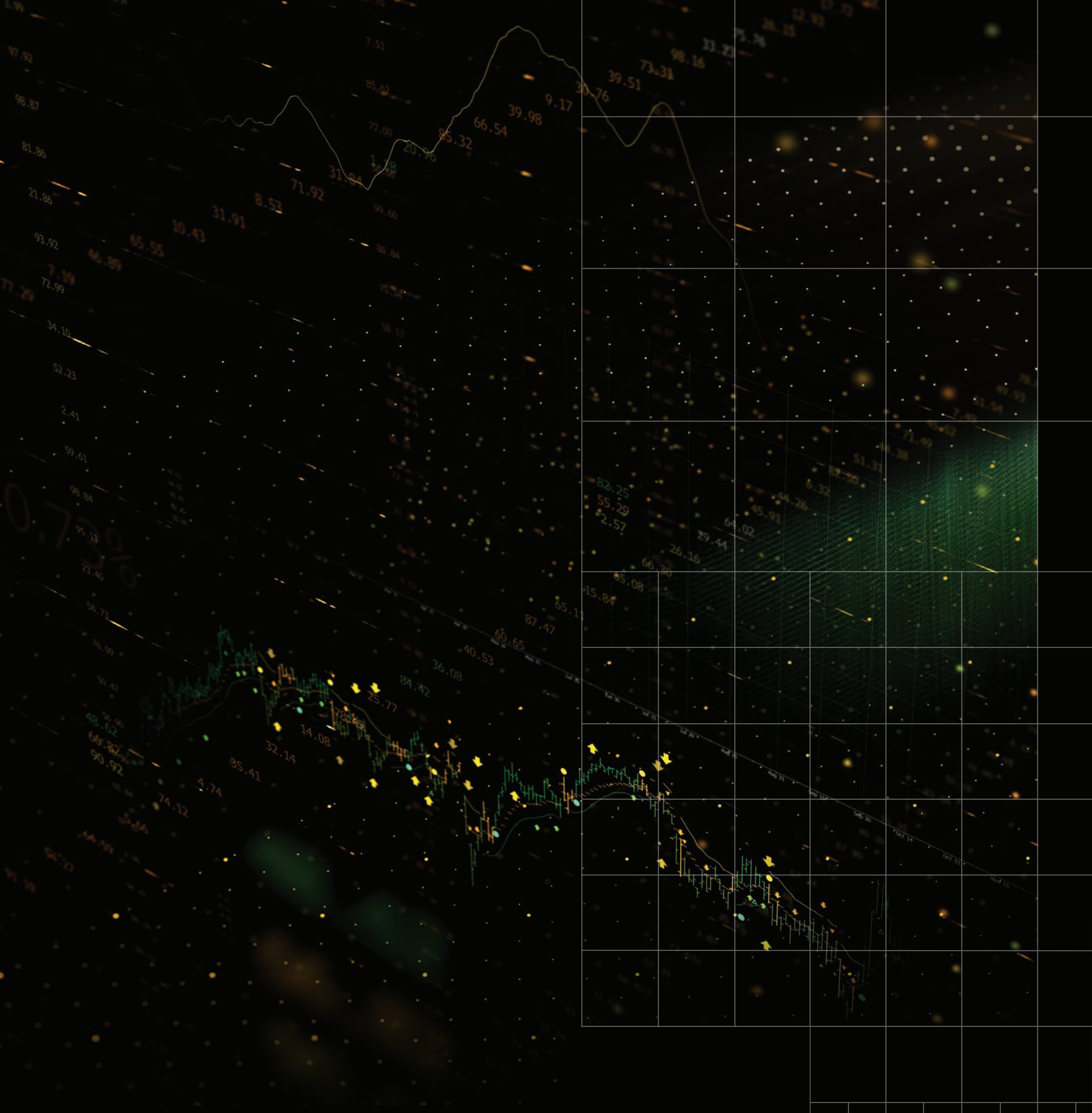
See clearly, act quickly.

Bloomberg Terminal

Risk & Valuations

Bloomberg Professional Services

Bloomberg



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 regulation 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 matter of minutes. Our clients can then seize the advantage of getting to market faster and utilizing their resources more efficiently.

Key features

- Cross-asset class product coverage (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 testing capabilities cross-asset.
- Lifecycle management from fixing, cash-flow to barrier and exercise events & report generation.
- Portfolio margin calculations for cleared and un-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
- EOD & on-demand risk reports
- P&L Explain
- What-if trade analysis
- Pre-Trade XVA & Margin
- Scenarios & stress testing
- Portfolio Margin calculations
- Lifecycle management
- Projected & stressed Cashflows
- Regulatory analytics (PRIIPs, SIMM)

Market risk

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

XVA

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

Hedge accounting

- US GAAP & IFRS
- Cash flow, Fair value & Net investment hedge types
- Effectiveness tests
- Measurement reports
- Cost of hedging
- Audit reports

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 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 with the full term structure of Greeks as well as a comprehensive 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. 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 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 be also 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.

	Total	3M	4M	5M	6M	7M	1Y	2Y	3Y
Portfolio Totals	412,893	779	-682	-137	740	189	-1,719	5,253	-30,618
AUD	515	165	-587	-85	701	255	161	-4	-10
CAD	-55,247	156	0	0	4	-4	4	29	49
EUR	-148	-99	-3	-2	0	-5	-7	-5	-24
GBP	358,522	577	521	426	20	647	409	-171	-21,567
JPY	80	0	0	0	0	0	0	0	0
USD	109,171	-19	-614	-477	15	-705	-2,286	5,404	-9,065

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.

	MTM			P&L Explanation			IR	Credit	OAS
Security	1 Day P&L	MTM Close	MTM Current	Explained	Unexplained	% Unexplained	Total	Delta	
Totals	1,302,087	-42,255,979	-40,953,892	1,302,822	-735	0	40,547	0	86,317
T 4 1/4 05/15/39	25,374	11,919,497	11,944,871	25,428	-55	0	12,030	0	11,001
T 3 11/15/45	65,692	19,736,074	19,801,766	65,591	102	0	40,785	0	20,799
T 2 3/4 02/15/28	23,394	19,866,532	19,889,926	23,408	-14	0	14,184	0	8,606
T 2 5/8 02/28/23	-46,196	-100,142,323	-100,188,519	-46,298	102	0	-22,445	0	-12,671
IBM 7 10/30/45	-890	13,928,313	13,927,422	-893	3	0	20,191	0	-24,177
CABKSM 0 05/14/2...	-68,794	12,038,352	11,969,559	-68,682	-112	0	496	0	-2,725
CAN 1 1/2 06/01/...	-42,995	-11,099,204	-11,142,199	-42,953	-42	0	-14,938	0	6,129
SVU 7 3/4 11/15/...	99,298	10,410,199	10,509,497	100,133	-835	-1	971	0	95,123
UKT 2 09/07/25	34,791	-21,054,955	-21,020,165	34,846	-56	0	19,514	0	-15,690
/SWAP 2.36 10/18...	4,278	-112,951	-108,673	4,282	-4	0	4,244	0	0
/IRS 2.08 09/20/2...	1,312	52,940	54,253	1,419	-106	-8	1,289	0	0
/IRS 2.01 10/18/2...	3,140	-362,428	-359,288	3,030	109	3	2,454	0	-62
/SWAP 2.36 10/18...	7,818	-246,591	-238,773	7,598	220	3	7,601	0	0
/SWAP 2.59 02/13...	2,845	-47,562	-44,717	2,966	-121	-4	2,231	0	0
/SWAP FLFL 10/17...	52,941	182,979	235,920	52,887	54	0	-3,102	0	0
/CAP 2.37 10/23/2...	-6,168	333,187	327,019	-5,939	-228	4	-5,885	0	0
/ .00 07/07/20	-51,873	9,435,750	9,383,877	-51,642	-230	0	330	0	0
/SWAP 1.89 09/19...	3,646	-380,447	-376,801	3,660	-14	0	3,110	0	0
/SWAP FLFL 03/29...	495,532	-673,792	-178,260	495,313	219	0	-33,970	0	0
/SWAP 5.00 03/28...	671,320	-10,340,706	-9,669,386	671,081	239	0	-7,024	0	0
/VW: 100 06/20/2...	1,426	-326,913	-325,487	1,417	8	1	-13	0	0
MARKIT CDX.NA.IG...	-194	-389,222	-389,417	-194	0	0	45	0	0
/ENGIF 100 06/20...	1,155	-232,377	-231,222	1,149	6	0	-9	0	0

P&L Explain Greeks-based

Gain insight into the various market risk factors impacting the daily movements of the market-to-market of your portfolio with transparent drill-down capabilities to security level.

Streamlined workflow solutions.

Cash flow analysis

MARS Front Office provides risk managers, traders and investment advisors with access, allowing them to achieve better insight into cash flows at the portfolio and deal levels. 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.

Automatic lifecycle management

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

Automated report scheduling

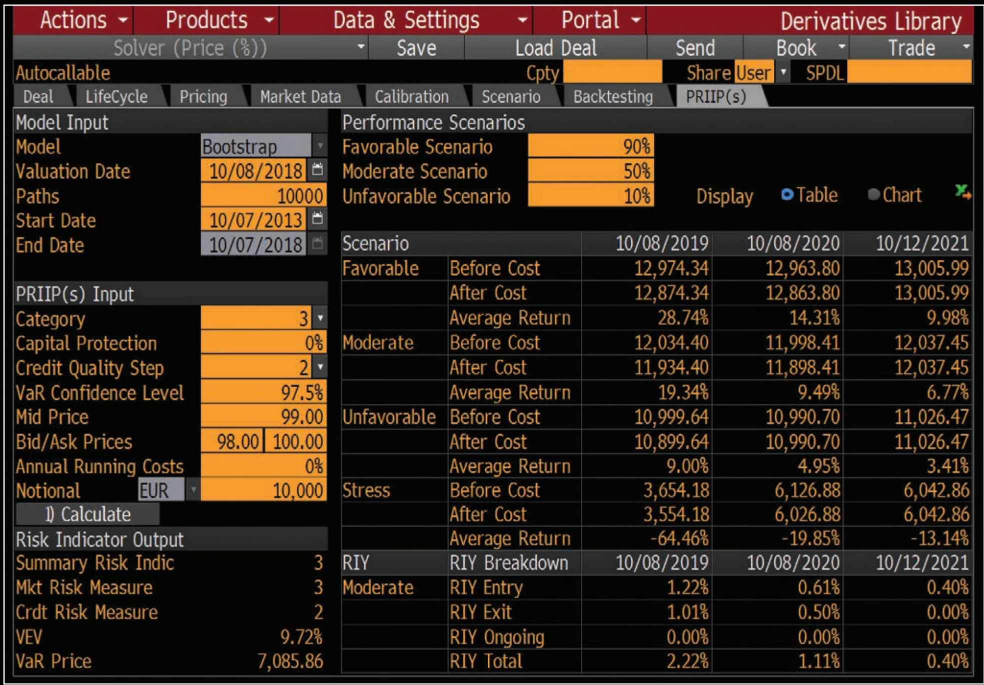
Automated reporting capabilities within MARS Front Office enable you to create reports and automate them to be executed at scheduled times and frequencies. Reports can be customized with contact details and disclaimers and be shared enterprise wide.

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.

Lifecycle management

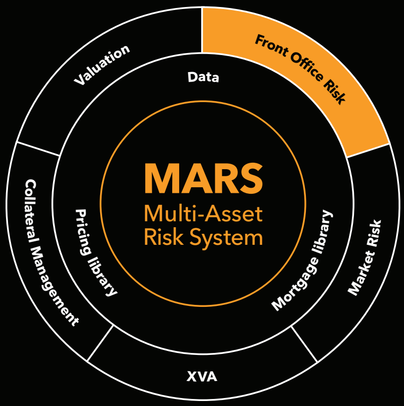
Monitor the lifecycle cash flow, fixing, exercise and barrier events impacting portfolios of derivatives and structured products.



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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