Portfolio Risk Analysis Report

Report Date: February 22, 2026
Portfolio Size: 75 Assets
Analysis Period: 12 Months
Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 9 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 66 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 75 assets with a combined market capitalization of $10245.2 billion. **Key Findings:** • 9 assets (12.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 43.0% • Maximum drawdown observed: -71.4% **Risk Concentration:** The analysis reveals significant risk concentration in 9 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 5 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.318 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap ($B)	Percentage
Technology	5	1951.63	19.0%
Healthcare	8	1743.12	17.0%
Energy	11	1353.35	13.2%
Industrial	7	1174.75	11.5%
Utilities	10	829.24	8.1%
Consumer Staples	11	793.72	7.7%
Financial Services	8	746.61	7.3%
Consumer Discretionary	4	651.73	6.4%
Materials	5	523.42	5.1%
Real Estate	6	477.63	4.7%

Risk Analysis Results

Risk Distribution:
• HIGH RISK (RED): 9 assets
• MEDIUM RISK (YELLOW): 0 assets
• LOW RISK (GREEN): 66 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
RYO	Energy	RED	66.2%	-46.0%	3
CLO	Utilities	RED	87.5%	-71.4%	2
MTO	Industrial	RED	89.2%	-57.3%	2
MWL	Utilities	RED	54.3%	-56.1%	2
PZL	Consumer Staples	RED	93.4%	-56.7%	2

RNEK	Materials	RED	68.5%	-64.9%	2
ZXO	Consumer Staples	RED	92.2%	-63.6%	2
ALD	Materials	RED	53.6%	-45.1%	2
PAI	Consumer Staples	RED	39.7%	-40.8%	2

Machine Learning Analysis

Advanced machine learning techniques were applied to identify anomalies and predict future risk ratings. **Anomaly Detection Summary:**
• Total Anomalies Detected: 12
• Critical Anomalies: 3
• High Risk Anomalies: 6
• Anomaly Rate: 16.0%
Risk Prediction Model:
• Model Accuracy: 100.0%
• Rating Changes Predicted: 0
• Assets Predicted to Deteriorate: 0
• Assets Predicted to Improve: 0

Key Machine Learning Insights

• 3 assets show critical anomalous behavior requiring immediate review
• Anomaly detection identified 12 assets with unusual patterns
• Key risk drivers: Max Drawdown, Sharpe Ratio, Volatility

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
PAI	Consumer Staples	100.0	CRITICAL	Critical anomaly - Consider immediate po...
RNEK	Materials	91.7	CRITICAL	Critical anomaly - Consider immediate po...
ZXO	Consumer Staples	80.6	CRITICAL	Critical anomaly - Consider immediate po...
CLO	Utilities	79.6	HIGH	Significant anomaly - Conduct thorough d...
ALD	Materials	77.0	HIGH	Significant anomaly - Conduct thorough d...
MTO	Industrial	75.6	HIGH	Significant anomaly - Conduct thorough d...
PZL	Consumer Staples	75.2	HIGH	Significant anomaly - Conduct thorough d...
RYO	Energy	72.6	HIGH	Significant anomaly - Conduct thorough d...
MWL	Utilities	70.4	HIGH	Significant anomaly - Conduct thorough d...

Top Risk Factors (Feature Importance)

1. Max Drawdown: 36.5% importance
2. Sharpe Ratio: 23.8% importance
3. Volatility: 14.3% importance
4. Volume Decline: 8.1% importance
5. Price Change 6M: 6.5% importance

ML Validation Results

Overall Validation Status: WARNING
Checks Passed: 3 / 4

✓ **Anomaly Detection Validation:** PASS
total_assets: 75, anomalies_detected: 12, anomaly_rate: 16.0
■ **Risk Prediction Validation:** WARNING
model_accuracy: 100.0, predictions_made: 75, rating_changes: 0
✓ **Feature Quality Validation:** PASS
features_checked: 9, nan_features: 0, total_samples: 75
✓ **Feature Importance Validation:** PASS
total_importance: 100.0, top_feature: Max Drawdown, top_importance: 36.5

Validation Warnings (1):
1. Suspiciously high accuracy: 100.0% (possible overfitting)

Sentiment Analysis

Sentiment analysis was conducted on 9 RED-flagged assets using financial news from the past 12 months. **Key Findings:**
• Average sentiment score: -0.318
• Assets with negative sentiment: 5/9
• Total news articles analyzed: 206

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
RYO	-0.492	NEGATIVE	28	STABLE	earnings, market_share, financial_health
ALD	-0.392	NEGATIVE	25	DETERIORATING	regulatory, earnings, financial_health
RNEK	-0.360	NEGATIVE	27	IMPROVING	regulatory, earnings, market_share
CLO	-0.331	NEGATIVE	28	IMPROVING	earnings, regulatory, operations
ZXO	-0.307	NEGATIVE	15	STABLE	financial_health, earnings, regulatory
MWL	-0.290	NEUTRAL	27	STABLE	regulatory, financial_health, earnings
PZL	-0.274	NEUTRAL	19	DETERIORATING	regulatory, earnings, financial_health
MTO	-0.250	NEUTRAL	21	DETERIORATING	earnings, financial_health, regulatory
PAI	-0.169	NEUTRAL	16	IMPROVING	financial_health, earnings, regulatory

Detailed Asset Analysis

Asset: RYO

Sector: Energy
Current Price: $128.08
Market Cap: $107.62B
Risk Rating: RED
Risk Metrics:
• Volatility: 66.2%
• Maximum Drawdown: -46.0%
• Beta: -0.04
• Sharpe Ratio: -0.26
• RSI: 53.8
Performance:
• 1-Month Return: 3.1%
• 3-Month Return: -30.4%
• 6-Month Return: -13.6%
Risk Flags:
• High Volatility, Extreme Drawdown, Extended Decline
Market Sentiment:
• Sentiment Score: -0.492 (NEGATIVE)
• News Articles: 28
• Trend: STABLE

Asset: CLO

Sector: Utilities
Current Price: $40.93
Market Cap: $58.89B
Risk Rating: RED
Risk Metrics:
• Volatility: 87.5%
• Maximum Drawdown: -71.4%
• Beta: -0.02
• Sharpe Ratio: -0.06
• RSI: 66.0
Performance:
• 1-Month Return: 16.5%
• 3-Month Return: 17.1%
• 6-Month Return: -38.8%
Risk Flags:
• High Volatility, Extreme Drawdown
Market Sentiment:
• Sentiment Score: -0.331 (NEGATIVE)
• News Articles: 28
• Trend: IMPROVING

Asset: MTO

Sector: Industrial
Current Price: $163.83
Market Cap: $253.24B
Risk Rating: RED
Risk Metrics:
• Volatility: 89.2%
• Maximum Drawdown: -57.3%
• Beta: 0.29
• Sharpe Ratio: 0.12
• RSI: 82.2
Performance:
• 1-Month Return: 45.1%

- 3-Month Return: 16.9%
- 6-Month Return: -13.9%

Risk Flags:
- High Volatility, Extreme Drawdown

Market Sentiment:
- Sentiment Score: -0.250 (NEUTRAL)
- News Articles: 21
- Trend: DETERIORATING

Asset: MWL

Sector: Utilities
Current Price: $64.18
Market Cap: $5.74B
Risk Rating: RED
Risk Metrics:
- Volatility: 54.3%
- Maximum Drawdown: -56.1%
- Beta: 0.21
- Sharpe Ratio: -0.20
- RSI: 82.4

Performance:
- 1-Month Return: 39.2%
- 3-Month Return: 13.6%
- 6-Month Return: -1.5%

Risk Flags:
- High Volatility, Extreme Drawdown

Market Sentiment:
- Sentiment Score: -0.290 (NEUTRAL)
- News Articles: 27
- Trend: STABLE

Asset: PZL

Sector: Consumer Staples
Current Price: $103.43
Market Cap: $128.90B
Risk Rating: RED
Risk Metrics:
- Volatility: 93.4%
- Maximum Drawdown: -56.7%
- Beta: 0.32
- Sharpe Ratio: 0.20
- RSI: 79.5

Performance:
- 1-Month Return: 54.4%
- 3-Month Return: 9.3%
- 6-Month Return: -0.1%

Risk Flags:
- High Volatility, Extreme Drawdown

Market Sentiment:
- Sentiment Score: -0.274 (NEUTRAL)
- News Articles: 19
- Trend: DETERIORATING

Recommendations

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

Immediate Actions (RED-flagged assets):

1. Consider reducing position sizes for 9 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 5 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: 2026-02-22 20:21:25
• Analysis Period: 12 months
• Total Assets Analyzed: 75
• 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_20260222_202125.csv
Risk Analysis CSV: risk_analysis_20260222_202125.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
ADQ	-0.7%	5.2%	9.8%	0.8%	0.79
AF	-0.5%	5.5%	10.1%	2.2%	0.74
AI	-1.2%	6.0%	4.3%	0.5%	0.51
ALD	19.2%	25.0%	-13.1%	-9.7%	-0.07
ARW	1.3%	3.3%	7.0%	0.1%	0.63
ASX	3.2%	3.8%	3.5%	0.2%	0.51
AWH	-1.4%	0.8%	6.2%	1.7%	0.56
AYJ	2.1%	3.2%	8.0%	-0.2%	0.63
BS	-0.6%	6.1%	11.4%	0.8%	0.79
BT	1.6%	5.2%	11.8%	1.4%	0.73
CGEZ	-1.5%	6.1%	4.1%	2.2%	0.43
CLO	16.5%	17.1%	-38.8%	3.2%	-0.06
CNW	3.5%	4.4%	8.2%	-0.8%	0.66
CQ	2.9%	0.9%	9.4%	1.3%	0.58
DKT	2.6%	1.7%	8.6%	1.9%	0.66
DMG	3.3%	4.7%	8.9%	0.8%	0.58
DN	-0.2%	6.5%	6.2%	0.8%	0.57
GEZ	1.1%	3.8%	9.4%	-0.7%	0.72
GK	1.6%	2.1%	5.5%	1.4%	0.57
GLY	3.0%	1.3%	5.0%	-0.4%	0.56
GR	-0.9%	5.9%	7.8%	-1.0%	0.72
MACW	-0.7%	6.0%	14.5%	-1.1%	0.68
ME	2.8%	6.2%	10.4%	1.4%	0.56
MT	2.5%	5.8%	5.7%	1.3%	0.51
MTO	45.1%	16.9%	-13.9%	4.0%	0.12
MU	4.4%	6.5%	12.1%	1.6%	0.57
MWL	39.2%	13.6%	-1.5%	-5.7%	-0.20
NBU	0.2%	4.7%	12.3%	1.5%	0.57
NFM	2.9%	5.6%	13.8%	3.5%	0.63
NHBC	0.1%	7.5%	8.6%	1.9%	0.68

NMLT	-0.3%	4.5%	5.3%	3.1%	0.57
NTD	3.2%	1.5%	4.7%	1.4%	0.48
NVX	1.6%	8.2%	13.7%	1.1%	0.70
NWB	0.1%	2.8%	7.1%	1.2%	0.48
NXKA	3.1%	0.2%	9.6%	-0.2%	0.41
PA	4.5%	5.0%	9.2%	1.0%	0.72
PAI	-5.4%	-18.0%	-28.0%	-19.8%	-0.86
PCC	3.8%	6.6%	11.6%	1.4%	0.70
PDF	3.6%	3.7%	6.5%	1.4%	0.55
PI	0.7%	3.5%	11.3%	2.3%	0.69
PLLP	3.0%	7.0%	13.3%	2.0%	0.71
PQG	-0.3%	2.3%	7.1%	-0.5%	0.66
PVT	3.1%	7.1%	11.9%	0.1%	0.67
PZL	54.4%	9.3%	-0.1%	-1.9%	0.20
RBGQ	-0.6%	4.0%	10.6%	1.9%	0.76
RN	-1.3%	2.5%	5.1%	-0.3%	0.39
RNEK	73.9%	86.0%	27.4%	-2.4%	-0.23
RNNV	2.5%	5.1%	15.1%	1.1%	0.70
RYO	3.1%	-30.4%	-13.6%	-3.4%	-0.26
SF	0.8%	3.6%	8.6%	0.7%	0.83
SHD	-1.2%	3.4%	4.9%	0.4%	0.48
SJCB	3.7%	7.5%	8.5%	1.6%	0.60
SJYJ	3.0%	3.9%	7.8%	-0.3%	0.73
SQU	0.8%	2.7%	6.1%	1.3%	0.45
STRA	2.7%	4.0%	5.7%	1.4%	0.44
SXZ	-1.4%	6.7%	10.4%	0.2%	0.56
TB	-0.9%	2.2%	8.3%	1.5%	0.44
TDCR	3.4%	5.4%	15.5%	0.3%	0.72
TMA	2.9%	6.4%	7.4%	1.6%	0.59
TPY	3.7%	1.6%	5.2%	2.6%	0.45
TWEO	2.0%	3.3%	9.9%	-0.7%	0.62
VGX	4.4%	3.6%	10.7%	1.0%	0.52
VHR	3.1%	2.9%	8.5%	0.8%	0.53
VIB	2.0%	2.1%	7.1%	1.8%	0.47
VIE	3.0%	7.4%	9.8%	0.1%	0.75
VJR	1.5%	1.1%	6.9%	2.1%	0.48
VMPY	1.3%	7.8%	10.3%	1.5%	0.75
VMZ	2.8%	2.4%	11.5%	1.2%	0.64
VP	-0.3%	9.0%	9.1%	2.0%	0.69
VQV	2.9%	3.5%	6.9%	-0.7%	0.53
VYD	2.5%	7.9%	12.4%	1.4%	0.60

XZW	3.1%	3.2%	5.4%	0.5%	0.46
ZB	0.6%	2.8%	10.3%	-0.2%	0.83
ZFQB	-1.2%	7.8%	9.8%	0.8%	0.64
ZXO	61.7%	34.7%	42.4%	0.6%	-0.12

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
RYO	✓	✓	✗	✗	✓	✗	✗
CLO	✓	✓	✗	✗	✗	✗	✗
MTO	✓	✓	✗	✗	✗	✗	✗
MWL	✓	✓	✗	✗	✗	✗	✗
PZL	✓	✓	✗	✗	✗	✗	✗
RNEK	✓	✓	✗	✗	✗	✗	✗
ZXO	✓	✓	✗	✗	✗	✗	✗
ALD	✓	✓	✗	✗	✗	✗	✗
PAI	✗	✓	✗	✗	✗	✓	✗
DN	✓	✗	✗	✗	✗	✗	✗
GR	✓	✗	✗	✗	✗	✗	✗
ARW	✓	✗	✗	✗	✗	✗	✗
PDF	✓	✗	✗	✗	✗	✗	✗
NHBC	✓	✗	✗	✗	✗	✗	✗
NFM	✓	✗	✗	✗	✗	✗	✗
VJR	✓	✗	✗	✗	✗	✗	✗
TWEO	✓	✗	✗	✗	✗	✗	✗
TPY	✓	✗	✗	✗	✗	✗	✗
NVX	✓	✗	✗	✗	✗	✗	✗
PVT	✓	✗	✗	✗	✗	✗	✗
VP	✓	✗	✗	✗	✗	✗	✗
DKT	✓	✗	✗	✗	✗	✗	✗
SJCB	✓	✗	✗	✗	✗	✗	✗
VQV	✓	✗	✗	✗	✗	✗	✗
PA	✓	✗	✗	✗	✗	✗	✗
MU	✓	✗	✗	✗	✗	✗	✗
VIB	✓	✗	✗	✗	✗	✗	✗
ZB	✗	✗	✗	✗	✗	✗	✗
VIE	✗	✗	✗	✗	✗	✗	✗
VMPY	✗	✗	✗	✗	✗	✗	✗
RBGQ	✗	✗	✗	✗	✗	✗	✗
PCC	✗	✗	✗	✗	✗	✗	✗

VHR	✗	✗	✗	✗	✗	✗	✗
DMG	✗	✗	✗	✗	✗	✗	✗
STRA	✗	✗	✗	✗	✗	✗	✗
VGX	✗	✗	✗	✗	✗	✗	✗
VMZ	✗	✗	✗	✗	✗	✗	✗
MACW	✗	✗	✗	✗	✗	✗	✗
SF	✗	✗	✗	✗	✗	✗	✗
NBU	✗	✗	✗	✗	✗	✗	✗
ASX	✗	✗	✗	✗	✗	✗	✗
SQU	✗	✗	✗	✗	✗	✗	✗
ZFQB	✗	✗	✗	✗	✗	✗	✗
NXKA	✗	✗	✗	✗	✗	✗	✗
XZW	✗	✗	✗	✗	✗	✗	✗
BT	✗	✗	✗	✗	✗	✗	✗
TDCR	✗	✗	✗	✗	✗	✗	✗
GLY	✗	✗	✗	✗	✗	✗	✗
CNW	✗	✗	✗	✗	✗	✗	✗
PI	✗	✗	✗	✗	✗	✗	✗
GEZ	✗	✗	✗	✗	✗	✗	✗
SXZ	✗	✗	✗	✗	✗	✗	✗
NWB	✗	✗	✗	✗	✗	✗	✗
NMLT	✗	✗	✗	✗	✗	✗	✗
RN	✗	✗	✗	✗	✗	✗	✗
PLLP	✗	✗	✗	✗	✗	✗	✗
PQG	✗	✗	✗	✗	✗	✗	✗
GK	✗	✗	✗	✗	✗	✗	✗
NTD	✗	✗	✗	✗	✗	✗	✗
SJYJ	✗	✗	✗	✗	✗	✗	✗
VYD	✗	✗	✗	✗	✗	✗	✗
TMA	✗	✗	✗	✗	✗	✗	✗
AF	✗	✗	✗	✗	✗	✗	✗
CQ	✗	✗	✗	✗	✗	✗	✗
MT	✗	✗	✗	✗	✗	✗	✗
AI	✗	✗	✗	✗	✗	✗	✗
AWH	✗	✗	✗	✗	✗	✗	✗
CGEZ	✗	✗	✗	✗	✗	✗	✗
ME	✗	✗	✗	✗	✗	✗	✗
RNNV	✗	✗	✗	✗	✗	✗	✗
SHD	✗	✗	✗	✗	✗	✗	✗
BS	✗	✗	✗	✗	✗	✗	✗
TB	✗	✗	✗	✗	✗	✗	✗

| ADQ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| AYJ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

Data Summary:
• Total Assets: 75
• Data Generated: 2026-02-22 20:21:25
• 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.