Portfolio Risk Analysis Report

Report Date: October 15, 2025
Portfolio Size: 25 Assets
Analysis Period: 12 Months
Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 16 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 9 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 25 assets with a combined market capitalization of $2998.0 billion. **Key Findings:** • 16 assets (64.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 27.7% • Maximum drawdown observed: -54.1% **Risk Concentration:** The analysis reveals significant risk concentration in 16 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 11 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.325 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap ($B)	Percentage
Healthcare	5	931.39	31.1%
Industrial	6	622.49	20.8%
Materials	2	446.66	14.9%
Real Estate	3	392.70	13.1%
Financial Services	3	338.86	11.3%
Utilities	3	147.51	4.9%
Consumer Staples	2	87.91	2.9%
Consumer Discretionary	1	30.48	1.0%

Risk Analysis Results

Risk Distribution:
• HIGH RISK (RED): 16 assets
• MEDIUM RISK (YELLOW): 0 assets
• LOW RISK (GREEN): 9 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
ATP	Utilities	RED	45.2%	-54.1%	3
MXR	Consumer Staples	RED	14.6%	-28.8%	2
GBK	Financial Services	RED	41.5%	-21.1%	2
DPS	Healthcare	RED	42.4%	-27.6%	2
SDBW	Industrial	RED	16.7%	-22.6%	2
XIQ	Healthcare	RED	24.9%	-24.1%	2
BPD	Industrial	RED	21.1%	-30.6%	2

TAIF	Consumer Staples	RED	38.8%	-38.7%	2
AY	Financial Services	RED	16.0%	-29.4%	2
TRV	Healthcare	RED	30.5%	-43.9%	2
MFF	Real Estate	RED	47.7%	-37.8%	2
ZPHZ	Utilities	RED	19.2%	-34.3%	1
SX	Industrial	RED	26.7%	-23.7%	1
DW	Consumer Discretionary	RED	23.0%	-20.4%	1
AAT	Industrial	RED	29.9%	-20.6%	1
GM	Real Estate	RED	22.7%	-22.3%	1

Machine Learning Analysis

Advanced machine learning techniques were applied to identify anomalies and predict future risk ratings. **Anomaly Detection Summary:**
• Total Anomalies Detected: 4
• Critical Anomalies: 1
• High Risk Anomalies: 3
• Anomaly Rate: 16.0%
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

• 1 assets show critical anomalous behavior requiring immediate review
• Anomaly detection identified 4 assets with unusual patterns
• Key risk drivers: Max Drawdown, Sharpe Ratio, Volume Decline

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
APSZ	Industrial	100.0	CRITICAL	Critical anomaly - Consider immediate po...
TAIF	Consumer Staples	75.5	HIGH	Significant anomaly - Conduct thorough d...
ATP	Utilities	75.5	HIGH	Significant anomaly - Conduct thorough d...
DPS	Healthcare	70.7	HIGH	Significant anomaly - Conduct thorough d...

Top Risk Factors (Feature Importance)

1. Max Drawdown: 48.4% importance
2. Sharpe Ratio: 11.0% importance
3. Volume Decline: 9.1% importance
4. Price Change 6M: 7.2% importance
5. Beta: 6.3% importance

ML Validation Results

Overall Validation Status: WARNING
Checks Passed: 3 / 4

✓ **Anomaly Detection Validation:** PASS
total_assets: 25, anomalies_detected: 4, anomaly_rate: 16.0
■ **Risk Prediction Validation:** WARNING
model_accuracy: 100.0, predictions_made: 25, rating_changes: 0
✓ **Feature Quality Validation:** PASS
features_checked: 9, nan_features: 0, total_samples: 25
✓ **Feature Importance Validation:** PASS
total_importance: 100.0, top_feature: Max Drawdown, top_importance: 48.4

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

Sentiment Analysis

Sentiment analysis was conducted on 16 RED-flagged assets using financial news from the past 12 months. **Key Findings:**
• Average sentiment score: -0.325
• Assets with negative sentiment: 11/16
• Total news articles analyzed: 374

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
MFF	-0.418	NEGATIVE	18	IMPROVING	regulatory, financial_health, market_share
SX	-0.409	NEGATIVE	28	IMPROVING	earnings, operations, financial_health
MXR	-0.402	NEGATIVE	28	DETERIORATING	earnings, regulatory, financial_health
DW	-0.378	NEGATIVE	26	DETERIORATING	regulatory, earnings, financial_health
ZPHZ	-0.361	NEGATIVE	30	STABLE	financial_health, earnings, operations
DPS	-0.356	NEGATIVE	16	STABLE	regulatory, financial_health, earnings
BPD	-0.341	NEGATIVE	27	IMPROVING	financial_health, regulatory, market_share
ATP	-0.339	NEGATIVE	22	IMPROVING	regulatory, earnings, financial_health
SDBW	-0.319	NEGATIVE	17	STABLE	earnings, regulatory, financial_health
XIQ	-0.318	NEGATIVE	26	IMPROVING	financial_health, earnings, regulatory
GM	-0.304	NEGATIVE	22	IMPROVING	earnings, regulatory, financial_health
GBK	-0.289	NEUTRAL	28	IMPROVING	regulatory, operations, market_share
AAT	-0.278	NEUTRAL	24	DETERIORATING	market_share, regulatory, financial_health
TAIF	-0.275	NEUTRAL	24	IMPROVING	regulatory, earnings, management
AY	-0.256	NEUTRAL	23	DETERIORATING	earnings, regulatory, management

TRV	-0.159	NEUTRAL	15	IMPROVING	earnings, regulatory, growth

Detailed Asset Analysis

Asset: ATP

Sector: Utilities
Current Price: $115.91
Market Cap: $50.50B
Risk Rating: RED
Risk Metrics:
• Volatility: 45.2%
• Maximum Drawdown: -54.1%
• Beta: 0.30
• Sharpe Ratio: -1.05
• RSI: 47.6
Performance:
• 1-Month Return: 8.1%
• 3-Month Return: -0.3%
• 6-Month Return: -28.6%
Risk Flags:
• High Volatility, Extreme Drawdown, Poor Risk Return
Market Sentiment:
• Sentiment Score: -0.339 (NEGATIVE)
• News Articles: 22
• Trend: IMPROVING

Asset: MXR

Sector: Consumer Staples
Current Price: $93.48
Market Cap: $69.85B
Risk Rating: RED
Risk Metrics:
• Volatility: 14.6%
• Maximum Drawdown: -28.8%
• Beta: -0.02
• Sharpe Ratio: -1.87
• RSI: 35.5
Performance:
• 1-Month Return: 3.4%
• 3-Month Return: -2.9%
• 6-Month Return: -13.3%
Risk Flags:
• Extreme Drawdown, Poor Risk Return
Market Sentiment:
• Sentiment Score: -0.402 (NEGATIVE)
• News Articles: 28
• Trend: DETERIORATING

Asset: GBK

Sector: Financial Services
Current Price: $141.68

Market Cap: $236.69B
Risk Rating: RED
Risk Metrics:
• Volatility: 41.5%
• Maximum Drawdown: -21.1%
• Beta: -0.04
• Sharpe Ratio: 1.17
• RSI: 43.3
Performance:
• 1-Month Return: -7.4%
• 3-Month Return: 0.0%
• 6-Month Return: 0.6%
Risk Flags:
• High Volatility, Extreme Drawdown
Market Sentiment:
• Sentiment Score: -0.289 (NEUTRAL)
• News Articles: 28
• Trend: IMPROVING

Asset: DPS

Sector: Healthcare
Current Price: $137.16
Market Cap: $240.15B
Risk Rating: RED
Risk Metrics:
• Volatility: 42.4%
• Maximum Drawdown: -27.6%
• Beta: 0.22
• Sharpe Ratio: 1.36
• RSI: 21.9
Performance:
• 1-Month Return: -3.3%
• 3-Month Return: 20.2%
• 6-Month Return: 43.3%
Risk Flags:
• High Volatility, Extreme Drawdown
Market Sentiment:
• Sentiment Score: -0.356 (NEGATIVE)
• News Articles: 16
• Trend: STABLE

Asset: SDBW

Sector: Industrial
Current Price: $166.40
Market Cap: $10.76B
Risk Rating: RED
Risk Metrics:
• Volatility: 16.7%
• Maximum Drawdown: -22.6%
• Beta: -0.03
• Sharpe Ratio: -0.56
• RSI: 88.5
Performance:
• 1-Month Return: 7.8%
• 3-Month Return: 4.2%

• 6-Month Return: -5.9%

Risk Flags:

• Extreme Drawdown, Poor Risk Return

Market Sentiment:

• Sentiment Score: -0.319 (NEGATIVE)

• News Articles: 17

• 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 16 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 11 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: 2025-10-15 07:39:44
• Analysis Period: 12 months
• Total Assets Analyzed: 25
• 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_073944.csv
Risk Analysis CSV: risk_analysis_20251015_073944.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AAT	5.0%	34.1%	16.4%	-0.7%	1.28
APSZ	3.2%	19.4%	81.2%	-14.5%	2.27
ATP	8.1%	-0.3%	-28.6%	0.4%	-1.05
AY	-0.4%	-8.2%	-10.4%	-9.1%	-1.88
BPD	-2.0%	-14.4%	-22.4%	1.4%	-1.15
CX	1.2%	-13.8%	-6.5%	-3.9%	0.38
DBH	6.1%	22.3%	28.9%	-8.2%	0.41
DPS	-3.3%	20.2%	43.3%	5.4%	1.36
DW	9.7%	2.2%	3.2%	11.4%	0.12
GBK	-7.4%	0.0%	0.6%	-2.7%	1.17
GM	-8.6%	-4.6%	-13.2%	-10.0%	0.09
MFF	9.4%	6.2%	8.6%	4.8%	0.28
MNQ	2.3%	14.2%	11.0%	-0.7%	1.65
MXR	3.4%	-2.9%	-13.3%	-1.7%	-1.87
NRQ	-8.4%	-0.6%	-0.7%	-9.3%	0.08
NY	-3.0%	-1.6%	-5.2%	3.1%	0.25
SDBW	7.8%	4.2%	-5.9%	3.3%	-0.56
SX	8.7%	20.9%	9.6%	0.4%	0.74
TAIF	-18.0%	2.7%	15.0%	-1.5%	0.05
TLTD	-0.3%	-10.0%	40.2%	-6.3%	1.20
TRV	-7.2%	-7.4%	-23.7%	-4.0%	-1.51
XIQ	2.2%	-10.1%	-11.3%	6.9%	-0.61
ZORP	12.1%	7.9%	10.7%	-4.1%	0.08
ZPB	3.7%	4.8%	14.5%	4.1%	0.43
ZPHZ	2.6%	-13.9%	-30.3%	-4.9%	-0.34

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break

ATP	✓	✓	✗	✗	✗	✓	✗
MXR	✗	✓	✗	✗	✗	✓	✗
GBK	✓	✓	✗	✗	✗	✗	✗
DPS	✓	✓	✗	✗	✗	✗	✗
SDBW	✗	✓	✗	✗	✗	✓	✗
XIQ	✗	✓	✗	✗	✗	✓	✗
BPD	✗	✓	✗	✗	✗	✓	✗
TAIF	✗	✓	✗	✓	✗	✗	✗
AY	✗	✓	✗	✗	✗	✓	✗
TRV	✗	✓	✗	✗	✗	✓	✗
MFF	✓	✓	✗	✗	✗	✗	✗
ZPHZ	✗	✓	✗	✗	✗	✗	✗
SX	✗	✓	✗	✗	✗	✗	✗
DW	✗	✓	✗	✗	✗	✗	✗
AAT	✗	✓	✗	✗	✗	✗	✗
GM	✗	✓	✗	✗	✗	✗	✗
APSZ	✓	✗	✗	✗	✗	✗	✗
MNQ	✗	✗	✗	✗	✗	✗	✗
TLTD	✗	✗	✗	✗	✗	✗	✗
CX	✗	✗	✗	✗	✗	✗	✗
NY	✗	✗	✗	✗	✗	✗	✗
DBH	✗	✗	✗	✗	✗	✗	✗
ZPB	✗	✗	✗	✗	✗	✗	✗
NRQ	✗	✗	✗	✗	✗	✗	✗
ZORP	✗	✗	✗	✗	✗	✗	✗

Data Summary:
- Total Assets: 25
- Data Generated: 2025-10-15 07:39:44
- 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.