

VALUE AT RISK

VaR is a risk metric that corresponds to an amount that could be lost with some chosen probability.

Ex:

1-Day 99% - VaR means that the maximum amount of loss that can happen in a day with a probability of 99% and a 1 % probability of exceeding it.

OBJECTIVE:

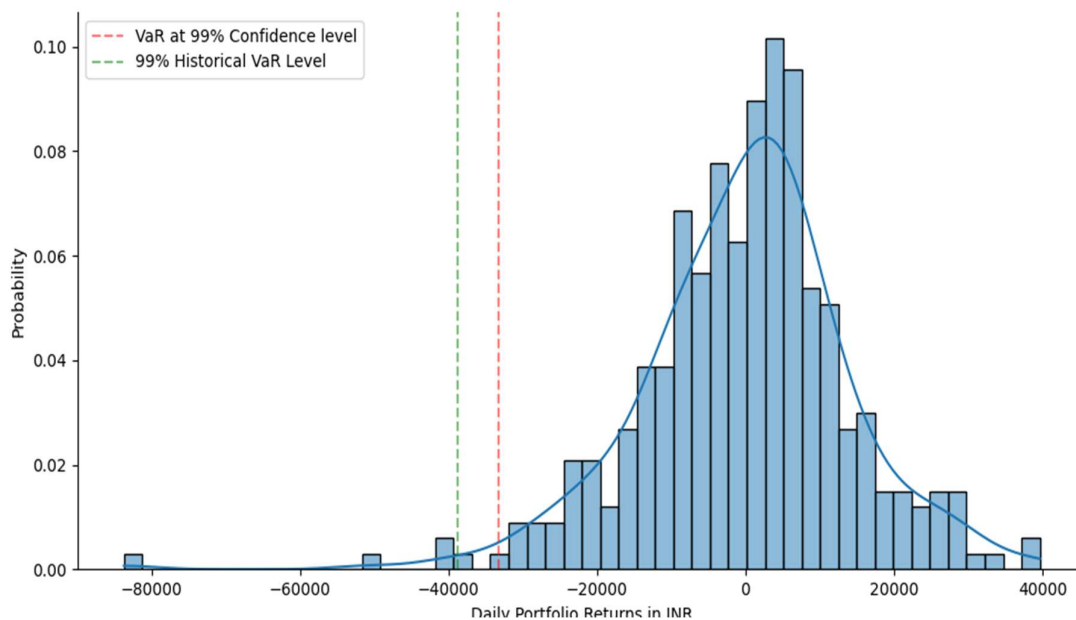
To Calculate the 1 - Day 99% VaR of a Portfolio of 3 stocks using Parametric and Historical methods.

Portfolio being:

STOCKS	WEIGHTS
1. DLF	0.4
2. NTPC	0.2
3. HDFC	0.4

VAR METHODS, ASSUMPTIONS AND ESTIMATES.

METHOD	ASSUMPTIONS	METHODOLOGY	ESTIMATE (in INR)
1. PARAMETRIC	<ol style="list-style-type: none">1. Risk Factor Returns are Normally distributed2. Applicable for Portfolios whose Returns are a linear function of Asset-Returns.	$VaR = -t$ and $P(X < t) = 0.01$ Therefore, $t = \mu + \sigma \cdot \Phi^{-1}(1 - 0.01)$	33303.566390512286
2. HISTORICAL	<ol style="list-style-type: none">1. Assumes that all possible future variations have been experienced in the past and the historical distribution is identical to the return distribution over the future horizon.	We take the past returns data, sort them in ascending order and calculate the 1 st percentile.	38719.743193575836



The Figure above summarises the entire exercise.