

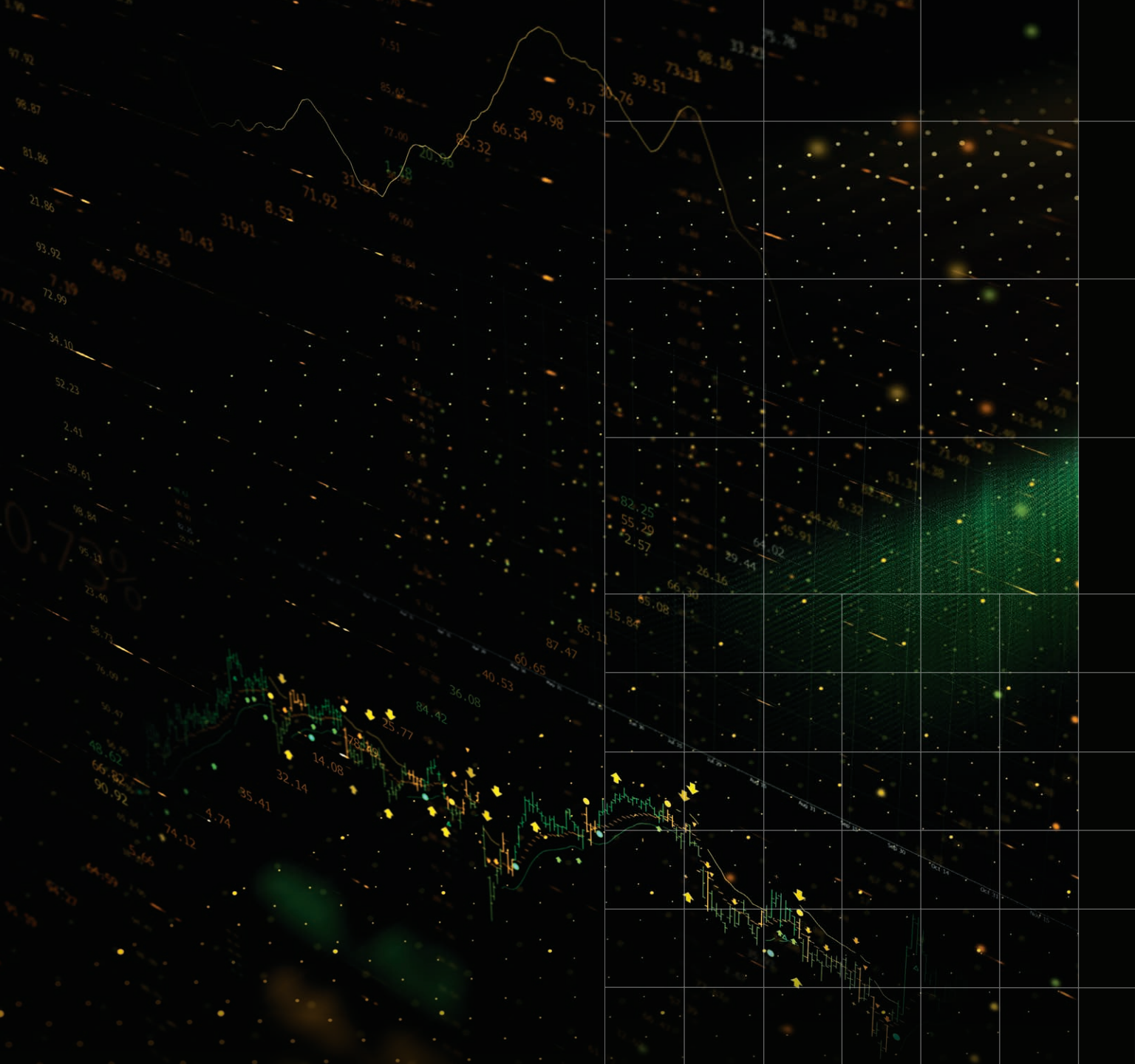
**See clearly,
act quickly.**

Bloomberg Terminal

Risk & Valuations

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Bloomberg Professional Services



Contents

- 04** Intraday cross-asset risk system
- 06** Powerful system & analytics
- 08** Streamlined workflow solutions

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 <ul style="list-style-type: none"> • Buy side (AIM) • Sell side (TOMS) • Third-party OMS 					
Pricing & data <ul style="list-style-type: none"> • State-of-the-art models • Cross-asset library • Contract creation • Valuations • Real-time & snapshot data 					
Front office risk <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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.

FX (Demo) 11/15/20 17:03											
Positions Scenarios Risk Analysis Hedging CVA Initial Margin VaR Cashflow P&L Explain Equity P&L Explain											
Group by No Grouping											
Security Info MTM P&L Explanation IR FX											
Security	1 Day P&L	Explained	Unexplained	% Unexplained	Total	Total	Spot Delta	Vega	Rega	Sega	
Totals	98,634	48,340	50,294	51	-38,518	105,841	110,322	-19,467	7,343	7,643	
AUDUSD - Forward	365	366	0	0	0	366	366	0	0	0	
NZDUSD - Barrier	657	673	-17	-3	203	491	536	6	195	-245	
NZDUSD - Barrier	30	23	7	24	1	15	16	-9	-20	29	
AUDUSD - Vanilla	125,299	75,816	49,484	39	-32,582	109,451	136,118	-30,626	3,400	559	
USDNOK - Touch	1,091	660	431	40	-23	750	944	-203	1,293	-1,284	
USDSEK - Double ...	0	0	0	0	0	0	0	0	0	0	
USDJPY - Double ...	-276	-83	-192	70	-1	-161	-282	-239	464	-103	
USDNOK - Touch	4,111	3,499	612	15	72	3,634	3,768	-838	2,226	-1,522	
USDOKK - Barrier ...	0	0	0	0	0	0	0	0	0	0	
USDSEK - Double ...	-11	-11	0	-2	-10	0	0	0	0	0	
EURCZK - Double ...	-26,784	-18,639	-8,145	30	-2,194	-16,333	-16,639	-103	350	59	
USDOKK - Digital	-5,260	-4,545	-715	14	66	-4,886	-5,633	351	102	294	
USDOKK - Barrier ...	823	1,112	-289	-35	-78	1,520	2,858	-1,615	147	129	
EURPLN - Compon...	-2,637	-1,437	-1,200	46	-20	-1,365	-1,223	-58	-17	-67	
USDTHD - Sequen...	-2,752	-2,789	38	-1	-3,775	718	1,397	-1,083	40	364	
USDCHN - Fader	-777	-756	-21	3	145	-913	-913	0	0	0	
USDCHN - Average...	124	123	2	1	-27	150	150	0	0	0	
GBPUSD - Forward	-1,814	-1,715	-98	5	15	-1,764	-1,791	6	24	-3	

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.

Example of swaption creation, pricing and saving

Parameters	Contract name	OV
EffectiveDate	29-Jun-2021	
MaturityDate	29-Jun-2026	
OptionExpiryOrFirstCall	25-Jun-2021	
Notional	10,000,000.00	
Currency	USD	

Bstructure:	OV 3049798382
BPrice:	PRICE GREEKS OV 2413607509
Bview:	Pv 95,688.99
Bsave:	SLKKOFJQ

Callouts showing formulas:

- Contract name:** OV
- EffectiveDate:** 29-Jun-2021
- MaturityDate:** 29-Jun-2026
- OptionExpiryOrFirstCall:** 25-Jun-2021
- Notional:** 10,000,000.00
- Currency:** USD
- Bstructure:** =BSTRUCTURE(D4,C5:D9)
- BPrice:** =BPRICE(C11)
- Bview:** =BVIEW(C13,"PV")
- Bsave:** =BSAVE(C11,C17:D17)

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.

Views ▾ Actions ▾ Reports ▾ Export ▾ Settings ▾					
LIFECYCLE DEMO (Demo) USD 11/17/20 17:36					
Positions Lifecycle Events					
Hide Filters Events Fixing Group By Event Date Update Cancel					
50) Reset Filters	Date	Security	Deal ID	Notional Underlying	Fixing Val... Desc
Time Range	03/16/18	Cancellable Fixed-Floa	XDACRBH4 Corp	10,000,000.00 US0003M Index	2.20175%
All Events	06/14/18	Cancellable Fixed-Floa	XDACRBH4 Corp	10,000,000.00 US0003M Index	2.33469%
From MM/DD/YYYY	09/14/18	Cancellable Fixed-Floa	XDACRBH4 Corp	10,000,000.00 US0003M Index	2.33713%
To MM/DD/YYYY	12/14/18	Cancellable Fixed-Floa	XDACRBH4 Corp	10,000,000.00 US0003M Index	2.80069%
Underlying	03/14/19	Cancellable Fixed-Floa	XDACRBH4 Corp	10,000,000.00 US0003M Index	2.61463%
EURUSD Currency 261	03/19/19	Capped Floater - USD	XDACREOK Corp	10,000,000.00 US0003M Index	2.61275%
EURGBP Currency 253	03/20/19	Cancellable Fixed-Floa	XDACRE02 Corp	100,000,000.00 US0003M Index	2.60700%
EUR006M Index 80	03/21/19	/SWAP 2.46 03/25/24	SL462010 Corp	10,000,000.00 US0003M Index	2.60150%
US0003M Index 77	03/21/19	/SWAP 1.08 03/25/49	SL46201X Corp	9,666,666.67 EUR006M Index	-2.229%
Counterparty					
BBGFX 515					
SWAP CNTRPAR 94					

Lifecycle management

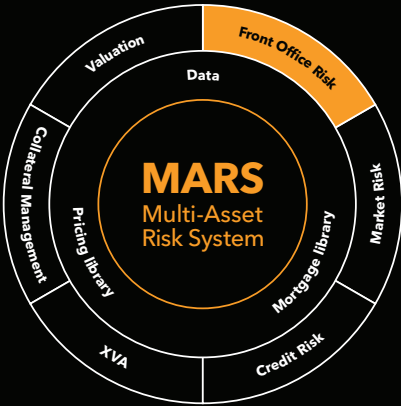
Monitor the lifecycle flow, fixing, exercise and barrier events impacting portfolios of derivatives and structured products. Easily edit events with fixing overrides of past fixings to visualize updated cash flows.

Actions ▾		Products ▾		Data & Settings ▾		Portal ▾		Derivatives Library	
Solver (Price (%)) ▾				Save		Load Deal		Send Book ▾ Trade ▾	
Autocallable				Cpty		Share User ▾		SPDL	
Deal	LifeCycle	Pricing	Market Data	Calibration	Scenario	Backtesting	PRIIP(s)		
Model Input				Performance Scenarios					
Model	Bootstrap ▾			Favorable Scenario		90%			
Valuation Date	10/08/2018 ▾			Moderate Scenario		50%			
Paths	10000			Unfavorable Scenario		10%			
Start Date	10/07/2013 ▾			Display					
End Date	10/07/2018 ▾								
PRIIP(s) Input									
Category	3 ▾			Moderate		Average Return			
Capital Protection	0%					28.74%			
Credit Quality Step	2 ▾					14.31%			
VaR Confidence Level	97.5%			Unfavorable		Before Cost			
Mid Price	99.00					12,034.40			
Bid/Ask Prices	98.00 100.00					11,998.41			
Annual Running Costs	0%			Stress		Average Return			
Notional	EUR ▾ 10,000					19.34%			
1) Calculate						9.49%			
Risk Indicator Output				RIY		Before Cost			
Summary Risk Indic	3					3,654.18			
Mkt Risk Measure	3					6,126.88			
Crdt Risk Measure	2			Moderate		Average Return			
VEV	9.72%					-64.46%			
VaR Price	7,085.86					-19.85%			
				RIY Breakdown		10/08/2019		10/08/2020	
				RIY Entry		1.22%		0.61%	
				RIY Exit		1.01%		0.50%	
				RIY Ongoing		0.00%		0.00%	
				RIY Total		2.22%		1.11%	
						10/12/2021			
						0.40%			
						0.00%			
						0.00%			
						0.40%			

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.



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