

Portfolio Risk Analysis Report

Report Date: February 23, 2026

Portfolio Size: 53 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): 48 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 53 assets with a combined market capitalization of \$6029.4 billion. **Key Findings:** • 5 assets (9.4%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 42.1% • Maximum drawdown observed: -70.6% **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: -0.229 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Consumer Discretionary	7	1095.98	18.2%
Industrial	10	1071.45	17.8%
Real Estate	5	799.30	13.3%
Materials	5	705.01	11.7%
Utilities	7	589.09	9.8%
Healthcare	5	494.89	8.2%
Energy	3	401.29	6.7%
Technology	4	385.53	6.4%
Consumer Staples	4	279.66	4.6%
Financial Services	3	207.22	3.4%

Risk Analysis Results

Risk Distribution:

- HIGH RISK (RED): 5 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 48 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
ZWZ	Utilities	RED	69.2%	-59.1%	3
BHLZ	Energy	RED	69.6%	-55.9%	2
PKX	Industrial	RED	76.7%	-54.1%	2
CJU	Technology	RED	66.2%	-60.8%	2
ALO	Industrial	RED	70.6%	-70.6%	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: 15.1%

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

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

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
ALO	Industrial	100.0	CRITICAL	Critical anomaly - Consider immediate po...
ZWZ	Utilities	85.2	CRITICAL	Critical anomaly - Consider immediate po...
BHLZ	Energy	71.8	HIGH	Significant anomaly - Conduct thorough d...
CJU	Technology	70.3	HIGH	Significant anomaly - Conduct thorough d...
PKX	Industrial	69.1	HIGH	Significant anomaly - Conduct thorough d...

Top Risk Factors (Feature Importance)

1. Max Drawdown: 24.5% importance
2. Volatility: 17.0% importance
3. Sharpe Ratio: 16.0% importance
4. Price Change 3M: 11.7% importance
5. Price Change 1M: 10.6% importance

ML Validation Results

Overall Validation Status: WARNING

Checks Passed: 3 / 4

✓ **Anomaly Detection Validation:** PASS

total_assets: 53, anomalies_detected: 8, anomaly_rate: 15.1

■ **Risk Prediction Validation:** WARNING

model_accuracy: 100.0, predictions_made: 53, rating_changes: 0

✓ **Feature Quality Validation:** PASS

features_checked: 9, nan_features: 0, total_samples: 53
✓ **Feature Importance Validation:** PASS
total_importance: 100.0, top_feature: Max Drawdown, top_importance: 24.5

Validation Warnings (1):

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

Sentiment Analysis

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

- Average sentiment score: -0.229
- Assets with negative sentiment: 2/5
- Total news articles analyzed: 113

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
BHLZ	-0.310	NEGATIVE	23	IMPROVING	regulatory, earnings, market_share
CJU	-0.303	NEGATIVE	30	STABLE	regulatory, earnings, management
ZWZ	-0.206	NEUTRAL	15	IMPROVING	earnings, regulatory, market_share
ALO	-0.198	NEUTRAL	26	IMPROVING	financial_health, earnings, regulatory
PKX	-0.126	NEUTRAL	19	IMPROVING	regulatory, earnings, growth

Detailed Asset Analysis

Asset: ZWZ

Sector: Utilities

Current Price: \$59.45

Market Cap: \$16.92B

Risk Rating: RED

Risk Metrics:

- Volatility: 69.2%
- Maximum Drawdown: -59.1%
- Beta: -0.11
- Sharpe Ratio: -0.34
- RSI: 28.7

Performance:

- 1-Month Return: -13.4%
- 3-Month Return: -20.2%
- 6-Month Return: -37.9%

Risk Flags:

- High Volatility, Extreme Drawdown, Momentum Breakdown

Market Sentiment:

- Sentiment Score: -0.206 (NEUTRAL)
- News Articles: 15

- Trend: IMPROVING

Asset: BHLZ

Sector: Energy

Current Price: \$146.65

Market Cap: \$135.76B

Risk Rating: RED

Risk Metrics:

- Volatility: 69.6%
- Maximum Drawdown: -55.9%
- Beta: 0.01
- Sharpe Ratio: -0.30
- RSI: 73.9

Performance:

- 1-Month Return: 36.5%
- 3-Month Return: 16.6%
- 6-Month Return: 12.1%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.310 (NEGATIVE)
- News Articles: 23

- Trend: IMPROVING

Asset: PKX

Sector: Industrial

Current Price: \$158.93

Market Cap: \$266.46B

Risk Rating: RED

Risk Metrics:

- Volatility: 76.7%
- Maximum Drawdown: -54.1%
- Beta: 0.07
- Sharpe Ratio: 0.18
- RSI: 73.8

Performance:

- 1-Month Return: 24.8%
- 3-Month Return: 20.4%
- 6-Month Return: -6.2%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.126 (NEUTRAL)
- News Articles: 19

- Trend: IMPROVING

Asset: CJU

Sector: Technology

Current Price: \$86.94

Market Cap: \$102.00B

Risk Rating: RED

Risk Metrics:

- Volatility: 66.2%
- Maximum Drawdown: -60.8%
- Beta: -0.45
- Sharpe Ratio: -0.42
- RSI: 60.5

Performance:

- 1-Month Return: 12.0%
- 3-Month Return: -5.6%
- 6-Month Return: -5.2%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.303 (NEGATIVE)
- News Articles: 30
- Trend: STABLE

Asset: ALO

Sector: Industrial

Current Price: \$86.59

Market Cap: \$28.25B

Risk Rating: RED

Risk Metrics:

- Volatility: 70.6%
- Maximum Drawdown: -70.6%
- Beta: -0.66
- Sharpe Ratio: -0.07
- RSI: 79.6

Performance:

- 1-Month Return: 49.3%
- 3-Month Return: 70.2%
- 6-Month Return: 124.3%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.198 (NEUTRAL)
- News Articles: 26
- 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 ≤ Score ≤ 0.3

Report Generation Details:

- Generated: 2026-02-23 20:36:50
- Analysis Period: 12 months
- Total Assets Analyzed: 53
- 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_203650.csv

Risk Analysis CSV: risk_analysis_20260223_203650.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AG	0.1%	6.0%	14.1%	0.4%	0.79
AIRL	2.9%	5.0%	8.6%	-0.6%	0.51
ALO	49.3%	70.2%	124.3%	-19.2%	-0.07
BHLZ	36.5%	16.6%	12.1%	9.0%	-0.30
BIAV	-1.0%	2.2%	9.3%	3.6%	0.60
BNO	-0.6%	4.1%	13.5%	2.3%	0.65
BRX	0.4%	8.2%	12.4%	0.7%	0.69
BS	1.1%	4.5%	13.2%	2.9%	0.71
BV	4.2%	3.5%	9.5%	2.0%	0.46
CAW	2.8%	5.4%	5.1%	0.1%	0.53
CBLX	-0.6%	5.7%	10.3%	0.8%	0.66
CESA	0.6%	6.1%	9.5%	1.0%	0.61
CESA	3.0%	4.2%	8.2%	1.2%	0.70
CJU	12.0%	-5.6%	-5.2%	3.9%	-0.42
CVQV	2.2%	7.0%	14.0%	3.4%	0.75
DHVQ	3.5%	8.4%	14.9%	-1.3%	0.76
DJBT	-0.3%	3.6%	12.9%	0.9%	0.61
DRQ	2.9%	2.3%	8.4%	2.8%	0.54
GBY	4.3%	6.4%	11.1%	2.7%	0.64
GGU	2.9%	6.0%	9.5%	1.9%	0.74
GPW	1.2%	2.7%	10.8%	-0.9%	0.66
MEMJ	1.2%	3.8%	11.6%	1.0%	0.69
MSI	3.6%	5.2%	13.5%	0.6%	0.62
MWA	0.2%	3.2%	9.3%	1.1%	0.65
NDG	-0.2%	3.8%	9.2%	1.7%	0.62
NFP	0.3%	4.2%	10.5%	2.5%	0.61
NORL	-1.4%	3.5%	7.2%	0.2%	0.64
NOY	1.9%	7.4%	8.6%	0.5%	0.58
NQ	2.8%	3.8%	8.2%	0.9%	0.63
NSSW	2.9%	6.7%	10.8%	-0.1%	0.75

NVKO	0.1%	8.8%	12.1%	-0.0%	0.75
NZSW	0.1%	0.9%	5.6%	-0.7%	0.51
PKX	24.8%	20.4%	-6.2%	-2.0%	0.18
PY	3.9%	6.0%	7.9%	2.3%	0.74
RILH	2.8%	4.6%	8.4%	-1.0%	0.68
RSN	1.6%	3.2%	6.9%	1.2%	0.61
SH	-1.5%	4.2%	9.3%	0.5%	0.69
SNAM	2.2%	1.2%	3.3%	0.3%	0.42
SOS	-1.5%	3.3%	6.6%	2.1%	0.41
ST	0.9%	2.8%	13.3%	1.8%	0.69
STV	0.1%	2.9%	13.5%	-1.2%	0.81
TERM	-1.1%	0.5%	9.0%	-1.1%	0.41
TF	2.5%	6.1%	12.5%	4.7%	0.71
TYTG	1.6%	2.8%	6.4%	1.6%	0.52
TYU	-0.5%	2.2%	9.4%	0.5%	0.57
TZ	-1.6%	0.5%	4.0%	1.8%	0.43
VLH	3.2%	2.5%	7.9%	1.2%	0.48
VWC	0.3%	3.7%	9.4%	0.6%	0.53
XDD	1.0%	5.4%	4.2%	1.6%	0.50
ZGA	1.1%	5.5%	10.0%	1.4%	0.44
ZLX	0.8%	2.0%	5.5%	-0.0%	0.60
ZRLH	-1.0%	2.7%	12.8%	1.3%	0.65
ZWZ	-13.4%	-20.2%	-37.9%	-9.0%	-0.34

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
ZWZ	✓	✓	✗	✗	✗	✗	✓
BHLZ	✓	✓	✗	✗	✗	✗	✗
PKX	✓	✓	✗	✗	✗	✗	✗
CJU	✓	✓	✗	✗	✗	✗	✗
ALO	✓	✓	✗	✗	✗	✗	✗
ZRLH	✓	✗	✗	✗	✗	✗	✗
VLH	✓	✗	✗	✗	✗	✗	✗
TYTG	✓	✗	✗	✗	✗	✗	✗
TERM	✓	✗	✗	✗	✗	✗	✗
AIRL	✓	✗	✗	✗	✗	✗	✗
SOS	✓	✗	✗	✗	✗	✗	✗
TZ	✓	✗	✗	✗	✗	✗	✗
XDD	✓	✗	✗	✗	✗	✗	✗

DRQ	✓	X	X	X	X	X	X
CBLX	✓	X	X	X	X	X	X
CESA	✓	X	X	X	X	X	X
ZGA	✓	X	X	X	X	X	X
PY	X	X	X	X	X	X	X
MSI	X	X	X	X	X	X	X
MWA	X	X	X	X	X	X	X
ST	X	X	X	X	X	X	X
NQ	X	X	X	X	X	X	X
CAW	X	X	X	X	X	X	X
NFP	X	X	X	X	X	X	X
DHVQ	X	X	X	X	X	X	X
VWC	X	X	X	X	X	X	X
BNO	X	X	X	X	X	X	X
CVQV	X	X	X	X	X	X	X
NVKO	X	X	X	X	X	X	X
CESA	X	X	X	X	X	X	X
DJBT	X	X	X	X	X	X	X
BS	X	X	X	X	X	X	X
RSN	X	X	X	X	X	X	X
NSSW	X	X	X	X	X	X	X
BV	X	X	X	X	X	X	X
NORL	X	X	X	X	X	X	X
BIAV	X	X	X	X	X	X	X
GPW	X	X	X	X	X	X	X
SNAM	X	X	X	X	X	X	X
BRX	X	X	X	X	X	X	X
GGU	X	X	X	X	X	X	X
MEMJ	X	X	X	X	X	X	X
ZLX	X	X	X	X	X	X	X
STV	X	X	X	X	X	X	X
NDG	X	X	X	X	X	X	X
TYU	X	X	X	X	X	X	X
NOY	X	X	X	X	X	X	X
AG	X	X	X	X	X	X	X
NZSW	X	X	X	X	X	X	X
SH	X	X	X	X	X	X	X
GBY	X	X	X	X	X	X	X
TF	X	X	X	X	X	X	X
RILH	X	X	X	X	X	X	X

Data Summary:

- Total Assets: 53
- Data Generated: 2026-02-23 20:36:50
- 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.