

3. Robi Axiata

Executive Summary:

Introduction:

Investment decisions are generally based on assessing the returns from an investment, which also includes the associated risk. Analysing the risk-return profile of an investment provides a clear view of the project's riskiness and profitability, enabling an investor to make an informed decision. In addition, risk-return metrics enable investors to evaluate the performance of different investments about market behavior. These assessments are necessary in formulating the decisions taken by various ranges of risk-taking investors. Risk-return metrics also provide investors with a measure of how much a project can lose over a specific period, enabling them to make informed decisions. Based on the analysis, investors assess which investment will have a higher return for the given risk, allowing them to allocate their capital effectively.

Objective

The goal of the risk-return analysis of four distinct telecommunications companies is to gain a better understanding of their performance over the course of the three-year historical data collection period. With the calculated risk-return metrics, it was easier to compare different companies' stock prices, returns, and associated risks.

Data cleaning

The Data on stock prices of different companies have been processed and cleared for the ease of calculation. The stock prices have been arranged from 2022 to 2025, excluding weekends and holidays.

The daily stock price data of the four telecom companies were collected and cleaned. After collecting the data, the daily returns were calculated from the processed data using the following formula:

$$\text{Daily Return} = \frac{\text{Today's Stock Price} - \text{Yesterday's Stock Price}}{\text{Yesterday's Stock Price}}$$

[Link to the calculation of Robi Axiata](#)

1. Individual Stock analysis of Robi Axiata (February 2022- August 2025)

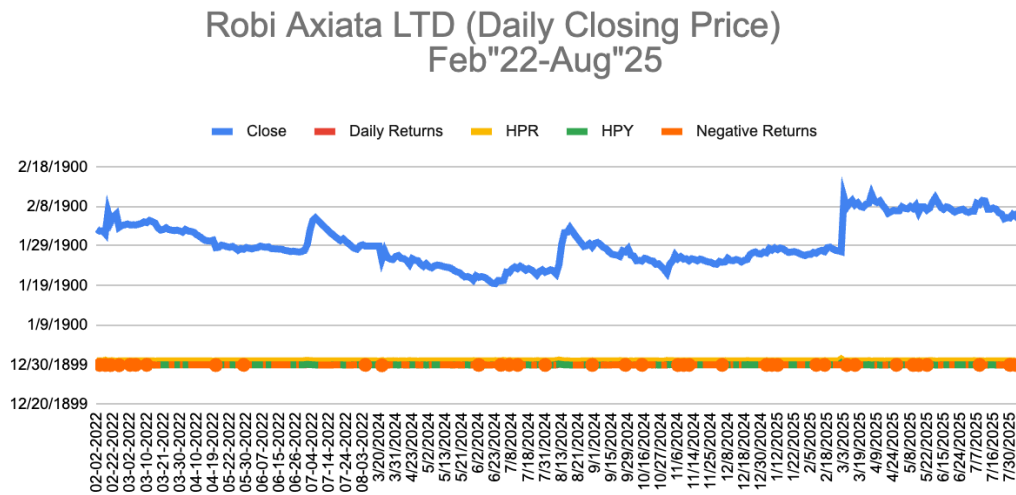


Figure 1.1

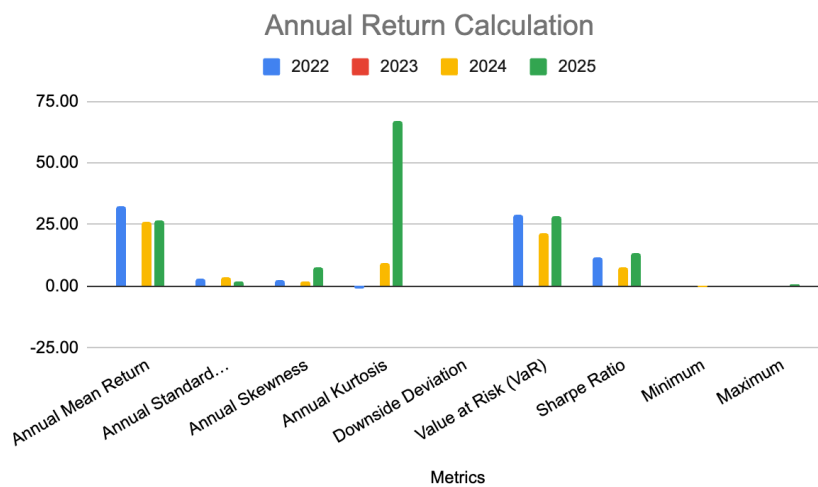


Figure 1.2

Return Statistics	
Mean	0.10%
Standard Error	0.22%
Median	-0.44%
Mode	0.00%
Standard Deviation	3.94%

Sample Variance	0.16%
Kurtosis	67.0915601
Skewness	6.139659171
Range	0.5923543124
Minimum	-0.1133333333
Maximum	0.479020979

Interpretation:

- **Average Return:** The mean return is slightly positive at 0.10%, reflecting minimal overall profitability across the observed period.
- **Return Asymmetry:** The median of -0.44% indicates that returns were negative for more than half of the observations, suggesting a tendency toward small losses.
- **Volatility:** The dataset shows moderate fluctuation with a standard deviation of 3.94% , implying noticeable variability in returns.
- **Skewness:** The distribution is highly positively skewed, 6.14 , indicating the presence of infrequent but very large positive returns.
- **Kurtosis:** An extremely high kurtosis of 67.09 points to heavy tails and a significant number of extreme outliers, signifying a highly unstable and non-normal return profile.

Downside Risk	
Downside Deviation	0.0221
Value at risk	-0.05931606596
Sharp ratio	0.4030

Downside Deviation (0.0221): Robi's downside deviation of 2.21% suggests that when the stock experiences negative returns, the magnitude of those losses is relatively modest. By focusing solely on returns below the mean, this measure provides a clearer picture of loss-focused volatility, indicating that Robi's price declines tend to be controlled rather than

severe.

Value at Risk (−0.0593): At a conventional 95% confidence level, the Value at Risk figure indicates that Robi’s stock is expected to lose no more than 5.93% in a single day under typical market conditions. This quantifies the scale of potential adverse price movements and highlights the extent of capital at risk during extreme but statistically probable scenarios.

Sharpe Ratio (0.4030): Robi’s Sharpe ratio points to a relatively low level of risk-adjusted return. With a value well below 1.0, the data suggests that while Robi has delivered some excess returns over the risk-free rate, the reward for total volatility—including both upside and downside movements—remains limited. For investors, this implies that enhancing return generation or reducing volatility could meaningfully improve the stock’s overall performance profile.

Annualised Returns Calculations				
Metrics	2022	2023	2024	2025
Annual Mean Return	32.30	0.00	26.14	26.47
Annual Standard Deviation	2.78	0.00	3.38	1.95
Annual Skewness	2.54	0.00	1.99	7.56
Annual Kurtosis	-1.24	0.00	9.62	66.95
Downside Deviation	0.02	0.00	0.02	0.01
Value at Risk (VaR)	28.79	0.00	21.72	28.16
Sharpe Ratio	11.619	0.00	7.736	13.574
Minimum	-8.84%	0.00	-11.33%	-5.91%
Maximum	16.58%	0.00	20.55%	47.90%

Annualised Returns Interpretation for Robi Stock

In 2022, Robi delivered an impressive annual mean return of 32.30% with a standard deviation of 2.78%, showing strong profitability alongside moderate volatility. The Sharpe ratio of 11.619 highlights exceptional risk-adjusted performance, likely driven by sustained positive market momentum during the year.

2023 was unusual. From September 2022 to February 2024, Robi’s share price stayed fixed at around 30, resulting in zero annual return and zero volatility for the year. This lack of movement points to a period of illiquidity, possible price regulation, or trading inactivity,

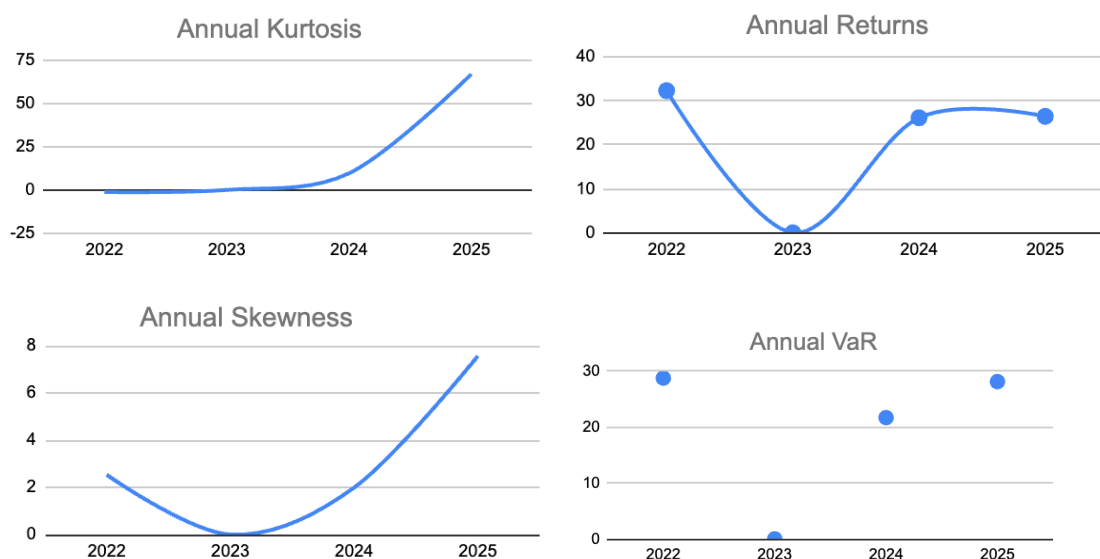
which removed both the opportunity for gains and the risk of losses. With no price fluctuations, downside deviation, Value at Risk, and the Sharpe ratio all registered at zero.

By 2024, trading activity resumed, and Robi's performance improved. The annual mean return climbed to 26.14%, accompanied by a higher standard deviation of 3.38%. This suggests renewed investor interest and potentially positive developments within the company or the broader sector. While the Sharpe ratio of 7.736 was lower than in 2022, it still reflected strong risk-adjusted returns.

So far in 2025, the upward trend has continued. The mean return of 26.47% paired with a reduced volatility of 1.95% shows steady price growth with lower risk. The Sharpe ratio of 13.574 suggests improved efficiency in turning volatility into returns.

Overall, 2023 stands out as a year of inactivity that interrupted the normal trading pattern. The recovery seen in 2024 and the continued stability in 2025 have restored Robi's position as an attractive option for active investors.

Visualizations



2022: The Annual Returns chart shows a high return of over 30%, paired with relatively low kurtosis and moderate skewness. This reflects strong performance with stable market behaviour. The Annual VaR is high, but returns comfortably outweighed downside risk during this period.

2023: The share price stayed fixed at around 30, leading to zero annual return and no volatility. As a result, kurtosis, skewness, and VaR all flattened, reflecting the absence of meaningful trading activity or price movement.

2024: By 2024, trading activity returned, and performance improved. Annual returns rose to about 26%, while kurtosis and skewness began to climb, showing that price movements

were becoming less evenly distributed and that occasional extreme changes were reappearing. VaR also increased, highlighting that with higher activity came a renewed possibility of losses.

2025: So far in 2025, returns have stayed strong and volatility has eased slightly, but kurtosis and skewness have surged. This suggests that while prices are generally stable, the distribution is becoming more extreme, with occasional large movements playing a bigger role. VaR remains high, meaning that notable downside risk is still present despite the positive trend.

Investment Implications

Risk Profile: Mixed 2022 and 2025 YTD show strong returns with controlled volatility, while 2024 had higher fluctuations and 2023 had complete stagnation. Rising kurtosis points to more unpredictable, extreme movements.

Return Consistency: 2022 and 2025 YTD stand out for attractive risk-adjusted performance, whereas 2023 offered no growth and 2024 came with higher volatility.

Diversification Impact: Could add value to a high-risk, actively managed portfolio if extreme moves are uncorrelated with broader market trends.

Investor Suitability: Best suited for active traders or speculative investors seeking to capitalise on sharp price swings, rather than long-term conservative holders.

Inference

Robi Axiata's performance over the past three years blends high-return periods, phases of inactivity, and bouts of heightened volatility. The frozen market of 2023 disrupted normal trading, while 2024 saw a return to growth but also heavier tail risks. The early months of 2025 have brought strong returns with reduced volatility, but the elevated kurtosis suggests that extreme events still drive much of the performance.

From a traditional portfolio management viewpoint, this uneven pattern limits Robi's appeal as a core holding. However, if the improved Sharpe ratios and lower downside risk in 2025 persist, the stock could transition toward a more balanced investment profile. For now, it remains best suited for higher-risk strategies with active monitoring.