

# Portfolio Risk Analysis Report

**Report Date:** February 23, 2026  
**Portfolio Size:** 25 Assets  
**Analysis Period:** 12 Months  
**Generated by:** Automated Risk Analysis Pipeline

## Risk Assessment Summary

**HIGH RISK (RED):** 4 Assets  
**MEDIUM RISK (YELLOW):** 0 Assets  
**LOW RISK (GREEN):** 21 Assets

## Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 25 assets with a combined market capitalization of \$3095.5 billion. **Key Findings:** • 4 assets (16.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 47.6% • Maximum drawdown observed: -81.0% **Risk Concentration:** The analysis reveals significant risk concentration in 4 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 2 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.308 • News coverage indicates heightened market concern for these positions

## Portfolio Overview

### Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Technology	4	1063.65	34.4%
Financial Services	6	578.20	18.7%
Healthcare	1	306.61	9.9%
Energy	4	305.37	9.9%
Consumer Discretionary	2	293.90	9.5%
Materials	2	238.22	7.7%
Consumer Staples	4	146.98	4.7%
Utilities	1	107.38	3.5%
Industrial	1	55.23	1.8%

## Risk Analysis Results

### Risk Distribution:

- HIGH RISK (RED): 4 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 21 assets

### High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
DWL	Industrial	RED	58.6%	-39.8%	4
SSR	Financial Services	RED	127.3%	-81.0%	2
AEQ	Consumer Staples	RED	50.3%	-58.3%	2
MZE	Consumer Staples	RED	132.0%	-68.3%	2

# 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: 4
- High Risk Anomalies: 0
- 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

- 4 assets show critical anomalous behavior requiring immediate review
- 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
MZE	Consumer Staples	100.0	CRITICAL	Critical anomaly - Consider immediate po...
SSR	Financial Services	95.9	CRITICAL	Critical anomaly - Consider immediate po...
DWL	Industrial	89.7	CRITICAL	Critical anomaly - Consider immediate po...
AEQ	Consumer Staples	81.5	CRITICAL	Critical anomaly - Consider immediate po...

## Top Risk Factors (Feature Importance)

1. Max Drawdown: 26.2% importance
2. Sharpe Ratio: 15.1% importance
3. Volatility: 13.9% importance
4. Price Change 3M: 11.1% importance
5. Price Change 6M: 9.4% importance

## ML Validation Results

**Overall Validation Status:** WARNING

**Checks Passed:** 3 / 4

✓ **Anomaly Detection Validation:** PASS

total\_assets: 25, anomalies\_detected: 4, anomaly\_rate: 16.0

■ **Risk Prediction Validation:** WARNING

model\_accuracy: 100.0, predictions\_made: 25, rating\_changes: 0

✓ **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: 26.2

**Validation Warnings (1):**

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

**Sentiment Analysis**

Sentiment analysis was conducted on 4 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: -0.308
- Assets with negative sentiment: 2/4
- Total news articles analyzed: 70

**Sentiment Analysis Results**

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
SSR	-0.443	NEGATIVE	20	IMPROVING	regulatory, financial_health, earnings
AEQ	-0.423	NEGATIVE	16	IMPROVING	earnings, financial_health, regulatory
MZE	-0.277	NEUTRAL	18	DETERIORATING	earnings, financial_health, operations
DWL	-0.090	NEUTRAL	16	STABLE	earnings, regulatory, management

**Detailed Asset Analysis**

**Asset: DWL**

**Sector:** Industrial

**Current Price:** \$35.92

**Market Cap:** \$55.23B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 58.6%
- Maximum Drawdown: -39.8%
- Beta: -0.15
- Sharpe Ratio: -0.14
- RSI: 33.5

**Performance:**

- 1-Month Return: -35.8%
- 3-Month Return: -20.4%
- 6-Month Return: -8.5%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: -0.090 (NEUTRAL)
- News Articles: 16
- Trend: STABLE

**Asset: SSR**

**Sector:** Financial Services

**Current Price:** \$119.01

**Market Cap:** \$148.82B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 127.3%
- Maximum Drawdown: -81.0%
- Beta: -0.36
- Sharpe Ratio: 0.06
- RSI: 74.4

**Performance:**

- 1-Month Return: 30.0%
- 3-Month Return: -14.2%
- 6-Month Return: -35.5%

**Risk Flags:**

- High Volatility, Extreme Drawdown

**Market Sentiment:**

- Sentiment Score: -0.443 (NEGATIVE)
- News Articles: 20
- Trend: IMPROVING

## Asset: AEQ

**Sector:** Consumer Staples

**Current Price:** \$88.23

**Market Cap:** \$39.14B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 50.3%
- Maximum Drawdown: -58.3%
- Beta: 0.02
- Sharpe Ratio: -0.45
- RSI: 54.9

**Performance:**

- 1-Month Return: 0.5%
- 3-Month Return: 48.9%
- 6-Month Return: -1.7%

**Risk Flags:**

- High Volatility, Extreme Drawdown

**Market Sentiment:**

- Sentiment Score: -0.423 (NEGATIVE)
- News Articles: 16
- Trend: IMPROVING

## Asset: MZE

**Sector:** Consumer Staples

**Current Price:** \$111.86

**Market Cap:** \$59.15B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 132.0%
- Maximum Drawdown: -68.3%
- Beta: 0.46
- Sharpe Ratio: 0.22
- RSI: 70.1

**Performance:**

- 1-Month Return: 51.5%

- 3-Month Return: 62.0%
- 6-Month Return: 56.6%

**Risk Flags:**

- High Volatility, Extreme Drawdown

**Market Sentiment:**

- Sentiment Score: -0.277 (NEUTRAL)
- News Articles: 18
- 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 4 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: 2026-02-23 19:54:56
- 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\_20260223\_195456.csv

**Risk Analysis CSV:** risk\_analysis\_20260223\_195456.csv

The tables below provide summary information for quick reference.

### Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AEQ	0.5%	48.9%	-1.7%	-7.7%	-0.45
BA	-1.4%	3.0%	7.1%	3.0%	0.54
BA	4.7%	3.6%	11.0%	0.6%	0.66
BCGZ	1.5%	8.4%	9.0%	1.9%	0.78
CG	4.0%	6.8%	8.6%	0.6%	0.61
DDY	2.0%	1.0%	4.5%	1.0%	0.47
DWB	2.7%	6.7%	9.5%	0.8%	0.78
DWL	-35.8%	-20.4%	-8.5%	-3.1%	-0.14
GMXA	3.2%	2.2%	9.9%	0.9%	0.55
GOGO	2.4%	1.5%	7.3%	0.4%	0.56
MDQN	-0.5%	7.1%	10.4%	2.1%	0.75
MNLA	1.1%	7.6%	12.0%	-1.2%	0.74
MZE	51.5%	62.0%	56.6%	6.0%	0.22
NFZ	3.3%	6.3%	11.7%	1.1%	0.82
NI	-1.1%	3.5%	12.0%	0.5%	0.67
PBM	-0.3%	7.1%	11.0%	0.0%	0.66
RYJ	-0.2%	3.3%	8.4%	3.2%	0.54
SKI	1.2%	3.3%	6.6%	2.5%	0.45
SSR	30.0%	-14.2%	-35.5%	9.7%	0.06
TC	2.1%	7.0%	11.0%	0.1%	0.63
TVU	-1.2%	4.6%	8.5%	2.3%	0.55
TZTU	1.6%	7.6%	11.6%	1.8%	0.66
VHYO	1.9%	5.5%	12.9%	0.4%	0.63
VJ	-0.0%	7.5%	7.1%	-0.4%	0.54
XBE	2.2%	6.3%	10.0%	-0.3%	0.71

### Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
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DWL	✓	✓	✗	✓	✗	✗	✓
SSR	✓	✓	✗	✗	✗	✗	✗
AEQ	✓	✓	✗	✗	✗	✗	✗
MZE	✓	✓	✗	✗	✗	✗	✗
VJ	✓	✗	✗	✗	✗	✗	✗
PBM	✓	✗	✗	✗	✗	✗	✗
GMXA	✓	✗	✗	✗	✗	✗	✗
CG	✓	✗	✗	✗	✗	✗	✗
MDQN	✓	✗	✗	✗	✗	✗	✗
RYJ	✓	✗	✗	✗	✗	✗	✗
XBE	✓	✗	✗	✗	✗	✗	✗
BA	✗	✗	✗	✗	✗	✗	✗
BA	✗	✗	✗	✗	✗	✗	✗
NFZ	✗	✗	✗	✗	✗	✗	✗
MNLA	✗	✗	✗	✗	✗	✗	✗
BCGZ	✗	✗	✗	✗	✗	✗	✗
DDY	✗	✗	✗	✗	✗	✗	✗
SKI	✗	✗	✗	✗	✗	✗	✗
NI	✗	✗	✗	✗	✗	✗	✗
TZTU	✗	✗	✗	✗	✗	✗	✗
GOGO	✗	✗	✗	✗	✗	✗	✗
DWB	✗	✗	✗	✗	✗	✗	✗
TVU	✗	✗	✗	✗	✗	✗	✗
VHYO	✗	✗	✗	✗	✗	✗	✗
TC	✗	✗	✗	✗	✗	✗	✗

#### Data Summary:

- Total Assets: 25
- Data Generated: 2026-02-23 19:54:56
- 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.