

# Portfolio Risk Analysis Report

**Report Date:** February 23, 2026

**Portfolio Size:** 91 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):** 82 Assets

## Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 91 assets with a combined market capitalization of \$11866.8 billion. **Key Findings:** • 9 assets (9.9%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 42.2% • Maximum drawdown observed: -73.1% **Risk Concentration:** The analysis reveals significant risk concentration in 9 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 9 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.359 • News coverage indicates heightened market concern for these positions

## Portfolio Overview

### Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Technology	10	2170.63	18.3%
Real Estate	9	1423.85	12.0%
Industrial	8	1376.71	11.6%
Healthcare	10	1360.63	11.5%
Materials	12	1161.26	9.8%
Energy	9	1103.43	9.3%
Consumer Discretionary	8	1087.47	9.2%
Utilities	9	822.89	6.9%
Financial Services	10	793.96	6.7%
Consumer Staples	6	566.02	4.8%

## Risk Analysis Results

### Risk Distribution:

- HIGH RISK (RED): 9 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 82 assets

### High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
RBC	Healthcare	RED	75.5%	-62.5%	5
ZRRB	Financial Services	RED	45.9%	-43.4%	3
CM	Utilities	RED	59.8%	-33.4%	3
XJT	Technology	RED	120.0%	-69.2%	2
SE	Healthcare	RED	67.6%	-59.6%	2

BH	Industrial	RED	75.2%	-52.9%	2
ZNKE	Energy	RED	79.1%	-67.0%	2
BNM	Energy	RED	72.0%	-73.1%	2
ZBE	Industrial	RED	59.2%	-53.7%	2

## Machine Learning Analysis

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

- Total Anomalies Detected: 14
- Critical Anomalies: 4
- High Risk Anomalies: 5
- Anomaly Rate: 15.4%

### 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 14 assets with unusual patterns
- Key risk drivers: Max Drawdown, Volatility, Sharpe Ratio

## Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
ZNKE	Energy	100.0	CRITICAL	Critical anomaly - Consider immediate po...
XJT	Technology	99.7	CRITICAL	Critical anomaly - Consider immediate po...
RBC	Healthcare	97.4	CRITICAL	Critical anomaly - Consider immediate po...
BH	Industrial	80.1	CRITICAL	Critical anomaly - Consider immediate po...
ZRRB	Financial Services	79.1	HIGH	Significant anomaly - Conduct thorough d...
CM	Utilities	78.7	HIGH	Significant anomaly - Conduct thorough d...
BNM	Energy	75.2	HIGH	Significant anomaly - Conduct thorough d...
SE	Healthcare	74.6	HIGH	Significant anomaly - Conduct thorough d...
ZBE	Industrial	70.2	HIGH	Significant anomaly - Conduct thorough d...

## Top Risk Factors (Feature Importance)

- Max Drawdown: 34.4% importance
- Volatility: 30.6% importance
- Sharpe Ratio: 17.8% importance
- Price Change 1M: 5.3% importance
- Price Change 6M: 5.2% importance

## ML Validation Results

Overall Validation Status: **WARNING**

Checks Passed: 3 / 4

✓ **Anomaly Detection Validation:** PASS

total\_assets: 91, anomalies\_detected: 14, anomaly\_rate: 15.4

■ **Risk Prediction Validation:** WARNING

model\_accuracy: 100.0, predictions\_made: 91, rating\_changes: 0

✓ **Feature Quality Validation:** PASS

features\_checked: 9, nan\_features: 0, total\_samples: 91

✓ **Feature Importance Validation:** PASS

total\_importance: 100.0, top\_feature: Max Drawdown, top\_importance: 34.4

**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: -0.359
- Assets with negative sentiment: 9/9
- Total news articles analyzed: 187

## Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
ZRRB	-0.425	NEGATIVE	15	IMPROVING	earnings, financial_health, management
ZNKE	-0.411	NEGATIVE	18	DETERIORATING	regulatory, management, earnings
RBC	-0.370	NEGATIVE	17	DETERIORATING	financial_health, regulatory, earnings
BNM	-0.361	NEGATIVE	18	IMPROVING	earnings, regulatory, financial_health
ZBE	-0.345	NEGATIVE	21	DETERIORATING	earnings, regulatory, financial_health
BH	-0.335	NEGATIVE	25	IMPROVING	regulatory, financial_health, earnings
CM	-0.335	NEGATIVE	25	IMPROVING	earnings, financial_health, regulatory
SE	-0.332	NEGATIVE	22	IMPROVING	earnings, regulatory, financial_health
XJT	-0.317	NEGATIVE	26	IMPROVING	financial_health, earnings, regulatory

## Detailed Asset Analysis

**Asset: RBC**

**Sector:** Healthcare  
**Current Price:** \$227.41  
**Market Cap:** \$46.56B  
**Risk Rating:** RED  
**Risk Metrics:**

- Volatility: 75.5%
- Maximum Drawdown: -62.5%
- Beta: 0.02
- Sharpe Ratio: 0.10
- RSI: 13.5

**Performance:**

- 1-Month Return: -56.8%
- 3-Month Return: -41.5%
- 6-Month Return: -30.9%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: -0.370 (NEGATIVE)
- News Articles: 17
- Trend: DETERIORATING

## Asset: ZRRB

**Sector:** Financial Services  
**Current Price:** \$128.12  
**Market Cap:** \$33.97B  
**Risk Rating:** RED  
**Risk Metrics:**

- Volatility: 45.9%
- Maximum Drawdown: -43.4%
- Beta: 0.07
- Sharpe Ratio: -0.58
- RSI: 47.8

**Performance:**

- 1-Month Return: -7.3%
- 3-Month Return: -6.7%
- 6-Month Return: -31.1%

**Risk Flags:**

- High Volatility, Extreme Drawdown, Poor Risk Return

**Market Sentiment:**

- Sentiment Score: -0.425 (NEGATIVE)
- News Articles: 15
- Trend: IMPROVING

## Asset: CM

**Sector:** Utilities  
**Current Price:** \$85.46  
**Market Cap:** \$121.10B  
**Risk Rating:** RED  
**Risk Metrics:**

- Volatility: 59.8%
- Maximum Drawdown: -33.4%
- Beta: -0.14
- Sharpe Ratio: -0.34
- RSI: 38.4

**Performance:**

- 1-Month Return: -10.8%

- 3-Month Return: -23.3%
- 6-Month Return: -11.7%

**Risk Flags:**

- High Volatility, Extreme Drawdown, Momentum Breakdown

**Market Sentiment:**

- Sentiment Score: -0.335 (NEGATIVE)
- News Articles: 25
- Trend: IMPROVING

## Asset: XJT

**Sector:** Technology

**Current Price:** \$66.66

**Market Cap:** \$15.45B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 120.0%
- Maximum Drawdown: -69.2%
- Beta: 0.72
- Sharpe Ratio: 0.10
- RSI: 79.6

**Performance:**

- 1-Month Return: 58.3%
- 3-Month Return: 30.0%
- 6-Month Return: 38.3%

**Risk Flags:**

- High Volatility, Extreme Drawdown

**Market Sentiment:**

- Sentiment Score: -0.317 (NEGATIVE)
- News Articles: 26
- Trend: IMPROVING

## Asset: SE

**Sector:** Healthcare

**Current Price:** \$54.05

**Market Cap:** \$76.55B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 67.6%
- Maximum Drawdown: -59.6%
- Beta: 0.05
- Sharpe Ratio: -0.42
- RSI: 58.8

**Performance:**

- 1-Month Return: 23.8%
- 3-Month Return: 7.7%
- 6-Month Return: 14.1%

**Risk Flags:**

- High Volatility, Extreme Drawdown

**Market Sentiment:**

- Sentiment Score: -0.332 (NEGATIVE)
- News Articles: 22
- 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 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 9 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 21:51:45
- Analysis Period: 12 months
- Total Assets Analyzed: 91
- 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\_215145.csv

**Risk Analysis CSV:** risk\_analysis\_20260223\_215145.csv

The tables below provide summary information for quick reference.

### Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AE	-0.7%	5.5%	8.6%	1.0%	0.75
AHY	-0.1%	6.6%	9.1%	0.3%	0.51
AIR	-0.3%	1.1%	5.5%	-0.3%	0.61
AKWR	0.6%	5.9%	10.3%	0.7%	0.58
AUG	-1.0%	4.2%	14.4%	1.1%	0.73
AUL	-1.6%	4.3%	10.1%	1.9%	0.51
BB	-0.6%	4.0%	13.1%	2.5%	0.74
BCO	1.0%	6.6%	11.3%	1.5%	0.55
BH	42.1%	30.2%	-12.9%	3.1%	0.04
BNM	27.4%	-4.2%	-39.2%	-7.4%	-0.23
CBP	4.0%	1.8%	6.4%	0.2%	0.50
CHQK	-0.4%	6.4%	13.3%	1.9%	0.80
CKS	3.4%	6.7%	6.8%	2.0%	0.54
CM	-10.8%	-23.3%	-11.7%	-0.3%	-0.34
CRO	0.5%	1.2%	7.9%	-0.4%	0.64
DER	3.0%	5.6%	6.8%	0.9%	0.65
DGO	0.2%	6.2%	8.1%	1.0%	0.44
DO	0.9%	7.2%	11.6%	0.7%	0.80
DX	1.3%	4.1%	14.8%	1.2%	0.80
GC	2.5%	4.6%	14.4%	0.8%	0.68
GTE	-0.5%	3.8%	8.1%	-0.9%	0.63
GWJ	-0.9%	6.6%	10.3%	0.0%	0.75
MGC	-0.7%	5.3%	11.6%	0.2%	0.59
MIVC	2.4%	1.2%	9.3%	1.3%	0.42
MIX	4.9%	5.3%	9.2%	1.4%	0.84
MKB	2.8%	3.8%	10.2%	1.1%	0.72
MNN	3.5%	4.7%	5.4%	-1.6%	0.48
MNV	3.9%	2.9%	10.5%	1.4%	0.78
MPY	3.1%	2.2%	13.4%	-1.4%	0.63
MTNM	4.0%	3.9%	8.9%	0.2%	0.49

NI	-0.7%	3.2%	5.8%	0.3%	0.49
NJX	2.4%	7.2%	8.2%	2.8%	0.62
NKN	3.0%	0.2%	7.2%	1.5%	0.38
NOH	0.9%	2.8%	3.7%	0.3%	0.54
NPY	0.4%	4.2%	13.1%	0.3%	0.72
NR	-0.8%	1.6%	8.0%	1.5%	0.47
NZWW	3.1%	4.2%	10.5%	1.0%	0.70
PBTU	1.3%	3.0%	10.6%	1.5%	0.58
PHQX	1.0%	4.7%	9.3%	-0.1%	0.61
PN	3.5%	8.1%	12.6%	1.4%	0.79
PN	0.9%	2.4%	14.6%	-0.6%	0.68
PPZ	1.3%	2.4%	7.3%	0.5%	0.55
PTWI	0.8%	3.7%	7.5%	0.6%	0.66
PW	3.8%	3.4%	10.3%	1.7%	0.55
RBC	-56.8%	-41.5%	-30.9%	5.8%	0.10
RBH	0.3%	6.3%	5.3%	3.3%	0.51
RDU	-1.7%	5.6%	8.7%	0.8%	0.58
RMI	1.6%	3.7%	13.1%	1.8%	0.74
RRX	2.1%	3.7%	9.9%	0.4%	0.81
RVA	3.8%	4.4%	12.7%	-0.4%	0.56
SBL	-0.9%	5.9%	4.7%	0.2%	0.52
SDSJ	1.5%	0.8%	4.1%	0.2%	0.48
SE	23.8%	7.7%	14.1%	-8.6%	-0.42
SGO	-1.4%	1.8%	8.4%	-0.5%	0.50
SLY	-0.4%	2.8%	7.0%	3.8%	0.61
SNV	-1.4%	4.3%	6.3%	1.7%	0.55
SRB	2.5%	3.8%	5.2%	0.2%	0.37
SRC	1.7%	2.6%	8.5%	1.7%	0.69
SRY	1.8%	5.1%	6.5%	2.3%	0.63
ST	-0.3%	0.8%	10.5%	1.6%	0.46
STL	3.9%	5.2%	6.7%	1.5%	0.58
SWD	3.8%	1.3%	8.9%	4.7%	0.61
SZ	0.8%	7.3%	10.5%	2.2%	0.76
TLTE	2.3%	2.8%	8.3%	2.8%	0.73
TOX	1.6%	5.8%	12.2%	0.5%	0.69
TSN	3.6%	2.3%	6.1%	1.3%	0.41
TWK	3.0%	3.8%	5.3%	2.0%	0.61
TXN	-0.3%	4.6%	9.0%	0.7%	0.61
VFT	1.9%	5.1%	8.9%	-0.6%	0.63
VJJC	0.9%	4.3%	9.0%	1.9%	0.43
VOIR	0.6%	5.9%	7.9%	1.0%	0.50

VQ	0.2%	5.3%	6.5%	-0.2%	0.50
VRA	2.9%	5.8%	10.8%	2.2%	0.63
VXO	1.6%	4.0%	8.4%	0.4%	0.54
VYE	2.6%	4.4%	5.2%	1.5%	0.47
XJT	58.3%	30.0%	38.3%	-10.8%	0.10
XJV	-0.4%	1.3%	9.3%	0.5%	0.53
XML	2.2%	5.2%	8.4%	0.9%	0.65
XO	-0.6%	1.5%	5.8%	1.1%	0.36
XOYF	-1.3%	6.4%	7.5%	0.4%	0.67
XR	-0.8%	7.5%	10.8%	2.4%	0.70
XUFC	1.1%	5.3%	9.4%	2.8%	0.61
XV	1.1%	2.3%	7.8%	1.2%	0.62
XY	-0.7%	3.8%	10.1%	-0.6%	0.64
ZBE	5.0%	-0.5%	-36.6%	-1.4%	-0.15
ZHO	0.2%	3.3%	5.7%	-0.2%	0.55
ZJX	-1.1%	6.1%	9.9%	2.6%	0.67
ZNKE	36.2%	101.4%	30.2%	-15.1%	0.20
ZRRB	-7.3%	-6.7%	-31.1%	-11.0%	-0.58
ZSF	1.1%	3.4%	6.5%	2.4%	0.51
ZVB	-0.9%	6.5%	13.8%	3.7%	0.72

## Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
RBC	✓	✓	✗	✓	✓	✗	✓
ZRRB	✓	✓	✗	✗	✗	✓	✗
CM	✓	✓	✗	✗	✗	✗	✓
XJT	✓	✓	✗	✗	✗	✗	✗
SE	✓	✓	✗	✗	✗	✗	✗
BH	✓	✓	✗	✗	✗	✗	✗
ZNKE	✓	✓	✗	✗	✗	✗	✗
BNM	✓	✓	✗	✗	✗	✗	✗
ZBE	✓	✓	✗	✗	✗	✗	✗
RVA	✓	✗	✗	✗	✗	✗	✗
XML	✓	✗	✗	✗	✗	✗	✗
RDU	✓	✗	✗	✗	✗	✗	✗
MTNM	✓	✗	✗	✗	✗	✗	✗
MPY	✓	✗	✗	✗	✗	✗	✗
ZHO	✓	✗	✗	✗	✗	✗	✗
TWK	✓	✗	✗	✗	✗	✗	✗

PHQX	✓	X	X	X	X	X	X
CBP	✓	X	X	X	X	X	X
SWD	✓	X	X	X	X	X	X
NI	✓	X	X	X	X	X	X
RRX	✓	X	X	X	X	X	X
VYE	✓	X	X	X	X	X	X
VFT	✓	X	X	X	X	X	X
BB	✓	X	X	X	X	X	X
PPZ	✓	X	X	X	X	X	X
RMI	✓	X	X	X	X	X	X
ZVB	✓	X	X	X	X	X	X
NOH	✓	X	X	X	X	X	X
VOIR	X	X	X	X	X	X	X
XY	X	X	X	X	X	X	X
MGC	X	X	X	X	X	X	X
MKB	X	X	X	X	X	X	X
AHY	X	X	X	X	X	X	X
RBH	X	X	X	X	X	X	X
DX	X	X	X	X	X	X	X
ST	X	X	X	X	X	X	X
VXO	X	X	X	X	X	X	X
PBTU	X	X	X	X	X	X	X
DGO	X	X	X	X	X	X	X
VQ	X	X	X	X	X	X	X
SLY	X	X	X	X	X	X	X
AIR	X	X	X	X	X	X	X
VRA	X	X	X	X	X	X	X
BCO	X	X	X	X	X	X	X
SGO	X	X	X	X	X	X	X
ZSF	X	X	X	X	X	X	X
GTE	X	X	X	X	X	X	X
TOX	X	X	X	X	X	X	X
CKS	X	X	X	X	X	X	X
SZ	X	X	X	X	X	X	X
AE	X	X	X	X	X	X	X
CRO	X	X	X	X	X	X	X
MIX	X	X	X	X	X	X	X
NJX	X	X	X	X	X	X	X
PN	X	X	X	X	X	X	X
VJJC	X	X	X	X	X	X	X
TLTE	X	X	X	X	X	X	X

AKWR	x	x	x	x	x	x	x
NR	x	x	x	x	x	x	x
XR	x	x	x	x	x	x	x
XO	x	x	x	x	x	x	x
TSN	x	x	x	x	x	x	x
TXN	x	x	x	x	x	x	x
NKN	x	x	x	x	x	x	x
AUL	x	x	x	x	x	x	x
GC	x	x	x	x	x	x	x
SNV	x	x	x	x	x	x	x
STL	x	x	x	x	x	x	x
XUFC	x	x	x	x	x	x	x
SBL	x	x	x	x	x	x	x
DER	x	x	x	x	x	x	x
AUG	x	x	x	x	x	x	x
XJV	x	x	x	x	x	x	x
GWJ	x	x	x	x	x	x	x
DO	x	x	x	x	x	x	x
ZJX	x	x	x	x	x	x	x
SRY	x	x	x	x	x	x	x
MNN	x	x	x	x	x	x	x
XV	x	x	x	x	x	x	x
SRC	x	x	x	x	x	x	x
PW	x	x	x	x	x	x	x
NPY	x	x	x	x	x	x	x
SRB	x	x	x	x	x	x	x
XOYF	x	x	x	x	x	x	x
PTWI	x	x	x	x	x	x	x
PN	x	x	x	x	x	x	x
NZWW	x	x	x	x	x	x	x
CHQK	x	x	x	x	x	x	x
MNV	x	x	x	x	x	x	x
MIVC	x	x	x	x	x	x	x
SDSJ	x	x	x	x	x	x	x

### Data Summary:

- Total Assets: 91
- Data Generated: 2026-02-23 21:51:45
- 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.