BAJAJ MUTUAL FUND

WHAT IS CALMAR RATIO ?

THE EQUITY COMPASS EDITION 24

Understanding the return a portfolio generated in relation to its deepest decline.

Imagine two roller coasters that begin and end at the same height.

One has a series of gentle dips. The other makes a steep plunge before climbing back to the finishing point.

Although both end at the same level, the second ride exposes its passengers to a much deeper fall.

A similar distinction can arise in investing. Two portfolios may generate comparable returns, but one may experience a substantially larger decline along the way. The Calmar ratio helps capture this difference by comparing a portfolio's annualised return with its maximum drawdown.

WHAT IS MAXIMUM DRAWDOWN?

Maximum drawdown is the largest decline in a portfolio's value from a previous peak to a subsequent trough during a specified period.

For example, if a portfolio rises to ₹1,20,000 and later falls to ₹90,000 before recovering, its drawdown would be:

$$\textbf{Maximum Drawdown} = \frac{(₹1,20,000 - ₹90,000)}{₹1,20,000} = 25\%$$

It reflects the deepest decline an investor would have experienced during the period.

WHAT IS THE CALMAR RATIO?

The Calmar ratio measures the annualised return generated by a portfolio relative to its maximum drawdown.

$$\textbf{Calmar Ratio} = \frac{\textbf{Compound Annual Growth Rate (CAGR)}}{\textbf{Absolute Maximum Drawdown}}$$

COMPONENT	WHAT IT MEANS
Compound Annual Growth Rate (CAGR)	The portfolio's return expressed as an annual rate over the period
Maximum Drawdown	The largest peak-to-trough decline experienced during the same period
Absolute Maximum Drawdown	The drawdown expressed as a positive number for calculating the ratio

A higher Calmar ratio generally indicates that the portfolio generated more return relative to the depth of its largest decline.

HOW TO INTERPRET THE CALMAR RATIO

CALMAR RATIO	WHAT IT MAY SUGGEST
Above 1	Annualised return exceeded the portfolio's maximum drawdown
Equal to 1	Annualised return was equal to the maximum drawdown
Between 0 and 1	Annualised return was positive but lower than the maximum drawdown
Below 0	The portfolio recorded a negative annualised return

These are broad interpretations rather than universal thresholds. The ratio is generally more meaningful when portfolios with similar investment objectives are compared over the same period.

HYPOTHETICAL EXAMPLE

Three equity portfolios are evaluated over the same period:

	PORTFOLIO A	PORTFOLIO B	PORTFOLIO C
Annualised return	12%	12%	9%
Maximum drawdown	10%	20%	6%
Calmar ratio	1.20	0.60	1.50

Portfolios A and B generated the same annualised return. However, Portfolio B experienced a much deeper decline, resulting in a lower Calmar ratio.

Portfolio C generated a lower return than Portfolio A, but it also experienced a smaller maximum drawdown. Consequently, it recorded the highest Calmar ratio in this illustration.

This does not mean that Portfolio C is necessarily more suitable or superior overall. It only indicates that, during the period considered, it generated more annualised return for each unit of maximum drawdown.

CALMAR RATIO VS SHARPE AND SORTINO RATIOS

MEASURE	RETURN ASSESSED AGAINST	RISK MEASURE USED
Calmar ratio	Maximum drawdown	Deepest peak-to-trough decline
Sharpe ratio	Risk-free rate	Total volatility
Sortino ratio	Target or risk-free rate	Downside volatility

The Sharpe and Sortino ratios consider the pattern of return fluctuations across the measurement period. The Calmar ratio focuses only on the single deepest decline.

Therefore, the measures provide different perspectives and may be considered together rather than viewed as substitutes.

POINTS TO KEEP IN MIND

- The Calmar ratio is commonly calculated over three years, hence comparisons must use the same measurement period.
- A portfolio may have a favourable Calmar ratio simply because it has not yet experienced a major market decline.
- The ratio considers only the largest drawdown and does not capture the frequency or duration of other declines.
- A recovery from a drawdown is not reflected directly. Two portfolios with the same maximum drawdown may take very different amounts of time to recover.
- The Calmar ratio is based on historical information and does not predict future returns or drawdowns.
- It should be evaluated alongside other measures, such as volatility, downside risk, consistency of returns, investment strategy and market conditions.

The Calmar ratio can help investors understand whether the returns generated by a portfolio were proportionate to its deepest decline. However, no single ratio provides a complete assessment of risk or performance.

Mutual Fund investments are subject to market risks, read all scheme related documents carefully.