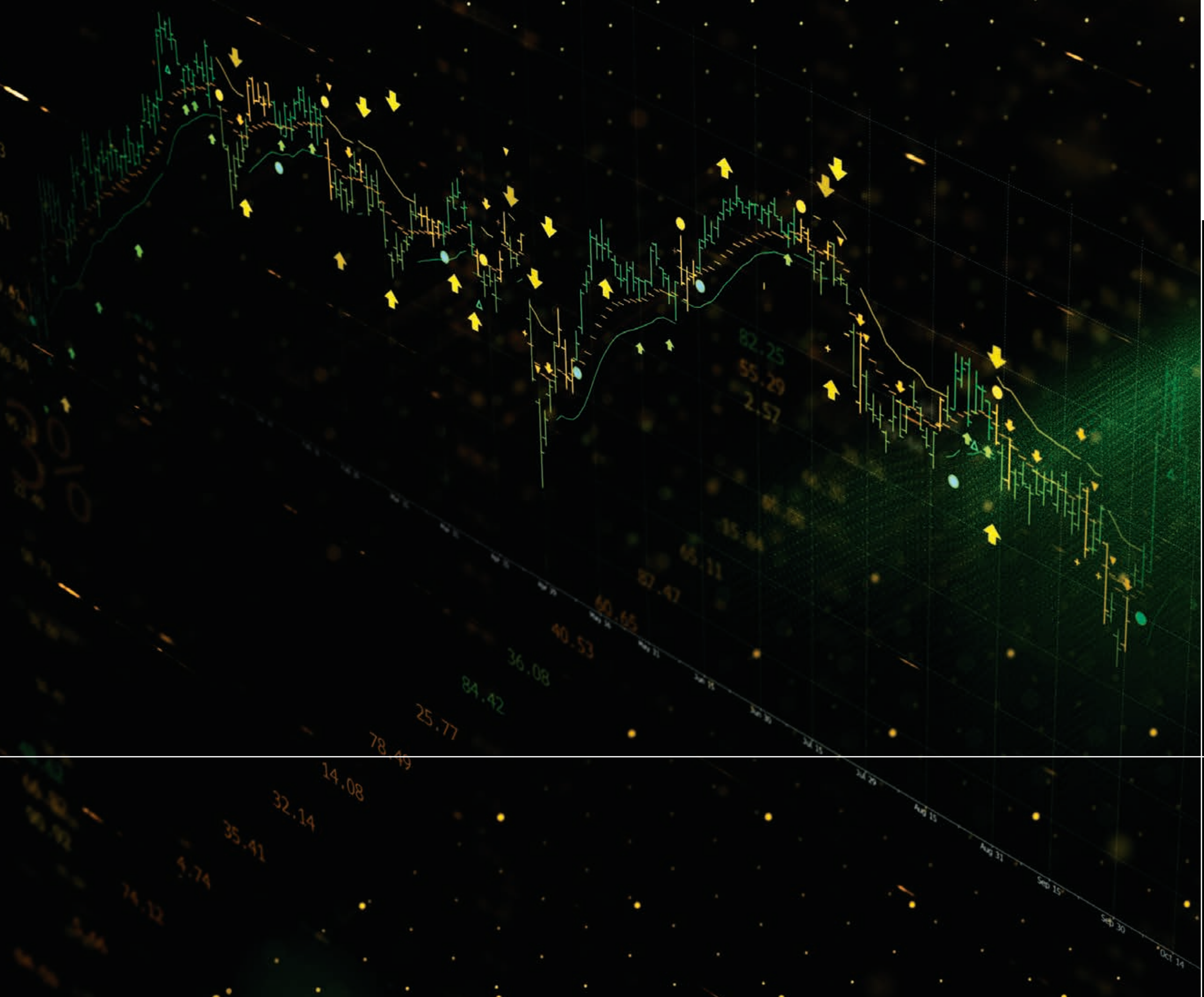
See clearly, act quickly.

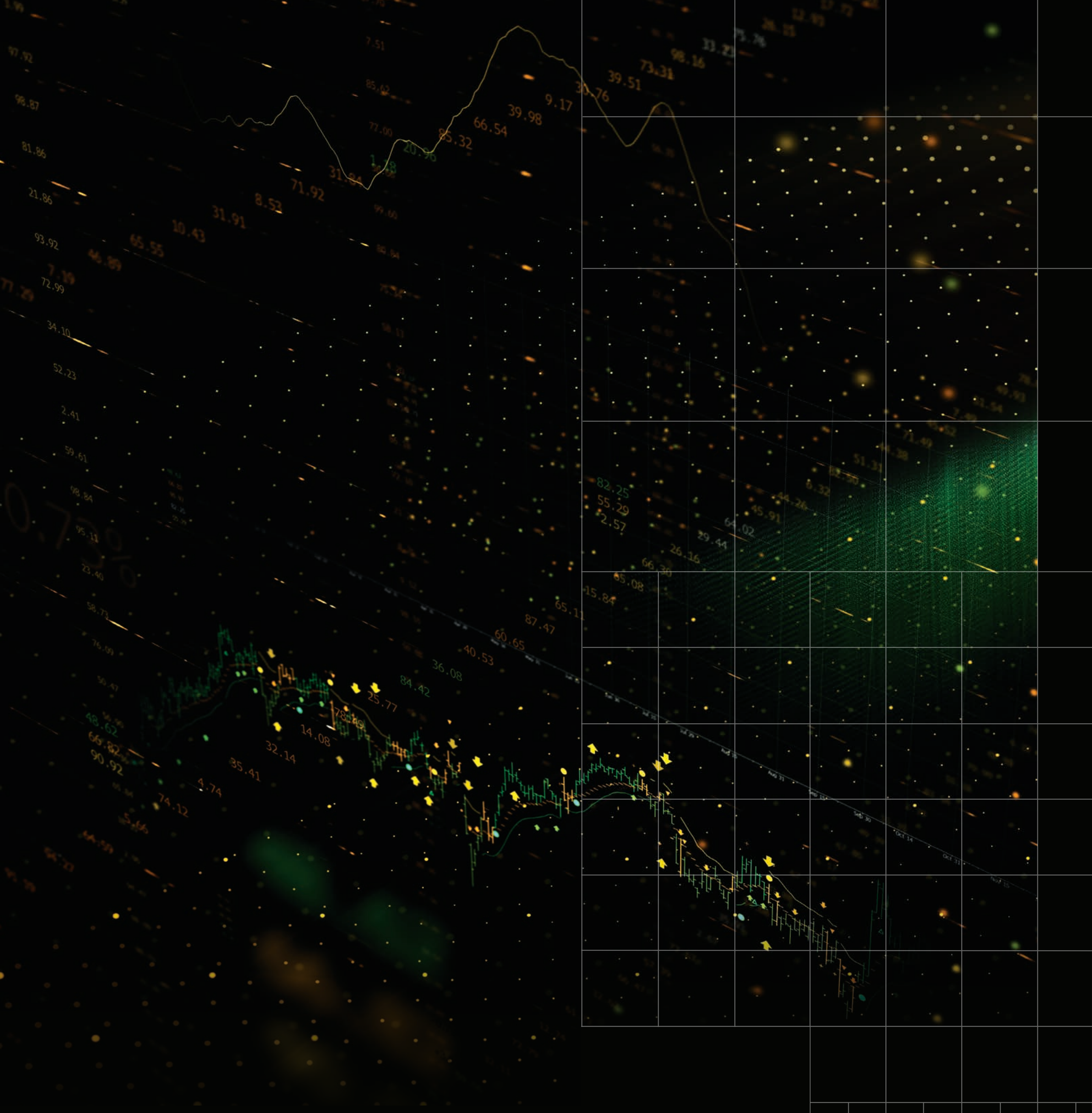


Bloomberg Terminal

Risk & Valuations

Bloomberg

Bloomberg Professional Services



Contents

Spot & manage portfolio risk. Intraday, every day.

Designed to help identify risk in portfolios and manage it more easily, MARS Front Office leverages Bloomberg's market data, pricing and analytics to provide a comprehensive suite of risk analytics for front office professionals. With advanced scenario and stress-test capabilities, term-structure risk reports, portfolio margin calculations, P&L Explain as well as streamlined workflow solutions, MARS Front Office contains everything you need to adapt to changing regulations and thrive in a challenging business landscape.

Intraday cross-asset risk system.

Bloomberg's MARS Front Office solution is equipped with rich functionality that can help your organization understand risk and increase operational efficiency in an evolving regulatory environment. Cross-asset class coverage and sophisticated analytics, powered by real-time data, enable front office players to monitor and manage intraday risk.

A comprehensive front office risk solution

Suitable for buy-side hedge fund traders, portfolio managers and investment advisors, as well as sell-side traders, structurers and sales professionals, MARS Front Office enables front office staff to monitor the value of their portfolios on demand with live real-time data, conduct pre-trade analysis, analyze their term-structure risk and investment decisions, and perform intraday lifecycle and cash flow management. All on a single and integrated platform.

MARS Front Office is built on the same robust data, pricing and risk library used across Bloomberg's suite of enterprise products, including Market Risk, Counterparty Risk XVA, Collateral Management and Hedge Accounting solutions. The portfolio solution is seamlessly integrated with our Bloomberg Derivatives single-security calculators: SWPM for interest rate derivatives; OVML for FX and commodities; OVME for equities, YASN, OVCV, CDSW and CDSO for credit; and the new Bloomberg multi-asset derivatives library, DLIB, providing unrivalled coverage within one single system. DLIB can add coverage for the most exotic products in a matter of minutes. Our clients can then seize the advantage of getting to market faster and utilizing their resources more efficiently.

Key features

- Product coverage across asset classes (including equities, fixed income, inflation, credit, commodities & FX) powered by Bloomberg data & pricing models
- Best-in-class cross-asset Quantitative Modelling library to capture market dynamics
- Position monitoring with intraday mark-to-market
- Full term-structure Greeks
- P&L Explain Greeks-based
- Powerful scenario tools & stress-test capabilities across-asset
- Lifecycle management from fixing and cash flow to barrier and exercise events, and report generation
- Portfolio margin calculations for cleared and non-cleared derivatives including ISDA SIMM
- Pre-trade analytics to calculate incremental XVA/PFE, VaR and initial margin
- Integration with Bloomberg Order Management Systems (AIM & TOMS) as well as third-party OMS
- API integration
- Regulatory capabilities allowing customers to comply efficiently and in a timely manner with existing regulations such as PRIIPs or SIMM

OMS integration

- Buy side (AIM)
- Sell side (TOMS)
- Third-party OMS

Pricing & data

- State-of-the-art models
- Cross-asset library
- Contract creation
- Valuations
- Real-time & snapshot data

Front office risk

- Intraday pricing & Greeks
- End-of-day & on-demand risk reports
- P&L Explain
- What-if trade analysis
- Pre-trade margin
- Scenarios & stress testing
- Portfolio margin calculations
- Lifecycle management
- Projected & stressed cash flows
- Regulatory analytics (PRIIPs, SIMM)
- Excel derivatives & mortgages toolkits

Market risk

- Full revaluation VaR & expected shortfall
- Greek sensitivities
- Historical, hypothetical & predictive stress tests
- Tracking error & relative risk statistics
- FRTB regulatory capital
- Buy & sell-side regulatory reporting
- Pre & post-trade analytics for all risk measures

Credit risk

- Portfolio, obligor & obligation analysis
- Early warning/outlier identification
- Credit scorecards & benchmarking
- Default probability with term structure
- Model-implied CDS
- Loss given default & recovery
- Knowledge date & as-of date analytics

XVA

- Valuation adjustments for OTC derivatives incl CVA, DVA, FVA, MVA & KVA
- Counterparty credit risk exposure metrics (PFE)
- Regulatory capital calculations (SA-CCR)
- XVA/PFE pre-trade analytics – position what-if and CSA what-if
- XVA sensitivities

Hedge accounting

- US GAAP & IAS/IFRS
- Micro, Macro & Last-of-layer method
- Cash flow, Fair value & Net investment hedge types
- Monthly reporting includes: valuations, single security CVA/DVA adjustments, scenarios & settlement cash flows

Collateral management

- Legal documentation management
- Dispute management
- Portfolio margin calculations & workflow (IM & VM)
- Automated messaging
- Initial margin Calculations (SIMM, CCP IM)
- In system reconciliation
- Risk analytics

MARS API

- Programmatic access
- Cross-asset data snapshot
- System integration
- Custom reporting

Powerful system & analytics.

Mark-to-market, Greeks & P&L Explain

Monitor mark-to-market, valuations and risk sensitivities powered by Bloomberg's market data, pricing and risk library. MARS Front Office provides access to an extensive array of risk analytics in a single platform, with the full term structure of Greeks as well as a comprehensive Greeks-based P&L Explain to analyze the impact of various market data factors on your books and portfolios. Term-structure Greeks include, but are not limited to Interest Rate Delta/Key Rate Risk, IR Basis risk, Credit KRR, IR Vega matrix, and FX Vega, Rega and Sega term structure. With full look-through into market data and model parameters, MARS Front Office delivers unrivalled consistency and transparency, consolidating valuation and risk in a single system across all asset classes for both flow and exotics.

Scenario analysis & stress testing

MARS Front Office allows you to conduct a comprehensive scenario analysis leveraging Bloomberg's cross-asset SHOC engine. Use Bloomberg's state-of-the-art pre-canned stress-test library that covers various market data events from Black Monday, Asian Crisis and Lehman Default 2008 to recent Brexit to assess the impact on the mark-to-market and Greeks in your portfolios. You can also create your own custom scenarios, including historical ones, via MARS Front Office.

Pre-trade analysis

Conduct powerful pre-trade analysis to calculate incremental Value-at-Risk, Credit Value Adjustment (CVA) or Potential Future Exposure (PFE) resulting from the addition of new what-if trades. Front office players can then make risk-informed decisions before entering a trade and analyze the full impact on their portfolio risk.

Calculate the right margin

MARS Front Office allows you to calculate Initial Margin (IM) using CCP IM models for cleared netting sets (CCP/FCM pair) and for OTC bilateral netting sets with ISDA SIMM. You can lower your capital requirements using incremental IM and "Porting" analysis across cleared and non-cleared netting sets to select the optimal trade venue. MARS also facilitates the attribution, transparency and reporting of SIMM IM risk classes and Greeks for all non-cleared netting sets.

Programmatic API access

MARS Front Office analytics can also be made available through programmatic API, providing all your firm's subscribers with a unified view of their portfolios while ensuring seamless integration between positions, market data and pricing models. Bloomberg's MARS Front Office API solution comes with fail over, load balancing, scalability, secure and encrypted sessions, data monitoring and management. The most trusted provider in the industry, Bloomberg delivers high-quality data and risk analytics across asset classes, enabling you to improve operational efficiency and potentially reduce costs by eliminating redundant feeds.

Support for Libor transition

MARS and SWPM offer comprehensive support for clients facing Libor transition. They compare the impact of changing to daily compounding RFRs from a market value perspective or, if needed, a constant valuation and change to the credit spread using the SWPM solver. In addition, Bloomberg has made it possible to amend any existing trade to switch to RFR from Libor, from a specified point in time, enabling clients to keep the details of paid cash flows while switching to RFR for future cash flows.

Derivatives Toolkit in Excel

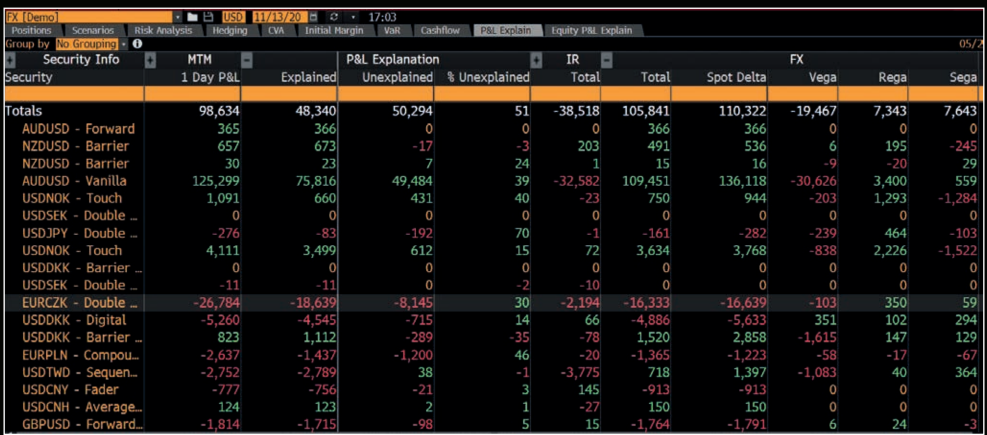
Derivatives Toolkit is integrated into our MARS Front Office solution, enabling clients to structure and price Bloomberg derivatives using Excel formulas – with no programming knowledge required. Using Bloomberg's market data, pricing and analytics to provide a powerful and customizable experience, clients are able to streamline analysis and calculations that would be extremely time-consuming if performed manually.

The integration of DLIB into Derivatives Toolkit makes designing a structured products spreadsheet as easy as a vanilla one, leveraging the range of capabilities offered by DLIB.

With advanced scenario and stress-test capabilities, term-structure risk reports, portfolio margin calculations, P&L Explain as well as streamlined workflow solutions, MARS Front Office provides everything you need to adapt to changing regulations and thrive in a challenging business landscape.

Risk analysis

Analyze your risk using term-structure Greeks, including, but not limited to, Key Rate Risk, IR Basis, Inflation KRR, and IR Vega matrix to FX Vega term-structure risk.



Greek-based P&L Explain

Gain insight into how various market factors impact the daily movement of mark-to-market valuations of your multi-asset portfolio, and drill down to the individual security level.

Streamlined workflow solutions.

Cash flow analysis

MARS Front Office provides risk managers, traders and investment advisors with access to cash flows at the portfolio and deal levels, allowing them to improve their re-investment and funding plans. Interactive charts and automated reports enable you to visualize projected or historical cash flows across time, separate principal and interest payments for interest rate products, aggregate cash flows by currency, asset class or counterparty, and decompose cash flows into net, interest payment, received cash flows and fees. Cash flows can be subjected to a wide variety of stress tests to improve your understanding of future cash flow profiles, enabling better-informed investment decisions.

Automatic lifecycle management

To help clients monitor the lifecycle events impacting portfolios of derivatives and structured products, lifecycle management provides a streamlined workflow with automatic monitoring of events – removing the burden, cost and risk of manual monitoring. Sales teams, investment advisors and relationship managers can use the lifecycle management tool to provide more effective, proactive service to their clients.

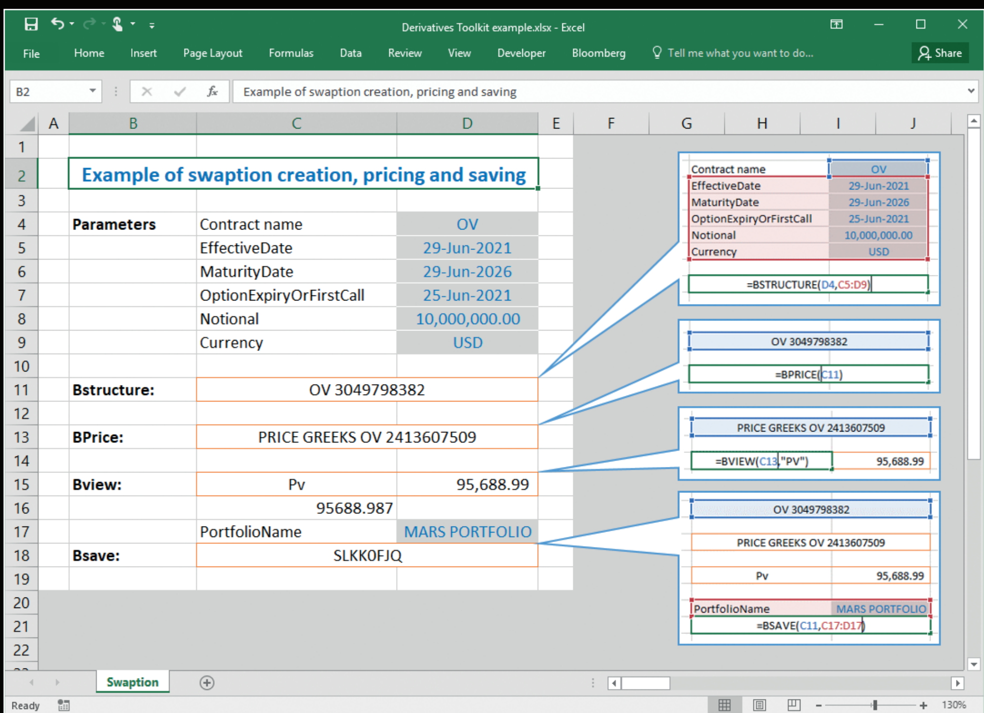
Fixing values can be verified in one place, with grouping and filtering features ensuring that only the relevant values are displayed. If the fixing retrieved by the lifecycle engine is not the one that needs to be used (for example, when a different value has been agreed with the counterparty), it's possible to edit the fixings directly on screen.

Automated report scheduling

Automated reporting capabilities within MARS Front Office enable you to create reports and automate them to be executed at scheduled times and frequencies. Reports can be customized with contact details and disclaimers and be shared enterprise wide.

Adapt to regulation

MARS Front Office allows you to compute and monitor PRIIPs analytics as well as intermediary performance analytics on a deal-by-deal level as well as on your entire portfolio. Built on DLIB technology, Bloomberg's PRIIPs solution, as part of MARS Front Office, allows you to have unrivalled coverage combined with state-of-the-art analytics available through the Terminal as well as API.



Derivatives Toolkit

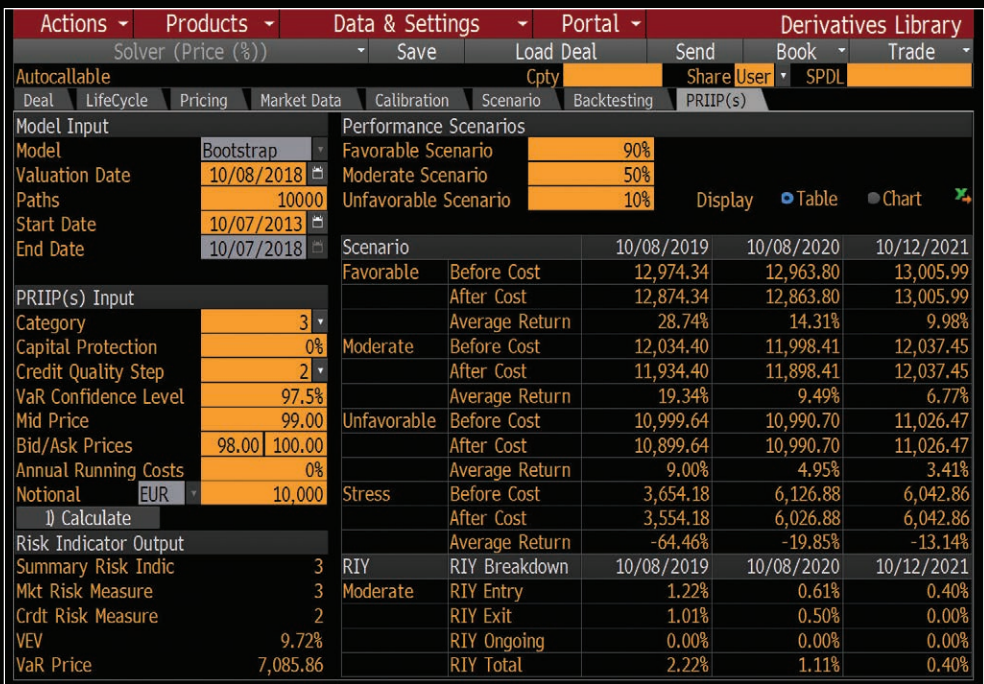
Structure and price derivatives using Excel formulas – with no programming knowledge required.

Cash flow analysis

Plan your re-investment strategy by projecting portfolio and deal-level cash flows into the future and subjecting them to a wide variety of stress tests.

Lifecycle management

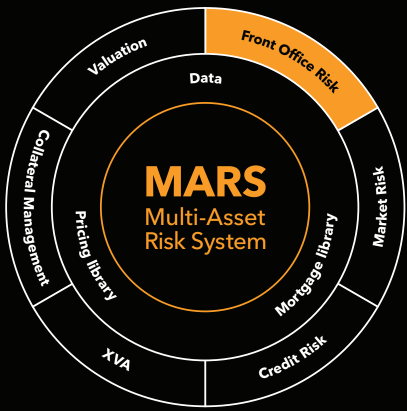
Monitor the lifecycle flow, fixing, exercise and barrier events impacting portfolios of derivatives and structured products. Easily edit events with fixing overrides of past fixings to visualize updated cash flows.



PRIIPs analytics

Generate the PRIIPs risk analytics required for your Key Information Document (KID) including Market Risk Measure (MRM), Credit Risk Measure (CRM), Summary Risk Indicator (SRI) and Intermediary Performance Scenarios and Reduction in Yield (RIY).

MARS Multi-Asset Risk System



The Multi-Asset Risk System provides consistent and consolidated valuation, product lifecycle analysis, market risk, counterparty risk and collateral management.

MARS is powered by Bloomberg's world-class pricing library, market data and mortgage cash flow engine and enables front office, risk and collateral professionals to analyze their trading and investment portfolios, mitigate risk and prepare for the unexpected.

Learn more

To learn more about Bloomberg's risk solutions, visit **RISK <GO>** on the Bloomberg Terminal or contact us at riskinfo@bloomberg.net.

About the Bloomberg Terminal.

Since 1981, business and financial professionals have depended on the Bloomberg Terminal® for the real-time data, news and analytics they need to make the decisions that matter. The Terminal provides information on every asset class — from fixed income to equities, foreign exchange to commodities, derivatives to mortgages — all seamlessly integrated with on-demand multimedia content, extensive electronic-trading capabilities and a superior communications network.

Take the next step.

For additional information, press the <HELP> key twice on the Bloomberg Terminal®.

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