

Portfolio Risk Analysis Report

Report Date: October 15, 2025
Portfolio Size: 40 Assets
Analysis Period: 12 Months
Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 34 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 6 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 40 assets with a combined market capitalization of \$5095.2 billion. **Key Findings:** • 34 assets (85.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 32.1% • Maximum drawdown observed: -55.8% **Risk Concentration:** The analysis reveals significant risk concentration in 34 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 17 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.276 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Healthcare	6	1515.48	29.7%
Financial Services	5	746.81	14.7%
Industrial	4	625.89	12.3%
Real Estate	5	401.46	7.9%
Consumer Staples	6	391.59	7.7%
Energy	3	364.69	7.2%
Utilities	3	321.45	6.3%
Technology	1	288.74	5.7%
Materials	4	225.22	4.4%
Consumer Discretionary	3	213.86	4.2%

Risk Analysis Results

Risk Distribution:

- HIGH RISK (RED): 34 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 6 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
AJA	Financial Services	RED	42.4%	-49.9%	5
XSYO	Healthcare	RED	40.2%	-43.9%	3
TLU	Consumer Staples	RED	46.4%	-53.6%	3
TDZC	Real Estate	RED	41.2%	-38.9%	3
PF	Consumer Staples	RED	43.8%	-55.8%	3

VPN	Materials	RED	42.1%	-52.8%	3
DWE	Consumer Staples	RED	23.7%	-29.1%	2
PF	Energy	RED	17.8%	-29.2%	2
AH	Industrial	RED	24.4%	-30.9%	2
PTQ	Real Estate	RED	40.2%	-20.7%	2
MI	Industrial	RED	15.4%	-25.7%	2
PJFK	Energy	RED	41.4%	-33.2%	2
PNUU	Consumer Staples	RED	16.7%	-30.9%	2
DHG	Healthcare	RED	42.3%	-43.5%	2
NRK	Energy	RED	41.7%	-30.2%	2
ZXFM	Consumer Staples	RED	22.0%	-29.8%	2
SGJL	Healthcare	RED	35.8%	-39.2%	2
TC	Healthcare	RED	33.0%	-50.9%	2
MCRK	Utilities	RED	33.7%	-46.4%	2
TO	Financial Services	RED	24.5%	-37.5%	2
BCA	Industrial	RED	32.9%	-47.3%	2
DXO	Consumer Discretionary	RED	42.6%	-28.2%	2
XGV	Real Estate	RED	29.3%	-28.4%	1
AG	Healthcare	RED	37.0%	-44.9%	1
VFWT	Financial Services	RED	30.0%	-38.0%	1
XO	Materials	RED	38.7%	-32.8%	1
ZP	Industrial	RED	35.3%	-27.6%	1
TA	Financial Services	RED	36.4%	-42.4%	1
TCG	Real Estate	RED	38.3%	-28.7%	1
BP	Real Estate	RED	29.8%	-35.5%	1
ZF	Financial Services	RED	24.2%	-23.5%	1
XCQ	Consumer Discretionary	RED	39.4%	-34.9%	1
STE	Healthcare	RED	35.7%	-21.5%	1
GCD	Materials	RED	25.9%	-25.9%	1

Machine Learning Analysis

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

- Total Anomalies Detected: 6
- Critical Anomalies: 2
- High Risk Anomalies: 3
- Anomaly Rate: 15.0%

Risk Prediction Model:

- Model Accuracy: 91.7%
- Rating Changes Predicted: 1
- Assets Predicted to Deteriorate: 0
- Assets Predicted to Improve: 1

Key Machine Learning Insights

- 2 assets show critical anomalous behavior requiring immediate review
- Anomaly detection identified 6 assets with unusual patterns
- Key risk drivers: Max Drawdown, Sharpe Ratio, Volatility

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
AG	Healthcare	100.0	CRITICAL	Critical anomaly - Consider immediate po...
AJA	Financial Services	95.7	CRITICAL	Critical anomaly - Consider immediate po...
PJFK	Energy	76.2	HIGH	Significant anomaly - Conduct thorough d...
TLU	Consumer Staples	67.9	HIGH	Significant anomaly - Conduct thorough d...
RGY	Utilities	66.1	HIGH	Significant anomaly - Conduct thorough d...

Predicted Risk Rating Changes

Symbol	Current Rating	Predicted Rating	Confidence	Trend
PTQ	RED	GREEN	57.0%	IMPROVING

Top Risk Factors (Feature Importance)

1. Max Drawdown: 48.2% importance
2. Sharpe Ratio: 16.2% importance
3. Volatility: 11.9% importance
4. Price Change 1M: 7.9% importance
5. Volume Decline: 5.0% importance

ML Validation Results

Overall Validation Status: **PASS**

Checks Passed: 4 / 4

✓ **Anomaly Detection Validation:** PASS

total_assets: 40, anomalies_detected: 6, anomaly_rate: 15.0

✓ **Risk Prediction Validation:** PASS

model_accuracy: 91.7, predictions_made: 40, rating_changes: 1

✓ **Feature Quality Validation:** PASS

features_checked: 9, nan_features: 0, total_samples: 40

✓ **Feature Importance Validation:** PASS

total_importance: 100.0, top_feature: Max Drawdown, top_importance: 48.2

Sentiment Analysis

Sentiment analysis was conducted on 34 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: -0.276
- Assets with negative sentiment: 17/34
- Total news articles analyzed: 792

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
AJA	-0.418	NEGATIVE	24	IMPROVING	regulatory, operations, earnings
NRK	-0.408	NEGATIVE	23	IMPROVING	regulatory, market_share, operations
TA	-0.379	NEGATIVE	28	DETERIORATING	earnings, regulatory, financial_health
XCQ	-0.360	NEGATIVE	26	DETERIORATING	earnings, regulatory, financial_health
STE	-0.356	NEGATIVE	25	STABLE	regulatory, earnings, financial_health
ZF	-0.353	NEGATIVE	23	DETERIORATING	financial_health, earnings, market_share
XO	-0.352	NEGATIVE	16	STABLE	regulatory, operations, financial_health
TDZC	-0.340	NEGATIVE	29	IMPROVING	regulatory, operations, earnings
VPN	-0.332	NEGATIVE	24	DETERIORATING	regulatory, earnings, financial_health
AH	-0.327	NEGATIVE	26	DETERIORATING	regulatory, financial_health, management
PF	-0.327	NEGATIVE	30	DETERIORATING	earnings, financial_health, regulatory
BP	-0.316	NEGATIVE	18	IMPROVING	regulatory, financial_health, earnings
TO	-0.314	NEGATIVE	30	IMPROVING	earnings, regulatory, operations
ZP	-0.312	NEGATIVE	27	IMPROVING	regulatory, financial_health, earnings
PJFK	-0.311	NEGATIVE	30	STABLE	earnings, regulatory, financial_health
PTQ	-0.308	NEGATIVE	19	IMPROVING	regulatory, financial_health, earnings
MCRK	-0.308	NEGATIVE	22	IMPROVING	regulatory, financial_health, earnings
DHG	-0.284	NEUTRAL	22	DETERIORATING	regulatory, earnings, market_share
XSYO	-0.282	NEUTRAL	30	STABLE	financial_health, regulatory, earnings
AG	-0.280	NEUTRAL	20	DETERIORATING	regulatory, earnings, financial_health
MI	-0.275	NEUTRAL	22	STABLE	financial_health, regulatory, management
VFWT	-0.268	NEUTRAL	29	IMPROVING	regulatory, earnings, financial_health
GCD	-0.264	NEUTRAL	22	DETERIORATING	earnings, management, regulatory
TC	-0.258	NEUTRAL	20	STABLE	regulatory, financial_health, market_share
DXO	-0.239	NEUTRAL	15	IMPROVING	financial_health, earnings, management
ZXFM	-0.230	NEUTRAL	23	STABLE	earnings, regulatory, operations
DWE	-0.223	NEUTRAL	22	IMPROVING	regulatory, earnings, financial_health
PF	-0.203	NEUTRAL	19	STABLE	earnings, operations, financial_health
BCA	-0.186	NEUTRAL	20	DETERIORATING	earnings, regulatory, growth
XGV	-0.176	NEUTRAL	16	DETERIORATING	earnings, market_share, operations
SGJL	-0.155	NEUTRAL	22	IMPROVING	regulatory, financial_health, operations

TCG	-0.152	NEUTRAL	23	IMPROVING	regulatory, earnings, financial_health
PNUU	-0.075	NEUTRAL	23	DETERIORATING	earnings, regulatory, operations
TLU	-0.009	NEUTRAL	24	IMPROVING	growth, earnings, regulatory

Detailed Asset Analysis

Asset: AJA

Sector: Financial Services

Current Price: \$112.19

Market Cap: \$13.69B

Risk Rating: RED

Risk Metrics:

- Volatility: 42.4%
- Maximum Drawdown: -49.9%
- Beta: 0.05
- Sharpe Ratio: -0.23
- RSI: 28.3

Performance:

- 1-Month Return: -18.8%
- 3-Month Return: -36.9%
- 6-Month Return: -39.2%

Risk Flags:

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

Market Sentiment:

- Sentiment Score: -0.418 (NEGATIVE)
- News Articles: 24
- Trend: IMPROVING

Asset: XSYO

Sector: Healthcare

Current Price: \$350.09

Market Cap: \$109.42B

Risk Rating: RED

Risk Metrics:

- Volatility: 40.2%
- Maximum Drawdown: -43.9%
- Beta: -0.00
- Sharpe Ratio: -0.73
- RSI: 58.6

Performance:

- 1-Month Return: 1.8%
- 3-Month Return: -21.1%
- 6-Month Return: -12.4%

Risk Flags:

- High Volatility, Extreme Drawdown, Poor Risk Return

Market Sentiment:

- Sentiment Score: -0.282 (NEUTRAL)
- News Articles: 30
- Trend: STABLE

Asset: TLU

Sector: Consumer Staples

Current Price: \$43.16

Market Cap: \$18.10B

Risk Rating: RED

Risk Metrics:

- Volatility: 46.4%
- Maximum Drawdown: -53.6%
- Beta: 0.04
- Sharpe Ratio: -0.51
- RSI: 53.6

Performance:

- 1-Month Return: 1.2%
- 3-Month Return: 8.0%
- 6-Month Return: 30.7%

Risk Flags:

- High Volatility, Extreme Drawdown, Poor Risk Return

Market Sentiment:

- Sentiment Score: -0.009 (NEUTRAL)
- News Articles: 24
- Trend: IMPROVING

Asset: TDZC

Sector: Real Estate

Current Price: \$134.03

Market Cap: \$72.82B

Risk Rating: RED

Risk Metrics:

- Volatility: 41.2%
- Maximum Drawdown: -38.9%
- Beta: -0.26
- Sharpe Ratio: -1.05
- RSI: 56.9

Performance:

- 1-Month Return: -2.3%
- 3-Month Return: -19.4%
- 6-Month Return: -6.8%

Risk Flags:

- High Volatility, Extreme Drawdown, Poor Risk Return

Market Sentiment:

- Sentiment Score: -0.340 (NEGATIVE)
- News Articles: 29
- Trend: IMPROVING

Asset: PF

Sector: Consumer Staples

Current Price: \$71.45

Market Cap: \$89.50B

Risk Rating: RED

Risk Metrics:

- Volatility: 43.8%
- Maximum Drawdown: -55.8%
- Beta: 0.13
- Sharpe Ratio: -1.12
- RSI: 45.7

Performance:

- 1-Month Return: -8.7%
- 3-Month Return: -2.1%
- 6-Month Return: -24.1%

Risk Flags:

- High Volatility, Extreme Drawdown, Poor Risk Return

Market Sentiment:

- Sentiment Score: -0.203 (NEUTRAL)
- News Articles: 19
- Trend: STABLE

Recommendations

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

Immediate Actions (RED-flagged assets):

1. Consider reducing position sizes for 34 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 17 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: 2025-10-15 16:15:22
- Analysis Period: 12 months
- Total Assets Analyzed: 40
- 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_20251015_161522.csv

Risk Analysis CSV: risk_analysis_20251015_161522.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	18.5%	52.3%	44.2%	3.4%	-0.22
AH	4.6%	12.8%	4.6%	-0.7%	-0.86
AJA	-18.8%	-36.9%	-39.2%	5.2%	-0.23
BCA	1.1%	0.1%	-13.8%	5.7%	-1.69
BL	0.6%	-3.0%	-7.4%	0.9%	-0.31
BP	4.4%	7.9%	44.2%	11.8%	0.17
DHG	-11.3%	4.6%	0.7%	2.4%	-0.40
DWE	3.5%	3.4%	-3.1%	-4.0%	-0.59
DXO	-6.8%	-9.0%	-21.9%	-4.0%	-0.27
GCD	5.4%	19.1%	8.1%	-7.1%	0.80
MCRK	5.2%	22.3%	4.7%	2.6%	-0.76
MI	5.8%	-5.7%	-11.3%	-6.1%	-1.17
NRK	4.1%	3.4%	26.4%	7.4%	1.28
PF	-2.4%	-3.8%	-16.0%	1.6%	-1.00
PF	-8.7%	-2.1%	-24.1%	-0.6%	-1.12
PJFK	-2.2%	30.4%	47.4%	12.6%	1.04
PNUU	1.7%	-1.8%	-11.4%	-6.0%	-1.12
PTQ	-4.6%	11.0%	5.7%	-5.5%	0.87
RGY	5.6%	16.0%	32.0%	2.3%	1.84
SGJL	7.2%	7.8%	15.6%	4.5%	-0.60
STE	-10.3%	2.8%	40.0%	2.3%	1.35
SXE	7.9%	18.0%	24.8%	-1.0%	0.77
TA	-0.7%	19.4%	-3.6%	0.3%	-0.24
TC	-9.6%	-18.4%	-30.9%	3.1%	-1.84
TCG	5.3%	-3.4%	23.2%	7.9%	0.28
TDZC	-2.3%	-19.4%	-6.8%	2.4%	-1.05
THP	11.1%	21.6%	34.1%	5.4%	0.84
TLU	1.2%	8.0%	30.7%	-12.8%	-0.51
TO	9.1%	6.1%	-12.6%	-2.4%	-1.13
VFWT	3.7%	-8.4%	-20.3%	5.4%	0.42

VPN	-4.8%	14.3%	-21.5%	-5.5%	-0.84
XCQ	9.5%	8.7%	25.8%	6.0%	0.28
XDF	-11.9%	-7.2%	5.8%	2.0%	0.45
XGV	1.3%	7.5%	18.5%	10.0%	0.06
XO	2.0%	-6.8%	-6.0%	-1.8%	0.13
XSYO	1.8%	-21.1%	-12.4%	3.9%	-0.73
ZF	-3.2%	6.0%	-9.8%	-4.1%	-0.09
ZP	1.7%	8.3%	13.8%	-3.9%	0.10
ZXFM	8.5%	-13.2%	-14.3%	-9.6%	-0.85
ZZA	5.8%	6.2%	-7.1%	10.1%	0.66

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
AJA	✓	✓	✗	✓	✓	✗	✓
XSYO	✓	✓	✗	✗	✗	✓	✗
TLU	✓	✓	✗	✗	✗	✓	✗
TDZC	✓	✓	✗	✗	✗	✓	✗
PF	✓	✓	✗	✗	✗	✓	✗
VPN	✓	✓	✗	✗	✗	✓	✗
DWE	✗	✓	✗	✗	✗	✓	✗
PF	✗	✓	✗	✗	✗	✓	✗
AH	✗	✓	✗	✗	✗	✓	✗
PTQ	✓	✓	✗	✗	✗	✗	✗
MI	✗	✓	✗	✗	✗	✓	✗
PJFK	✓	✓	✗	✗	✗	✗	✗
PNUU	✗	✓	✗	✗	✗	✓	✗
DHG	✓	✓	✗	✗	✗	✗	✗
NRK	✓	✓	✗	✗	✗	✗	✗
ZXFM	✗	✓	✗	✗	✗	✓	✗
SGJL	✗	✓	✗	✗	✗	✓	✗
TC	✗	✓	✗	✗	✗	✓	✗
MCRK	✗	✓	✗	✗	✗	✓	✗
TO	✗	✓	✗	✗	✗	✓	✗
BCA	✗	✓	✗	✗	✗	✓	✗
DXO	✓	✓	✗	✗	✗	✗	✗
XGV	✗	✓	✗	✗	✗	✗	✗
AG	✗	✓	✗	✗	✗	✗	✗
VFWT	✗	✓	✗	✗	✗	✗	✗
XO	✗	✓	✗	✗	✗	✗	✗

ZP	x	✓	x	x	x	x	x
TA	x	✓	x	x	x	x	x
TCG	x	✓	x	x	x	x	x
BP	x	✓	x	x	x	x	x
ZF	x	✓	x	x	x	x	x
XCQ	x	✓	x	x	x	x	x
STE	x	✓	x	x	x	x	x
GCD	x	✓	x	x	x	x	x
XDF	x	x	x	x	x	x	x
THP	x	x	x	x	x	x	x
ZZA	x	x	x	x	x	x	x
SXE	x	x	x	x	x	x	x
BL	x	x	x	x	x	x	x
RGY	x	x	x	x	x	x	x

Data Summary:

- Total Assets: 40
- Data Generated: 2025-10-15 16:15:22
- 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.