

OCTARISK

Quarterly Portfolio Risk Report

Q1 2026

Valuation Date: December 31, 2025

Report Generated: January 20, 2026

Open-Source Risk Analysis Framework

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Executive Summary

This quarterly report analyzes five distinct portfolio strategies using the Octarisk open-source risk measurement framework. Our analysis reveals critical findings about portfolio construction, diversification, and the widespread misunderstanding of what constitutes a *balanced* portfolio.

Key Findings

- **The traditional 60/40 *balanced* portfolio is equity-dominated by risk:** Despite only 50% equity allocation, equities contribute 85% of total portfolio risk. This portfolio is balanced by weight, not by risk.
- **True diversification requires multiple uncorrelated assets:** The ALLSEASONS portfolio achieves 11.2% diversification benefit with lower overall VaR than the traditional 60/40, despite having only 30% equity allocation.
- **Inflation protection requires real assets:** In stagflation scenarios, portfolios with gold exposure (ALLSEASONS, HARDASSETS) lose 38% less than the traditional balanced portfolio.
- **Conservative portfolios can still achieve diversification:** SAFEHARBOR achieves the highest diversification benefit (13.3%) with the lowest volatility through bond ladders and small allocations to gold and REITs.

Portfolio Risk Summary (10-day VaR @ 99.9%)

Portfolio	VaR (EUR)	VaR (%)	Div. Benefit	SRRI
SAFEHARBOR	46,143	4.6%	13.3%	4
BALANCED	99,622	9.9%	6.5%	6
ALLSEASONS	93,337	9.3%	11.2%	6
GROWTH	150,813	15.0%	5.2%	6
HARDASSETS	153,651	15.3%	6.2%	6

Portfolio value is 1,000,000 EUR (as of 31th of December 2025).

The Myth of 60/40 Balance

For decades, the 60/40 portfolio (60% equities, 40% bonds) has been marketed as a balanced allocation. Our quantitative analysis reveals an uncomfortable truth: the traditional 60/40 is not balanced by risk—it is an equity portfolio with a bond footnote.

Risk Decomposition Analysis

The BALANCED portfolio demonstrates this problem clearly:

- Equity allocation: 50% of portfolio
- **Equity risk contribution: 85% of total VaR**
- Fixed income allocation: 40% of portfolio
- **Fixed income risk contribution: -0.3% of total VaR (essentially zero)**

This means that despite representing only half the portfolio, equities drive essentially all the risk. The 40% bond allocation contributes nothing to risk reduction. This is the opposite of balanced.

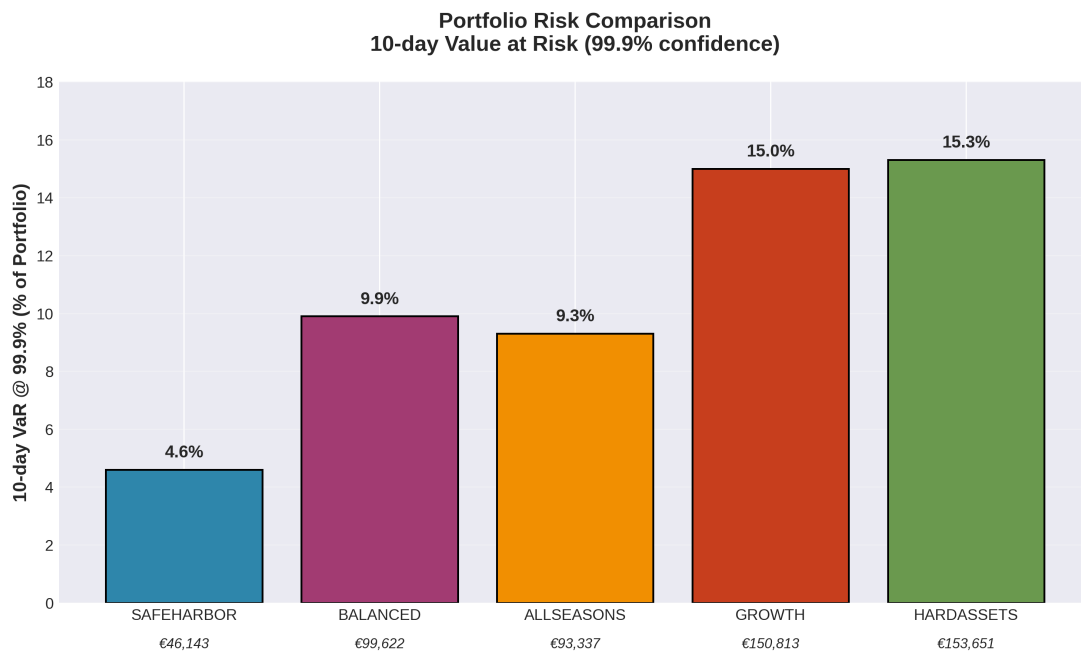


Figure 1: Portfolio Risk Comparison (10-day VaR @ 99.9%)

True Balance: The ALLSEASONS Alternative

In contrast, the ALLSEASONS portfolio demonstrates what true risk balance looks like:

- Equity allocation: 30% of portfolio (half of BALANCED)
- Equity risk contribution: 52% of total VaR
- Gold (15% allocation): 16% risk contribution

- REITs (10% allocation): 16% risk contribution
- Bitcoin (5% allocation): 15% risk contribution

The Remarkable Finding:

Despite having only 30% equity allocation (vs. 60% in BALANCED), ALLSEASONS achieves **lower total portfolio VaR** (9.3% vs. 9.9%). This is the power of true diversification through uncorrelated asset classes.

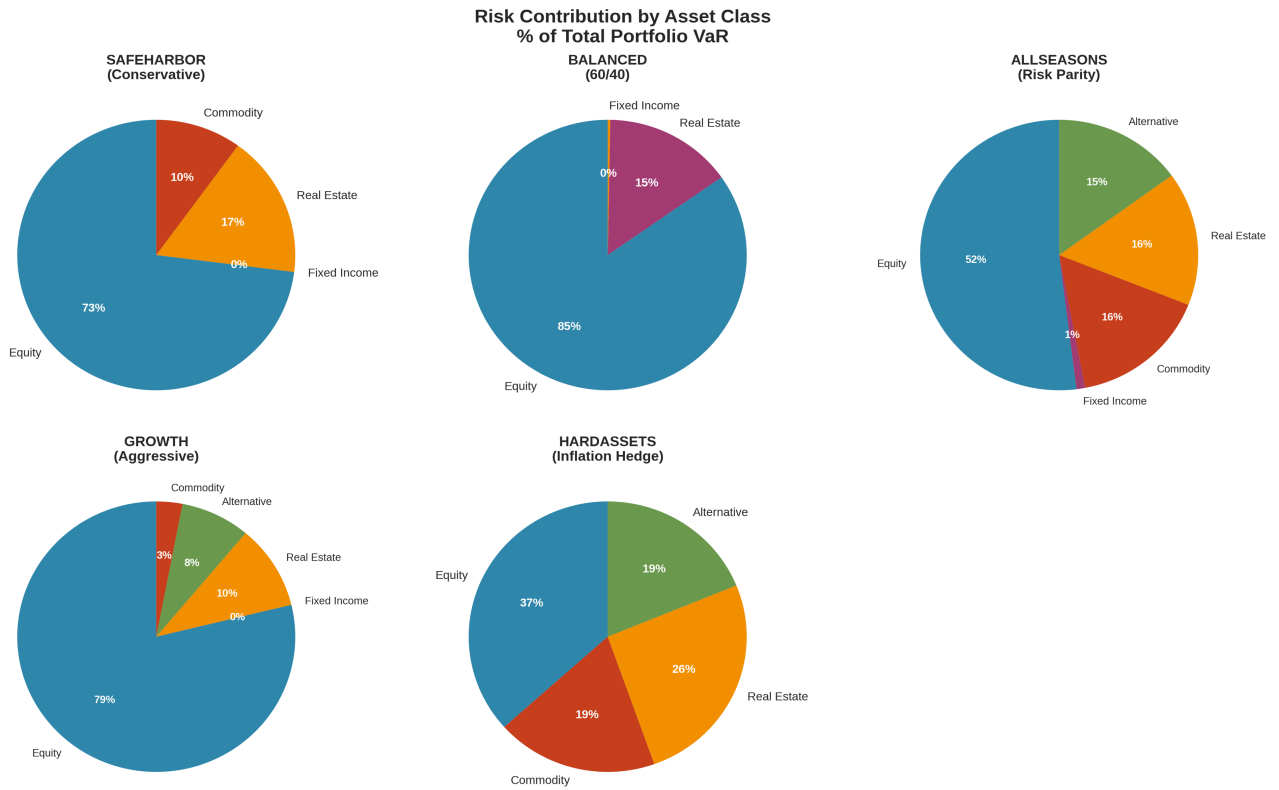


Figure 2: Risk Contribution by Asset Class (% of Total VaR)

Note how BALANCED is dominated by a single blue slice (equity), while ALLSEASONS distributes risk across multiple asset classes. This is the visual representation of true diversification.

Diversification Benefits

Diversification benefit measures how much portfolio risk is reduced through combining multiple assets versus holding them individually. Higher diversification benefit indicates better risk reduction through asset combination.

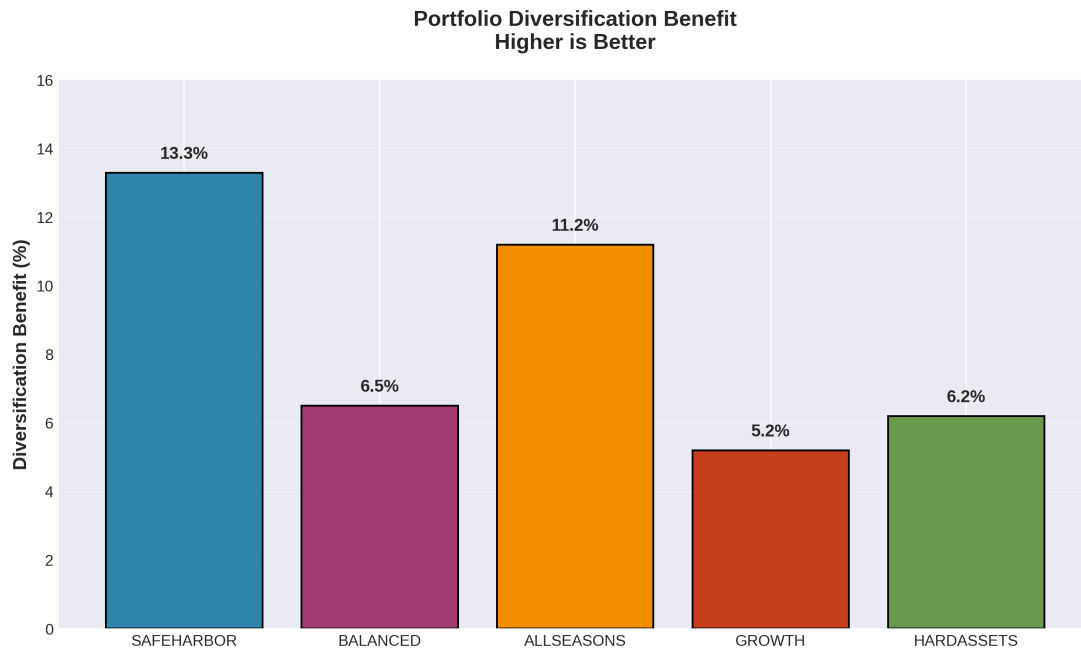


Figure 3: Portfolio Diversification Benefit Comparison

Key Observations

SAFEHARBOR leads with 13.3% diversification benefit. Despite being the most conservative portfolio (20% equity), it achieves the highest diversification through bond laddering across multiple maturities, combined with small allocations to gold and REITs. This demonstrates that conservative portfolios can still achieve excellent diversification.

ALLSEASONS achieves 11.2% diversification benefit—72% higher than BALANCED (6.5%). This massive difference explains why ALLSEASONS can have lower overall VaR despite less exposure to traditional safeassets. The portfolio benefits from gold, negative correlation with equities, Bitcoins low correlation with traditional assets, and genuine multi-asset diversification.

BALANCED achieves only 6.5% diversification benefit because its 40% bond allocation provides minimal diversification in the current regime where stock-bond correlation can break positive. When both stocks and bonds fall together (as in 2022), the diversification disappears.

GROWTH (5.2%) and HARDASSETS (6.2%) show lower diversification benefits because they are intentionally concentrated strategies. GROWTH is equity-heavy by

design, while HARDASSETS deliberately avoids bonds. These are acceptable tradeoffs for portfolios with specific strategic goals.

Stress Test Analysis

We subject all portfolios to four parametric stress scenarios: general financial crisis, COVID-19 style pandemic shock, stagflation (rising inflation + economic stagnation), and an AI bubble burst. These scenarios test portfolio resilience across different economic regimes.

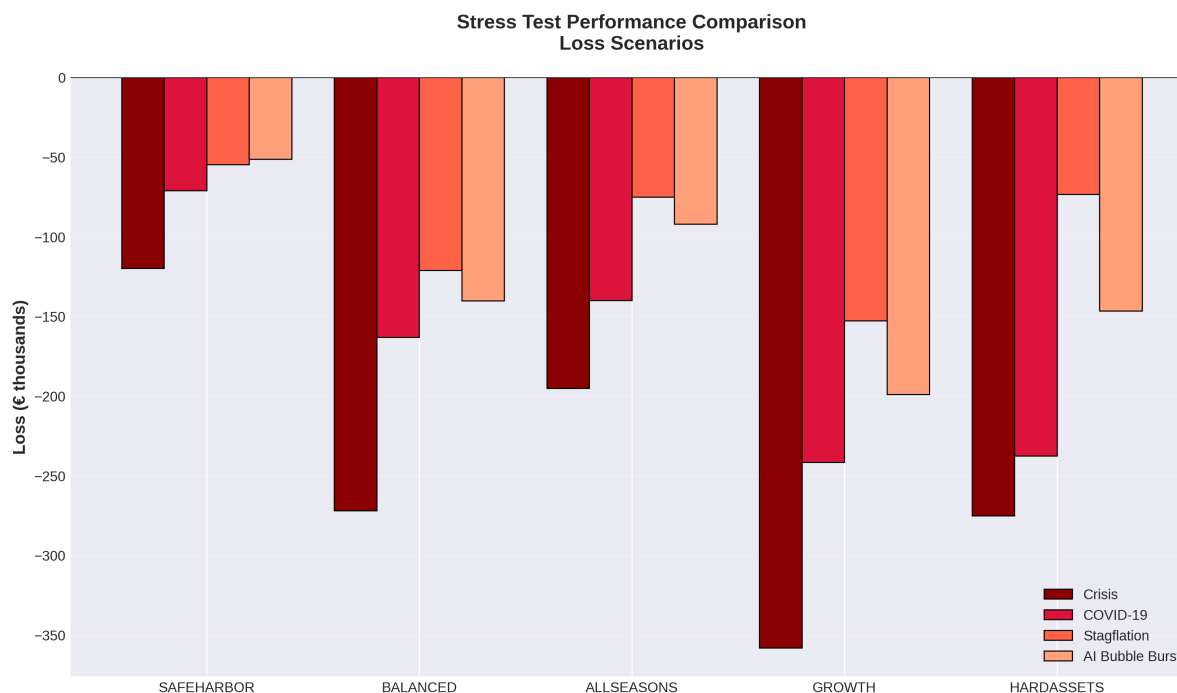


Figure 4: Stress Test Performance (Loss in EUR thousands)

Stress Test Results

Scenario	SAFEHARBOR	BALANCED	ALLSEASONS	GROWTH
Crisis	-€119,892	-€271,914	-€195,127	-€358,110
COVID-19	-€70,943	-€163,119	-€139,963	-€241,562
Stagflation	-€54,633	-€121,019	-€75,007	-€152,652
AI Bubble	-€51,284	-€140,207	-€92,086	-€198,947

Green indicates best performance in each scenario

The Stagflation Problem

The stagflation scenario deserves special attention as it exposes a critical weakness in traditional portfolio construction. Stagflation (rising inflation combined with economic stagnation) is particularly dangerous because both stocks and bonds can fall simultaneously.

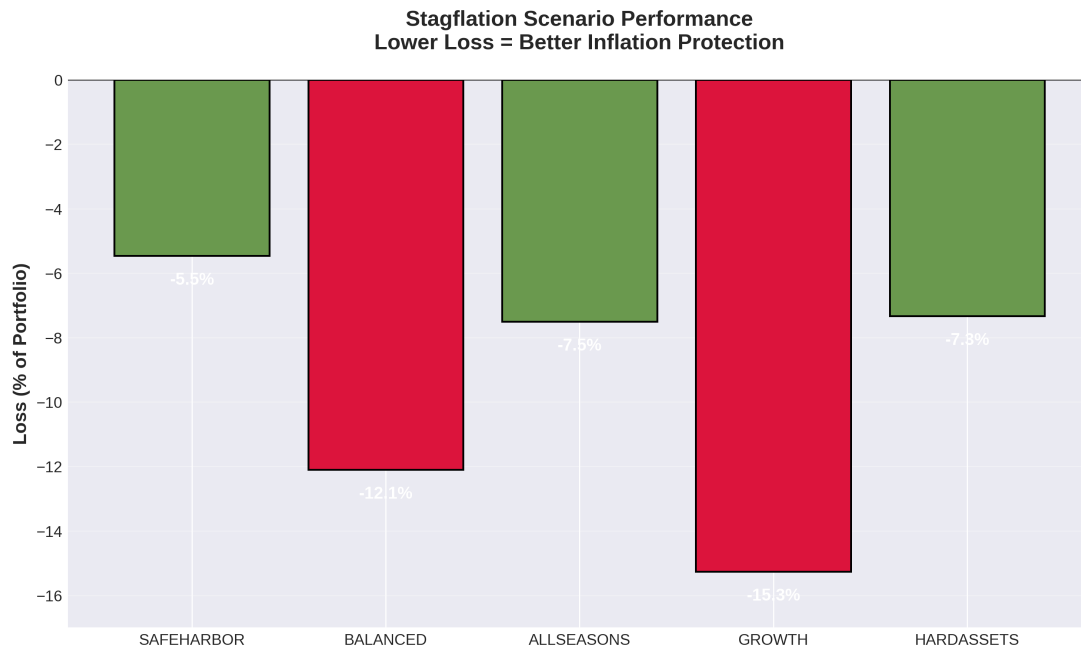


Figure 5: Stagflation Scenario Performance

Key Finding:

BALANCED loses 12.1% in the stagflation scenario, while ALLSEASONS loses only 7.5%—a 38% better outcome. Why? BALANCED has zero gold allocation. ALLSEASONS has 15% gold, which performs well during inflation. This single asset allocation choice makes a massive difference in portfolio resilience across economic regimes.

This empirically proves that the balanced portfolio is not balanced for different economic regimes—it is optimized for one regime (falling rates, rising stocks) and vulnerable to others.

Portfolio Profiles

SAFEHARBOR (Conservative Retiree)

Asset Allocation:

- 20% MSCI World Equity
- 70% Government Bonds (laddered across 4 maturities from 1 year to 3 years)
- 5% REITs
- 5% Physical Gold

Risk Metrics:

- 10-day VaR (99.9%): €46,143 (4.6%)
- Annualized Volatility: 5.7%
- **Diversification Benefit: 13.3% (highest of all portfolios)**
- SRRI Class: 4

Suitability:

Ideal for retirees or near-retirees who cannot afford significant drawdowns. The bond ladder provides predictable income while small allocations to gold and REITs add diversification without excessive risk. Achieves excellent risk-adjusted returns through superior diversification.

BALANCED (Traditional 60/40)

Asset Allocation:

- 50% Global Equities (35% MSCI World, 15% Emerging Markets)
- 40% Fixed Income (30% Government with 1-3 year maturity, 10% Corporate with 2 year maturity)
- 10% Global REITs

Risk Metrics:

- 10-day VaR (99.9%): €99,622 (9.9%)
- Annualized Volatility: 12.2%
- Diversification Benefit: 6.5% (second lowest)
- SRRI Class: 6

Critical Issue:

Despite the balanced label, this portfolio is equity-dominated by risk. Equities drive 85% of total VaR while bonds contribute essentially nothing (-0.3%). Performs poorly in stagflation scenarios due to zero inflation hedges. Consider ALLSEASONS as a superior alternative with lower risk and better diversification.

ALLSEASONS (Risk Parity Inspired)

Asset Allocation:

- 30% Global Equities (25% MSCI ACWI, 5% Emerging Markets)
- 40% Fixed Income (25% Government, 15% Corporate)
- 15% Physical Gold
- 10% REITs
- 5% Bitcoin

Risk Metrics:

- **10-day VaR (99.9%): €93,337 (9.3%)**
- Annualized Volatility: 11.5%
- Diversification Benefit: 11.2% (second highest)
- SRRI Class: 6

Key Strength:

This is what true balance looks like. Risk contributions are distributed across multiple uncorrelated asset classes (equity 52%, gold 16%, REITs 16%, Bitcoin 15%). Achieves lower VaR than BALANCED despite half the equity allocation. Excels in stagflation scenarios due to gold exposure. Recommended for investors seeking genuine all-weather diversification.

GROWTH (Aggressive Accumulator)

Asset Allocation:

- 70% Global Equities (45% MSCI World, 25% Emerging Markets)
- 10% Corporate Bonds
- 10% REITs
- 5% Bitcoin
- 5% Physical Gold

Risk Metrics:

- 10-day VaR (99.9%): €150,813 (15.0%)
- Annualized Volatility: 18.5%
- Diversification Benefit: 5.2% (lowest)
- SRRI Class: 6 (nearly 7)

Suitability:

Designed for younger investors with 30+ year horizons who can tolerate high volatility for maximum growth potential. Heavy emerging markets allocation adds growth potential but also risk. Small Bitcoin position serves as generational technology bet. Not suitable for anyone who needs portfolio stability or regular income.

HARDASSETS (Inflation Hedge)

Asset Allocation:

- 35% Global Equities (20% MSCI World, 15% Emerging Markets)
- 30% Physical Gold
- 25% REITs

- 10% Bitcoin
- 0% Bonds (deliberate)

Risk Metrics:

- 10-day VaR (99.9%): €153,651 (15.3%)
- Annualized Volatility: 18.9%
- Diversification Benefit: 6.2%
- SRRI Class: 6 (nearly 7)

Strategic Focus:

Deliberately avoids nominal bonds due to inflation concerns. Massive overweight in tangible/scarce assets. Performs exceptionally well in stagflation (only 7.3% loss vs. 12.1% for BALANCED). High Bitcoin allocation (10%) makes this the most volatile portfolio but also positions for potential digital asset appreciation. Suitable only for investors with strong inflation concerns and high risk tolerance.

Conclusion and Recommendations

This analysis demonstrates that portfolio construction requires thinking beyond simple asset allocation percentages. True balance means balancing risk contributions, not just portfolio weights.

Key Takeaways

1. Question Conventional Wisdom

The traditional 60/40 balanced portfolio is a marketing construct, not a risk management tool. It works well in certain market regimes (declining interest rates, rising equities) but fails when correlations break down. Investors should demand more sophisticated risk analysis from their advisors.

2. Diversification Requires Uncorrelated Assets

Genuine diversification benefit comes from combining assets with low or negative correlations. Gold, REITs, and alternative assets provide this benefit. Bonds alone are insufficient, especially in inflationary environments where stock-bond correlation can turn positive.

3. Match Portfolio to Economic Regime Expectations

If you believe inflation is a risk, allocate to inflation hedges (gold, real assets). If you expect deflation, bonds provide protection. If uncertain about the future regime, choose true diversification (ALLSEASONS). Do not rely on a single-regime optimized portfolio (BALANCED).

4. Open-Source Risk Analysis Matters

This analysis was produced using Octarisk, an open-source risk measurement framework. Sophisticated risk analysis should not be locked behind expensive Bloomberg terminals or proprietary black boxes. Transparency in risk measurement helps investors make informed decisions.

Actionable Recommendations

- **If you currently hold a 60/40 portfolio:** Consider adding 10-15% gold and reducing equity allocation to 30-40%. This provides genuine all-weather diversification without significantly reducing expected returns.
- **If you are a conservative investor:** SAFEHARBOR demonstrates that you can achieve excellent risk-adjusted returns through superior diversification. Bond laddering plus small allocations to gold and REITs provides stability with diversification benefits.
- **If you are concerned about inflation:** Traditional portfolios with zero inflation hedges are dangerously exposed. Even a moderate 15% gold allocation (as in ALLSEASONS) provides meaningful protection without excessive cost.
- **For all investors:** Focus on risk contribution, not just allocation percentages. Ask your advisor: What percentage of my portfolio risk comes from equities? If the answer is above 70%, your portfolio is not truly diversified.

About Octarisk

Octarisk is a free and open-source portfolio risk measurement framework built on GNU Octave. It provides sophisticated risk analytics including Monte Carlo simulation, stress testing, VaR decomposition, and utility-based risk assessment.

Website: www.octarisk.com

License: *GPLv3 (free and open-source)*

Next Report: Q2 2026 (*April 2026*)

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