Scenario Backtest: No-Policy-Change Counterfactual for June 2025

Analysis Document

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1. Introduction

This document presents a comprehensive backtest scenario analyzing the hypothetical portfolio risk and performance outcomes for June 2025, assuming the internal risk policy remained unchanged from its prior configuration. This

counterfactual analysis aims to compare the actual risk outcomes with what might have occurred had the policy not been revised, providing critical insights for risk governance, strategic decision-making, and compliance monitoring.

The analysis incorporates a detailed review of governance structures, risk policy summaries, portfolio compositions, dated incident notes, and various operational metrics, offering a holistic view suitable for stakeholders, including risk officers, portfolio managers, and regulatory compliance teams.

2. Background and Context

Northbridge Capital operates under a well-defined governance framework within Fairfox Financial Holding. The organization emphasizes risk mitigation, compliance, and strategic performance measurement aligned with industry best practices.

In 2025, an internal risk policy was revised on June 10th, affecting portfolio risk limits, high-frequency trading constraints, and scenario stress testing procedures. This update aimed to adapt to market conditions and enhance risk controls.

Accurate historical analysis requires understanding both current and counterfactual risk environments, particularly as they relate to internal policy breaches, incident management, and adherence to regulatory standards.

3. Objective and Scope

The primary objective of this scenario backtest is to evaluate, in a controlled hypothetical framework, how portfolio risk metrics and performance indicators would have been different if the June 2025 policy had not been amended.

Scope includes:

- Comparison of actual vs. counterfactual risk exposures
- Assessment of potential breaches or violations under the no-policy-change scenario
- Impact on portfolio performance, including returns and losses
- Review of incident reports, tactical adjustments, and governance responses relevant to June 2025

The analysis also integrates governance documentation and incident tracking to contextualize the risk environment and validate assumptions.

4. Methodology

The backtest methodology employs a combination of quantitative risk modeling, scenario simulation, and historical data reconstruction:

1. **Data Collection:** Aggregation of portfolio holdings, risk metrics, incident notes, and policy parameters as of June 2025.
2. **Counterfactual Assumption Construction:** Maintaining the risk policy parameters from May 2025, ignoring subsequent adjustments made in June 2025.
3. **Simulation:** Application of risk models (e.g., VaR and gamma metrics) to reconstructed portfolio data under the no-policy scenario using Monte Carlo simulations and stress testing techniques.
4. **Comparison and Analysis:** Quantitative comparison of risk outcomes, breaches, and performance metrics between actual recorded data and the simulated counterfactuals.

This process involves meticulous validation, error checking, and reconciliation with incident notes to ensure consistency and robustness.

5. Risk Policy Summary

The internal risk policy (ID: POL-20240610-001) stipulates the following core components:

Aspect	Description
Risk Limits	Maximum VaR at 99% confidence level: 10% of portfolio value; maximum gamma exposure: 5 million units.
Trade Constraints	Slippage threshold: 20 basis points; Quote spread limit: 15 basis points.
Stress Test Procedures	Mandatory quarterly stress tests incorporating historical shocks and hypothetical scenarios, aligned with Basel III standards.
Violation Handling	Automatic breach alerts; immediate review by Risk Committee; remedial action plans required within 5 business days.

Any breach of these parameters (identified as BR-20240615-045, for example) triggers compliance review and potential sanctions, emphasizing the

importance of ongoing adherence.

6. Portfolio Sleeve Mappings

Portfolio sleeve mappings classify individual holdings according to sector, geographic region, and asset class. For instance:

Sleeve ID	Asset Type	Sector	Region	Nominal Value (USD)
AS-001	Equity	Technology	North America	10,000,000
AS-002	Fixed Income	Government Bonds	Europe	5,000,000
AS-003	Derivatives	Options	Asia	2,000,000

Table mappings are derived from portfolio tracking systems and validated against custodial records, facilitating targeted risk analysis per segment.

7. Incident Notes and Updates

This section consolidates key incident notes, risk updates, and relevant communications during June 2025. Notable entries include:

> **2025-06-18: VaR / Gamma Update**
>
> Estimated Value at Risk (VaR) increased by 15% from previous day, attributed to market volatility spike in tech equities. Gamma exposure also saw a 10% rise, crossing predefined policy thresholds (BR-20250618-012). A review of risk limits was initiated.

> **2025-06-20: Breach Notification**
>
> Alert triggered for gamma breach (BR-20250620-023). Immediate risk committee convened, and a remedial strategy was executed, halting further trading until compliance review concluded.

All incident notes are timestamped and linked to corresponding breach codes, supporting post-event root cause analysis.

8. Data Parameters and Metrics

The analysis leverages key risk and performance indicators, including:

Parameter	Description	Unit	Sample Value (June 2025)
slippage_bps	Average transaction slippage in basis points	bps	12
quote_spread_bps	Average quote spread in basis points	bps	8
Value at Risk (VaR 99%)	Potential loss at 99% confidence	USD	1,200,000
Gamma Exposure	Aggregate gamma sensitivity	Units	4,800,000
Breaches	Number of policy breaches during period	Count	3

These parameters underpin the risk modeling and are validated against trade and incident logs for accuracy.

9. Results and Analysis

9.1. Risk Exposure Comparison

The hypothetical (no-policy-change) scenario indicates a marginal increase in portfolio VaR, averaging 1,350,000 USD, compared to actual reported VaR of 1,200,000 USD. This suggests tighter risk controls post-policy update successfully mitigated certain exposure peaks.

9.2. Breach Incidence

Scenario	Number of Breaches	Policy Violations	Comments
Actual	5	2 gamma breaches, 1 VaR breach	
No-Policy-Change (Counterfactual)	8	4 gamma breaches, 2 VaR breaches	

The results demonstrate that maintaining previous risk limits could have exposed the portfolio to increased probability of breaches, emphasizing the importance of policy revisions.

9.3. Performance Metrics

Monthly returns under the counterfactual scenario marginally lagged actual performance, primarily due to reduced flexibility in trading strategies constrained by stricter risk parameters. The simulation indicates potential downside risks without policy updates, including increased drawdowns during volatility spikes.

9.4. Visual Aid: Risk Trend Graph

Figure 1: Portfolio VaR trend in June 2025 under actual and no-policy scenarios (visual representation).

10. Document Metadata and Citations

10.1. Metadata

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10.2. Citations

- Internal Risk Policy Document: POL-20240610-001, *Risk Policy v1.0*, Northbridge Capital, 2024.
- Incident Reports: BR-20240615-045, BR-20250618-012, BR-20250620-023.
- Market Data Source: Bloomberg Terminal, June 2025.

- Stress Testing Standards: Basel Committee on Banking Supervision, 2019.

11. Conclusions

The counterfactual analysis underscores the effectiveness of recent policy updates in mitigating portfolio risk. Without these adjustments, the portfolio could have experienced increased breach frequency, higher volatility exposure, and potential performance deterioration during turbulent market conditions in June 2025.

Ongoing review of risk policies, along with continuous monitoring of incident data, remains essential for maintaining an optimal risk-reward balance and ensuring regulatory compliance.

12. Appendices

Appendix A: Technical Definitions

- **Value at Risk (VaR):** Measurement of potential portfolio loss at a specified confidence level over a given time horizon.
- **Gamma:** Second-order sensitivity of options to underlying asset price changes, reflecting convexity.
- **Slippage:** Difference between expected transaction price and actual execution price, expressed in basis points.
- **Quote Spread:** Difference between bid and ask prices, serving as a liquidity indicator.

Appendix B: Data Sources and Validation Procedures

All data utilized in this analysis were validated against broker reports, custodial records, and risk compliance logs. Discrepancies were reconciled through manual review, and simulations were stress-tested to account for data variability.

Appendix C: Glossary of Terms

Counterfactual Scenario
: A hypothetical scenario used for comparison, assuming different conditions than actual historical events.

Policy Breach
: Violation of risk limits, triggering alerts, and requiring remedial

action.

Monte Carlo Simulation

: A computational technique that uses random sampling to estimate risk metrics.