Portfolio Risk Analysis Report

Report Date: February 24, 2026
Portfolio Size: 25 Assets
Analysis Period: 12 Months
Generated by: Automated Risk Analysis Pipeline

Risk Assessment Summary

HIGH RISK (RED): 18 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 7 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 25 assets with a combined market capitalization of $15049.6 billion. **Key Findings:** • 18 assets (72.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 33.8% • Maximum drawdown observed: -58.3% **Risk Concentration:** The analysis reveals significant risk concentration in 18 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 0 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: 0.050 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap ($B)	Percentage
Consumer Cyclical	4	4253.62	28.3%
Technology	7	2720.49	18.1%
Financial Services	5	2614.47	17.4%
Consumer Defensive	3	1802.55	12.0%
Healthcare	4	1777.98	11.8%
Communication Services	1	1614.41	10.7%
Industrials	1	266.04	1.8%

Risk Analysis Results

Risk Distribution:
• HIGH RISK (RED): 18 assets
• MEDIUM RISK (YELLOW): 0 assets
• LOW RISK (GREEN): 7 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
PYPL	Financial Services	RED	40.9%	-49.9%	6
ORCL	Technology	RED	61.6%	-58.3%	5
INTU	Technology	RED	36.2%	-55.3%	5
CRM	Technology	RED	34.5%	-41.7%	4
ADBE	Technology	RED	32.8%	-45.3%	4
IBM	Technology	RED	33.6%	-28.7%	3
TMO	Healthcare	RED	32.2%	-27.5%	3
TSLA	Consumer Cyclical	RED	61.3%	-26.7%	2

LLY	Healthcare	RED	42.4%	-32.6%	2
AVGO	Technology	RED	50.3%	-31.1%	2
ABBV	Healthcare	RED	26.6%	-20.7%	1
SBUX	Consumer Cyclical	RED	34.4%	-31.3%	1
AMZN	Consumer Cyclical	RED	35.2%	-21.9%	1
QCOM	Technology	RED	39.3%	-27.0%	1
META	Communication Services	RED	39.6%	-28.0%	1
JPM	Financial Services	RED	26.0%	-20.1%	1
GS	Financial Services	RED	32.0%	-25.7%	1
HD	Consumer Cyclical	RED	23.5%	-21.5%	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: 2
• High Risk Anomalies: 3
• Anomaly Rate: 16.0%
Risk Prediction Model:
• Model Accuracy: 87.5%
• Rating Changes Predicted: 1
• Assets Predicted to Deteriorate: 1
• Assets Predicted to Improve: 0

Key Machine Learning Insights

• 2 assets show critical anomalous behavior requiring immediate review
• 1 assets predicted to deteriorate in risk rating
• Anomaly detection identified 4 assets with unusual patterns
• Key risk drivers: Max Drawdown, Price Change 1M, Volatility

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
INTU	Technology	100.0	CRITICAL	Critical anomaly - Consider immediate po...
PYPL	Financial Services	87.6	CRITICAL	Critical anomaly - Consider immediate po...
AVGO	Technology	76.5	HIGH	Significant anomaly - Conduct thorough d...
TSLA	Consumer Cyclical	71.3	HIGH	Significant anomaly - Conduct thorough d...
ORCL	Technology	63.7	HIGH	Normal behavior pattern - Continue monit...

Predicted Risk Rating Changes

Symbol	Current Rating	Predicted Rating	Confidence	Trend
MA	GREEN	RED	53.0%	DETERIORATING

Top Risk Factors (Feature Importance)

1. Max Drawdown: 46.5% importance
2. Price Change 1M: 17.0% importance
3. Volatility: 11.0% importance
4. Price Change 3M: 10.6% importance
5. Sharpe Ratio: 5.4% importance

ML Validation Results

Overall Validation Status: PASS
Checks Passed: 4 / 4

✓ **Anomaly Detection Validation:** PASS
total_assets: 25, anomalies_detected: 4, anomaly_rate: 16.0
✓ **Risk Prediction Validation:** PASS
model_accuracy: 87.5, predictions_made: 25, rating_changes: 1
✓ **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: 46.4

Sentiment Analysis

Sentiment analysis was conducted on 18 RED-flagged assets using financial news from the past 12 months. **Key Findings:**
• Average sentiment score: 0.050
• Assets with negative sentiment: 0/18
• Total news articles analyzed: 168

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
TMO	-0.111	NEUTRAL	5	IMPROVING	earnings, growth
SBUX	-0.104	NEUTRAL	6	IMPROVING	technology, management, growth
LLY	-0.015	NEUTRAL	10	STABLE	earnings, financial_health, technology
PYPL	0.006	NEUTRAL	10	STABLE	management, market_share
INTU	0.014	NEUTRAL	10	STABLE	technology, earnings, management
AVGO	0.037	NEUTRAL	10	STABLE	technology, earnings, regulatory
TSLA	0.038	NEUTRAL	10	STABLE	regulatory, growth, technology
ABBV	0.040	NEUTRAL	10	STABLE	operations, earnings, financial_health

AMZN	0.047	NEUTRAL	10	STABLE	earnings, growth, technology
JPM	0.047	NEUTRAL	10	STABLE	financial_health, technology, market_share
CRM	0.066	NEUTRAL	10	STABLE	technology, earnings, operations
GS	0.077	NEUTRAL	10	STABLE	regulatory, technology, growth
HD	0.079	NEUTRAL	10	STABLE	earnings, macro, growth
QCOM	0.096	NEUTRAL	10	IMPROVING	technology, earnings, operations
IBM	0.097	NEUTRAL	10	STABLE	technology, macro, earnings
ORCL	0.106	NEUTRAL	10	IMPROVING	technology, earnings, regulatory
META	0.180	NEUTRAL	10	IMPROVING	growth, technology, earnings
ADBE	0.202	NEUTRAL	7	DETERIORATING	technology, macro, earnings

Detailed Asset Analysis

Asset: PYPL

Sector: Financial Services
Current Price: $43.71
Market Cap: $40.89B
Risk Rating: RED
Risk Metrics:
• Volatility: 40.9%
• Maximum Drawdown: -49.9%
• Beta: 0.24
• Sharpe Ratio: -1.16
• RSI: 58.9
Performance:
• 1-Month Return: -22.8%
• 3-Month Return: -27.8%
• 6-Month Return: -36.9%
Risk Flags:
• High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: 0.006 (NEUTRAL)
• News Articles: 10
• Trend: STABLE

Asset: ORCL

Sector: Technology
Current Price: $144.80
Market Cap: $416.27B
Risk Rating: RED
Risk Metrics:
• Volatility: 61.6%
• Maximum Drawdown: -58.3%
• Beta: 0.00
• Sharpe Ratio: 0.01
• RSI: 43.5
Performance:
• 1-Month Return: -20.6%

- 3-Month Return: -27.0%
- 6-Month Return: -38.2%

Risk Flags:
- High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Momentum Breakdown

Market Sentiment:
- Sentiment Score: 0.106 (NEUTRAL)
- News Articles: 10
- Trend: IMPROVING

Asset: INTU

Sector: Technology
Current Price: $360.61
Market Cap: $100.39B
Risk Rating: RED
Risk Metrics:
- Volatility: 36.2%
- Maximum Drawdown: -55.3%
- Beta: 0.04
- Sharpe Ratio: -1.11
- RSI: 23.8

Performance:
- 1-Month Return: -35.8%
- 3-Month Return: -45.5%
- 6-Month Return: -44.9%

Risk Flags:
- Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown

Market Sentiment:
- Sentiment Score: 0.014 (NEUTRAL)
- News Articles: 10
- Trend: STABLE

Asset: CRM

Sector: Technology
Current Price: $185.40
Market Cap: $176.51B
Risk Rating: RED
Risk Metrics:
- Volatility: 34.5%
- Maximum Drawdown: -41.7%
- Beta: 0.04
- Sharpe Ratio: -1.34
- RSI: 40.2

Performance:
- 1-Month Return: -19.2%
- 3-Month Return: -18.2%
- 6-Month Return: -25.0%

Risk Flags:
- Extreme Drawdown, Severe Decline, Poor Risk Return, Momentum Breakdown

Market Sentiment:
- Sentiment Score: 0.066 (NEUTRAL)
- News Articles: 10
- Trend: STABLE

Asset: ADBE

Sector: Technology
Current Price: $255.20
Market Cap: $106.87B
Risk Rating: RED
Risk Metrics:
• Volatility: 32.8%
• Maximum Drawdown: -45.3%
• Beta: -0.00
• Sharpe Ratio: -1.59
• RSI: 37.8
Performance:
• 1-Month Return: -16.3%
• 3-Month Return: -21.3%
• 6-Month Return: -29.7%
Risk Flags:
• Extreme Drawdown, Severe Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: 0.202 (NEUTRAL)
• News Articles: 7
• 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 18 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 0 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: 2026-02-24 16:56:34
• 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_20260224_165634.csv
Risk Analysis CSV: risk_analysis_20260224_165634.csv

The tables below provide summary information for quick reference.

Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
ABBV	3.3%	-2.7%	11.6%	10.6%	0.60
ADBE	-16.3%	-21.3%	-29.7%	21.3%	-1.59
AMZN	-12.3%	-5.3%	-8.3%	36.5%	0.07
AVGO	0.7%	-3.7%	11.6%	-21.8%	1.13
BRK-B	1.8%	-2.3%	1.2%	3.8%	-0.09
COST	1.8%	10.7%	5.9%	-18.6%	-0.14
CRM	-19.2%	-18.2%	-25.0%	35.1%	-1.34
GILD	7.9%	18.2%	32.0%	7.5%	1.19
GS	-3.5%	16.7%	23.0%	2.5%	1.30
HD	0.7%	14.1%	-3.6%	-10.1%	0.21
IBM	-21.7%	-22.0%	-2.6%	44.5%	-0.19
INTU	-35.8%	-45.5%	-44.9%	55.5%	-1.11
JPM	-1.7%	-0.3%	1.3%	-1.8%	0.61
KO	11.0%	11.2%	18.6%	12.6%	0.92
LLY	-0.4%	-0.2%	52.4%	13.8%	0.61
MA	-6.2%	-8.3%	-16.4%	16.2%	-0.45
META	-5.1%	7.5%	-15.2%	6.9%	0.04
ORCL	-20.6%	-27.0%	-38.2%	8.7%	0.01
PYPL	-22.8%	-27.8%	-36.9%	60.1%	-1.16
QCOM	-6.5%	-11.1%	-6.7%	22.9%	-0.08
RTX	2.4%	17.2%	27.8%	22.6%	1.81
SBUX	-0.6%	12.2%	12.4%	1.0%	-0.31
TMO	-17.6%	-12.0%	5.4%	19.4%	-0.00
TSLA	-7.3%	3.1%	16.4%	-9.9%	0.60
WMT	8.2%	21.1%	32.7%	-12.1%	1.29

Risk Flags Details

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

PYPL	✓	✓	✗	✓	✓	✓	✓
ORCL	✓	✓	✗	✓	✓	✗	✓
INTU	✗	✓	✗	✓	✓	✓	✓
CRM	✗	✓	✗	✓	✗	✓	✓
ADBE	✗	✓	✗	✓	✗	✓	✓
IBM	✗	✓	✗	✓	✗	✗	✓
TMO	✗	✓	✗	✓	✗	✗	✓
TSLA	✓	✓	✗	✗	✗	✗	✗
LLY	✓	✓	✗	✗	✗	✗	✗
AVGO	✓	✓	✗	✗	✗	✗	✗
ABBV	✗	✓	✗	✗	✗	✗	✗
SBUX	✗	✓	✗	✗	✗	✗	✗
AMZN	✗	✓	✗	✗	✗	✗	✗
QCOM	✗	✓	✗	✗	✗	✗	✗
META	✗	✓	✗	✗	✗	✗	✗
JPM	✗	✓	✗	✗	✗	✗	✗
GS	✗	✓	✗	✗	✗	✗	✗
HD	✗	✓	✗	✗	✗	✗	✗
KO	✗	✗	✗	✗	✗	✗	✗
GILD	✗	✗	✗	✗	✗	✗	✗
RTX	✗	✗	✗	✗	✗	✗	✗
BRK-B	✗	✗	✗	✗	✗	✗	✗
WMT	✗	✗	✗	✗	✗	✗	✗
COST	✗	✗	✗	✗	✗	✗	✗
MA	✗	✗	✗	✗	✗	✗	✗

Data Summary:
• Total Assets: 25
• Data Generated: 2026-02-24 16:56:34
• 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.