

# Risk & Portfolio Construction Dashboard – Documentation & User Guide

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# Introduction

The **AlTi Risk & Portfolio Construction Dashboard** is an internal platform designed to bring together risk and portfolio analytics applications into one secure, interactive environment. It supports advisors, analysts, and investment teams by streamlining portfolio analysis, enhancing client communication, and enabling smarter, data-driven decisions.

This **User Guide** is your reference for navigating the dashboard effectively. It explains how to access the tool, provides step-by-step instructions for each module, and offers examples of how to apply results in practice. It is designed for both frequent and occasional users - ensuring that everyone can extract value from the platform quickly.

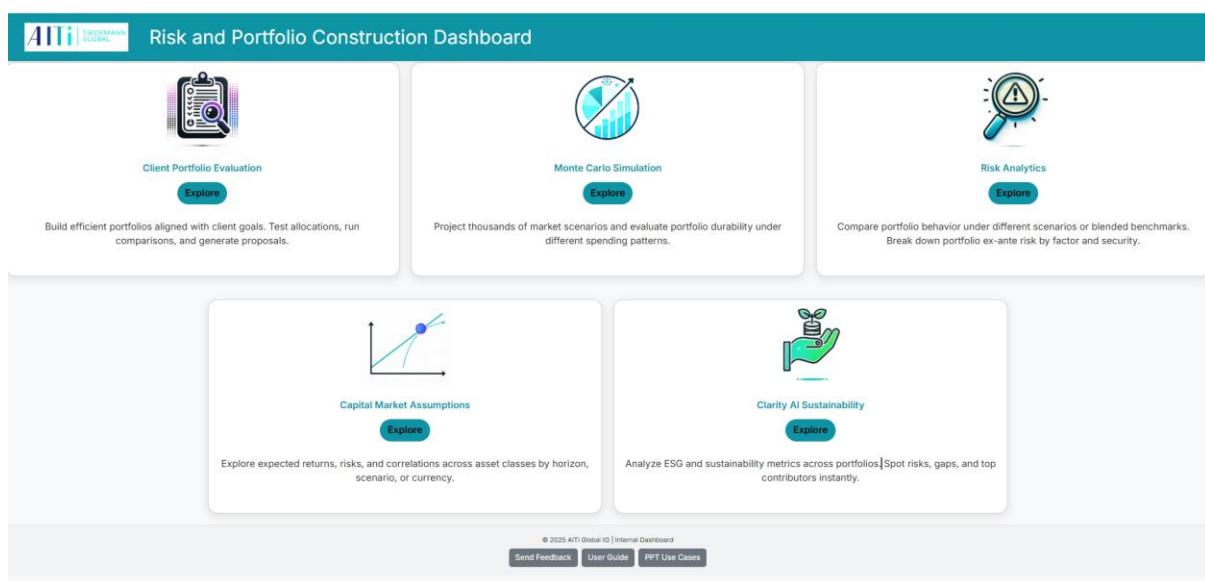


FIGURE 1 - DASHBOARD HOMEPAGE ([HTTPS://PLOTLY.ALTI-GLOBAL.COM/](https://plotly.alti-global.com/))

## Who Should Use This Guide

- **Advisors**— to prepare proposals, client portfolio evaluations, and investment insights.
- **Investment Committees (IC) & Risk Teams** — to run diagnostics, scenario tests, and validate alignment with assumptions.
- **Portfolio Managers** — to analyse exposures, sustainability metrics, and risk drivers.

## Why This Guide Matters

- Reduces the need for repeated training.
- Helps new or infrequent users quickly regain familiarity.
- Supports consistency in client deliverables.
- Acts as a living reference document to accompany the dashboard.

# Document Structure

This guide is organized into the following sections:

1. **Introduction** — Purpose of the dashboard and this guide.
2. **Module Reference** — Each app uses a standard template: Purpose, Overview, Key Questions, How to Use, Inputs & Outputs, Example Use Case, Best Uses, Tips.
3. **FAQs** — Common questions and quick troubleshooting.
4. **Technical Glossary** — Key terms and definitions.
5. **Feedback & Continuous Improvement** — How the guide and dashboard will evolve.

## App – Client Portfolio Evaluation

### Purpose

The Client Portfolio Evaluation app lets you upload one or more client portfolios, compare them to multiple efficient frontiers, and generate clear analytics for meetings. It brings together optimization, benchmarking, and long-term growth projections so you can diagnose efficiency gaps, quantify downside risk (VaR/CVaR), and present a cleaner “current vs proposed” story.

### Overview

Upload a standardized Excel template. The app aggregates asset weights by class, aligns them with the Capital Market Assumptions, and builds three efficient frontiers:

- Core Frontier – Global + Global Aggregate only
- Core + Private Frontier – Core plus private markets
- Unconstrained Frontier – Full asset universe

You can resample thousands of feasible portfolios to display the opportunity set as a gray cloud behind the frontiers. Users can overlay selected client portfolios and benchmarks (e.g., 60/40 with a chosen fixed-income sleeve).

The Caps Template control lets you choose between three portfolio constraint settings:

- Standard: 30% max per asset, 50% per group
- Tight: 20% max per asset, 40% per group
- Loose: 50% max per asset, 70% per group

A companion growth chart projects compounded values over 3–30 years in your chosen currency. Custom Frontier functionality enables you to define a personalized set of assets to generate a tailor-made frontier. Finally, you can export all results to Excel, with separate tabs for each frontier’s allocations and performance.

### Key Questions It Answers

- How efficient is this portfolio relative to the optimal frontiers?
- What are its risk-adjusted characteristics (Return/Vol, VaR 95%, CVaR 95%)?

- How do “current” and “proposed” allocations compare to a blended market benchmark?
- What does long-term capital growth look like over 3/5/10/20/30 years?
- Where do private markets and customized allocations fit in the efficiency spectrum?

## How to Use

1. Download & fill the input template (Assets × Weights for up to six portfolios).
2. Upload the file in the sidebar. The app aggregates duplicate asset classes automatically.
3. (Optional) Choose a blended benchmark (e.g., 60/40 plus fixed-income type).
4. Select Caps Template (Standard, Tight, or Loose) to set optimization constraints.
5. Click Run Optimization to generate three frontiers.
6. (Optional) Click Resample Portfolios to show the feasible space as a gray cloud.
7. (Optional) Use Custom Frontier to select your own set of assets and generate a personalized curve.
8. Use Select Client Portfolios → Add Selected Portfolios to overlay points and populate the tables.
9. Review the Portfolio Summary, Holdings Table, and Projected Growth chart.
10. Click Download Results to export allocations, frontiers, performance grids, holdings, summary metrics, and growth projections.

## Inputs & Outputs

Input	Description
Client Input Template	Excel with columns: HOLDINGS, RISK ALLOCATION, ASSET CLASS, PORTFOLIO_1..6.
Blended Benchmark	Fixed-income type (Global Agg, US Agg, US Muni) and equity/fixed split (e.g., 60/40).
Display Settings	Pixel sizes for charts/tables; initial investment amount; currency (USD/EUR/GBP).
Caps Template	Standard, Tight, or Loose caps to control diversification levels

Output	Description
Efficient Frontier	Three optimized risk-return curves (Core, Core + Private, Unconstrained) with fixed axes (0–19%). Optional resampled cloud behind curves.
Custom Frontier	User-defined subset of assets, calculated and plotted alongside standard frontiers.
Portfolio Overlays	Selected client portfolios plotted; optional benchmark diamond marker.
Portfolio Summary (Metrics)	Expected return, risk (stdev), VaR 95%, CVaR 95%, return/vol, return/CVaR (transposed).
Holdings Table	Grouped by Stability / Diversified / Growth; shows market benchmark, current, proposed.
Projected Growth	Grouped bars of compounded values at 3, 5, 10, 20, 30 years (currency-specific).
Excel Export	Tabs: Allocations, Performance, Holdings_Table, Portfolio_Summary, Projected_Growth.

## Example Use Case

An advisor uploads a file with CURRENT and PROPOSED portfolios. After selecting a 60/40 Global Agg benchmark, Standard Caps, and running optimization, three curves are shown.

The advisor sees that the current portfolio sits below the Core + Private frontier and far from the Unconstrained frontier. By adding a Custom Frontier, they explore a specific subset of private and alternative assets.

The resampled cloud shows feasible diversification paths, while the metrics highlight higher risk for a given return. The advisor downloads the Excel package to document a proposed reallocation that brings the portfolio closer to the frontier without increasing risk.

## Best Uses

- Client reviews and annual rebalancing discussions.
- New client onboarding (show “current vs proposed” vs market benchmark).
- IC or risk meetings needing a visual, auditable efficiency check.
- Exploring the role of private markets or customized allocation universes.

## Tips

- VaR and CVaR use a parametric approximation (normal tails) for quick comparison.
- The resampling engine is optimized for speed to provide faster overlays even with large simulations.
- Axes are fixed at 0–19% for comparability across sessions.
- Use Loose Caps for exploratory scenarios and Tight Caps for conservative portfolios.
- Currency only changes display/labels on the growth chart and export; optimization stays in base units.

# App – Capital Market Assumptions

## Purpose

The Capital Market Assumptions (CMA) app provides an interactive, centralized view of expected returns, volatilities, and correlations across asset classes. It helps advisors, portfolio managers, and risk teams compare assumptions, stress scenarios, and back proposals with a consistent research foundation. Who it's for: Advisors (client proposals), PMs (portfolio construction), Risk/IC (SAA validation).

## Overview

The app displays the latest CMA table and adapts outputs by currency (USD, EUR, GBP) and scenario (e.g., Base Case, Mild Recession, Stagflation, Disinflationary Boom, Policy Overkill). Visuals include a risk–return scatter plot and a correlation heatmap based on historical series. Users can download audit-ready files (Excel tables, return series CSV, and methodology PDF) to support client deliverables and IC materials.

## Key Questions It Answers

- What are the expected return and volatility for a given asset class over the next 10 years?
- How do assumptions change across currencies and scenarios?
- Which correlations matter most for diversification right now?

## How to Use

1. Select Currency (USD/EUR/GBP).
2. Choose a Scenario from the dropdown.
3. Review the CMA table (filter/sort as needed).
4. Explore visuals: Risk–Return Scatter, Correlation Heatmap (and Beta Matrix if enabled).
5. Download the CMA Excel, Return Series CSV, and Methodology PDF as needed.

## Inputs & Outputs

Input	Description
Currency Selector	Choose USD, EUR, or GBP for display and conversion logic (EUR/GBP derived from USD via 10-year rate differentials).
Scenario Selector	Base and stress scenarios to test sensitivity (Mild Recession, Stagflation, Disinflationary Boom, Policy Overkill).

Output	Description
CMA Table	Asset class list with forecast return (%) and volatility (%).
Risk–Return Scatter	Visual comparison of expected returns vs. volatility (category colors).
Correlation Heatmap	Historical correlations (by currency dataset) to illustrate diversification patterns.
Downloads	CMA Excel (by currency/scenario), return series CSV, methodology PDF.

## Example Use Case

Preparing a USD-based client proposal: Select USD and Base Case. The table shows expected returns and volatilities for each asset class. The scatter plot highlights the risk–return trade-off, while the correlation heatmap reveals diversification clusters. Export the CMA Excel to include a one-page summary in the client presentation.

## Best Uses

- Strategic Asset Allocation (SAA) reviews and updates.
- IC memos and portfolio proposals requiring consistent assumptions.
- Sensitivity checks across macro scenarios and currencies.

## Tips

- EUR/GBP expected returns are derived from USD CMA using 10-year rate differentials.
- Scenario multipliers apply consistently across asset classes.
- Infrastructure may be separated into listed vs. private segments for clarity.
- Downloaded files are tagged by currency and scenario for auditability.

# App – Monte Carlo Simulation

## Purpose

The Monte Carlo Simulation app models portfolio value under uncertainty, combining quarterly market returns with flexible spending rules. It helps advisors and PMs compare policies, quantify downside odds, and set realistic expectations with client-ready visuals.

## Overview

You can configure up to three simulations with different return/volatility assumptions, withdrawal patterns, and one-off cash flows. Each run generates thousands of quarterly paths, from which the app derives the median and interquartile range, then compares them to an inflation benchmark. A Summary view stacks selected simulations to contrast final values and outcome probabilities. Custom spending can be uploaded from a template, and all chart data can be exported to Excel for audit and reporting.

## Key Questions It Answers

- Will the plan likely keep pace with inflation over the horizon?
- What is the range of plausible outcomes (median, 25th/75th percentiles)?
- How often do we see large losses or portfolio depletion?

## How to Use

1. Set Global Parameters (initial value, # sims, inflation, after-tax capture, currency, chart sizes).
2. Enter Simulation 1–3 parameters ( $\mu/\sigma$ , fixed %/amount spending, one-time spend, horizon).
3. (Optional) Download the spending template → add quarterly amounts → Upload.
4. Choose which sims to include in Output Summary and click Run Simulations.
5. Review per-sim charts and the combined Summary; Download Results (Excel) if needed.

## Inputs & Outputs

Input	Group	Description
Initial Portfolio	Global	Starting value used for all sims and the inflation benchmark.
# Simulations	Global	Number of Monte Carlo paths (e.g., 1,000).
Inflation (annual)	Global	Used to build the dashed benchmark line (quarterly compounding).
After-Tax Capture	Global	Scales $\mu$ and $\sigma$ (decimal, e.g., 0.90).
Currency	Global	Label for chart axes/annotations (no FX conversion).
Annual Return ( $\mu$ )	Per Sim	Expected annual return (decimal).
Annual Volatility ( $\sigma$ )	Per Sim	Annual volatility (decimal).
Quarterly Fixed Spend	Per Sim	Fixed amount withdrawn each quarter.
Quarterly Fixed Spend	Per Sim	Fraction of portfolio withdrawn each quarter (decimal).
One-Time Spend & Quarter	Per Sim	Lump sum and the quarter it occurs.
Duration (quarters)	Per Sim	Total horizon (e.g., 160 = 40 years).
Custom Spending Upload	Optional	Quarter → Amount map per sim via template.

Output	Description
Per-Sim Line Chart	50 sample paths (grey), Median (blue), 25th/75th percentiles (teal), Inflation (dashed).
Per-Sim Bar	Median value every 5 years vs inflation benchmark markers.
Per-Sim Probabilities	Grouped bars: Outperform Inflation, Loss >50%, Complete Loss.
Summary Line	Selected sims' medians vs inflation.
Summary Bars	Final median values across selected sims.
Summary Probabilities	Outcome probabilities across selected sims.
Excel Download	Tidy tables for each chart and simulation.

## Example Use Case

A couple plans to withdraw \$25k per quarter and renovate their home for \$200k in year 3. You set three simulations: conservative, balanced, and growth. You upload a custom schedule for tuition spikes over specific quarters. After running, the Summary shows the conservative policy has the lowest depletion risk, while the growth policy most often beats inflation. You export the Excel pack and include the charts in the client deck.

## Best Uses

- Retirement income planning with policy comparisons.
- Stress-testing withdrawal rates and one-off cash needs.
- Client reviews that need ranges, not point estimates.
- IC/Risk discussions on loss and depletion probabilities.

## Tips

- Enter  $\mu/\sigma$ /spending rates as decimals (e.g., 0.06, 0.10, 0.01).
- Inflation line compounds the initial value (no contributions).
- After-Tax Capture currently scales both  $\mu$  and  $\sigma$ ; adjust if policy requires  $\mu$ -only.
- Custom spending: only non-zero cells are stored; clear via the sidebar button.

# App – Clarity AI Sustainability

## Purpose

Turn ESG and sustainability data into clear, comparable insights. The Clarity AI Sustainability app centralizes metrics across US/INTL funds, LPs, and SMAs so advisors and PMs can quickly spot strengths, gaps, and trade-offs—and walk into meetings with client-ready charts and tables.

## Overview

The app aggregates sustainability data from Clarity AI and harmonizes it across vehicles and geography. You pick strategies (US funds, international funds, LPs, SMAs), and the app instantly builds grouped tables across Climate, Environmental, Social, and Governance pillars. For deeper dives, choose up to three metrics to visualize as side-by-side bar charts. Everything is exportable: multi-sheet Excel tables and a metrics-key document with definitions and methodologies.

## Key Questions It Answers

- Which strategies have the lowest carbon intensity or best temperature alignment?
- How do LPs and funds compare on diversity and governance practices?
- Which portfolios align with net-zero targets or show leadership on environmental metrics?
- Where are the biggest ESG trade-offs across my shortlist?

## How to Use

1. Select strategies via the US/INTL funds, LP, and SMA dropdowns.
2. Review the grouped ESG tables that auto-populate.
3. Choose up to three metrics for the comparison bar charts
4. Analyze leaders/laggards across tables and visuals.
5. Export: download tables to Excel and the Metrics Key for your deck.

## Inputs & Outputs

Input	Category	Description
US Fund(s)	Strategy Selection	Multi-select; mutual funds/ETFs
INTL Fund(s)	Strategy Selection	Multi-select
LP(s)	Strategy Selection	Multi-select; shows STRUCTURE instead of ISIN
SMA(s)	Strategy Selection	Multi-select; ID displays as SMA
Metric for Bar Chart 1	Chart Controls	Any available metric
Metric for Bar Chart 2	Chart Controls	Optional
Metric for Bar Chart 3	Chart Controls	Optional

Output	Description
Climate; Environmental (1 & 2); Social; Governance	Temperature ratings; financed carbon intensity; environmental/social/governance scores; net-zero status; biodiversity/water/waste; diversity metrics; board structure; anti-bribery

Metric vs. selected strategies	Color-coded bars with values labeled
Excel workbook	One sheet per metric group; rounded to 1 decimal
Metrics Key (DOCX)	Definitions & methodology (TCFD-aligned temperature ratings)

### Example Use Case

A client asks for a sustainability-tilted equity sleeve. You select three US equity funds, two international funds, and one LP. The Climate table shows Fund A at 1.8°C temperature alignment, Fund B at 2.4°C, LP at 2.1°C. You set Bar Chart 1 to Female Board Members (Fund A 42%, Fund B 28%, LP 35%) and Bar Chart 2 to Carbon Intensity Scope 1+2 (LP lowest at 45 tCO<sub>2</sub>e/\$M). With the evidence laid out, you recommend overweighting Fund A and the LP to balance climate alignment and diversity leadership, and export the Excel plus the Metrics Key for the IC deck.

### Best Uses

- ESG-focused client proposals and portfolio reviews.
- SFDR, TCFD, and other regulatory sustainability reports.
- Diversity and inclusion monitoring.
- Climate-aligned portfolio construction.
- Quarterly ESG progress reporting.

### Tips

- Metrics are rounded to one decimal place; missing values display as blanks.
- Funds show ISINs, LPs use a STRUCTURE field, SMAs are labeled as "SMA".
- Temperature ratings follow TCFD-aligned methodology.
- Check the data date in-app to confirm quarterly updates.
- Charts auto-scale but preserve aspect ratio for readability.

# App – Risk Analytics

## Purpose

Give advisors, PMs, and risk teams a fast, transparent view of what drives risk and tracking error in a portfolio. The app decomposes volatility and TE into factor and security contributions, quantifies diversification benefits, and shows historical stress outcomes—so you can explain results, adjust weights, and defend decisions in IC and client meetings.

## Overview

Load (or upload) a Portfolio and a Benchmark, and the app does the rest. It maps holdings to factor betas and a covariance matrix, then calculates ex-ante portfolio risk and tracking error, highlighting where active risk comes from—top/bottom factor exposures, factor TE contributors, and security- and strategy-level contributions. In parallel, the app builds an actual-holdings performance index using proxied returns, runs concise historical stress tests, and quantifies diversification benefits. A dedicated TE-diversification view contrasts Growth vs. Defensive (Stability + Diversified) sleeves. For audit and reuse, you can download clean input templates along with the beta and covariance files.

## Key Questions It Answers

- What are the top contributors to portfolio risk and tracking error - by factor, security, and strategy?
- How well diversified is the portfolio (Diversification Ratio & Benefit %)? Where is correlation concentrating risk?
- How did the portfolio fare vs the benchmark in major historical scenarios (GFC, COVID, 2022 rates, latest year)?
- Are Growth vs Defensive sleeves providing TE diversification, and by how much?

## How to Use

1. Load inputs: Upload CSVs or pick a saved Portfolio and Benchmark; optionally edit tables inline.
2. Select Analysis Mode: Proxied (fills missing return history) or Default (strict historical set).
3. Click Run Analysis to compute factor/TE decomposition and build performance & stress views.
4. Review outputs: KPIs → factor & security contributions → diversification & TE-diversification → stress tests.
5. Refine: Adjust weights (or switch mode/universe) and re-run; export tables via the built-in CSV buttons.

## Inputs & Outputs

Input	Description
Portfolio (Tier4, Weight)	Upload CSV or select a saved portfolio; weights auto-normalized.
Benchmark (Tier4, Weight)	Upload CSV or select a saved benchmark; weights auto-normalized.
Analysis Mode	Proxied (uses proxied instrument returns & betas for coverage) or Default (historical only).

Editable Tables	Inline add/edit/delete rows for quick what-ifs.
Templates & Universe	Download Portfolio/Benchmark templates and Instruments List from sidebar.

Output	Description
KPIs	Portfolio Vol %, Benchmark Vol %, Tracking Error % (annualized).
Cumulative Performance	Index (base=100) for Portfolio vs Benchmark using proxied returns.
Core Stats Table	CAGR %, Ann. Vol %, Sharpe, Max Drawdown % for Portfolio and Benchmark.
Historical Stress Tests	Excess-return bar chart and table for preset periods (GFC, COVID, 2022, YTD, etc.).
Factor Decomposition	Table of factor exposures (port/bench/active) and risk contribution %; charts of Top/Bottom active exposures and Top/Bottom TE contributors.
Security-Level Decomposition	Charts: Contribution to Risk by Security and by Strategy (Tier4); sortable/filterable table of security-level contributions.
Diversification Dashboard	Bar chart and table: Weighted Avg Indiv Vol vs Portfolio Vol, Diversification Benefit %, Diversification Ratio, Weighted Avg Pairwise Corr.
TE Diversification (Growth vs Defensive)	5-bar view: TE Growth, TE Defensive, Sum of Weighted TEs, Total TE (analysis), Diversification Benefit %; plus metric table.
Beta Matrix Heatmap	Lasso-estimated betas by security × factor (download links to betas and factor covariance).

## Example Use Case

A PM compares a balanced sleeve to its policy benchmark. After loading the portfolio and benchmark, they run Proxied mode to maximize coverage. KPIs show TE = 2.3% with portfolio vol slightly below benchmark. The Top/Bottom Active Exposures reveal underweight to Quality and overweight to Value; TE contributors are concentrated in Rates Level and US Equity. Security-level charts flag two concentrated Tier4 strategies driving ~35% of risk. The Diversification panel shows a Benefit of 18% and DR 1.23×; Stress Tests indicate defensiveness in 2022 but lagging the Post-COVID rally. The TE Diversification view confirms Defensive sleeve offsets Growth risk, supporting a small rebalance away from the two concentrated strategies.

## Best Uses

- IC/Risk reviews to explain what's driving risk & TE.
- Portfolio construction and what-if rebalancing.
- Manager oversight by Tier4 contribution tracking.
- Client-ready exhibits showing stress behaviour and diversification.

## Tips

- Instrument names must match the Instruments List; otherwise you'll see "no overlap" warnings.
- Use Proxied mode when holdings lack full histories; switch to Default for stricter backtests.
- Weights are auto-normalized; enter any scale (e.g., 1/5/10) and the app will rescale.
- Factor and covariance files are dated (e.g., betas\_2025\_08\_\*, factor\_cov\_2025\_08.csv); keep versions aligned.
- KPI % are annualized; charts label values directly for readability.
- Tables support CSV export, sorting, and filtering (where enabled).

# FAQs

## App – Client Portfolio Evaluation

### Q1. Why is my Efficient Frontier empty?

Ensure portfolio weights sum to >0 and asset class labels match the template exactly.

### Q2. Does currency selection affect optimization?

No, only labels and growth projections change — calculations remain in base units.

### Q3. Can I compare multiple portfolios?

Yes — up to 6 columns can be compared via Select Client Portfolios → Add Selected.

## App – Monte Carlo Simulation

### Q1. Should $\mu$ and $\sigma$ be decimals or percentages?

Use decimals, e.g., 0.06 = 6%.

### Q2. What does "After-Tax Capture" mean?

Multiplier applied to returns and volatilities to reflect post-tax performance.

### Q3. My spending plan didn't load — why?

Ensure non-zero cells are included; blank rows are ignored by the app.

### Q4. How many paths should I run?

1,000 paths is a typical balance between performance and accuracy.

## App – Risk Factor Analysis

### Q1. Why doesn't the analysis run with my file?

Check that weights sum to ~100% and the Tier4 names match the instrument list. Use the template to avoid formatting issues.

### Q2. What's the difference between Default and Proxied analysis modes?

- *Default*: Uses only historical return series for exposures and covariance.
- *Proxied*: Fills gaps using proxy return series for securities without long history (better coverage, slightly less precision).

### Q3. Why is Tracking Error so high?

Likely concentrated in a few factors or sleeves. Check Active TE Contributors and Security-Level table — often 2–3 exposures explain most of it.

### Q4. Can I change weights inside the app?

Yes. Both portfolio and benchmark tables are editable. You can add/remove rows or tweak weights, then re-run analysis.

### Q5. How often is the covariance/beta matrix updated?

Monthly (default). Check the date in the download file for the latest refresh.

### Q6. What should I look at first when presenting results?

1. KPIs → Portfolio vol, Benchmark vol, TE.
2. Top/Bottom factor exposures.
3. Top TE contributors.  
That gives a clean “what / why / so what” story.

## **Q7. Can I export the results?**

Yes. Tables can be exported as CSV, and you can download the Beta Matrix and Covariance Matrix for validation or further modelling.

## **Q8. Why do some rows show “0” in exposures or contributions?**

Those securities/factors may not have enough data or relevance. If coverage is low, switch to *Proxied* mode.

## **Q9. Does this replace Bloomberg PORT or Barra?**

No. This is a streamlined internal tool focused on factor risk decomposition and tracking error, designed for fast, transparent insight.

## **Q10. Who should use this app?**

Advisors, PMs, and Risk/IC teams — especially when preparing for IC reviews, client meetings, or testing rebalance ideas.

## **Q11. What is a “factor model,” in simple terms?**

A factor model is like breaking down a recipe to see which ingredients drive the taste.

Instead of treating a portfolio as a “black box,” we split its returns and risks into a few broad drivers (factors) — things like equities, interest rates, credit spreads, currencies, or inflation.

- If a portfolio moves a lot like equities, we say it has equity factor exposure.
- If it's sensitive to interest rates, it has duration factor exposure.
- If it's tilted toward emerging markets, it has EM factor exposure.

By measuring how much of each “ingredient” is in the mix, we can explain:

- What's driving returns and risk today
- Why the portfolio differs from its benchmark
- How to adjust the mix to stay intentional and aligned

## **Q12. How are the factors in this model selected?**

The factors are chosen to capture the broad, systematic forces that drive most portfolio risks and returns.

- They cover the main asset classes and risk themes: equities, interest rates (duration), credit spreads, currencies, commodities, and alternative risk premia.
- Each factor is backed by historical data series (e.g., MSCI ACWI for global equities, Bloomberg Barclays indices for bonds, FX indices for currency).
- The list in the app groups factors into intuitive categories — for example:
  - Equity Growth factors (e.g., US Large Cap, EM Equities)
  - Fixed Income factors (e.g., Duration, Credit Spreads)
  - Alternative factors (e.g., EM Carry, Volatility)

The selection process balances two goals:

1. Breadth – enough factors to capture the main drivers of risk.
2. Clarity – not so many that the results become noise or impossible to interpret.

In practice, this means most portfolios' movements can be explained by a handful of key factors, while the rest is treated as *specific (idiosyncratic) risk*.

## **App – Capital Market Assumptions**

### **Q1. What are scenarios like “Mild Recession” or “Stagflation”?**

These apply multipliers to base forecasts:

- Mild Recession: lower returns ( $-20\%$ ), slightly higher vol ( $+15\%$ ).
  - Stagflation: sharp haircut to returns ( $-30\%$ ) with big vol spike ( $+30\%$ ).
- They're not predictions, but stress cases to test portfolio resilience.

#### **Q2. What is volatility in this context?**

Volatility is the expected standard deviation of annual returns (10-year horizon). A 15% vol means returns typically move  $\pm 15\%$  around the average each year.

#### **Q3. How are correlations calculated?**

They're based on historical return series (not forecasted). The heatmap helps illustrate diversification benefits or concentration risks across asset classes.

#### **Q4. Can I download the underlying methodology?**

Yes. Use the Methodology PDF link in the sidebar to see assumptions, data sources, and calculation details.

#### **Q5. How often are CMA assumptions updated?**

Typically once per year, but the app may include interim scenario refreshes when market conditions shift significantly.

### **App – Clarity AI Sustainability**

#### **Q1. Why are some ESG values missing?**

Missing data is displayed as blanks — no imputation is applied.

#### **Q2. How can I compare multiple strategies?**

Select up to 3 ESG metrics, view grouped tables, and use bar chart comparisons.

#### **Q3. Can I export ESG definitions and methodologies?**

Yes — download the Metrics Key DOCX from the sidebar.

# Technical Glossary

## App – Client Portfolio Evaluation

### **Efficient Frontier**

Curve of optimal portfolios delivering maximum return for a given risk level.

### **VaR / CVaR**

Value at Risk and Conditional VaR at 95% confidence. Diagnostic only.

## App – Monte Carlo Simulation

### **Median / IQR Paths**

Median and interquartile range of simulated portfolio growth paths.

### **After-Tax Capture**

Factor applied to expected return and volatility to reflect post-tax outcomes.

## App – Risk Factor Analysis

### **Active Exposure**

Difference between the portfolio's factor exposure and the benchmark's exposure. Positive means overweight vs benchmark; negative means underweight.

### **Active Risk Contribution (ARC)**

The portion of tracking error attributable to a specific factor or security. Helps identify main TE drivers.

### **Beta (Factor Exposure)**

Measures sensitivity of a security (or portfolio) to a risk factor (e.g., how much EM equity exposure explains returns). Estimated via Lasso regression in this app.

### **Covariance Matrix**

Statistical matrix showing how factors move together. Used to compute portfolio risk and correlations between factors. Stabilized here using **EWMA + shrinkage**.

### **EWMA (Exponentially Weighted Moving Average)**

A method that gives more weight to recent observations in estimating volatility/covariance. Helps risk estimates adapt to market conditions.

### **Factor**

A systematic source of risk/return (e.g., Equity Growth, Duration, Credit Spread, EM Carry, FX Volatility).

### **Factor Contribution to Risk**

The percentage of portfolio risk explained by each factor. Summed across factors = 100%.

### **Lasso Regression**

A regression method that shrinks small, noisy coefficients to zero. Ensures only meaningful factor exposures are kept.

### **Specific Risk**

Risk unique to a security that cannot be explained by factors (idiosyncratic risk).

### **Systematic Risk**

Risk explained by broad market factors (e.g., equities, rates, FX).

### **Tracking Error (TE)**

Volatility of the difference between portfolio and benchmark returns. Expressed in annualized %.

### **Diversification Ratio (DR)**

Ratio of weighted average individual volatilities to portfolio volatility.

### **Diversification Benefit %**

% reduction in volatility achieved by combining imperfectly correlated assets.

### **TE Diversification**

Reduction in total Tracking Error when combining Growth and Defensive sleeves.

### **Proxy Mapping**

Matching Tier4 securities to representative return series for broader coverage.

## [\*\*App – Capital Market Assumptions\*\*](#)

### **Capital Market Assumptions (CMA)**

Long-term (usually 10-year) forecasts of expected returns, volatilities, and correlations across asset classes.

### **Correlation**

A measure of how two assets move together (range: -1 to +1). Negative = diversifier, positive = moves in sync.

### **Currency Adjustment**

Shift applied when changing base currency (USD, EUR, GBP), reflecting expected inflation and interest rate differences.

### **Scenario**

A stress adjustment applied to base forecasts (e.g., recession, stagflation, boom). Used to test sensitivity of portfolios.

### **Forecast Return**

Expected return, shown as an annualized percentage over 10 years.

### **Forecast Volatility**

Expected standard deviation of annual returns over the same horizon. Higher vol = more uncertainty.

### **Scatter Plot (Risk vs Return)**

Visualization showing expected return on the Y-axis and volatility on the X-axis — a quick way to compare asset class efficiency.

### **Heatmap (Correlation Matrix)**

Grid showing pairwise correlations between asset classes. Helps assess diversification and risk concentration.

## [\*\*App – Clarity AI Sustainability\*\*](#)

### **Temperature Alignment**

Portfolio warming potential vs net-zero 2050 pathway (°C).

# Feedback & Continuous Improvement

This dashboard is being developed as a living tool — designed to evolve with real-world use, feedback from advisors, portfolio managers, and IC members, and changes in market conditions.

User → Feedback → Review → Prioritize → Implement → Update → User

## How to Provide Feedback

- Use the “Send Feedback” button at the bottom of the home page.
- Or reply directly via email with comments, screenshots, or suggestions.
- Please be specific: mention which app, feature, or data your feedback relates to.

## What Happens with Your Feedback

- All comments are logged and reviewed weekly.
- Urgent issues (bugs, errors) are fixed immediately.
- Enhancement requests are prioritized based on frequency of requests, impact on daily work, and technical feasibility.
- Top contributors will be acknowledged in update notes.

## Our Commitment

- Regular updates: Feedback from the pilot phase (and beyond) will feed into quarterly improvements.
- Transparency: A changelog will document fixes, enhancements, and new features.
- Collaboration: The goal is not only to solve issues but also to co-create features that make the dashboard more useful across teams.

# Version Control

Item	Date	Name	Review Date
Document creation	05/09/2025	João Abrantes / Alex Hokanson	10/09/2025