

Portfolio Risk Analysis Report

Report Date: February 22, 2026

Portfolio Size: 100 Assets

Analysis Period: 12 Months

Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 7 Assets

MEDIUM RISK (YELLOW): 0 Assets

LOW RISK (GREEN): 93 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 100 assets with a combined market capitalization of \$14843.9 billion. **Key Findings:** • 7 assets (7.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 40.9% • Maximum drawdown observed: -70.3% **Risk Concentration:** The analysis reveals significant risk concentration in 7 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 3 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.281 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Healthcare	11	3243.34	21.8%
Real Estate	16	2677.80	18.0%
Technology	12	2514.65	16.9%
Consumer Discretionary	9	1503.11	10.1%
Materials	8	1185.34	8.0%
Financial Services	11	1100.70	7.4%
Industrial	10	847.40	5.7%
Utilities	10	807.31	5.4%
Consumer Staples	6	594.85	4.0%
Energy	7	369.38	2.5%

Risk Analysis Results

Risk Distribution:

- HIGH RISK (RED): 7 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 93 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
DR	Industrial	RED	64.2%	-52.3%	5
PUA	Consumer Staples	RED	41.4%	-44.1%	3
MN	Real Estate	RED	54.2%	-47.9%	2
MCTP	Industrial	RED	84.0%	-66.0%	2
TOE	Real Estate	RED	110.0%	-70.3%	2

SX	Healthcare	RED	74.9%	-59.7%	2
MKVN	Consumer Discretionary	RED	49.8%	-24.1%	2

Machine Learning Analysis

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

- Total Anomalies Detected: 15

- Critical Anomalies: 5

- High Risk Anomalies: 2

- Anomaly Rate: 15.0%

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

- 5 assets show critical anomalous behavior requiring immediate review
- Anomaly detection identified 15 assets with unusual patterns
- Key risk drivers: Max Drawdown, Price Change 6M, Sharpe Ratio

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
TOE	Real Estate	100.0	CRITICAL	Critical anomaly - Consider immediate po...
DR	Industrial	99.3	CRITICAL	Critical anomaly - Consider immediate po...
MCTP	Industrial	94.5	CRITICAL	Critical anomaly - Consider immediate po...
PUA	Consumer Staples	89.6	CRITICAL	Critical anomaly - Consider immediate po...
MN	Real Estate	86.9	CRITICAL	Critical anomaly - Consider immediate po...
SX	Healthcare	77.0	HIGH	Significant anomaly - Conduct thorough d...
MKVN	Consumer Discretionary	74.5	HIGH	Significant anomaly - Conduct thorough d...

Top Risk Factors (Feature Importance)

- Max Drawdown: 26.3% importance
- Price Change 6M: 18.4% importance
- Sharpe Ratio: 17.7% importance
- Volatility: 16.9% importance
- Price Change 3M: 12.9% importance

ML Validation Results

Overall Validation Status: **WARNING**

Checks Passed: 3 / 4

✓ **Anomaly Detection Validation:** PASS
 total_assets: 100, anomalies_detected: 15, anomaly_rate: 15.0
 ■ **Risk Prediction Validation:** WARNING
 model_accuracy: 100.0, predictions_made: 100, rating_changes: 0
 ✓ **Feature Quality Validation:** PASS
 features_checked: 9, nan_features: 0, total_samples: 100
 ✓ **Feature Importance Validation:** PASS
 total_importance: 100.0, top_feature: Max Drawdown, top_importance: 26.3

Validation Warnings (1):

- Suspiciously high accuracy: 100.0% (possible overfitting)

Sentiment Analysis

Sentiment analysis was conducted on 7 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: -0.281
- Assets with negative sentiment: 3/7
- Total news articles analyzed: 136

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
DR	-0.385	NEGATIVE	29	DETERIORATING	regulatory, operations, earnings
SX	-0.339	NEGATIVE	18	IMPROVING	financial_health, regulatory, operations
MCTP	-0.328	NEGATIVE	25	IMPROVING	earnings, financial_health, regulatory
MKVN	-0.300	NEUTRAL	18	STABLE	earnings, regulatory, management
MN	-0.277	NEUTRAL	16	IMPROVING	operations, regulatory, management
TOE	-0.238	NEUTRAL	15	IMPROVING	operations, earnings, management
PUA	-0.100	NEUTRAL	15	IMPROVING	market_share, earnings, regulatory

Detailed Asset Analysis

Asset: DR

Sector: Industrial

Current Price: \$80.47

Market Cap: \$147.33B

Risk Rating: RED

Risk Metrics:

- Volatility: 64.2%
- Maximum Drawdown: -52.3%
- Beta: -0.03
- Sharpe Ratio: 0.00
- RSI: 26.6

Performance:

- 1-Month Return: -47.1%
- 3-Month Return: -37.0%
- 6-Month Return: -42.4%

Risk Flags:

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

Market Sentiment:

- Sentiment Score: -0.385 (NEGATIVE)
- News Articles: 29
- Trend: DETERIORATING

Asset: PUA

Sector: Consumer Staples

Current Price: \$80.88

Market Cap: \$127.92B

Risk Rating: RED

Risk Metrics:

- Volatility: 41.4%
- Maximum Drawdown: -44.1%
- Beta: 0.16
- Sharpe Ratio: -0.69
- RSI: 51.7

Performance:

- 1-Month Return: -9.5%
- 3-Month Return: -4.0%
- 6-Month Return: -23.8%

Risk Flags:

- High Volatility, Extreme Drawdown, Poor Risk Return

Market Sentiment:

- Sentiment Score: -0.100 (NEUTRAL)
- News Articles: 15
- Trend: IMPROVING

Asset: MN

Sector: Real Estate

Current Price: \$129.16

Market Cap: \$146.17B

Risk Rating: RED

Risk Metrics:

- Volatility: 54.2%
- Maximum Drawdown: -47.9%
- Beta: -0.22
- Sharpe Ratio: -0.05
- RSI: 82.6

Performance:

- 1-Month Return: 32.4%
- 3-Month Return: 48.0%
- 6-Month Return: 7.4%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.277 (NEUTRAL)
- News Articles: 16
- Trend: IMPROVING

Asset: MCTP

Sector: Industrial

Current Price: \$59.67

Market Cap: \$104.30B

Risk Rating: RED

Risk Metrics:

- Volatility: 84.0%
- Maximum Drawdown: -66.0%
- Beta: -0.43
- Sharpe Ratio: -0.09
- RSI: 61.5

Performance:

- 1-Month Return: 10.8%
- 3-Month Return: -8.3%
- 6-Month Return: -15.8%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.328 (NEGATIVE)
- News Articles: 25
- Trend: IMPROVING

Asset: TOE

Sector: Real Estate

Current Price: \$152.87

Market Cap: \$227.37B

Risk Rating: RED

Risk Metrics:

- Volatility: 110.0%
- Maximum Drawdown: -70.3%
- Beta: -0.22
- Sharpe Ratio: -0.07
- RSI: 83.9

Performance:

- 1-Month Return: 59.7%
- 3-Month Return: 43.0%
- 6-Month Return: 3.8%

Risk Flags:

- High Volatility, Extreme Drawdown

Market Sentiment:

- Sentiment Score: -0.238 (NEUTRAL)
- News Articles: 15
- 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 7 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 3 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 21:03:55
- Analysis Period: 12 months
- Total Assets Analyzed: 100
- 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_210355.csv

Risk Analysis CSV: risk_analysis_20260222_210355.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AKH	1.1%	6.0%	11.5%	0.7%	0.71
AOT	-0.6%	0.9%	7.9%	1.4%	0.43
AQE	-0.7%	6.2%	6.1%	1.0%	0.57
ARF	1.7%	4.2%	3.5%	1.0%	0.43
BCX	-0.6%	5.0%	14.1%	1.1%	0.75
BDWN	1.4%	2.4%	8.6%	-0.0%	0.44
BIDZ	2.2%	3.1%	6.8%	2.5%	0.44
BNG	2.4%	1.1%	4.8%	2.5%	0.43
BP	1.4%	6.5%	6.8%	1.9%	0.62
BPP	-0.1%	4.0%	6.9%	1.1%	0.47
CB	4.3%	3.2%	10.7%	-0.2%	0.70
CBO	-1.6%	2.7%	8.3%	-1.5%	0.59
CDF	-0.6%	4.4%	4.3%	0.4%	0.49
CGSJ	0.8%	4.1%	10.7%	-0.3%	0.62
CKU	2.2%	5.4%	6.9%	-0.3%	0.42
CT	0.7%	3.1%	11.4%	1.6%	0.73
CW	0.0%	4.6%	10.4%	-0.1%	0.64
DCEZ	-1.1%	7.4%	13.4%	-1.1%	0.73
DIQ	2.2%	7.3%	7.8%	0.6%	0.52
DIX	1.0%	3.3%	6.4%	-1.4%	0.43
DR	-47.1%	-37.0%	-42.4%	-6.1%	0.00
GALB	3.8%	8.1%	10.8%	0.8%	0.64
GFKA	1.5%	4.8%	13.7%	-1.3%	0.77
GLW	-1.2%	7.4%	13.6%	0.3%	0.66
GLX	1.8%	7.3%	6.6%	2.1%	0.57
GNO	-0.4%	3.1%	5.3%	1.5%	0.55
GOO	0.7%	7.3%	8.6%	0.1%	0.60
GQZ	3.4%	6.1%	5.4%	2.2%	0.52
GR	3.4%	6.8%	10.3%	-1.4%	0.56
GRNX	1.3%	1.5%	3.7%	1.7%	0.43

GUN	-0.1%	4.1%	10.3%	3.4%	0.47
MC	0.4%	6.3%	10.5%	0.2%	0.61
MCTP	10.8%	-8.3%	-15.8%	5.1%	-0.09
MKVN	-13.0%	-3.9%	0.5%	-6.4%	-0.00
MN	32.4%	48.0%	7.4%	-7.8%	-0.05
MRO	1.2%	0.7%	4.2%	3.6%	0.55
MTY	-0.7%	2.3%	6.0%	1.9%	0.57
MXNU	-0.4%	5.8%	12.5%	2.8%	0.73
MYQ	2.6%	2.4%	6.5%	3.0%	0.63
NBJ	2.9%	5.8%	7.2%	1.0%	0.60
NG	2.5%	7.7%	8.5%	0.9%	0.66
NGT	3.3%	3.2%	8.9%	1.4%	0.59
NI	0.9%	7.2%	11.2%	2.0%	0.73
NPB	2.6%	4.1%	13.4%	3.0%	0.74
NVU	3.2%	3.5%	10.0%	1.6%	0.68
PCD	-1.3%	4.0%	8.3%	1.2%	0.59
PDU	4.6%	8.6%	13.7%	1.2%	0.83
PIZM	3.3%	2.8%	14.2%	1.1%	0.79
PLE	-0.4%	2.9%	11.6%	-0.8%	0.75
POI	0.3%	5.5%	4.6%	-0.7%	0.52
PUA	-9.5%	-4.0%	-23.8%	-10.7%	-0.69
PUAT	0.2%	3.4%	11.9%	2.3%	0.69
PX	-0.9%	6.4%	7.7%	0.9%	0.49
RE	-2.0%	2.5%	5.0%	0.2%	0.46
REX	0.6%	6.3%	11.6%	-0.2%	0.62
RFY	1.9%	3.4%	12.1%	1.0%	0.75
RJ	3.3%	0.4%	8.0%	0.9%	0.43
RL	-1.8%	3.4%	5.7%	3.5%	0.43
RP	-1.4%	5.0%	4.8%	2.2%	0.45
RQF	-1.6%	0.8%	4.2%	1.6%	0.60
RZ	-1.3%	8.4%	11.8%	1.5%	0.66
RZH	1.6%	0.8%	9.9%	1.4%	0.54
SBA	0.5%	7.5%	9.1%	2.2%	0.75
SFA	3.4%	7.0%	6.0%	1.5%	0.51
SIH	1.1%	5.4%	9.3%	-1.5%	0.58
SKO	4.9%	7.1%	11.3%	-0.5%	0.70
SMU	1.9%	3.3%	13.9%	1.0%	0.81
SS	-0.5%	1.9%	2.7%	0.2%	0.49
SX	-1.0%	6.9%	-30.8%	-3.7%	-0.09
SY	-0.9%	2.5%	8.9%	1.4%	0.58
SYQ	3.5%	4.0%	6.3%	2.0%	0.56

TAD	1.0%	7.5%	10.6%	2.6%	0.70
TDX	2.8%	2.8%	6.9%	0.6%	0.51
TE	2.3%	3.0%	5.8%	2.6%	0.55
TLL	4.8%	6.0%	11.0%	0.7%	0.85
TM	4.0%	2.8%	10.3%	-1.3%	0.52
TMZ	0.8%	7.2%	8.8%	1.2%	0.66
TOE	59.7%	43.0%	3.8%	-5.1%	-0.07
TQB	2.6%	6.1%	7.4%	0.7%	0.49
TU	1.5%	3.2%	13.5%	0.4%	0.81
TW	1.8%	0.9%	10.6%	-1.5%	0.58
TYT	3.4%	6.0%	11.2%	2.6%	0.59
VELU	-1.5%	7.1%	8.9%	1.3%	0.66
VI	0.6%	0.4%	3.8%	2.8%	0.50
VPY	4.2%	4.5%	12.9%	3.0%	0.72
VR	-0.2%	3.3%	10.0%	0.3%	0.65
VS	0.9%	4.8%	4.9%	1.9%	0.44
VT	1.3%	3.1%	3.8%	2.0%	0.39
VT	3.6%	2.8%	7.8%	-1.2%	0.68
VTED	-0.7%	1.2%	8.7%	-0.1%	0.58
VW	-0.1%	3.6%	13.3%	2.0%	0.64
XL	2.9%	2.1%	5.3%	0.0%	0.39
XNP	0.8%	3.8%	7.3%	0.8%	0.42
XP	0.9%	5.2%	12.5%	-1.2%	0.67
XVLB	1.7%	1.1%	7.4%	-0.0%	0.53
XWV	-1.1%	0.1%	5.1%	2.8%	0.50
ZKR	4.1%	6.2%	7.7%	3.6%	0.52
ZOW	0.9%	3.1%	5.3%	0.8%	0.55
ZQOQ	-1.1%	5.0%	7.8%	1.9%	0.49
ZU	2.6%	5.8%	8.3%	2.3%	0.44

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
DR	✓	✓	✗	✓	✓	✗	✓
PUA	✓	✓	✗	✗	✗	✓	✗
MN	✓	✓	✗	✗	✗	✗	✗
MCTP	✓	✓	✗	✗	✗	✗	✗
TOE	✓	✓	✗	✗	✗	✗	✗
SX	✓	✓	✗	✗	✗	✗	✗
MKVN	✓	✓	✗	✗	✗	✗	✗

RE	✓	X	X	X	X	X	X
VS	✓	X	X	X	X	X	X
CT	✓	X	X	X	X	X	X
PLE	✓	X	X	X	X	X	X
CW	✓	X	X	X	X	X	X
VI	✓	X	X	X	X	X	X
RZH	✓	X	X	X	X	X	X
ZKR	✓	X	X	X	X	X	X
RJ	✓	X	X	X	X	X	X
SY	✓	X	X	X	X	X	X
AQE	✓	X	X	X	X	X	X
RP	✓	X	X	X	X	X	X
RFY	✓	X	X	X	X	X	X
SS	✓	X	X	X	X	X	X
GUN	✓	X	X	X	X	X	X
GR	✓	X	X	X	X	X	X
NI	✓	X	X	X	X	X	X
BDWN	✓	X	X	X	X	X	X
TYT	X	X	X	X	X	X	X
ZQOQ	X	X	X	X	X	X	X
BCX	X	X	X	X	X	X	X
XVLB	X	X	X	X	X	X	X
AOT	X	X	X	X	X	X	X
XWV	X	X	X	X	X	X	X
XP	X	X	X	X	X	X	X
MC	X	X	X	X	X	X	X
VPY	X	X	X	X	X	X	X
XNP	X	X	X	X	X	X	X
REX	X	X	X	X	X	X	X
VT	X	X	X	X	X	X	X
SBA	X	X	X	X	X	X	X
PX	X	X	X	X	X	X	X
VTED	X	X	X	X	X	X	X
TW	X	X	X	X	X	X	X
SMU	X	X	X	X	X	X	X
CDF	X	X	X	X	X	X	X
SYQ	X	X	X	X	X	X	X
DCEZ	X	X	X	X	X	X	X
NG	X	X	X	X	X	X	X
GLX	X	X	X	X	X	X	X
XL	X	X	X	X	X	X	X

NPB	x	x	x	x	x	x	x
TLL	x	x	x	x	x	x	x
VR	x	x	x	x	x	x	x
POI	x	x	x	x	x	x	x
NGT	x	x	x	x	x	x	x
NBJ	x	x	x	x	x	x	x
BIDZ	x	x	x	x	x	x	x
SFA	x	x	x	x	x	x	x
SKO	x	x	x	x	x	x	x
CBO	x	x	x	x	x	x	x
GNO	x	x	x	x	x	x	x
BNG	x	x	x	x	x	x	x
ARF	x	x	x	x	x	x	x
ZOW	x	x	x	x	x	x	x
RQF	x	x	x	x	x	x	x
GOO	x	x	x	x	x	x	x
DIQ	x	x	x	x	x	x	x
CGSJ	x	x	x	x	x	x	x
TDX	x	x	x	x	x	x	x
GALB	x	x	x	x	x	x	x
GLW	x	x	x	x	x	x	x
TMZ	x	x	x	x	x	x	x
AKH	x	x	x	x	x	x	x
NVU	x	x	x	x	x	x	x
RZ	x	x	x	x	x	x	x
MXNU	x	x	x	x	x	x	x
ZU	x	x	x	x	x	x	x
MTY	x	x	x	x	x	x	x
VELU	x	x	x	x	x	x	x
TAD	x	x	x	x	x	x	x
BPP	x	x	x	x	x	x	x
TQB	x	x	x	x	x	x	x
RL	x	x	x	x	x	x	x
CKU	x	x	x	x	x	x	x
VT	x	x	x	x	x	x	x
CB	x	x	x	x	x	x	x
PIZM	x	x	x	x	x	x	x
GRNX	x	x	x	x	x	x	x
TE	x	x	x	x	x	x	x
TM	x	x	x	x	x	x	x
MRO	x	x	x	x	x	x	x

PUAT	x	x	x	x	x	x	x
VW	x	x	x	x	x	x	x
BP	x	x	x	x	x	x	x
MYQ	x	x	x	x	x	x	x
GQZ	x	x	x	x	x	x	x
DIX	x	x	x	x	x	x	x
SIH	x	x	x	x	x	x	x
PDU	x	x	x	x	x	x	x
PCD	x	x	x	x	x	x	x
GFKA	x	x	x	x	x	x	x
TU	x	x	x	x	x	x	x

Data Summary:

- Total Assets: 100
- Data Generated: 2026-02-22 21:03:55
- 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.