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): 33 Assets
MEDIUM RISK (YELLOW): 0 Assets
LOW RISK (GREEN): 17 Assets

Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 50 assets with a combined market capitalization of $30032.3 billion. **Key Findings:** • 33 assets (66.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 32.9% • Maximum drawdown observed: -58.3% **Risk Concentration:** The analysis reveals significant risk concentration in 33 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 21 RED-flagged assets show negative market sentiment • Average sentiment score for flagged assets: -0.314 • News coverage indicates heightened market concern for these positions

Portfolio Overview

Sector Allocation

Sector	Assets	Market Cap ($B)	Percentage
Technology	12	11096.72	36.9%
Consumer Cyclical	6	4633.50	15.4%
Communication Services	3	4268.08	14.2%
Financial Services	8	3631.85	12.1%
Healthcare	8	2808.36	9.4%
Industrials	6	1258.21	4.2%
Consumer Defensive	4	1138.57	3.8%
Energy	2	998.86	3.3%
Utilities	1	198.16	0.7%

Risk Analysis Results

Risk Distribution:
• HIGH RISK (RED): 33 assets
• MEDIUM RISK (YELLOW): 0 assets
• LOW RISK (GREEN): 17 assets

High Risk Assets

Symbol	Sector	Risk Rating	Volatility	Max Drawdown	Risk Score
NOW	Technology	RED	42.5%	-51.9%	6
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
NFLX	Communication Services	RED	32.9%	-43.4%	4
ADBE	Technology	RED	32.7%	-45.3%	4

AMD	Technology	RED	64.0%	-31.9%	3
MSFT	Technology	RED	26.4%	-28.8%	3
IBM	Technology	RED	33.6%	-28.7%	3
TMO	Healthcare	RED	32.2%	-27.5%	3
NVDA	Technology	RED	44.2%	-28.2%	2
LLY	Healthcare	RED	42.4%	-32.6%	2
TSLA	Consumer Cyclical	RED	61.3%	-26.7%	2
ABT	Healthcare	RED	23.4%	-23.0%	2
AVGO	Technology	RED	50.3%	-31.1%	2
NKE	Consumer Cyclical	RED	41.5%	-34.5%	2
TXN	Technology	RED	40.9%	-29.6%	2
INTC	Technology	RED	66.8%	-30.1%	2
JPM	Financial Services	RED	26.0%	-20.1%	1
UPS	Industrials	RED	30.1%	-29.7%	1
BA	Industrials	RED	37.5%	-25.2%	1
HD	Consumer Cyclical	RED	23.4%	-21.5%	1
MRK	Healthcare	RED	28.9%	-22.5%	1
ISRG	Healthcare	RED	35.6%	-26.1%	1
MS	Financial Services	RED	31.5%	-25.0%	1
GE	Industrials	RED	31.4%	-21.4%	1
MDLZ	Consumer Defensive	RED	22.3%	-25.9%	1
CAT	Industrials	RED	33.3%	-21.8%	1
GS	Financial Services	RED	32.0%	-25.7%	1
DIS	Communication Services	RED	31.9%	-28.2%	1
PG	Consumer Defensive	RED	18.4%	-20.1%	1
CVX	Energy	RED	25.1%	-20.6%	1
AMZN	Consumer Cyclical	RED	35.2%	-21.9%	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: 4
• 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

• 4 assets show critical anomalous behavior requiring immediate review
• Anomaly detection identified 8 assets with unusual patterns
• Key risk drivers: Max Drawdown, Volatility, Price Change 1M

Critical Anomalies Detected

Symbol	Sector	Anomaly Score	Severity	Recommendation
INTU	Technology	100.0	CRITICAL	Critical anomaly - Consider immediate po...
ORCL	Technology	95.5	CRITICAL	Critical anomaly - Consider immediate po...
INTC	Technology	85.7	CRITICAL	Critical anomaly - Consider immediate po...
CAT	Industrials	81.1	CRITICAL	Critical anomaly - Consider immediate po...
NOW	Technology	65.8	HIGH	Significant anomaly - Conduct thorough d...
PYPL	Financial Services	65.5	HIGH	Significant anomaly - Conduct thorough d...
AMD	Technology	63.6	HIGH	Significant anomaly - Conduct thorough d...

Top Risk Factors (Feature Importance)

1. Max Drawdown: 59.3% importance
2. Volatility: 21.1% importance
3. Price Change 1M: 3.8% importance
4. Beta: 3.2% importance
5. Rsi: 3.1% importance

ML Validation Results

Overall Validation Status: WARNING
Checks Passed: 3 / 4

✓ **Anomaly Detection Validation:** PASS
total_assets: 50, anomalies_detected: 8, anomaly_rate: 16.0
■ **Risk Prediction Validation:** WARNING
model_accuracy: 100.0, predictions_made: 50, rating_changes: 0
✓ **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: 59.3

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

Sentiment Analysis

Sentiment analysis was conducted on 33 RED-flagged assets using financial news from the past 12 months. **Key Findings:**
• Average sentiment score: -0.314

- Assets with negative sentiment: 21/33
- Total news articles analyzed: 750

Sentiment Analysis Results

Symbol	Sentiment Score	Label	News Count	Trend	Key Themes
MDLZ	-0.420	NEGATIVE	15	DETERIORATING	regulatory, market_share, financial_health
ADBE	-0.393	NEGATIVE	20	IMPROVING	earnings, operations, regulatory
TSLA	-0.384	NEGATIVE	25	STABLE	regulatory, financial_health, earnings
LLY	-0.382	NEGATIVE	21	DETERIORATING	earnings, operations, regulatory
MRK	-0.379	NEGATIVE	20	IMPROVING	regulatory, market_share, financial_health
ISRG	-0.373	NEGATIVE	30	STABLE	regulatory, earnings, financial_health
NOW	-0.367	NEGATIVE	25	IMPROVING	earnings, regulatory, financial_health
NFLX	-0.364	NEGATIVE	21	IMPROVING	earnings, regulatory, management
NVDA	-0.356	NEGATIVE	27	DETERIORATING	financial_health, regulatory, earnings
HD	-0.348	NEGATIVE	25	IMPROVING	regulatory, financial_health, earnings
INTU	-0.346	NEGATIVE	21	DETERIORATING	earnings, management, financial_health
NKE	-0.345	NEGATIVE	22	DETERIORATING	financial_health, earnings, regulatory
AVGO	-0.344	NEGATIVE	28	IMPROVING	regulatory, earnings, operations
AMZN	-0.343	NEGATIVE	29	IMPROVING	regulatory, financial_health, earnings
AMD	-0.338	NEGATIVE	19	DETERIORATING	regulatory, financial_health, market_share
MS	-0.336	NEGATIVE	27	STABLE	regulatory, financial_health, earnings
ABT	-0.333	NEGATIVE	20	DETERIORATING	earnings, management, regulatory
CVX	-0.330	NEGATIVE	29	STABLE	financial_health, earnings, regulatory
TMO	-0.316	NEGATIVE	21	STABLE	earnings, operations, regulatory
INTC	-0.316	NEGATIVE	19	STABLE	operations, earnings, regulatory
TXN	-0.308	NEGATIVE	21	IMPROVING	operations, regulatory, earnings
GE	-0.287	NEUTRAL	28	STABLE	financial_health, earnings, regulatory
CAT	-0.287	NEUTRAL	22	IMPROVING	earnings, market_share, regulatory
BA	-0.286	NEUTRAL	23	STABLE	earnings, market_share, growth
MSFT	-0.285	NEUTRAL	17	IMPROVING	earnings, regulatory, management
DIS	-0.259	NEUTRAL	19	STABLE	earnings, regulatory, market_share
PYPL	-0.251	NEUTRAL	20	IMPROVING	earnings, regulatory, management
IBM	-0.240	NEUTRAL	25	STABLE	earnings, regulatory, financial_health
GS	-0.233	NEUTRAL	22	STABLE	regulatory, financial_health, market_share
PG	-0.231	NEUTRAL	19	IMPROVING	regulatory, financial_health, operations
UPS	-0.203	NEUTRAL	29	DETERIORATING	financial_health, regulatory, earnings
ORCL	-0.199	NEUTRAL	18	DETERIORATING	regulatory, financial_health, earnings
JPM	-0.188	NEUTRAL	23	DETERIORATING	growth, financial_health, earnings

Detailed Asset Analysis

Asset: NOW

Sector: Technology
Current Price: $103.22
Market Cap: $108.92B
Risk Rating: RED
Risk Metrics:
• Volatility: 42.5%
• Maximum Drawdown: -51.9%
• Beta: -0.03
• Sharpe Ratio: -1.22
• RSI: 42.3
Performance:
• 1-Month Return: -24.3%
• 3-Month Return: -36.6%
• 6-Month Return: -41.3%
Risk Flags:
• High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.367 (NEGATIVE)
• News Articles: 25
• Trend: IMPROVING

Asset: PYPL

Sector: Financial Services
Current Price: $43.69
Market Cap: $40.87B
Risk Rating: RED
Risk Metrics:
• Volatility: 40.9%
• Maximum Drawdown: -49.9%
• Beta: 0.04
• Sharpe Ratio: -1.16
• RSI: 58.8
Performance:
• 1-Month Return: -22.8%
• 3-Month Return: -27.9%
• 6-Month Return: -37.0%
Risk Flags:
• High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.251 (NEUTRAL)
• News Articles: 20
• Trend: IMPROVING

Asset: ORCL

Sector: Technology
Current Price: $144.42
Market Cap: $415.05B
Risk Rating: RED

Risk Metrics:
• Volatility: 61.6%
• Maximum Drawdown: -58.3%
• Beta: 0.34
• Sharpe Ratio: 0.01
• RSI: 43.2
Performance:
• 1-Month Return: -20.8%
• 3-Month Return: -27.1%
• 6-Month Return: -38.4%
Risk Flags:
• High Volatility, Extreme Drawdown, Severe Decline, Extended Decline, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.199 (NEUTRAL)
• News Articles: 18
• Trend: DETERIORATING

Asset: INTU

Sector: Technology
Current Price: $360.00
Market Cap: $100.22B
Risk Rating: RED
Risk Metrics:
• Volatility: 36.2%
• Maximum Drawdown: -55.3%
• Beta: -0.07
• Sharpe Ratio: -1.11
• RSI: 23.4
Performance:
• 1-Month Return: -35.9%
• 3-Month Return: -45.6%
• 6-Month Return: -45.0%
Risk Flags:
• Extreme Drawdown, Severe Decline, Extended Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.346 (NEGATIVE)
• News Articles: 21
• Trend: DETERIORATING

Asset: NFLX

Sector: Communication Services
Current Price: $76.70
Market Cap: $325.35B
Risk Rating: RED
Risk Metrics:
• Volatility: 32.9%
• Maximum Drawdown: -43.4%
• Beta: -0.02
• Sharpe Ratio: -0.67
• RSI: 41.1
Performance:
• 1-Month Return: -10.5%
• 3-Month Return: -26.5%
• 6-Month Return: -37.0%

Risk Flags:
• Extreme Drawdown, Extended Decline, Poor Risk Return, Momentum Breakdown
Market Sentiment:
• Sentiment Score: -0.364 (NEGATIVE)
• News Articles: 21
• 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 33 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 21 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 16:36:36
• 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_163636.csv
Risk Analysis CSV: risk_analysis_20260224_163636.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%	24.4%	-0.59
ADBE	-16.7%	-21.7%	-30.1%	21.2%	-1.61
AMD	-16.5%	3.0%	28.5%	14.3%	1.32
AMZN	-12.4%	-5.3%	-8.3%	36.4%	0.07
AVGO	-0.1%	-4.4%	10.7%	-21.9%	1.12
BA	-6.0%	29.9%	2.9%	-10.6%	0.83
BLK	-4.2%	6.4%	-4.6%	11.2%	0.57
BRK-B	1.7%	-2.4%	1.2%	3.7%	-0.09
CAT	20.7%	39.8%	78.5%	23.5%	2.61
COST	2.0%	11.0%	6.1%	-18.7%	-0.13
CSCO	1.7%	3.5%	18.0%	27.9%	0.94
CVX	11.4%	24.4%	19.2%	8.7%	0.85
DE	23.3%	31.2%	31.4%	21.4%	1.03
DIS	-4.6%	2.5%	-9.2%	19.8%	-0.01
GE	14.9%	18.0%	27.4%	3.8%	1.82
GILD	7.9%	18.1%	32.0%	7.3%	1.19
GOOGL	-6.9%	3.6%	49.1%	16.9%	1.88
GS	-3.6%	16.6%	22.8%	2.5%	1.29
HD	0.6%	14.0%	-3.7%	-10.2%	0.21
IBM	-21.6%	-21.9%	-2.5%	44.3%	-0.19
INTC	6.1%	30.7%	83.7%	-2.4%	1.23
INTU	-35.9%	-45.6%	-45.0%	55.3%	-1.11
ISRG	-6.5%	-12.0%	5.5%	12.0%	-0.38
JNJ	11.3%	21.7%	40.1%	4.4%	2.27
JPM	-1.9%	-0.4%	1.1%	-1.9%	0.61
LLY	-0.6%	-0.3%	52.2%	13.8%	0.61
LOW	0.7%	19.9%	9.1%	-3.6%	0.79
MA	-6.5%	-8.6%	-16.6%	16.0%	-0.46
MCD	7.0%	8.9%	8.1%	5.4%	0.58
MDLZ	3.9%	7.6%	-0.2%	-0.7%	-0.16

MMM	4.8%	-0.6%	7.7%	20.2%	0.58
MRK	15.6%	28.1%	48.3%	-1.2%	1.27
MS	-7.3%	6.6%	14.9%	17.6%	0.99
MSFT	-17.8%	-18.1%	-23.2%	44.9%	-0.09
NEE	11.3%	13.9%	28.1%	-1.9%	1.29
NFLX	-10.5%	-26.5%	-37.0%	-10.8%	-0.67
NKE	-1.4%	2.6%	-18.2%	-19.7%	-0.33
NOW	-24.3%	-36.6%	-41.3%	61.7%	-1.22
NVDA	2.9%	7.3%	6.8%	1.5%	1.06
ORCL	-20.8%	-27.1%	-38.4%	8.7%	0.01
PEP	15.3%	16.1%	15.8%	11.5%	0.59
PFE	5.3%	10.7%	12.2%	3.4%	0.41
PG	10.9%	10.6%	7.6%	0.5%	-0.02
PYPL	-22.8%	-27.9%	-37.0%	60.0%	-1.16
TMO	-17.4%	-11.8%	5.7%	19.3%	0.00
TSLA	-7.4%	3.1%	16.3%	-10.0%	0.60
TXN	8.8%	34.2%	4.8%	21.8%	0.37
UPS	9.3%	23.5%	35.6%	18.0%	0.28
V	-7.0%	-6.9%	-12.3%	11.2%	-0.51
XOM	11.4%	28.3%	35.6%	19.2%	1.37

Risk Flags Details

Symbol	High Vol	Ext. DD	Vol Collapse	Severe Dec	Ext. Dec	Poor Sharpe	Mom. Break
NOW	✓	✓	✗	✓	✓	✓	✓
PYPL	✓	✓	✗	✓	✓	✓	✓
ORCL	✓	✓	✗	✓	✓	✗	✓
INTU	✗	✓	✗	✓	✓	✓	✓
NFLX	✗	✓	✗	✗	✓	✓	✓
ADBE	✗	✓	✗	✓	✗	✓	✓
AMD	✓	✓	✗	✓	✗	✗	✗
MSFT	✗	✓	✗	✓	✗	✗	✓
IBM	✗	✓	✗	✓	✗	✗	✓
TMO	✗	✓	✗	✓	✗	✗	✓
NVDA	✓	✓	✗	✗	✗	✗	✗
LLY	✓	✓	✗	✗	✗	✗	✗
TSLA	✓	✓	✗	✗	✗	✗	✗
ABT	✗	✓	✗	✗	✗	✓	✗
AVGO	✓	✓	✗	✗	✗	✗	✗
NKE	✓	✓	✗	✗	✗	✗	✗

TXN	✓	✓	✗	✗	✗	✗	✗
INTC	✓	✓	✗	✗	✗	✗	✗
JPM	✗	✓	✗	✗	✗	✗	✗
UPS	✗	✓	✗	✗	✗	✗	✗
BA	✗	✓	✗	✗	✗	✗	✗
HD	✗	✓	✗	✗	✗	✗	✗
MRK	✗	✓	✗	✗	✗	✗	✗
ISRG	✗	✓	✗	✗	✗	✗	✗
MS	✗	✓	✗	✗	✗	✗	✗
GE	✗	✓	✗	✗	✗	✗	✗
V	✗	✗	✗	✗	✗	✓	✗
MDLZ	✗	✓	✗	✗	✗	✗	✗
CAT	✗	✓	✗	✗	✗	✗	✗
GS	✗	✓	✗	✗	✗	✗	✗
DIS	✗	✓	✗	✗	✗	✗	✗
PG	✗	✓	✗	✗	✗	✗	✗
CVX	✗	✓	✗	✗	✗	✗	✗
AMZN	✗	✓	✗	✗	✗	✗	✗
NEE	✗	✗	✗	✗	✗	✗	✗
PEP	✗	✗	✗	✗	✗	✗	✗
COST	✗	✗	✗	✗	✗	✗	✗
GILD	✗	✗	✗	✗	✗	✗	✗
BLK	✗	✗	✗	✗	✗	✗	✗
MMM	✗	✗	✗	✗	✗	✗	✗
DE	✗	✗	✗	✗	✗	✗	✗
XOM	✗	✗	✗	✗	✗	✗	✗
JNJ	✗	✗	✗	✗	✗	✗	✗
LOW	✗	✗	✗	✗	✗	✗	✗
PFE	✗	✗	✗	✗	✗	✗	✗
MA	✗	✗	✗	✗	✗	✗	✗
GOOGL	✗	✗	✗	✗	✗	✗	✗
CSCO	✗	✗	✗	✗	✗	✗	✗
MCD	✗	✗	✗	✗	✗	✗	✗
BRK-B	✗	✗	✗	✗	✗	✗	✗

Data Summary:
- Total Assets: 50
- Data Generated: 2026-02-24 16:36:36
- 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.