

# Portfolio Risk Analysis Report

**Report Date:** February 24, 2026  
**Portfolio Size:** 62 Assets  
**Analysis Period:** 12 Months  
**Generated by:** Automated Risk Analysis Pipeline

## Risk Assessment Summary

**HIGH RISK (RED):** 23 Assets  
**MEDIUM RISK (YELLOW):** 0 Assets  
**LOW RISK (GREEN):** 39 Assets

## Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 62 assets with a combined market capitalization of \$38692.9 billion. **Key Findings:** • 23 assets (37.1%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 29.9% • Maximum drawdown observed: -58.3% **Risk Concentration:** The analysis reveals significant risk concentration in 23 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 0 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: 0.075 • News coverage indicates heightened market concern for these positions

## Portfolio Overview

### Sector Allocation

Sector	Assets	Market Cap (\$B)	Percentage
Technology	16	15608.02	40.3%
Communication Services	4	5901.53	15.3%
Consumer Cyclical	7	4756.82	12.3%
Financial Services	8	3655.10	9.4%
Healthcare	10	3456.77	8.9%
Consumer Defensive	6	2496.14	6.5%
Industrials	7	1528.83	4.0%
Energy	2	1001.49	2.6%
Utilities	1	198.87	0.5%
Real Estate	1	89.31	0.2%

## Risk Analysis Results

### Risk Distribution:

- HIGH RISK (RED): 23 assets
- MEDIUM RISK (YELLOW): 0 assets
- LOW RISK (GREEN): 39 assets

### High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
PYPL	Financial Services	RED	43.3%	-48.5%	6
ORCL	Technology	RED	74.0%	-58.3%	6
INTU	Technology	RED	34.8%	-48.6%	5
NOW	Technology	RED	38.3%	-47.7%	5
MSFT	Technology	RED	25.5%	-28.8%	4

ADBE	Technology	RED	30.7%	-32.9%	4
UNH	Healthcare	RED	40.6%	-26.9%	4
ACN	Technology	RED	34.1%	-30.5%	4
CRM	Technology	RED	36.0%	-33.1%	4
NFLX	Communication Services	RED	30.6%	-39.9%	3
TMO	Healthcare	RED	26.8%	-21.6%	3
IBM	Technology	RED	37.3%	-28.7%	3
AMD	Technology	RED	68.7%	-27.2%	2
NKE	Consumer Cyclical	RED	34.6%	-25.2%	2
META	Communication Services	RED	33.4%	-24.4%	2
AVGO	Technology	RED	48.3%	-25.3%	2
AMZN	Consumer Cyclical	RED	31.5%	-21.7%	2
ABT	Healthcare	RED	22.9%	-21.6%	2
INTC	Technology	RED	70.7%	-21.8%	2
HD	Consumer Cyclical	RED	22.1%	-21.5%	1
BA	Industrials	RED	29.9%	-24.5%	1
TXN	Technology	RED	33.3%	-23.6%	1
QCOM	Technology	RED	35.4%	-27.0%	1

## Machine Learning Analysis

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

- Total Anomalies Detected: 10
- Critical Anomalies: 3
- High Risk Anomalies: 3
- Anomaly Rate: 16.1%

### 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

- 3 assets show critical anomalous behavior requiring immediate review
- Anomaly detection identified 10 assets with unusual patterns
- Key risk drivers: Max Drawdown, Volatility, Price Change 3M

## Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
ORCL	Technology	100.0	CRITICAL	Critical anomaly - Consider immediate po...

INTU	Technology	90.5	CRITICAL	Critical anomaly - Consider immediate po...
PYPL	Financial Services	84.8	CRITICAL	Critical anomaly - Consider immediate po...
AMD	Technology	76.5	HIGH	Significant anomaly - Conduct thorough d...
NOW	Technology	69.5	HIGH	Significant anomaly - Conduct thorough d...
INTC	Technology	68.5	HIGH	Significant anomaly - Conduct thorough d...

### Top Risk Factors (Feature Importance)

- 1. Max Drawdown: 52.7% importance
- 2. Volatility: 15.6% importance
- 3. Price Change 3M: 13.4% importance
- 4. Sharpe Ratio: 9.9% importance
- 5. Volume Decline: 3.0% importance

### ML Validation Results

Overall Validation Status: **WARNING**  
Checks Passed: 2 / 4

✓ **Anomaly Detection Validation:** PASS  
total\_assets: 62, anomalies\_detected: 10, anomaly\_rate: 16.1  
■ **Risk Prediction Validation:** WARNING  
model\_accuracy: 100.0, predictions\_made: 62, rating\_changes: 0  
■ **Feature Quality Validation:** WARNING  
features\_checked: 9, nan\_features: 0, total\_samples: 62  
✓ **Feature Importance Validation:** PASS  
total\_importance: 100.0, top\_feature: Max Drawdown, top\_importance: 52.7

**Validation Warnings (2):**  
1. Suspiciously high accuracy: 100.0% (possible overfitting)  
2. Feature 'price\_change\_6m' has very low variance (0.000000)

### Sentiment Analysis

Sentiment analysis was conducted on 23 RED-flagged assets using financial news from the past 12 months. **Key Findings:**

- Average sentiment score: 0.075
- Assets with negative sentiment: 0/23
- Total news articles analyzed: 207

### Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
TMO	-0.111	NEUTRAL	5	IMPROVING	earnings, growth
PYPL	-0.025	NEUTRAL	10	STABLE	management
NOW	-0.010	NEUTRAL	10	STABLE	technology, growth

ACN	-0.002	NEUTRAL	10	STABLE	technology, macro, growth
ABT	0.004	NEUTRAL	7	DETERIORATING	earnings, management, technology
INTU	0.014	NEUTRAL	10	STABLE	technology, earnings, management
BA	0.018	NEUTRAL	10	DETERIORATING	earnings, technology, macro
IBM	0.029	NEUTRAL	10	STABLE	technology, earnings, macro
NFLX	0.044	NEUTRAL	10	STABLE	earnings
ORCL	0.056	NEUTRAL	10	STABLE	technology, earnings, regulatory
INTC	0.066	NEUTRAL	10	STABLE	technology, earnings
UNH	0.067	NEUTRAL	5	IMPROVING	earnings
AVGO	0.089	NEUTRAL	10	STABLE	technology, earnings, regulatory
NKE	0.100	NEUTRAL	10	STABLE	macro, technology, operations
QCOM	0.101	NEUTRAL	10	STABLE	technology, earnings
TXN	0.106	NEUTRAL	3	DETERIORATING	growth
CRM	0.127	NEUTRAL	10	IMPROVING	technology, earnings, operations
META	0.131	NEUTRAL	10	IMPROVING	technology, growth, macro
AMZN	0.143	NEUTRAL	10	IMPROVING	earnings, technology, growth
HD	0.168	NEUTRAL	10	IMPROVING	earnings, macro, technology
MSFT	0.200	NEUTRAL	10	IMPROVING	technology, earnings, growth
ADBE	0.202	NEUTRAL	7	DETERIORATING	technology, macro, earnings
AMD	0.207	NEUTRAL	10	IMPROVING	technology, growth, earnings

## Detailed Asset Analysis

### Asset: PYPL

**Sector:** Financial Services

**Current Price:** \$43.69

**Market Cap:** \$40.88B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 43.3%
- Maximum Drawdown: -48.5%
- Beta: 0.44
- Sharpe Ratio: -2.05
- RSI: 58.8

**Performance:**

- 1-Month Return: -22.8%
- 3-Month Return: -27.9%
- 6-Month Return: 0.0%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: -0.025 (NEUTRAL)
- News Articles: 10
- Trend: STABLE

## Asset: ORCL

**Sector:** Technology

**Current Price:** \$144.81

**Market Cap:** \$416.20B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 74.0%
- Maximum Drawdown: -58.3%
- Beta: -0.62
- Sharpe Ratio: -1.09
- RSI: 43.5

**Performance:**

- 1-Month Return: -20.6%
- 3-Month Return: -27.0%
- 6-Month Return: 0.0%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: 0.056 (NEUTRAL)
- News Articles: 10
- Trend: STABLE

## Asset: INTU

**Sector:** Technology

**Current Price:** \$360.29

**Market Cap:** \$100.30B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 34.8%
- Maximum Drawdown: -48.6%
- Beta: 0.16
- Sharpe Ratio: -3.51
- RSI: 23.6

**Performance:**

- 1-Month Return: -35.9%
- 3-Month Return: -45.6%
- 6-Month Return: 0.0%

**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: NOW

**Sector:** Technology

**Current Price:** \$103.14

**Market Cap:** \$108.83B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 38.3%
- Maximum Drawdown: -47.7%
- Beta: 0.12

- Sharpe Ratio: -3.02
- RSI: 42.1

**Performance:**

- 1-Month Return: -24.4%
- 3-Month Return: -36.6%
- 6-Month Return: 0.0%

**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: MSFT

**Sector:** Technology

**Current Price:** \$386.61

**Market Cap:** \$2873.43B

**Risk Rating:** RED

**Risk Metrics:**

- Volatility: 25.5%
- Maximum Drawdown: -28.8%
- Beta: 0.05
- Sharpe Ratio: -2.15
- RSI: 35.1

**Performance:**

- 1-Month Return: -17.6%
- 3-Month Return: -17.9%
- 6-Month Return: 0.0%

**Risk Flags:**

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

**Market Sentiment:**

- Sentiment Score: 0.200 (NEUTRAL)
- News Articles: 10
- Trend: IMPROVING

## Recommendations

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

**Immediate Actions (RED-flagged assets):**

1. Consider reducing position sizes for 23 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 18:13:48
- Analysis Period: 12 months
- Total Assets Analyzed: 62
- 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\_181348.csv

**Risk Analysis CSV:** risk\_analysis\_20260224\_181348.csv

The tables below provide summary information for quick reference.

### Performance Metrics Data

Symbol	1M Return	3M Return	6M Return	Vol Decline	Sharpe Ratio
AAPL	6.7%	0.4%	0.0%	13.6%	1.47
ABBV	3.6%	-2.4%	0.0%	10.9%	0.94
ABT	5.4%	-10.1%	0.0%	24.6%	-1.12
ACN	-28.6%	-20.4%	0.0%	32.0%	-1.37
ADBE	-16.2%	-21.2%	0.0%	21.5%	-2.10
AMD	-14.4%	5.5%	0.0%	15.2%	1.04
AMT	6.3%	7.3%	0.0%	-1.4%	-0.35
AMZN	-12.1%	-5.0%	0.0%	36.7%	-0.56
AVGO	0.5%	-3.8%	0.0%	-21.7%	0.46
BA	-6.1%	29.9%	0.0%	-10.4%	-0.00
BLK	-3.1%	7.6%	0.0%	11.7%	-0.21
BRK-B	2.0%	-2.2%	0.0%	3.9%	-0.29
CAT	20.9%	40.0%	0.0%	23.8%	3.52
COST	1.9%	10.9%	0.0%	-18.5%	0.58
CRM	-19.2%	-18.2%	0.0%	35.3%	-1.67
CSCO	1.7%	3.5%	0.0%	28.2%	1.05
CVX	11.6%	24.7%	0.0%	8.9%	1.70
DE	24.2%	32.1%	0.0%	21.7%	1.98
DIS	-4.2%	2.9%	0.0%	20.1%	-0.66
GE	15.8%	19.0%	0.0%	4.1%	1.66
GILD	7.5%	17.7%	0.0%	7.8%	2.32
GOOGL	-6.6%	4.0%	0.0%	17.1%	2.83
GS	-2.6%	17.9%	0.0%	2.8%	1.60
HD	0.4%	13.8%	0.0%	-9.9%	-0.32
IBM	-22.1%	-22.4%	0.0%	45.1%	-0.18
INTC	8.0%	33.0%	0.0%	-2.0%	2.10
INTU	-35.9%	-45.6%	0.0%	55.8%	-3.51
ISRG	-6.7%	-12.1%	0.0%	12.2%	0.35
JNJ	11.5%	21.8%	0.0%	4.7%	4.68
JPM	-0.9%	0.5%	0.0%	-1.4%	0.03

KO	10.8%	11.0%	0.0%	12.9%	2.23
LLY	-1.0%	-0.8%	0.0%	14.0%	2.23
LOW	0.6%	19.8%	0.0%	-3.1%	0.85
MA	-6.1%	-8.2%	0.0%	16.4%	-1.62
MCD	6.3%	8.1%	0.0%	5.7%	0.93
MDLZ	3.7%	7.5%	0.0%	-0.4%	0.09
META	-4.8%	7.7%	0.0%	7.0%	-0.87
MMM	5.2%	-0.2%	0.0%	20.4%	0.57
MRK	16.1%	28.6%	0.0%	-0.9%	3.23
MS	-6.7%	7.3%	0.0%	18.0%	1.08
MSFT	-17.6%	-17.9%	0.0%	45.2%	-2.15
NEE	11.7%	14.3%	0.0%	-1.3%	2.98
NFLX	-9.7%	-25.8%	0.0%	-10.5%	-3.05
NKE	-1.4%	2.7%	0.0%	-19.5%	-0.98
NOW	-24.4%	-36.6%	0.0%	62.0%	-3.02
NVDA	3.6%	7.9%	0.0%	1.9%	0.53
ORCL	-20.6%	-27.0%	0.0%	8.9%	-1.09
PEP	15.4%	16.2%	0.0%	11.7%	1.54
PFE	5.5%	10.9%	0.0%	3.6%	1.15
PG	10.6%	10.3%	0.0%	0.8%	0.86
PYPL	-22.8%	-27.9%	0.0%	60.4%	-2.05
QCOM	-6.6%	-11.2%	0.0%	23.1%	-0.45
RTX	2.3%	17.0%	0.0%	22.7%	1.91
SBUX	-0.2%	12.6%	0.0%	1.1%	0.76
TMO	-17.7%	-12.1%	0.0%	19.5%	0.47
TSLA	-6.7%	3.8%	0.0%	-9.6%	0.92
TXN	8.1%	33.3%	0.0%	22.7%	0.41
UNH	-22.0%	-13.8%	0.0%	47.7%	-0.26
UPS	9.4%	23.6%	0.0%	18.2%	2.61
V	-6.3%	-6.2%	0.0%	11.7%	-1.19
WMT	8.0%	20.9%	0.0%	-11.9%	2.50
XOM	11.8%	28.7%	0.0%	19.5%	2.69

## Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
PYPL	✓	✓	✗	✓	✓	✓	✓
ORCL	✓	✓	✗	✓	✓	✓	✓
INTU	✗	✓	✗	✓	✓	✓	✓
NOW	✗	✓	✗	✓	✓	✓	✓

MSFT	X	✓	X	✓	X	✓	✓
ADBE	X	✓	X	✓	X	✓	✓
UNH	✓	✓	X	✓	X	X	✓
ACN	X	✓	X	✓	X	✓	✓
CRM	X	✓	X	✓	X	✓	✓
NFLX	X	✓	X	X	✓	✓	X
TMO	X	✓	X	✓	X	X	✓
IBM	X	✓	X	✓	X	X	✓
AMD	✓	✓	X	X	X	X	X
NKE	X	✓	X	X	X	✓	X
META	X	✓	X	X	X	✓	X
AVGO	✓	✓	X	X	X	X	X
AMZN	X	✓	X	X	X	✓	X
ABT	X	✓	X	X	X	✓	X
INTC	✓	✓	X	X	X	X	X
HD	X	✓	X	X	X	X	X
BA	X	✓	X	X	X	X	X
V	X	X	X	X	X	✓	X
DIS	X	X	X	X	X	✓	X
MA	X	X	X	X	X	✓	X
TXN	X	✓	X	X	X	X	X
QCOM	X	✓	X	X	X	X	X
TSLA	✓	X	X	X	X	X	X
LLY	X	X	X	X	X	X	X
DE	X	X	X	X	X	X	X
MMM	X	X	X	X	X	X	X
NEE	X	X	X	X	X	X	X
ABBV	X	X	X	X	X	X	X
JNJ	X	X	X	X	X	X	X
MRK	X	X	X	X	X	X	X
GILD	X	X	X	X	X	X	X
CVX	X	X	X	X	X	X	X
ISRG	X	X	X	X	X	X	X
RTX	X	X	X	X	X	X	X
GS	X	X	X	X	X	X	X
AMT	X	X	X	X	X	X	X
PG	X	X	X	X	X	X	X
MS	X	X	X	X	X	X	X
XOM	X	X	X	X	X	X	X
CAT	X	X	X	X	X	X	X
LOW	X	X	X	X	X	X	X

CSCO	X	X	X	X	X	X	X
BRK-B	X	X	X	X	X	X	X
KO	X	X	X	X	X	X	X
GOOGL	X	X	X	X	X	X	X
COST	X	X	X	X	X	X	X
PFE	X	X	X	X	X	X	X
SBUX	X	X	X	X	X	X	X
WMT	X	X	X	X	X	X	X
MDLZ	X	X	X	X	X	X	X
PEP	X	X	X	X	X	X	X
BLK	X	X	X	X	X	X	X
AAPL	X	X	X	X	X	X	X
NVDA	X	X	X	X	X	X	X
JPM	X	X	X	X	X	X	X
MCD	X	X	X	X	X	X	X
GE	X	X	X	X	X	X	X
UPS	X	X	X	X	X	X	X

**Data Summary:**

- Total Assets: 62
- Data Generated: 2026-02-24 18:13:49
- 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.