

# Portfolio Risk Analysis Report

Report Date: October 15, 2025  
Portfolio Size: 51 Assets  
Analysis Period: 12 Months  
Generated by: Automated Risk Analysis Pipeline

## Risk Assessment Summary

**HIGH RISK (RED): 35 Assets**  
**MEDIUM RISK (YELLOW): 0 Assets**  
**LOW RISK (GREEN): 16 Assets**

## Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 51 assets with a combined market capitalization of \$5402.7 billion. **Key Findings:** • 35 assets (68.6%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 28.4% • Maximum drawdown observed: -49.8% **Risk Concentration:** The analysis reveals significant risk concentration in 35 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 22 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.315 • News coverage indicates heightened market concern for these positions

## Portfolio Overview

### Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Consumer Discretionary	8	1131.12	20.9%
Real Estate	5	656.75	12.2%
Consumer Staples	5	583.72	10.8%
Materials	8	560.34	10.4%
Industrial	6	539.77	10.0%
Technology	3	533.01	9.9%
Energy	7	444.37	8.2%
Financial Services	3	391.62	7.2%
Healthcare	3	333.93	6.2%
Utilities	3	228.05	4.2%

## Risk Analysis Results

### Risk Distribution:

- HIGH RISK (RED): 35 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 16 assets

### High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
ZQR	Real Estate	RED	42.6%	-49.7%	4
DUH	Consumer Discretionary	RED	35.4%	-41.0%	3
MXG	Consumer Discretionary	RED	46.6%	-49.8%	3
XFXF	Energy	RED	44.4%	-34.4%	3
BEOK	Utilities	RED	48.4%	-39.1%	3

RHV	Consumer Discretionary	RED	37.1%	-46.0%	3
NUKX	Real Estate	RED	18.7%	-27.0%	2
MH	Consumer Discretionary	RED	30.0%	-28.1%	2
SVR	Healthcare	RED	26.2%	-28.8%	2
APB	Consumer Discretionary	RED	36.9%	-36.6%	2
TYB	Energy	RED	40.5%	-22.8%	2
ZZM	Real Estate	RED	20.3%	-34.4%	2
RV	Industrial	RED	33.6%	-45.1%	2
XS	Financial Services	RED	24.2%	-25.9%	2
AMH	Technology	RED	23.2%	-43.9%	2
AJC	Consumer Staples	RED	21.7%	-38.1%	2
DH	Consumer Staples	RED	44.8%	-48.6%	2
SR	Healthcare	RED	39.3%	-45.1%	2
GES	Industrial	RED	17.5%	-20.2%	1
TQS	Consumer Staples	RED	30.6%	-33.7%	1
CIL	Materials	RED	24.2%	-27.8%	1
TIV	Financial Services	RED	25.0%	-26.8%	1
RDT	Energy	RED	22.4%	-26.3%	1
MRPM	Real Estate	RED	30.4%	-29.4%	1
VF	Industrial	RED	32.7%	-23.7%	1
ACSY	Energy	RED	39.6%	-31.1%	1
XZ	Utilities	RED	25.4%	-29.3%	1
NKE	Materials	RED	37.9%	-42.1%	1
REPD	Healthcare	RED	19.0%	-22.1%	1
VSO	Energy	RED	31.4%	-25.4%	1
AN	Consumer Staples	RED	33.6%	-31.6%	1
NUXW	Energy	RED	31.7%	-31.7%	1
DSTA	Consumer Discretionary	RED	35.9%	-28.6%	1
BU	Consumer Discretionary	RED	28.2%	-28.3%	1
PW	Materials	RED	32.5%	-27.2%	1

## 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: 3
- High Risk Anomalies: 4
- Anomaly Rate: 15.7%

### **Risk Prediction Model:**

- Model Accuracy: 93.8%
- Rating Changes Predicted: 1
- Assets Predicted to Deteriorate: 0

- Assets Predicted to Improve: 1

### Key Machine Learning Insights

- 3 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
ZQR	Real Estate	100.0	CRITICAL	Critical anomaly - Consider immediate po...
VF	Industrial	93.5	CRITICAL	Critical anomaly - Consider immediate po...
BEOK	Utilities	80.4	CRITICAL	Critical anomaly - Consider immediate po...
TYB	Energy	73.5	HIGH	Significant anomaly - Conduct thorough d...
BU	Consumer Discretionary	69.6	HIGH	Significant anomaly - Conduct thorough d...
DH	Consumer Staples	69.1	HIGH	Significant anomaly - Conduct thorough d...
RHV	Consumer Discretionary	62.7	HIGH	Significant anomaly - Conduct thorough d...

### Predicted Risk Rating Changes

Symbol	Current Rating	Predicted Rating	Confidence	Trend
GES	RED	GREEN	90.0%	IMPROVING

### Top Risk Factors (Feature Importance)

1. Max Drawdown: 55.5% importance
2. Volatility: 19.8% importance
3. Sharpe Ratio: 8.7% importance
4. Price Change 6M: 3.9% importance
5. Volume Decline: 3.9% importance

### ML Validation Results

Overall Validation Status: PASS

Checks Passed: 4 / 4

✓ Anomaly Detection Validation: PASS

total\_assets: 51, anomalies\_detected: 8, anomaly\_rate: 15.7

✓ Risk Prediction Validation: PASS

model\_accuracy: 93.8, predictions\_made: 51, rating\_changes: 1

✓ Feature Quality Validation: PASS

features\_checked: 9, nan\_features: 0, total\_samples: 51

✓ Feature Importance Validation: PASS

total\_importance: 100.0, top\_feature: Max Drawdown, top\_importance: 55.5

## Sentiment Analysis

Sentiment analysis was conducted on 35 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: -0.315
- Assets with negative sentiment: 22/35
- Total news articles analyzed: 820

## Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
VF	-0.437	NEGATIVE	19	DETERIORATING	financial_health, regulatory, earnings
VSO	-0.423	NEGATIVE	26	STABLE	earnings, financial_health, operations
RHV	-0.415	NEGATIVE	26	DETERIORATING	earnings, regulatory, financial_health
MXG	-0.405	NEGATIVE	30	IMPROVING	regulatory, financial_health, earnings
TYB	-0.404	NEGATIVE	21	IMPROVING	earnings, financial_health, management
APB	-0.398	NEGATIVE	28	STABLE	earnings, financial_health, regulatory
PW	-0.392	NEGATIVE	30	DETERIORATING	regulatory, financial_health, operations
SR	-0.360	NEGATIVE	19	IMPROVING	earnings, regulatory, growth
ZZM	-0.359	NEGATIVE	30	IMPROVING	regulatory, financial_health, earnings
REPD	-0.357	NEGATIVE	27	STABLE	regulatory, earnings, financial_health
RDT	-0.355	NEGATIVE	18	IMPROVING	earnings, regulatory, financial_health
XS	-0.348	NEGATIVE	21	DETERIORATING	regulatory, financial_health, earnings
AMH	-0.342	NEGATIVE	19	STABLE	regulatory, earnings, market_share
XFXF	-0.337	NEGATIVE	25	DETERIORATING	regulatory, financial_health, market_share
DSTA	-0.336	NEGATIVE	16	IMPROVING	regulatory, earnings, market_share
GES	-0.326	NEGATIVE	26	DETERIORATING	regulatory, earnings, market_share
BU	-0.326	NEGATIVE	16	IMPROVING	market_share, financial_health, regulatory
AN	-0.321	NEGATIVE	29	IMPROVING	regulatory, financial_health, earnings
RV	-0.309	NEGATIVE	19	DETERIORATING	financial_health, earnings, regulatory
NUKX	-0.304	NEGATIVE	29	IMPROVING	financial_health, regulatory, operations
XZ	-0.304	NEGATIVE	26	IMPROVING	regulatory, earnings, financial_health
DUH	-0.300	NEGATIVE	23	STABLE	regulatory, earnings, growth
ACSY	-0.297	NEUTRAL	26	DETERIORATING	regulatory, financial_health, operations
NKE	-0.292	NEUTRAL	28	STABLE	financial_health, earnings, operations
TQS	-0.289	NEUTRAL	27	DETERIORATING	regulatory, financial_health, earnings
DH	-0.288	NEUTRAL	23	IMPROVING	regulatory, earnings, financial_health
CIL	-0.283	NEUTRAL	30	IMPROVING	regulatory, management, financial_health
BEOK	-0.282	NEUTRAL	23	DETERIORATING	financial_health, earnings, growth

MRPM	-0.279	NEUTRAL	20	STABLE	regulatory, management, earnings
TIV	-0.262	NEUTRAL	18	STABLE	regulatory, financial_health, earnings
SVR	-0.201	NEUTRAL	20	DETERIORATING	regulatory, management, financial_health
NUXW	-0.198	NEUTRAL	19	IMPROVING	regulatory, financial_health, operations
AJC	-0.184	NEUTRAL	28	IMPROVING	regulatory, earnings, market_share
MH	-0.162	NEUTRAL	20	DETERIORATING	regulatory, earnings, growth
ZQR	-0.142	NEUTRAL	15	IMPROVING	regulatory, financial_health, growth

Detailed Asset Analysis

Asset: ZQR

**Sector:** Real Estate  
**Current Price:** \$65.43  
**Market Cap:** \$92.13B  
**Risk Rating:** RED  
**Risk Metrics:**

- Volatility: 42.6%
- Maximum Drawdown: -49.7%
- Beta: -0.10
- Sharpe Ratio: -0.07
- RSI: 7.7

**Performance:**

- 1-Month Return: -23.1%
- 3-Month Return: -22.8%
- 6-Month Return: -47.4%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: -0.142 (NEUTRAL)
- News Articles: 15
- Trend: IMPROVING

Asset: DUH

**Sector:** Consumer Discretionary  
**Current Price:** \$147.25  
**Market Cap:** \$266.51B  
**Risk Rating:** RED  
**Risk Metrics:**

- Volatility: 35.4%
- Maximum Drawdown: -41.0%
- Beta: 0.05
- Sharpe Ratio: -1.19
- RSI: 7.3

**Performance:**

- 1-Month Return: -11.6%
- 3-Month Return: -24.3%
- 6-Month Return: -17.7%

**Risk Flags:**

- Extreme Drawdown, Poor Risk Return, Momentum Breakdown

**Market Sentiment:**

- Sentiment Score: -0.300 (NEGATIVE)
- News Articles: 23
- Trend: STABLE

**Asset: MXG**

**Sector:** Consumer Discretionary

**Current Price:** \$156.97

**Market Cap:** \$220.29B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 46.6%
- Maximum Drawdown: -49.8%
- Beta: 0.02
- Sharpe Ratio: -0.91
- RSI: 37.9

**Performance:**

- 1-Month Return: -4.9%
- 3-Month Return: 2.7%
- 6-Month Return: -33.5%

**Risk Flags:**

- High Volatility, Extreme Drawdown, Poor Risk Return

**Market Sentiment:**

- Sentiment Score: -0.405 (NEGATIVE)
- News Articles: 30
- Trend: IMPROVING

**Asset: XFXF**

**Sector:** Energy

**Current Price:** \$40.16

**Market Cap:** \$62.92B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 44.4%
- Maximum Drawdown: -34.4%
- Beta: -0.02
- Sharpe Ratio: 0.08
- RSI: 31.3

**Performance:**

- 1-Month Return: -18.1%
- 3-Month Return: -9.0%
- 6-Month Return: -1.7%

**Risk Flags:**

- High Volatility, Extreme Drawdown, Severe Decline

**Market Sentiment:**

- Sentiment Score: -0.337 (NEGATIVE)
- News Articles: 25
- Trend: DETERIORATING

**Asset: BEOK**

**Sector:** Utilities

**Current Price:** \$45.63

**Market Cap:** \$8.46B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 48.4%
- Maximum Drawdown: -39.1%
- Beta: 0.09
- Sharpe Ratio: 2.25
- RSI: 32.6

**Performance:**

- 1-Month Return: -12.1%
- 3-Month Return: -11.0%
- 6-Month Return: 63.0%

**Risk Flags:**

- High Volatility, Extreme Drawdown, Momentum Breakdown

**Market Sentiment:**

- Sentiment Score: -0.282 (NEUTRAL)
- News Articles: 23
- 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 35 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 22 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 07:18:53
- Analysis Period: 12 months
- Total Assets Analyzed: 51
- 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\_071853.csv

**Risk Analysis CSV:** risk\_analysis\_20251015\_071853.csv

The tables below provide summary information for quick reference.

### Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
ACSY	-4.8%	-4.2%	6.2%	-7.8%	0.96
AJC	-10.7%	-8.5%	2.0%	6.4%	-1.76
AMH	7.5%	7.5%	-11.4%	-0.7%	-1.60
AN	-4.4%	-10.4%	-4.4%	-1.0%	-0.37
APB	-7.8%	-17.5%	-25.8%	-8.6%	-0.91
AQO	-3.2%	7.2%	30.0%	4.8%	0.73
BDK	-1.2%	1.4%	-9.4%	-1.3%	1.26
BEOK	-12.1%	-11.0%	63.0%	-1.0%	2.25
BTM	-3.4%	1.7%	5.6%	9.5%	0.84
BU	12.9%	46.6%	26.0%	3.6%	1.05
CCJ	4.7%	10.2%	39.1%	10.3%	1.95
CIL	7.6%	16.3%	5.5%	-1.1%	-0.15
DAX	3.4%	15.6%	10.0%	-6.0%	1.47
DH	7.2%	7.1%	4.5%	-2.2%	-0.25
DH	6.0%	0.6%	-11.5%	7.1%	-0.25
DQX	1.1%	9.0%	3.5%	-4.2%	1.17
DSTA	-4.7%	-23.7%	-13.1%	3.1%	0.52
DUH	-11.6%	-24.3%	-17.7%	2.3%	-1.19
GDT	1.3%	20.4%	33.7%	-7.9%	1.90
GES	0.7%	9.6%	2.9%	2.4%	-0.26
ME	-5.7%	-3.1%	4.1%	2.8%	1.52
MH	1.0%	-17.0%	-8.4%	1.1%	-0.66
MLC	-2.1%	-9.8%	-13.1%	-5.2%	-0.82
MRPM	-1.5%	26.4%	20.0%	-2.9%	0.39
MXG	-4.9%	2.7%	-33.5%	3.4%	-0.91
NHV	-0.3%	-2.2%	13.4%	-5.9%	1.67
NKE	12.2%	13.9%	-16.6%	1.1%	-0.33
NUKX	-4.6%	-3.3%	-5.1%	-2.1%	-1.53
NUXW	12.4%	9.3%	-10.3%	-2.7%	0.01
PE	-7.2%	-15.5%	-9.4%	-6.5%	-0.31

PW	2.2%	-4.7%	-16.8%	3.6%	0.09
RDT	-5.1%	-6.1%	-13.3%	2.1%	-0.14
REPD	-7.0%	-4.7%	-6.8%	-6.9%	-0.42
RHV	-13.7%	-13.6%	-32.6%	-0.6%	-1.45
RV	-5.5%	0.5%	-8.9%	4.9%	-1.21
RYY	-3.8%	-1.5%	-0.2%	-0.8%	0.18
SR	-7.1%	-15.1%	-34.7%	5.1%	-0.82
SVR	0.7%	-8.6%	-10.3%	-2.0%	-1.00
TIV	20.1%	16.7%	-5.2%	-5.1%	0.25
TQS	3.5%	11.1%	12.1%	-2.8%	0.05
TSK	0.4%	-0.2%	-15.8%	0.8%	0.08
TYB	16.8%	11.2%	45.7%	-4.3%	1.82
VF	14.0%	33.8%	69.6%	-10.4%	1.40
VSO	4.9%	-11.5%	-12.3%	-11.6%	0.54
XFXF	-18.1%	-9.0%	-1.7%	-3.7%	0.08
XS	9.6%	-5.0%	-4.5%	8.6%	-0.58
XZ	2.8%	-10.4%	-3.7%	-0.1%	-0.34
ZID	-4.2%	-4.7%	3.2%	6.5%	0.53
ZOBI	-1.9%	4.9%	12.0%	8.2%	-0.43
ZQR	-23.1%	-22.8%	-47.4%	4.7%	-0.07
ZZM	-4.6%	-11.9%	-14.9%	1.5%	-2.05

## Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
ZQR	✓	✓	✗	✓	✗	✗	✓
DUH	✗	✓	✗	✗	✗	✓	✓
MXG	✓	✓	✗	✗	✗	✓	✗
XFXF	✓	✓	✗	✓	✗	✗	✗
BEOK	✓	✓	✗	✗	✗	✗	✓
RHV	✗	✓	✗	✗	✗	✓	✓
NUKX	✗	✓	✗	✗	✗	✓	✗
MH	✗	✓	✗	✗	✗	✓	✗
SVR	✗	✓	✗	✗	✗	✓	✗
APB	✗	✓	✗	✗	✗	✓	✗
TYB	✓	✓	✗	✗	✗	✗	✗
ZZM	✗	✓	✗	✗	✗	✓	✗
RV	✗	✓	✗	✗	✗	✓	✗
XS	✗	✓	✗	✗	✗	✓	✗
AMH	✗	✓	✗	✗	✗	✓	✗

AJC	X	✓	X	X	X	✓	X
DH	✓	✓	X	X	X	X	X
SR	X	✓	X	X	X	✓	X
GES	X	✓	X	X	X	X	X
TQS	X	✓	X	X	X	X	X
CIL	X	✓	X	X	X	X	X
TIV	X	✓	X	X	X	X	X
RDT	X	✓	X	X	X	X	X
MRPM	X	✓	X	X	X	X	X
VF	X	✓	X	X	X	X	X
ACSY	X	✓	X	X	X	X	X
XZ	X	✓	X	X	X	X	X
NKE	X	✓	X	X	X	X	X
REPD	X	✓	X	X	X	X	X
MLC	X	X	X	X	X	✓	X
VSO	X	✓	X	X	X	X	X
AN	X	✓	X	X	X	X	X
NUXW	X	✓	X	X	X	X	X
DSTA	X	✓	X	X	X	X	X
BU	X	✓	X	X	X	X	X
PW	X	✓	X	X	X	X	X
ZOBI	X	X	X	X	X	X	X
ME	X	X	X	X	X	X	X
CCJ	X	X	X	X	X	X	X
GDT	X	X	X	X	X	X	X
DQX	X	X	X	X	X	X	X
PE	X	X	X	X	X	X	X
BDK	X	X	X	X	X	X	X
DAX	X	X	X	X	X	X	X
AQO	X	X	X	X	X	X	X
TSK	X	X	X	X	X	X	X
DH	X	X	X	X	X	X	X
RYY	X	X	X	X	X	X	X
NHV	X	X	X	X	X	X	X
BTM	X	X	X	X	X	X	X
ZID	X	X	X	X	X	X	X

#### Data Summary:

- Total Assets: 51
- Data Generated: 2025-10-15 07:18:53
- 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.