VAPOR: Value-at-Risk and Portfolio Optimization Report

1. Portfolio Composition

This report analyzes a portfolio consisting of the following assets and weights:

Asset	Weight
AAPL	15.00%
MSFT	15.00%
GOOGL	15.00%
AMZN	15.00%
BND	10.00%
GLD	10.00%
XOM	10.00%
JPM	10.00%

Historical data from 2018-01-01 to 2023-12-31 has been used for this analysis.

2. Value at Risk (VaR) Analysis

The table below shows the VaR calculated using different methods:

Method	95% 1-day VaR
Historical VaR	-1.72%
Parametric VaR	-1.92%
Monte Carlo VaR	-1.77%

3. Stress Test Results

The following table shows the portfolio returns under various stress scenarios:

Scenario	Stressed Return
Market Crash	-10.33%
Tech Selloff	-10.83%
Energy Crisis	-1.33%

Financial Crisis	-7.83%

4. Risk Appetite Assessment

Current Risk Appetite: -5.00%

- Historical VaR: Exceeds risk appetite
- Parametric VaR: Exceeds risk appetite
- Monte Carlo VaR: Exceeds risk appetite

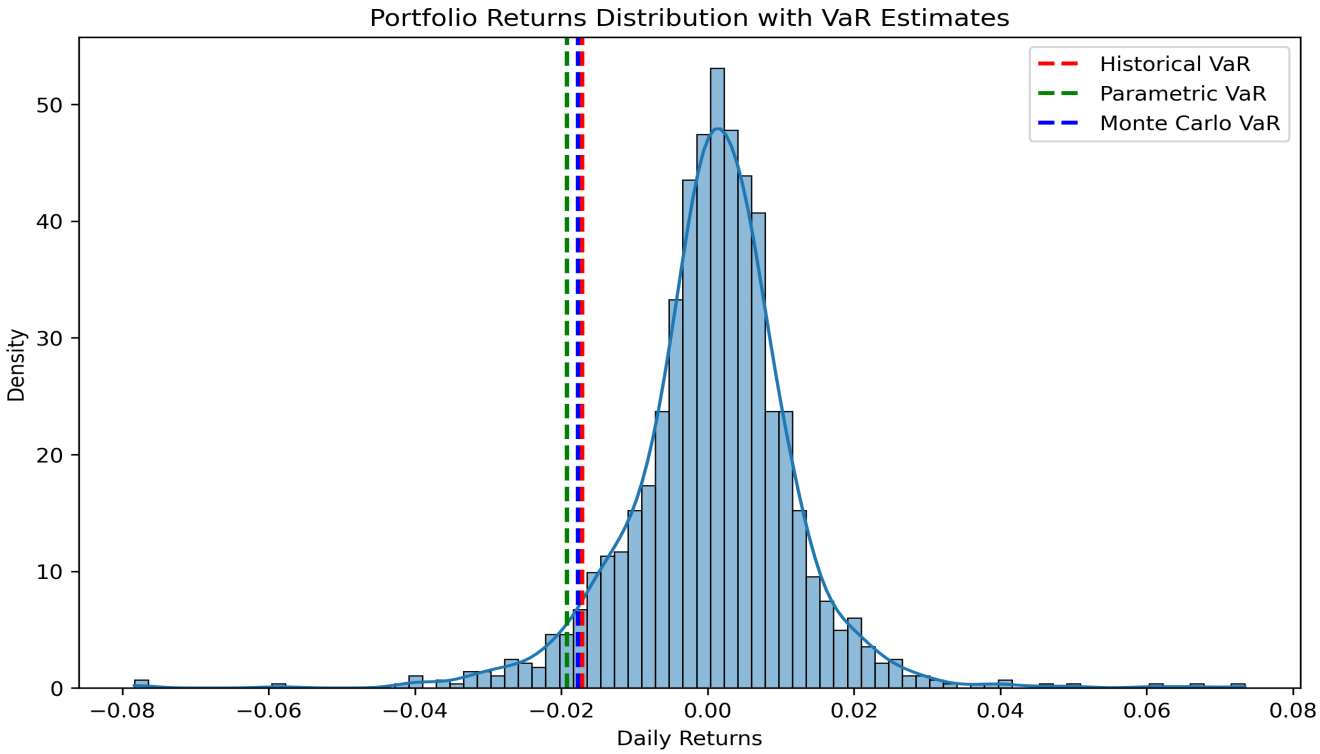
5. VaR Model Backtesting

Number of VaR violations: 1436

Expected number of violations: 75.40

Conclusion: VaR model may be underestimating risk

6. Portfolio Returns Distribution



7. Summary and Conclusion

Based on the analysis:

1. The portfolio's Value at Risk (VaR) at 95% confidence level ranges from -1.92% to -1.72%, depending on the calculation method.

2. Stress testing reveals that the portfolio is most vulnerable to a Energy Crisis scenario, potentially losing up to -1.33%.

3. The VaR model's performance is deemed to be "VaR model may be underestimating risk".

4. The current risk level exceeds the defined risk appetite. Risk mitigation strategies should be considered to align with the risk appetite.