

Portfolio Risk Analysis Report

Report Date: October 15, 2025
Portfolio Size: 50 Assets
Analysis Period: 12 Months
Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 5 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 45 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 50 assets with a combined market capitalization of \$5892.7 billion. **Key Findings:** • 5 assets (10.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 43.7% • Maximum drawdown observed: -75.4% **Risk Concentration:** The analysis reveals significant risk concentration in 5 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 2 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.283 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Healthcare	5	1468.63	24.9%
Financial Services	9	927.94	15.7%
Materials	6	924.30	15.7%
Technology	4	540.60	9.2%
Consumer Staples	7	534.25	9.1%
Energy	4	408.10	6.9%
Industrial	2	329.03	5.6%
Consumer Discretionary	6	317.53	5.4%
Real Estate	4	245.33	4.2%
Utilities	3	196.98	3.3%

Risk Analysis Results

Risk Distribution:

- HIGH RISK (RED): 5 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 45 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
PPMY	Real Estate	RED	55.5%	-47.1%	6
ZR	Technology	RED	53.7%	-44.0%	5
ZPB	Financial Services	RED	74.1%	-48.4%	5
XYSZ	Consumer Discretionary	RED	202.9%	-75.4%	2
NS	Consumer Discretionary	RED	68.7%	-61.4%	2

Machine Learning Analysis

Advanced machine learning techniques were applied to identify anomalies and predict future risk ratings. **Anomaly Detection Summary:**

- Total Anomalies Detected: 8
- Critical Anomalies: 2
- High Risk Anomalies: 3
- Anomaly Rate: 16.0%

Risk Prediction Model:

- Model Accuracy: 93.3%
- Rating Changes Predicted: 1
- Assets Predicted to Deteriorate: 0
- Assets Predicted to Improve: 1

Key Machine Learning Insights

- 2 assets show critical anomalous behavior requiring immediate review
- Anomaly detection identified 8 assets with unusual patterns
- Key risk drivers: Max Drawdown, Volume Decline, Volatility

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
XYSZ	Consumer Discretionary	100.0	CRITICAL	Critical anomaly - Consider immediate po...
NS	Consumer Discretionary	91.0	CRITICAL	Critical anomaly - Consider immediate po...
ZPB	Financial Services	75.9	HIGH	Significant anomaly - Conduct thorough d...
PPMY	Real Estate	68.7	HIGH	Significant anomaly - Conduct thorough d...
ZR	Technology	68.5	HIGH	Significant anomaly - Conduct thorough d...

Predicted Risk Rating Changes

Symbol	Current Rating	Predicted Rating	Confidence	Trend
XYSZ	RED	GREEN	56.0%	IMPROVING

Top Risk Factors (Feature Importance)

1. Max Drawdown: 26.0% importance
2. Volume Decline: 16.6% importance
3. Volatility: 16.3% importance
4. Price Change 6M: 15.0% importance
5. Sharpe Ratio: 11.0% importance

ML Validation Results

Overall Validation Status: PASS

Checks Passed: 4 / 4

✓ **Anomaly Detection Validation:** PASS

total_assets: 50, anomalies_detected: 8, anomaly_rate: 16.0

✓ **Risk Prediction Validation:** PASS

model_accuracy: 93.3, predictions_made: 50, rating_changes: 1

✓ **Feature Quality Validation:** PASS

features_checked: 9, nan_features: 0, total_samples: 50

✓ **Feature Importance Validation:** PASS

total_importance: 100.0, top_feature: Max Drawdown, top_importance: 26.0

Sentiment Analysis

Sentiment analysis was conducted on 5 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: -0.283
- Assets with negative sentiment: 2/5
- Total news articles analyzed: 113

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
NS	-0.336	NEGATIVE	21	IMPROVING	financial_health, earnings, regulatory
XYSZ	-0.307	NEGATIVE	28	DETERIORATING	financial_health, regulatory, earnings
ZPB	-0.279	NEUTRAL	18	IMPROVING	regulatory, financial_health, management
ZR	-0.267	NEUTRAL	18	DETERIORATING	operations, earnings, regulatory
PPMY	-0.224	NEUTRAL	28	IMPROVING	earnings, regulatory, management

Detailed Asset Analysis

Asset: PPMY

Sector: Real Estate

Current Price: \$38.86

Market Cap: \$15.13B

Risk Rating: RED

Risk Metrics:

- Volatility: 55.5%
- Maximum Drawdown: -47.1%
- Beta: 0.05
- Sharpe Ratio: -0.57
- RSI: 22.2

Performance:

- 1-Month Return: -38.7%
- 3-Month Return: -35.1%
- 6-Month Return: -10.8%

Risk Flags:

- High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown

Market Sentiment:

- Sentiment Score: -0.224 (NEUTRAL)
- News Articles: 28
- Trend: IMPROVING

Asset: ZR

Sector: Technology

Current Price: \$80.07

Market Cap: \$44.15B

Risk Rating: RED

Risk Metrics:

- Volatility: 53.7%
- Maximum Drawdown: -44.0%
- Beta: 0.06
- Sharpe Ratio: -0.69
- RSI: 35.0

Performance:

- 1-Month Return: -12.6%
- 3-Month Return: -33.2%
- 6-Month Return: -8.3%

Risk Flags:

- High Volatility, Extreme Drawdown, Extended Decline, Poor Risk Return, Momentum Breakdown

Market Sentiment:

- Sentiment Score: -0.267 (NEUTRAL)
- News Articles: 18
- Trend: DETERIORATING

Asset: ZPB

Sector: Financial Services

Current Price: \$99.64

Market Cap: \$95.15B

Risk Rating: RED

Risk Metrics:

- Volatility: 74.1%
- Maximum Drawdown: -48.4%
- Beta: 0.22
- Sharpe Ratio: -0.10
- RSI: 28.9

Performance:

- 1-Month Return: -43.4%
- 3-Month Return: -38.6%
- 6-Month Return: -39.7%

Risk Flags:

- High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Momentum Breakdown

Market Sentiment:

- Sentiment Score: -0.279 (NEUTRAL)
- News Articles: 18
- Trend: IMPROVING

Asset: XYSZ

Sector: Consumer Discretionary

Current Price: \$43.33

Market Cap: \$43.80B

Risk Rating: RED

Risk Metrics:

- Volatility: 202.9%
- Maximum Drawdown: -75.4%
- Beta: 0.22
- Sharpe Ratio: 0.34
- RSI: 87.8

Performance:

- 1-Month Return: 170.3%
- 3-Month Return: 133.7%
- 6-Month Return: 35.7%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.307 (NEGATIVE)
- News Articles: 28
- Trend: DETERIORATING

Asset: NS

Sector: Consumer Discretionary

Current Price: \$57.05

Market Cap: \$96.95B

Risk Rating: RED

Risk Metrics:

- Volatility: 68.7%
- Maximum Drawdown: -61.4%
- Beta: -0.03
- Sharpe Ratio: -0.09
- RSI: 86.0

Performance:

- 1-Month Return: 62.8%
- 3-Month Return: 3.1%
- 6-Month Return: -2.1%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.336 (NEGATIVE)
- News Articles: 21
- Trend: IMPROVING

Recommendations

Based on the comprehensive risk analysis, the following recommendations are provided:

Immediate Actions (RED-flagged assets):

1. Consider reducing position sizes for 5 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 2 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: $-0.3 \leq \text{Score} \leq 0.3$

Report Generation Details:

- Generated: 2025-10-15 17:24:38
- Analysis Period: 12 months
- Total Assets Analyzed: 50
- 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_172438.csv

Risk Analysis CSV: risk_analysis_20251015_172438.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AJQ	4.6%	3.9%	11.8%	0.4%	0.68
AWK	0.1%	4.2%	7.7%	0.8%	0.62
BFR	2.1%	7.9%	10.4%	-2.6%	0.68
BM	-1.3%	5.8%	11.1%	0.7%	0.68
CBO	0.8%	6.1%	11.1%	1.7%	0.60
CBYM	1.6%	2.5%	5.8%	0.4%	0.57
CEC	0.5%	2.7%	8.1%	3.7%	0.63
CGTN	-0.6%	2.4%	9.4%	1.5%	0.46
CQH	2.5%	5.4%	12.1%	1.0%	0.80
CS	1.7%	5.7%	6.3%	0.6%	0.66
DBY	0.7%	6.1%	10.3%	-0.0%	0.52
DFVE	4.0%	5.7%	10.9%	4.1%	0.59
DKWE	-0.3%	5.9%	11.7%	1.6%	0.66
GG	3.5%	7.4%	10.0%	1.7%	0.66
MP	1.1%	7.6%	8.0%	1.2%	0.69
MTBH	3.9%	1.9%	10.7%	4.5%	0.54
MWS	3.9%	0.6%	3.1%	0.3%	0.50
MYX	2.1%	4.3%	7.1%	0.4%	0.47
NCIH	4.4%	3.4%	13.5%	1.1%	0.82
NS	62.8%	3.1%	-2.1%	-11.5%	-0.09
PF	0.3%	4.7%	5.3%	-1.2%	0.50
PNV	-1.5%	3.2%	6.4%	1.0%	0.40
PODS	3.2%	3.5%	9.5%	0.8%	0.74
PPMY	-38.7%	-35.1%	-10.8%	-4.7%	-0.57
PYTY	2.4%	6.3%	7.5%	-0.1%	0.62
REWU	2.9%	2.9%	8.5%	-0.3%	0.49
RGJ	0.7%	4.2%	6.0%	-0.0%	0.65
RUY	1.9%	5.7%	9.0%	1.6%	0.62
RVSL	2.3%	7.9%	10.2%	2.3%	0.65
RX	1.7%	7.9%	14.5%	2.8%	0.68

RZHH	-1.8%	4.2%	8.2%	-1.1%	0.43
SDZ	2.1%	7.4%	6.7%	1.5%	0.65
SPD	-0.7%	4.1%	6.9%	1.9%	0.59
SRGR	0.2%	5.2%	13.9%	2.5%	0.72
SWU	-1.1%	0.8%	7.9%	-0.4%	0.41
TE	3.0%	2.5%	5.4%	1.7%	0.45
TIR	-0.0%	0.7%	8.5%	0.4%	0.47
TJC	2.8%	4.7%	5.2%	-0.1%	0.41
TQP	0.6%	4.4%	4.4%	-0.1%	0.61
VCTN	2.9%	4.5%	7.0%	0.5%	0.61
VF	3.7%	2.9%	8.6%	-0.3%	0.45
VKG	1.5%	1.1%	7.3%	-0.3%	0.56
VQX	1.7%	6.9%	10.5%	0.4%	0.62
XJP	1.4%	6.7%	9.2%	0.3%	0.50
XLC	2.4%	2.0%	10.2%	1.5%	0.69
XN	-1.3%	3.1%	7.5%	0.7%	0.51
XXQ	1.1%	6.1%	7.3%	2.1%	0.54
XYSZ	170.3%	133.7%	35.7%	4.2%	0.34
ZPB	-43.4%	-38.6%	-39.7%	-4.6%	-0.10
ZR	-12.6%	-33.2%	-8.3%	-7.0%	-0.69

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
PPMY	✓	✓	✗	✓	✓	✓	✓
ZR	✓	✓	✗	✗	✓	✓	✓
ZPB	✓	✓	✗	✓	✓	✗	✓
XYSZ	✓	✓	✗	✗	✗	✗	✗
NS	✓	✓	✗	✗	✗	✗	✗
MTBH	✓	✗	✗	✗	✗	✗	✗
XLC	✓	✗	✗	✗	✗	✗	✗
DBY	✓	✗	✗	✗	✗	✗	✗
RUY	✓	✗	✗	✗	✗	✗	✗
CS	✗	✗	✗	✗	✗	✗	✗
AJQ	✗	✗	✗	✗	✗	✗	✗
AWK	✗	✗	✗	✗	✗	✗	✗
REWU	✗	✗	✗	✗	✗	✗	✗
SRGR	✗	✗	✗	✗	✗	✗	✗
PYTY	✗	✗	✗	✗	✗	✗	✗
XN	✗	✗	✗	✗	✗	✗	✗

BM	X	X	X	X	X	X	X
VKG	X	X	X	X	X	X	X
XJP	X	X	X	X	X	X	X
CGTN	X	X	X	X	X	X	X
PODS	X	X	X	X	X	X	X
NCIH	X	X	X	X	X	X	X
RX	X	X	X	X	X	X	X
SPD	X	X	X	X	X	X	X
PNV	X	X	X	X	X	X	X
SDZ	X	X	X	X	X	X	X
MWS	X	X	X	X	X	X	X
DFVE	X	X	X	X	X	X	X
VF	X	X	X	X	X	X	X
SWU	X	X	X	X	X	X	X
VQX	X	X	X	X	X	X	X
TQP	X	X	X	X	X	X	X
CBYM	X	X	X	X	X	X	X
TIR	X	X	X	X	X	X	X
BFR	X	X	X	X	X	X	X
RVSL	X	X	X	X	X	X	X
RZHH	X	X	X	X	X	X	X
RGJ	X	X	X	X	X	X	X
DKWE	X	X	X	X	X	X	X
XXQ	X	X	X	X	X	X	X
PF	X	X	X	X	X	X	X
MP	X	X	X	X	X	X	X
VCTN	X	X	X	X	X	X	X
CBO	X	X	X	X	X	X	X
GG	X	X	X	X	X	X	X
TJC	X	X	X	X	X	X	X
MYX	X	X	X	X	X	X	X
CQH	X	X	X	X	X	X	X
TE	X	X	X	X	X	X	X
CEC	X	X	X	X	X	X	X

Data Summary:

- Total Assets: 50
- Data Generated: 2025-10-15 17:24:38
- 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.