Portfolio Risk Analysis Report

Report Date: October 15, 2025
Portfolio Size: 25 Assets
Analysis Period: 12 Months
Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 19 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 6 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 25 assets with a combined market capitalization of $2908.7 billion. **Key Findings:** • 19 assets (76.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 30.0% • Maximum drawdown observed: -44.4% **Risk Concentration:** The analysis reveals significant risk concentration in 19 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 14 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.326 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap ($B)	Percentage
Healthcare	7	1542.83	53.0%
Consumer Staples	5	389.75	13.4%
Technology	1	232.10	8.0%
Energy	3	228.40	7.9%
Consumer Discretionary	1	179.43	6.2%
Utilities	3	147.39	5.1%
Real Estate	2	108.14	3.7%
Materials	2	48.48	1.7%
Industrial	1	32.15	1.1%

Risk Analysis Results

Risk Distribution:
• HIGH RISK (RED): 19 assets
• MEDIUM RISK (YELLOW): 0 assets
• LOW RISK (GREEN): 6 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
CVUZ	Healthcare	RED	36.7%	-43.0%	4
SQCB	Healthcare	RED	24.1%	-44.4%	3
XXGH	Healthcare	RED	31.5%	-39.9%	2
RRB	Technology	RED	17.6%	-33.1%	2
CLE	Utilities	RED	41.0%	-30.3%	2
PTXE	Healthcare	RED	16.2%	-31.3%	2

CD	Healthcare	RED	44.8%	-26.1%	2
SCEN	Industrial	RED	44.8%	-28.9%	2
RWW	Consumer Discretionary	RED	27.3%	-22.5%	1
NA	Healthcare	RED	36.7%	-28.2%	1
MQD	Utilities	RED	35.6%	-30.6%	1
AHP	Consumer Staples	RED	39.4%	-23.1%	1
DLFJ	Consumer Staples	RED	35.7%	-33.8%	1
BWC	Utilities	RED	21.9%	-24.7%	1
TQ	Real Estate	RED	28.6%	-30.7%	1
BZ	Energy	RED	30.5%	-30.3%	1
GG	Materials	RED	22.0%	-25.7%	1
PHBY	Consumer Staples	RED	33.8%	-30.0%	1
NCHB	Energy	RED	32.7%	-30.2%	1

Machine Learning Analysis

Advanced machine learning techniques were applied to identify anomalies and predict future risk ratings. **Anomaly Detection Summary:**
• Total Anomalies Detected: 4
• Critical Anomalies: 6
• High Risk Anomalies: 5
• Anomaly Rate: 16.0%
Risk Prediction Model:
• Model Accuracy: 87.5%
• Rating Changes Predicted: 1
• Assets Predicted to Deteriorate: 1
• Assets Predicted to Improve: 0

Key Machine Learning Insights

• 6 assets show critical anomalous behavior requiring immediate review
• 1 assets predicted to deteriorate in risk rating
• Anomaly detection identified 4 assets with unusual patterns
• Key risk drivers: Max Drawdown, Sharpe Ratio, Volatility

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
CVUZ	Healthcare	100.0	CRITICAL	Critical anomaly - Consider immediate po...
SCEN	Industrial	94.6	CRITICAL	Critical anomaly - Consider immediate po...
RRB	Technology	87.6	CRITICAL	Critical anomaly - Consider immediate po...
CLE	Utilities	87.4	CRITICAL	Critical anomaly - Consider immediate po...
MMR	Healthcare	87.3	CRITICAL	Normal behavior pattern - Continue monit...
MO	Materials	84.7	CRITICAL	Normal behavior pattern - Continue monit...

CD	Healthcare	76.4	HIGH	Normal behavior pattern - Continue monit...
SQCB	Healthcare	75.0	HIGH	Normal behavior pattern - Continue monit...
MQD	Utilities	66.7	HIGH	Normal behavior pattern - Continue monit...
XXGH	Healthcare	65.8	HIGH	Normal behavior pattern - Continue monit...

Predicted Risk Rating Changes

Symbol	Current Rating	Predicted Rating	Confidence	Trend
DZJ	GREEN	RED	57.0%	DETERIORATING

Top Risk Factors (Feature Importance)

1. Max Drawdown: 51.2% importance
2. Sharpe Ratio: 14.1% importance
3. Volatility: 7.2% importance
4. Price Change 3M: 6.3% importance
5. Beta: 5.4% importance

ML Validation Results

Overall Validation Status: PASS
Checks Passed: 4 / 4

✓ **Anomaly Detection Validation:** PASS
total_assets: 25, anomalies_detected: 4, anomaly_rate: 16.0
✓ **Risk Prediction Validation:** PASS
model_accuracy: 87.5, predictions_made: 25, rating_changes: 1
✓ **Feature Quality Validation:** PASS
features_checked: 9, nan_features: 0, total_samples: 25
✓ **Feature Importance Validation:** PASS
total_importance: 100.0, top_feature: Max Drawdown, top_importance: 51.2

Sentiment Analysis

Sentiment analysis was conducted on 19 RED-flagged assets using financial news from the past 12 months. **Key Findings:**
• Average sentiment score: -0.326
• Assets with negative sentiment: 14/19
• Total news articles analyzed: 441

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
PHBY	-0.437	NEGATIVE	15	DETERIORATING	market_share, earnings, regulatory

NA	-0.436	NEGATIVE	20	DETERIORATING	earnings, regulatory, financial_health
CVUZ	-0.428	NEGATIVE	25	IMPROVING	regulatory, operations, financial_health
NCHB	-0.381	NEGATIVE	30	IMPROVING	earnings, regulatory, financial_health
GG	-0.381	NEGATIVE	29	DETERIORATING	regulatory, financial_health, earnings
BWC	-0.376	NEGATIVE	26	IMPROVING	regulatory, financial_health, earnings
AHP	-0.351	NEGATIVE	24	DETERIORATING	regulatory, earnings, financial_health
RWW	-0.345	NEGATIVE	25	IMPROVING	regulatory, financial_health, earnings
SCEN	-0.339	NEGATIVE	24	IMPROVING	regulatory, financial_health, operations
MQD	-0.338	NEGATIVE	21	IMPROVING	earnings, regulatory, financial_health
RRB	-0.319	NEGATIVE	16	IMPROVING	regulatory, financial_health, operations
TQ	-0.312	NEGATIVE	16	STABLE	earnings, regulatory, financial_health
DLFJ	-0.308	NEGATIVE	30	DETERIORATING	earnings, regulatory, management
SQCB	-0.304	NEGATIVE	28	DETERIORATING	regulatory, financial_health, earnings
CLE	-0.295	NEUTRAL	21	STABLE	earnings, regulatory, market_share
PTXE	-0.252	NEUTRAL	16	DETERIORATING	earnings, financial_health, regulatory
XXGH	-0.237	NEUTRAL	30	STABLE	regulatory, financial_health, earnings
CD	-0.206	NEUTRAL	30	IMPROVING	financial_health, earnings, regulatory
BZ	-0.148	NEUTRAL	15	IMPROVING	growth, regulatory, market_share

Detailed Asset Analysis

Asset: CVUZ

Sector: Healthcare
Current Price: $233.74
Market Cap: $68.33B
Risk Rating: RED
Risk Metrics:
• Volatility: 36.7%
• Maximum Drawdown: -43.0%
• Beta: 0.13
• Sharpe Ratio: -1.38
• RSI: 17.6
Performance:
• 1-Month Return: -19.9%
• 3-Month Return: -20.5%
• 6-Month Return: -22.6%
Risk Flags:
• Extreme Drawdown, Severe Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.428 (NEGATIVE)
• News Articles: 25
• Trend: IMPROVING

Asset: SQCB

Sector: Healthcare
Current Price: $223.50
Market Cap: $200.49B
Risk Rating: RED
Risk Metrics:
• Volatility: 24.1%
• Maximum Drawdown: -44.4%
• Beta: -0.05
• Sharpe Ratio: -1.49
• RSI: 41.2
Performance:
• 1-Month Return: -11.3%
• 3-Month Return: -16.1%
• 6-Month Return: -31.1%
Risk Flags:
• Extreme Drawdown, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.304 (NEGATIVE)
• News Articles: 28
• Trend: DETERIORATING

Asset: XXGH

Sector: Healthcare
Current Price: $153.77
Market Cap: $238.09B
Risk Rating: RED
Risk Metrics:
• Volatility: 31.5%
• Maximum Drawdown: -39.9%
• Beta: -0.13
• Sharpe Ratio: -0.86
• RSI: 62.2
Performance:
• 1-Month Return: 4.6%
• 3-Month Return: -8.6%
• 6-Month Return: -17.1%
Risk Flags:
• Extreme Drawdown, Poor Risk Return
Market Sentiment:
• Sentiment Score: -0.237 (NEUTRAL)
• News Articles: 30
• Trend: STABLE

Asset: RRB

Sector: Technology
Current Price: $363.29
Market Cap: $232.10B
Risk Rating: RED
Risk Metrics:
• Volatility: 17.6%
• Maximum Drawdown: -33.1%
• Beta: -0.09
• Sharpe Ratio: -2.36
• RSI: 17.1
Performance:
• 1-Month Return: -7.6%

• 3-Month Return: -24.2%
• 6-Month Return: -27.0%
Risk Flags:
• Extreme Drawdown, Poor Risk Return
Market Sentiment:
• Sentiment Score: -0.319 (NEGATIVE)
• News Articles: 16
• Trend: IMPROVING

Asset: CLE

Sector: Utilities
Current Price: $52.35
Market Cap: $74.13B
Risk Rating: RED
Risk Metrics:
• Volatility: 41.0%
• Maximum Drawdown: -30.3%
• Beta: -0.13
• Sharpe Ratio: 2.14
• RSI: 47.4
Performance:
• 1-Month Return: -3.4%
• 3-Month Return: 58.6%
• 6-Month Return: 56.9%
Risk Flags:
• High Volatility, Extreme Drawdown
Market Sentiment:
• Sentiment Score: -0.295 (NEUTRAL)
• News Articles: 21
• Trend: STABLE

Recommendations

Based on the comprehensive risk analysis, the following recommendations are provided:
Immediate Actions (RED-flagged assets):
1. Consider reducing position sizes for 19 high-risk assets
2. Implement stop-loss orders to limit further downside exposure
3. Review fundamental analysis for potential divestiture candidates
4. Monitor daily price movements and news flow closely

Medium-term Actions (YELLOW-flagged assets):
1. Conduct deeper due diligence on 0 medium-risk assets
2. Consider hedging strategies for positions with high volatility
3. Review correlation with overall portfolio risk
4. Set up enhanced monitoring and alerts

Portfolio-level Recommendations:
1. Diversify across sectors to reduce concentration risk
2. Consider alternative investments to reduce correlation
3. Implement systematic risk management framework
4. Schedule monthly portfolio risk reviews

Sentiment-based Actions:
1. Monitor news flow for 14 assets with negative sentiment
2. Consider contrarian opportunities if fundamentals remain strong
3. Assess impact of market sentiment on price movements
4. Review analyst coverage and institutional positioning

Appendix

Methodology

This risk analysis employs a four-stage pipeline methodology: **Stage 1 - Data Ingestion:** • Historical price data (252 trading days) • Trading volume information • Market capitalization data • Sector classifications **Stage 2 - Core Analysis:** • Volatility calculation (annualized) • Maximum drawdown analysis • Beta coefficient estimation • Risk-adjusted return metrics (Sharpe ratio) • Technical indicators (RSI) • Rule-based risk flagging system **Stage 3 - Sentiment Analysis:** • News article collection (12-month lookback) • Natural language processing for sentiment scoring • Trend analysis and confidence metrics • Key theme extraction **Stage 4 - Report Generation:** • Comprehensive risk assessment compilation • Visual data presentation • Actionable recommendations • Professional PDF report output

Risk Assessment Thresholds

RED Flag Thresholds: • Volatility > 40% (annualized) • Maximum drawdown < -20% • Volume decline > 50% • 1-month price decline > 15% **YELLOW Flag Thresholds:** • Volatility > 25% (annualized) • Maximum drawdown < -10% • Volume decline > 30% • Multiple warning indicators present **Sentiment Thresholds:** • Negative sentiment: Score < -0.3 • Positive sentiment: Score > 0.3 • Neutral sentiment: -0.3 ≤ Score ≤ 0.3

Report Generation Details:
• Generated: 2025-10-15 15:11:42
• Analysis Period: 12 months
• Total Assets Analyzed: 25
• Pipeline Version: 1.0

Test Data - Portfolio Details

Complete portfolio and risk analysis data has been exported to CSV files for further analysis:

Portfolio Data CSV: portfolio_data_20251015_151142.csv
Risk Analysis CSV: risk_analysis_20251015_151142.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AHP	-12.4%	4.2%	13.3%	-5.1%	0.78
APH	-2.8%	5.3%	20.6%	10.1%	0.89
BWC	-0.7%	2.7%	18.3%	-3.6%	0.00
BZ	-2.4%	12.7%	27.2%	5.5%	-0.21
CD	-14.8%	-1.4%	-16.2%	-7.8%	1.22
CLE	-3.4%	58.6%	56.9%	5.8%	2.14
CVUZ	-19.9%	-20.5%	-22.6%	-0.4%	-1.38
DLFJ	3.0%	8.5%	53.7%	1.2%	0.73
DZJ	-3.1%	4.7%	2.5%	0.1%	-0.26
GG	-4.3%	5.0%	18.0%	-7.5%	0.67
MMR	-8.6%	-3.3%	0.3%	-10.4%	0.47
MO	15.5%	15.2%	83.7%	-2.7%	2.04
MQD	-7.7%	-3.0%	-10.6%	14.4%	-0.31
NA	-11.3%	3.8%	10.1%	-9.2%	0.67
NCHB	16.0%	38.1%	28.0%	-4.4%	0.80
PHBY	3.5%	5.2%	-5.0%	-1.0%	0.08
PTXE	-1.2%	-9.8%	-8.2%	1.3%	-2.15
RRB	-7.6%	-24.2%	-27.0%	-2.8%	-2.36
RWW	0.4%	9.9%	46.1%	-8.4%	1.38
SCEN	13.0%	28.6%	88.0%	12.2%	1.46
SQCB	-11.3%	-16.1%	-31.1%	9.1%	-1.49
TEA	0.2%	13.7%	17.3%	9.5%	1.61
TQ	-4.8%	-11.7%	-28.0%	-9.9%	-0.16
XWM	0.6%	6.8%	18.2%	2.0%	0.97
XXGH	4.6%	-8.6%	-17.1%	-3.2%	-0.86

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break

CVUZ	✗	✓	✗	✓	✗	✓	✓
SQCB	✗	✓	✗	✗	✗	✓	✓
XXGH	✗	✓	✗	✗	✗	✓	✗
RRB	✗	✓	✗	✗	✗	✓	✗
CLE	✓	✓	✗	✗	✗	✗	✗
PTXE	✗	✓	✗	✗	✗	✓	✗
CD	✓	✓	✗	✗	✗	✗	✗
SCEN	✓	✓	✗	✗	✗	✗	✗
RWW	✗	✓	✗	✗	✗	✗	✗
NA	✗	✓	✗	✗	✗	✗	✗
MQD	✗	✓	✗	✗	✗	✗	✗
AHP	✗	✓	✗	✗	✗	✗	✗
DLFJ	✗	✓	✗	✗	✗	✗	✗
BWC	✗	✓	✗	✗	✗	✗	✗
TQ	✗	✓	✗	✗	✗	✗	✗
BZ	✗	✓	✗	✗	✗	✗	✗
GG	✗	✓	✗	✗	✗	✗	✗
PHBY	✗	✓	✗	✗	✗	✗	✗
NCHB	✗	✓	✗	✗	✗	✗	✗
MMR	✗	✗	✗	✗	✗	✗	✗
TEA	✗	✗	✗	✗	✗	✗	✗
MO	✗	✗	✗	✗	✗	✗	✗
XWM	✗	✗	✗	✗	✗	✗	✗
DZJ	✗	✗	✗	✗	✗	✗	✗
APH	✗	✗	✗	✗	✗	✗	✗

Data Summary:
• Total Assets: 25
• Data Generated: 2025-10-15 15:11:42
• Note: This test data is provided for further analysis, validation, and detailed review purposes.
• All metrics are calculated from 252 trading days of historical data.