# Portfolio Risk Analysis Report

**Report Date:** October 14, 2025
**Portfolio Size:** 20 Assets
**Analysis Period:** 12 Months
**Generated by:** Automated Risk Analysis Pipeline

## Risk Assessment Summary

**HIGH RISK (RED):** 14 Assets
**MEDIUM RISK (YELLOW):** 0 Assets
**LOW RISK (GREEN):** 6 Assets

# Executive Summary

This report presents a comprehensive risk analysis of a portfolio containing 20 assets with a combined market capitalization of $2406.9 billion. **Key Findings:** • 14 assets (70.0%) are rated as HIGH RISK (RED) • 0 assets (0.0%) are rated as MEDIUM RISK (YELLOW) • Average portfolio volatility: 29.4% • Maximum drawdown observed: -51.9% **Risk Concentration:** The analysis reveals significant risk concentration in 14 assets requiring immediate attention and potential portfolio rebalancing. **Sentiment Analysis:** • 5 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 | 4 | 723.76 | 30.1% |
| Healthcare | 3 | 577.71 | 24.0% |
| Materials | 4 | 379.25 | 15.8% |
| Industrial | 2 | 215.78 | 9.0% |
| Consumer Staples | 1 | 123.84 | 5.1% |
| Consumer Discretionary | 2 | 104.99 | 4.4% |
| Financial Services | 1 | 102.73 | 4.3% |
| Energy | 1 | 100.51 | 4.2% |
| Utilities | 1 | 63.84 | 2.7% |
| Real Estate | 1 | 14.51 | 0.6% |

# Risk Analysis Results

**Risk Distribution:**
• HIGH RISK (RED): 14 assets
• MEDIUM RISK (YELLOW): 0 assets
• LOW RISK (GREEN): 6 assets

## High Risk Assets

| Symbol | Sector | Risk Rating | Volatility | Max Drawdown | Risk Score |
|---|---|---|---|---|---|
| RXN | Healthcare | RED | 31.0% | -44.8% | 4 |
| TVB | Healthcare | RED | 42.9% | -39.9% | 3 |
| ZIZ | Consumer Discretionary | RED | 29.7% | -45.6% | 2 |
| DOOD | Industrial | RED | 30.1% | -41.1% | 2 |
| BMD | Materials | RED | 38.4% | -38.4% | 2 |

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|---|---|---|---|---|---|
| VW | Healthcare | RED | 24.3% | -26.8% | 2 |
| GGM | Technology | RED | 41.0% | -51.9% | 2 |
| GTF | Industrial | RED | 26.4% | -31.8% | 2 |
| PHU | Materials | RED | 30.7% | -21.3% | 1 |
| XR | Technology | RED | 24.2% | -21.8% | 1 |
| MWI | Materials | RED | 33.1% | -40.4% | 1 |
| GO | Technology | RED | 28.6% | -24.9% | 1 |
| NTV | Real Estate | RED | 32.6% | -39.3% | 1 |
| DHX | Consumer Staples | RED | 36.6% | -31.6% | 1 |

# Machine Learning Analysis

Advanced machine learning techniques were applied to identify anomalies and predict future risk ratings. **Anomaly Detection Summary:**
• Total Anomalies Detected: 3
• Critical Anomalies: 3
• High Risk Anomalies: 1
• Anomaly Rate: 15.0%
**Risk Prediction Model:**
• Model Accuracy: 83.3%
• Rating Changes Predicted: 1
• Assets Predicted to Deteriorate: 1
• Assets Predicted to Improve: 0

## Key Machine Learning Insights

• 3 assets show critical anomalous behavior requiring immediate review
• 1 assets predicted to deteriorate in risk rating
• Anomaly detection identified 3 assets with unusual patterns
• Key risk drivers: Max Drawdown, Price Change 6M, Sharpe Ratio

## Critical Anomalies Detected

| Symbol | Sector | Anomaly Score | Severity | Recommendation |
|---|---|---|---|---|
| MDG | Consumer Discretionary | 100.0 | CRITICAL | Critical anomaly - Consider immediate po... |
| RXN | Healthcare | 99.7 | CRITICAL | Critical anomaly - Consider immediate po... |
| BMD | Materials | 82.8 | CRITICAL | Critical anomaly - Consider immediate po... |
| GGM | Technology | 63.5 | HIGH | Normal behavior pattern - Continue monit... |

## Predicted Risk Rating Changes

| Symbol | Current Rating | Predicted Rating | Confidence | Trend |
|---|---|---|---|---|
| DBES | GREEN | RED | 54.0% | DETERIORATING |

## Top Risk Factors (Feature Importance)

1. Max Drawdown: 38.6% importance
2. Price Change 6M: 21.3% importance
3. Sharpe Ratio: 17.1% importance
4. Price Change 3M: 7.8% importance
5. Volatility: 5.9% importance

# Sentiment Analysis

Sentiment analysis was conducted on 14 RED-flagged assets using financial news from the past 12 months. **Key Findings:**
• Average sentiment score: -0.314
• Assets with negative sentiment: 5/14
• Total news articles analyzed: 295

## Sentiment Analysis Results

| Symbol | Sentiment Score | Label | News Count | Trend | Key Themes |
|---|---|---|---|---|---|
| ZIZ | -0.543 | NEGATIVE | 17 | DETERIORATING | regulatory, market_share, earnings |
| RXN | -0.452 | NEGATIVE | 22 | IMPROVING | earnings, market_share, financial_health |
| GTF | -0.344 | NEGATIVE | 28 | IMPROVING | regulatory, earnings, market_share |
| MWI | -0.344 | NEGATIVE | 20 | STABLE | regulatory, earnings, financial_health |
| BMD | -0.323 | NEGATIVE | 27 | IMPROVING | regulatory, financial_health, earnings |
| DOOD | -0.287 | NEUTRAL | 16 | DETERIORATING | earnings, regulatory, management |
| XR | -0.283 | NEUTRAL | 19 | IMPROVING | regulatory, operations, earnings |
| TVB | -0.282 | NEUTRAL | 15 | DETERIORATING | operations, earnings, regulatory |
| VW | -0.274 | NEUTRAL | 23 | IMPROVING | earnings, regulatory, management |
| GO | -0.271 | NEUTRAL | 18 | STABLE | regulatory, financial_health, earnings |
| PHU | -0.269 | NEUTRAL | 29 | DETERIORATING | financial_health, operations, earnings |
| DHX | -0.261 | NEUTRAL | 22 | IMPROVING | earnings, operations, regulatory |
| GGM | -0.248 | NEUTRAL | 22 | IMPROVING | regulatory, earnings, growth |
| NTV | -0.209 | NEUTRAL | 17 | DETERIORATING | regulatory, financial_health, management |

# Detailed Asset Analysis

## Asset: RXN

**Sector:** Healthcare
**Current Price:** $377.61
**Market Cap:** $28.38B

**Risk Rating:** RED
**Risk Metrics:**
• Volatility: 31.0%
• Maximum Drawdown: -44.8%
• Beta: 0.11
• Sharpe Ratio: -0.59
• RSI: 14.1
**Performance:**
• 1-Month Return: -11.3%
• 3-Month Return: -29.3%
• 6-Month Return: -41.0%
**Risk Flags:**
• Extreme Drawdown, Extended Decline, Poor Risk Return, Momentum Breakdown
**Market Sentiment:**
• Sentiment Score: -0.452 (NEGATIVE)
• News Articles: 22
• Trend: IMPROVING

## Asset: TVB

**Sector:** Healthcare
**Current Price:** $285.24
**Market Cap:** $471.72B
**Risk Rating:** RED
**Risk Metrics:**
• Volatility: 42.9%
• Maximum Drawdown: -39.9%
• Beta: 0.02
• Sharpe Ratio: -0.53
• RSI: 45.0
**Performance:**
• 1-Month Return: -3.2%
• 3-Month Return: -5.1%
• 6-Month Return: -17.6%
**Risk Flags:**
• High Volatility, Extreme Drawdown, Poor Risk Return
**Market Sentiment:**
• Sentiment Score: -0.282 (NEUTRAL)
• News Articles: 15
• Trend: DETERIORATING

## Asset: ZIZ

**Sector:** Consumer Discretionary
**Current Price:** $56.49
**Market Cap:** $41.23B
**Risk Rating:** RED
**Risk Metrics:**
• Volatility: 29.7%
• Maximum Drawdown: -45.6%
• Beta: -0.09
• Sharpe Ratio: -1.28
• RSI: 47.7
**Performance:**
• 1-Month Return: -6.8%
• 3-Month Return: -13.5%
• 6-Month Return: -3.8%

**Risk Flags:**
• Extreme Drawdown, Poor Risk Return
**Market Sentiment:**
• Sentiment Score: -0.543 (NEGATIVE)
• News Articles: 17
• Trend: DETERIORATING

## Asset: DOOD

**Sector:** Industrial
**Current Price:** $183.20
**Market Cap:** $149.66B
**Risk Rating:** RED
**Risk Metrics:**
• Volatility: 30.1%
• Maximum Drawdown: -41.1%
• Beta: -0.13
• Sharpe Ratio: -1.29
• RSI: 29.3
**Performance:**
• 1-Month Return: -0.6%
• 3-Month Return: -4.0%
• 6-Month Return: -10.3%
**Risk Flags:**
• Extreme Drawdown, Poor Risk Return
**Market Sentiment:**
• Sentiment Score: -0.287 (NEUTRAL)
• News Articles: 16
• Trend: DETERIORATING

## Asset: BMD

**Sector:** Materials
**Current Price:** $35.01
**Market Cap:** $51.98B
**Risk Rating:** RED
**Risk Metrics:**
• Volatility: 38.4%
• Maximum Drawdown: -38.4%
• Beta: 0.02
• Sharpe Ratio: 0.23
• RSI: 3.5
**Performance:**
• 1-Month Return: -15.5%
• 3-Month Return: 7.3%
• 6-Month Return: -7.4%
**Risk Flags:**
• Extreme Drawdown, Severe Decline
**Market Sentiment:**
• Sentiment Score: -0.323 (NEGATIVE)
• News Articles: 27
• 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 14 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 5 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: 2025-10-14 10:48:22
• Analysis Period: 12 months
• Total Assets Analyzed: 20
• Pipeline Version: 1.0