various factors, including negative news surrounding the companies, weak market sentiment, or macroeconomic events that affected the Indian stock market.

1. Seasonal Patterns:

There doesn't appear to be a clear seasonal pattern in the portfolio's performance. While some months show positive returns and others show negative returns, there is no consistent pattern of performance across specific months. This suggests that the portfolio's performance is more influenced by individual company-specific factors, market trends, or macroeconomic events rather than strictly following a seasonal pattern.

2. Consistency of Performance:

The consistency of performance varies throughout the years. Some years show relatively steady returns, such as 2019

with an average monthly return of approximately 0.02%. However, other years display more volatility in returns, like 2020, which had a wide range of monthly returns from -18.19% to 16.65%. This inconsistency may be due to the various factors mentioned earlier, such as company-specific news, market trends, and macroeconomic events.

3. Months to Watch Out For:

Based on the data provided, some months with more extreme returns (either positive or negative) might warrant closer attention. These include July 2015 (-0.064328), December 2020 (0.088198), and January 2016 (-0.181953). It's essential to investigate the reasons behind these returns to better understand their impact on the portfolio.

4. Potential Improvements:

To potentially improve monthly performance, consider the following strategies:

* Diversification: Ensure the portfolio is well-diversified across various sectors and companies to minimize the impact of negative events affecting specific stocks or industries.

* Rebalancing: Regularly rebalance the portfolio to maintain the desired level of diversification and risk exposure. This can help mitigate the impact of extreme returns in individual months.

* Monitoring: Keep a close eye on the underlying companies, industry trends, and macroeconomic factors that may influence the portfolio's performance. Stay informed about news and events that could affect the stocks in the portfolio.

* Risk Management: Establish a risk management strategy to help protect against significant losses during periods of market volatility or negative news surrounding the holdings. This might include setting stop-loss orders, using options for hedging purposes, or adjusting the portfolio's risk exposure based on market conditions.

1. Conclusion:

In conclusion, the performance of this Indian stock portfolio varies across months and years, with no clear seasonal pattern. To improve monthly performance, consider diversifying the holdings, regularly rebalancing the portfolio, monitoring underlying factors influencing performance, and implementing a risk management strategy.

Portfolio vs Best Stock Comparison

1. PERFORMANCE COMPARISON:

The Diversified Portfolio has a total return of 758.69% and an annual return of 11.52%. The TCS Stock Portfolio has a total return of 1244.32% and an annual return of 14.08%. The TCS Stock Portfolio outperforms the Diversified Portfolio in terms of both total and annual returns.

2. RISK COMPARISON:

The Diversified Portfolio has an annual volatility of 19.41%, while the TCS Stock Portfolio has an annual volatility of

25.01%. The TCS Stock Portfolio is more volatile than the Diversified Portfolio, indicating a higher level of risk.

3. RISK-ADJUSTED RETURNS COMPARISON:

The Sharpe Ratios for both portfolios are relatively close, with the Diversified Portfolio having a Sharpe Ratio of 0.9283 and the TCS Stock Portfolio having a Sharpe Ratio of 0.9044. The Sortino Ratios are also similar, with the Diversified Portfolio at 1.3362 and the TCS Stock Portfolio at 1.3506. These ratios suggest that both portfolios have comparable risk-adjusted returns.

4. STRENGTHS AND WEAKNESSES OF EACH:

Strengths of Diversified Portfolio:

- Lower annual volatility, indicating less risk compared to the TCS Stock Portfolio.
- Comparable risk-adjusted returns as indicated by the Sharpe and Sortino Ratios.

Weaknesses of Diversified Portfolio:

- Lower total return and annual return compared to the TCS Stock Portfolio.

Strengths of TCS Stock Portfolio:

- Higher total return and annual return compared to the Diversified Portfolio.
- Slightly higher risk-adjusted returns as indicated by the Sharpe Ratio, but similar Sortino Ratios.

Weaknesses of TCS Stock Portfolio:

- Higher annual volatility, indicating more risk compared to the Diversified Portfolio.

5. RECOMMENDATION:

Based on the performance and risk metrics, the TCS Stock Portfolio is better for investors seeking higher returns, as it has a higher total return and annual return. However, the Diversified Portfolio may be more suitable for investors who are risk-averse due to its lower annual volatility and comparable risk-adjusted returns. It's important for an investor to consider their risk tolerance and investment goals when choosing between these two portfolios.

Specific Metric (Sharpe Ratio)

The Sharpe Ratio is a widely used metric to evaluate the performance of an investment portfolio, specifically its

risk-adjusted return. It measures how much excess return (return above the risk-free rate) a portfolio provides per unit of volatility (standard deviation of returns). In simple terms, it helps investors determine if a higher return is coming with higher risk or not.

1. What this metric measures:

The Sharpe Ratio measures the average return earned in excess of the risk-free rate per unit of volatility or risk taken by the portfolio. It's a performance measure that adjusts the return for the level of risk associated with the returns.

2. How it's calculated:

The formula to calculate the Sharpe Ratio is as follows:

Sharpe Ratio = (Portfolio Return - Risk-Free Rate) / Portfolio Standard Deviation

In your specific case, a value of 0.9283360046567025 implies that the portfolio return was 0.928 times the risk-free rate for each unit of volatility in the portfolio.

3. What the specific value means:

A Sharpe Ratio above 1 is generally considered good, indicating that the portfolio is generating excess returns over the risk-free rate. A ratio below 1 signifies an underperforming portfolio relative to its level of risk. In this case, your portfolio's Sharpe Ratio of 0.9283 suggests it has been generating slightly less than one unit of return per unit of risk taken.

4. Factors that could improve or worsen this metric:

There are several factors that can influence the Sharpe Ratio, including:

a) Portfolio Return: Higher returns (especially those in excess of the risk-free rate) will increase the Sharpe Ratio.

b) Risk-Free Rate: A lower risk-free rate will increase the Sharpe Ratio.

c) Volatility: Lower portfolio volatility will increase the Sharpe Ratio.

To improve this metric, an investor can strive for higher returns with the same or less risk, or accept lower returns but with less volatility.

5. How investors should interpret this in their decision making:

The Sharpe Ratio is a useful tool for comparing different portfolios to determine which one offers the best return for a

given level of risk. A higher Sharpe Ratio indicates that a portfolio has performed well relative to its level of risk, making it a more attractive option. However, it's important to remember that this metric doesn't consider other aspects like transaction costs, tax implications or investor preferences. It is best used in conjunction with other portfolio analysis tools and a thorough understanding of an individual's investment goals and risk tolerance.