

# Portfolio Risk Analysis Report

**Report Date:** February 24, 2026  
**Portfolio Size:** 50 Assets  
**Analysis Period:** 12 Months  
**Generated by:** Automated Risk Analysis Pipeline

## Risk Assessment Summary

**HIGH RISK (RED):** 19 Assets  
**MEDIUM RISK (YELLOW):** 0 Assets  
**LOW RISK (GREEN):** 31 Assets

## Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 50 assets with a combined market capitalization of \$31681.2 billion. **Key Findings:** • 19 assets (38.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 30.0% • Maximum drawdown observed: -58.3% **Risk Concentration:** The analysis reveals significant risk concentration in 19 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 0 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: 0.059 • News coverage indicates heightened market concern for these positions

## Portfolio Overview

### Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Technology	13	11351.11	35.8%
Communication Services	4	5894.22	18.6%
Consumer Cyclical	6	4652.54	14.7%
Consumer Defensive	6	2497.92	7.9%
Healthcare	6	2477.21	7.8%
Financial Services	5	2084.57	6.6%
Industrials	7	1526.21	4.8%
Energy	2	999.27	3.2%
Utilities	1	198.21	0.6%

## Risk Analysis Results

### Risk Distribution:

- HIGH RISK (RED): 19 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 31 assets

### High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
PYPL	Financial Services	RED	42.8%	-48.5%	6
ORCL	Technology	RED	73.2%	-58.3%	6
NOW	Technology	RED	38.9%	-47.7%	5
ADBE	Technology	RED	30.5%	-32.9%	4
NFLX	Communication Services	RED	30.2%	-39.9%	4
MSFT	Technology	RED	25.2%	-28.8%	4

ACN	Technology	RED	33.7%	-30.3%	4
CRM	Technology	RED	36.0%	-33.1%	4
IBM	Technology	RED	37.0%	-28.7%	3
TMO	Healthcare	RED	26.5%	-21.6%	3
AMD	Technology	RED	67.6%	-27.2%	3
META	Communication Services	RED	33.0%	-24.4%	2
ABT	Healthcare	RED	22.6%	-21.6%	2
AVGO	Technology	RED	47.9%	-25.3%	2
INTC	Technology	RED	69.9%	-21.8%	2
HD	Consumer Cyclical	RED	21.9%	-21.5%	1
TXN	Technology	RED	32.8%	-24.9%	1
BA	Industrials	RED	29.9%	-24.5%	1
AMZN	Consumer Cyclical	RED	31.1%	-21.7%	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: 5
- High Risk Anomalies: 4
- Anomaly Rate: 16.0%

**Risk Prediction Model:**

- Model Accuracy: 93.3%
- Rating Changes Predicted: 1
- Assets Predicted to Deteriorate: 0
- Assets Predicted to Improve: 1

## Key Machine Learning Insights

- 5 assets show critical anomalous behavior requiring immediate review
- Anomaly detection identified 8 assets with unusual patterns
- Key risk drivers: Max Drawdown, Sharpe Ratio, Price Change 6M

## Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
INTC	Technology	100.0	CRITICAL	Critical anomaly - Consider immediate po...
PYPL	Financial Services	94.3	CRITICAL	Critical anomaly - Consider immediate po...
CAT	Industrials	90.5	CRITICAL	Critical anomaly - Consider immediate po...
ORCL	Technology	90.1	CRITICAL	Critical anomaly - Consider immediate po...
NOW	Technology	86.4	CRITICAL	Critical anomaly - Consider immediate po...
NFLX	Communication Services	73.3	HIGH	Significant anomaly - Conduct thorough d...

ACN	Technology	63.8	HIGH	Significant anomaly - Conduct thorough d...
DE	Industrials	63.8	HIGH	Significant anomaly - Conduct thorough d...
TXN	Technology	61.0	HIGH	Normal behavior pattern - Continue monit...

Predicted Risk Rating Changes

Symbol	Current Rating	Predicted Rating	Confidence	Trend
INTC	RED	GREEN	52.0%	IMPROVING

Top Risk Factors (Feature Importance)

- 1. Max Drawdown: 44.5% importance
- 2. Sharpe Ratio: 20.5% importance
- 3. Price Change 6M: 15.5% importance
- 4. Volatility: 6.9% importance
- 5. Price Change 1M: 5.0% importance

ML Validation Results

Overall Validation Status: PASS  
Checks Passed: 4 / 4

✓ **Anomaly Detection Validation:** PASS  
total\_assets: 50, anomalies\_detected: 8, anomaly\_rate: 16.0

✓ **Risk Prediction Validation:** PASS  
model\_accuracy: 93.3, predictions\_made: 50, rating\_changes: 1

✓ **Feature Quality Validation:** PASS  
features\_checked: 9, nan\_features: 0, total\_samples: 50

✓ **Feature Importance Validation:** PASS  
total\_importance: 100.0, top\_feature: Max Drawdown, top\_importance: 44.5

Sentiment Analysis

Sentiment analysis was conducted on 19 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: 0.059
- Assets with negative sentiment: 0/19
- Total news articles analyzed: 172

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
TMO	-0.111	NEUTRAL	5	IMPROVING	earnings, growth
NOW	-0.010	NEUTRAL	10	STABLE	technology, growth

ACN	-0.002	NEUTRAL	10	IMPROVING	technology, macro, growth
ABT	0.004	NEUTRAL	7	DETERIORATING	earnings, management, technology
PYPL	0.006	NEUTRAL	10	STABLE	management, market_share
INTC	0.022	NEUTRAL	10	STABLE	technology, earnings, market_share
NFLX	0.030	NEUTRAL	10	STABLE	None
AVGO	0.037	NEUTRAL	10	STABLE	technology, earnings, regulatory
AMZN	0.047	NEUTRAL	10	STABLE	earnings, growth, technology
BA	0.049	NEUTRAL	10	DETERIORATING	earnings, technology, macro
HD	0.079	NEUTRAL	10	STABLE	earnings, macro, market_share
CRM	0.083	NEUTRAL	10	STABLE	technology, earnings, operations
IBM	0.089	NEUTRAL	10	STABLE	technology, macro, earnings
AMD	0.095	NEUTRAL	10	STABLE	growth, technology, earnings
MSFT	0.105	NEUTRAL	10	IMPROVING	technology, earnings, growth
ORCL	0.106	NEUTRAL	10	IMPROVING	technology, earnings, regulatory
TXN	0.106	NEUTRAL	3	DETERIORATING	growth
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:** \$43.72

**Market Cap:** \$40.90B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 42.8%
- Maximum Drawdown: -48.5%
- Beta: 0.33
- Sharpe Ratio: -1.98
- RSI: 59.0

**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:** \$145.09

**Market Cap:** \$417.06B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 73.2%
- Maximum Drawdown: -58.3%
- Beta: -0.10
- Sharpe Ratio: -1.01
- RSI: 43.7

**Performance:**

- 1-Month Return: -20.5%
- 3-Month Return: -26.8%
- 6-Month Return: -38.1%

**Risk Flags:**

• High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown

**Market Sentiment:**

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

## Asset: NOW

**Sector:** Technology

**Current Price:** \$103.53

**Market Cap:** \$109.24B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 38.9%
- Maximum Drawdown: -47.7%
- Beta: 0.08
- Sharpe Ratio: -2.60
- RSI: 42.7

**Performance:**

- 1-Month Return: -24.1%
- 3-Month Return: -36.4%
- 6-Month Return: -41.2%

**Risk Flags:**

• Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown

**Market Sentiment:**

- Sentiment Score: -0.010 (NEUTRAL)
- News Articles: 10
- Trend: STABLE

## Asset: ADBE

**Sector:** Technology

**Current Price:** \$255.57

**Market Cap:** \$106.98B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 30.5%
- Maximum Drawdown: -32.9%
- Beta: -0.01
- Sharpe Ratio: -2.23
- RSI: 38.1

**Performance:**

- 1-Month Return: -16.1%
- 3-Month Return: -21.2%
- 6-Month Return: -29.6%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: 0.202 (NEUTRAL)
- News Articles: 7
- Trend: DETERIORATING

## Asset: NFLX

**Sector:** Communication Services

**Current Price:** \$77.08

**Market Cap:** \$327.01B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 30.2%
- Maximum Drawdown: -39.9%
- Beta: -0.19
- Sharpe Ratio: -2.96
- RSI: 42.3

**Performance:**

- 1-Month Return: -10.1%
- 3-Month Return: -26.1%
- 6-Month Return: -36.7%

**Risk Flags:**

- Extreme Drawdown, Extended Decline, Poor Risk Return, Momentum Breakdown

**Market Sentiment:**

- Sentiment Score: 0.030 (NEUTRAL)
- News Articles: 10
- 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 19 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:  $-0.3 \leq \text{Score} \leq 0.3$

#### Report Generation Details:

- Generated: 2026-02-24 17:02:40
- Analysis Period: 12 months
- Total Assets Analyzed: 50
- 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\_170240.csv

**Risk Analysis CSV:** risk\_analysis\_20260224\_170240.csv

The tables below provide summary information for quick reference.

### Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
ABT	5.3%	-10.1%	-12.3%	24.5%	-1.14
ACN	-28.3%	-20.1%	-21.4%	31.7%	-1.33
ADBE	-16.1%	-21.2%	-29.6%	21.4%	-2.23
AMD	-15.3%	4.5%	30.3%	14.6%	1.09
AMZN	-12.3%	-5.3%	-8.3%	36.5%	-0.47
AVGO	0.8%	-3.6%	11.6%	-21.8%	0.66
BA	-6.1%	29.8%	2.8%	-10.5%	0.27
BRK-B	1.9%	-2.3%	1.3%	3.8%	0.11
CAT	21.0%	40.1%	78.9%	23.6%	3.51
COST	1.9%	10.8%	5.9%	-18.6%	0.61
CRM	-19.1%	-18.1%	-24.9%	35.1%	-1.47
CSCO	1.6%	3.4%	17.9%	28.0%	1.26
CVX	11.5%	24.5%	19.4%	8.8%	1.73
DE	23.5%	31.4%	31.7%	21.5%	1.96
DIS	-4.4%	2.7%	-9.0%	19.9%	-0.67
GE	15.1%	18.3%	27.7%	3.8%	1.84
GILD	8.0%	18.3%	32.2%	7.5%	2.22
GOOGL	-6.7%	3.9%	49.4%	16.9%	2.88
GS	-3.3%	17.0%	23.2%	2.6%	1.64
HD	0.6%	14.0%	-3.7%	-10.1%	-0.33
IBM	-21.6%	-21.9%	-2.5%	44.5%	-0.00
INTC	7.6%	32.6%	86.3%	-2.3%	2.11
JNJ	11.2%	21.6%	40.0%	4.5%	4.44
KO	11.0%	11.2%	18.6%	12.6%	2.11
LLY	-0.5%	-0.3%	52.2%	13.8%	2.47
LOW	0.9%	20.2%	9.4%	-3.4%	0.82
MA	-6.1%	-8.3%	-16.3%	16.2%	-1.65
MCD	6.6%	8.5%	7.7%	5.5%	0.90
MDLZ	3.8%	7.5%	-0.3%	-0.6%	-0.02
META	-5.0%	7.6%	-15.1%	6.9%	-0.89

MMM	4.9%	-0.4%	7.8%	20.3%	0.63
MRK	15.7%	28.2%	48.3%	-1.2%	2.96
MS	-7.2%	6.7%	15.0%	17.7%	1.15
MSFT	-17.6%	-17.9%	-23.0%	45.0%	-2.04
NEE	11.3%	14.0%	28.1%	-1.8%	2.50
NFLX	-10.1%	-26.1%	-36.7%	-10.7%	-2.96
NOW	-24.1%	-36.4%	-41.2%	61.8%	-2.60
NVDA	3.5%	7.9%	7.3%	1.7%	0.53
ORCL	-20.5%	-26.8%	-38.1%	8.8%	-1.01
PEP	15.6%	16.4%	16.1%	11.6%	1.45
PG	10.7%	10.4%	7.4%	0.6%	0.81
PYPL	-22.8%	-27.8%	-36.9%	60.2%	-1.98
RTX	2.3%	17.1%	27.6%	22.6%	2.12
SBUX	-0.4%	12.4%	12.6%	1.0%	0.92
TMO	-17.7%	-12.2%	5.2%	19.4%	0.44
TSLA	-7.1%	3.4%	16.6%	-9.8%	0.88
TXN	8.7%	34.0%	4.7%	22.1%	0.38
UPS	9.6%	23.9%	36.0%	18.1%	2.55
WMT	8.1%	20.9%	32.6%	-12.0%	2.48
XOM	11.4%	28.3%	35.6%	19.3%	2.74

## Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
PYPL	✓	✓	✗	✓	✓	✓	✓
ORCL	✓	✓	✗	✓	✓	✓	✓
NOW	✗	✓	✗	✓	✓	✓	✓
ADBE	✗	✓	✗	✓	✗	✓	✓
NFLX	✗	✓	✗	✗	✓	✓	✓
MSFT	✗	✓	✗	✓	✗	✓	✓
ACN	✗	✓	✗	✓	✗	✓	✓
CRM	✗	✓	✗	✓	✗	✓	✓
IBM	✗	✓	✗	✓	✗	✗	✓
TMO	✗	✓	✗	✓	✗	✗	✓
AMD	✓	✓	✗	✓	✗	✗	✗
META	✗	✓	✗	✗	✗	✓	✗
ABT	✗	✓	✗	✗	✗	✓	✗
AVGO	✓	✓	✗	✗	✗	✗	✗
INTC	✓	✓	✗	✗	✗	✗	✗
HD	✗	✓	✗	✗	✗	✗	✗

DIS	X	X	X	X	X	✓	X
TSLA	✓	X	X	X	X	X	X
TXN	X	✓	X	X	X	X	X
BA	X	✓	X	X	X	X	X
MA	X	X	X	X	X	✓	X
AMZN	X	✓	X	X	X	X	X
PG	X	X	X	X	X	X	X
WMT	X	X	X	X	X	X	X
JNJ	X	X	X	X	X	X	X
GOOGL	X	X	X	X	X	X	X
NEE	X	X	X	X	X	X	X
MCD	X	X	X	X	X	X	X
MRK	X	X	X	X	X	X	X
UPS	X	X	X	X	X	X	X
NVDA	X	X	X	X	X	X	X
KO	X	X	X	X	X	X	X
COST	X	X	X	X	X	X	X
GILD	X	X	X	X	X	X	X
DE	X	X	X	X	X	X	X
GE	X	X	X	X	X	X	X
RTX	X	X	X	X	X	X	X
GS	X	X	X	X	X	X	X
MDLZ	X	X	X	X	X	X	X
BRK-B	X	X	X	X	X	X	X
MMM	X	X	X	X	X	X	X
LOW	X	X	X	X	X	X	X
XOM	X	X	X	X	X	X	X
SBUX	X	X	X	X	X	X	X
MS	X	X	X	X	X	X	X
CAT	X	X	X	X	X	X	X
CVX	X	X	X	X	X	X	X
LLY	X	X	X	X	X	X	X
PEP	X	X	X	X	X	X	X
CSCO	X	X	X	X	X	X	X

#### Data Summary:

- Total Assets: 50
- Data Generated: 2026-02-24 17:02:40
- 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.