

# Credit Risk and its impact on regulations and technical architecture

Ayan Sagynbek kyzy

Sell-side Valuations, Risk and Regulations solutions specialist at Bloomberg

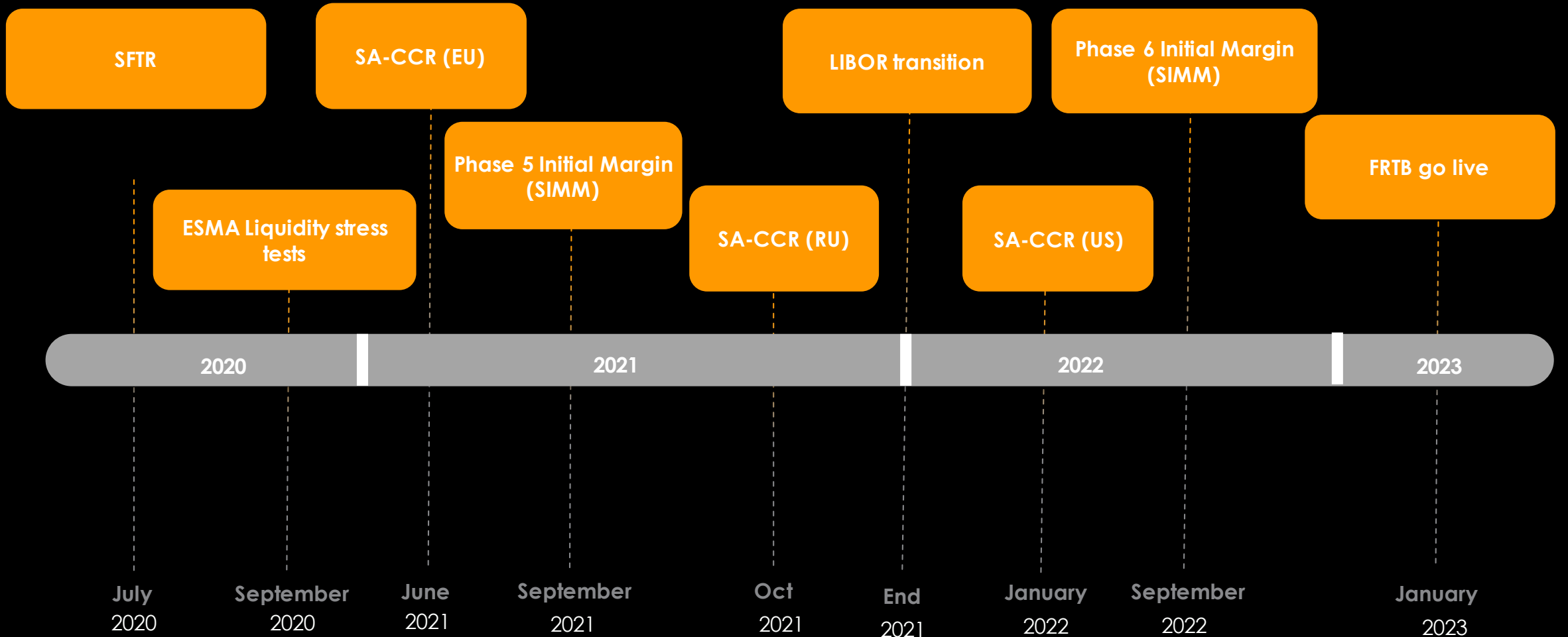
Bloomberg

# Regulatory Risk Global Deadlines

## RegRisk Timelines : Sell-Side & Buy-Side



# New Regulatory Timeline (Sell-side)

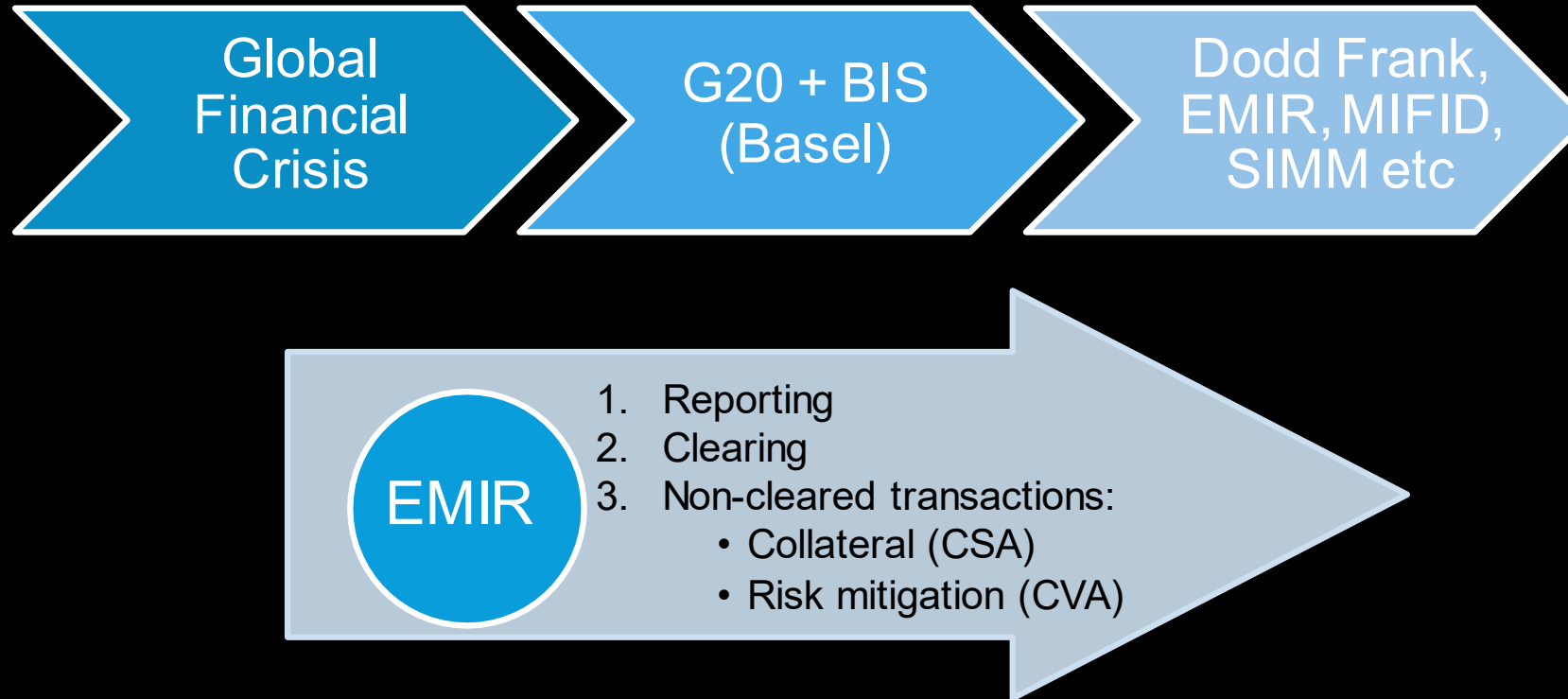


# Agenda

---

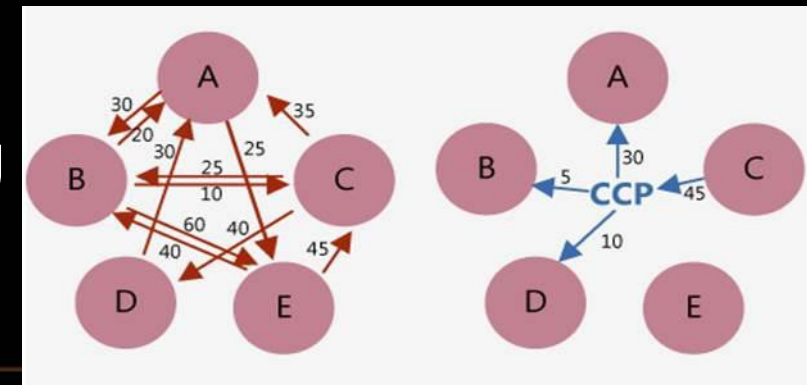
- Timeline of the changes in the Global and Russian Federation regulation:
  - **Credit Risk:**
    - IFRS 13 & 9 Reporting and Analytics, SA-CCR, Clearing & Collateral management & SIMM, PRIIPs
  - **Operational and Pricing Model Risks:**
    - IPV, Libor Transition
  - **Climate Risk:**
    - Banking Regulations forming, ESG Factoring, Stress-testing
- Impact of such changes on business and workflows
- Bloomberg Solutions

# Credit Risk: Derivatives transactions (post-GFC crisis)

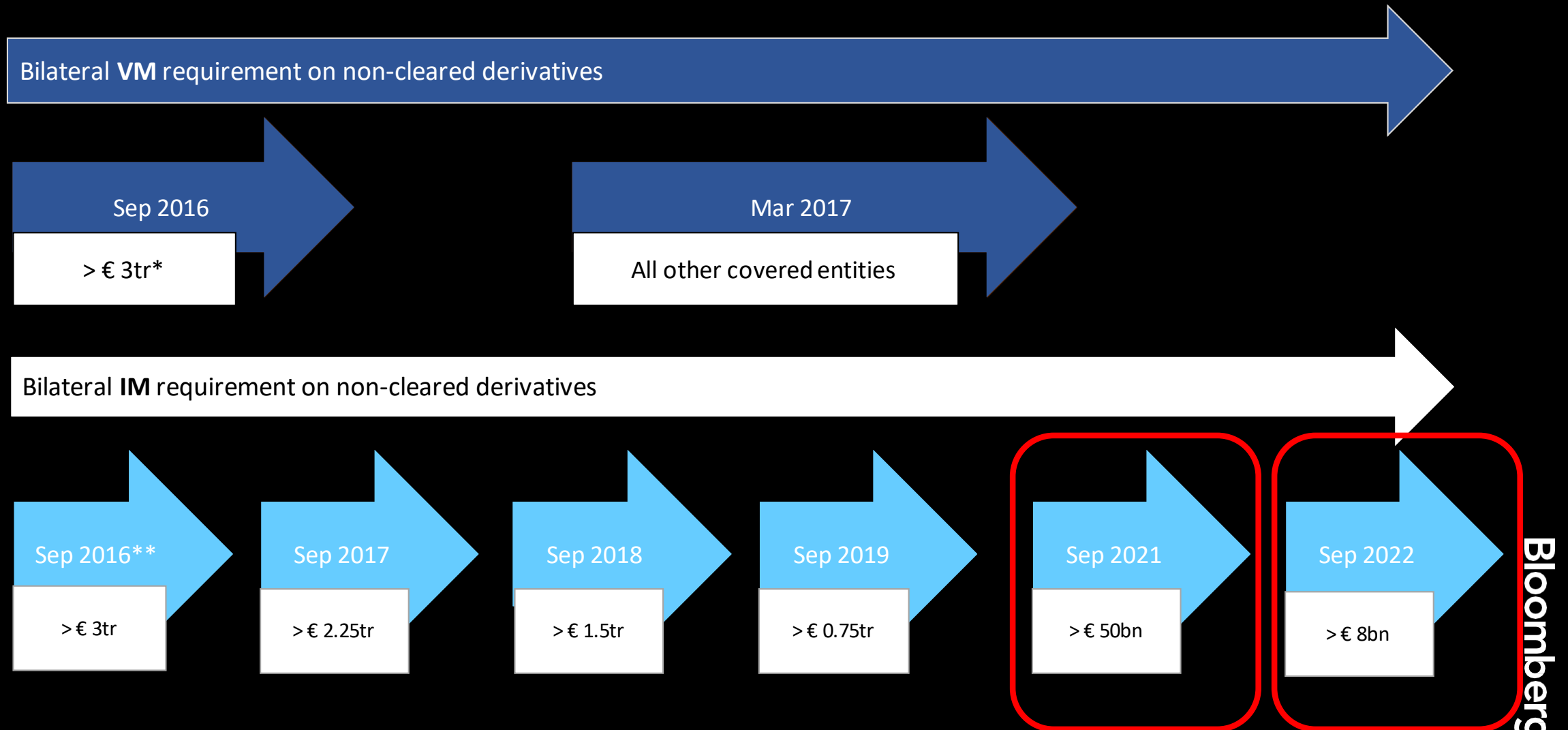


# Credit Risk: Clearing & Collateral management & SIMM

- **Non-regulatory Clearing** globally is driven by the following benefits:
  - netting and capital benefits (exposure to just one CCP)
  - the desire of counterparties to mitigate credit risk and settlement risk and, in the case of banks, to reduce capital held against such trades
    - In Russia clearing may sometimes be deemed a more expensive option than bilateral, however, the benefits above as well as the desire to trade with foreign counterparties and lock more favourable rates may outweigh the costs in long term
- And, of course, the rollout of margining requirements for non-cleared derivatives (SIMM) is also one of the key drivers to move into clearing



# Margining – Initial Margin Mandatory Deadlines

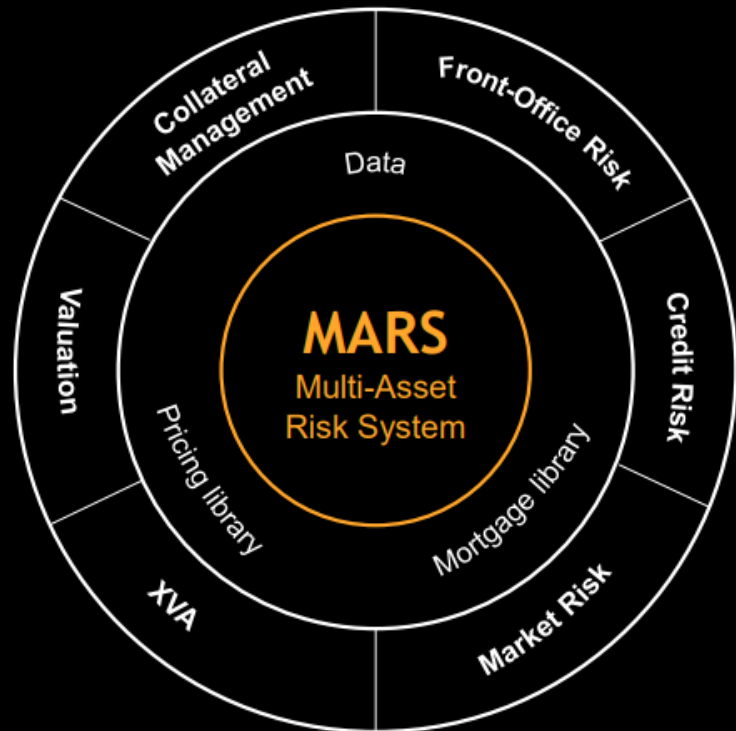


April 2020 Revisions

BCBS: Basel Committee on Banking Supervision

IOSCO: International Organization of Securities Commissions

# Multi-Asset Risk System (“MARS”) – A Suite of Integrated and Scalable Solutions



- Help front-office, risk and collateral professionals to analyse their trading and investment Portfolios, mitigate risk and prepare for the unexpected.

Powered by Bloomberg’s world class:

- Pricing library
- Mortgage cash flow engine, and
- Market data

Consistent and consolidated platform for:

- Valuation of derivatives
- Front office risk (incl. product life cycle analysis)
- - Credit Risk
- Counterparty risk and
- Collateral management



# Bloomberg Collateral – Margin Blotter

Views ▾ Actions ▾ Contact Export Settings ▾ Multi Asset Risk System: Collateral (DEMO)

Margin Dispute Interest Reconciliation Substitution Transactions Inventory Risk

Summary History

Hide Filters «

Event Type  New Events  Pending Events 31) Event Actions ▾ 32) Bulk Mode

Event Type	Agreement	Valuation Agent	Principal	Counterparty	Event Type	Mgn. Type	Status	Ba...	Call
<input type="checkbox"/> Cpty. Call	41) BVAL DEMO CP...	Both	DEMO BVAL PR...	DEMO BVAL CPTY	No Action	Prin. IM	Open	USD	
<input type="checkbox"/> No Action	42) BVAL DEMO CP...	Both	DEMO BVAL PR...	DEMO BVAL CPTY	Prin. Call	Cpty. IM	Open	USD	4,62
<input type="checkbox"/> Prin. Call	43) DEMO 1 CPTY -...	Both	DEMO PRINCIP...	DEMO OTC COUN...	Prin. Call	VM	Open	USD	1,58
	44) DEMO 1 GMRA	Both	DEMO PRINCIP...	DEMO REPO COU...	Cpty. Call	VM	Open	USD	-85
	45) DEMO 2 CPTY	Both	DEMO PRINCIP...	DEMO SIMM cou...	Prin. Call	VM	Sent	USD	2,05
	46) DEMO 2 CPTY -...	Both	DEMO PRINCIP...	DEMO SIMM cou...	Cpty. Call	Prin. IM	Open	USD	-60
	47) DEMO 2 CPTY -...	Both	DEMO PRINCIP...	DEMO SIMM cou...	Prin. Call	Cpty. IM	Open	USD	31
	48) DEMO 3 CPTY -...	Both	DEMO PRINCIP...	DEMO UMV Coun...	No Action	VM	Open	EUR	
	49) DEMO 4 CPTY -...	Counterparty	DEMO PRINCIP...	DEMO NVA Count...	No Action	VM	Open	EUR	
	50) DEMO 5 CPTY	Counterparty	DEMO PRINCIP...	DEMO CLEARING	Prin. Call	VM	Open	USD	20,01

Hide Positions

Exposure  Collateral  SIMM Breakdown

SIMM Attribution	Initial Margin ↑ IM	Interest Rate	Foreign Exchange	Credit Qualifying	Equity
Product Class	Initial Margin ↑ IM	IM	IM	IM	IM
Totals (15)	7,611,373				
Commodity (1)	30,065	5	0	0	0
XAUUSD	30,065	5	0	0	0
Credit (2)	2,228,431	47,135	15,178	2,212,424	0
/AAPL 100 12/20/28	2,111,507	46,671	0	2,099,355	0
/TELEF 100 06/20/24 48	261,184	2,015	15,178	256,591	0
IR&FX (12)	5,352,877	5,157,563	621,438	0	0
/SWAP 1.20 02/01/21	340,163	340,163	0	0	0
/SWAP 2.50 03/02/22	112,224	112,224	0	0	0

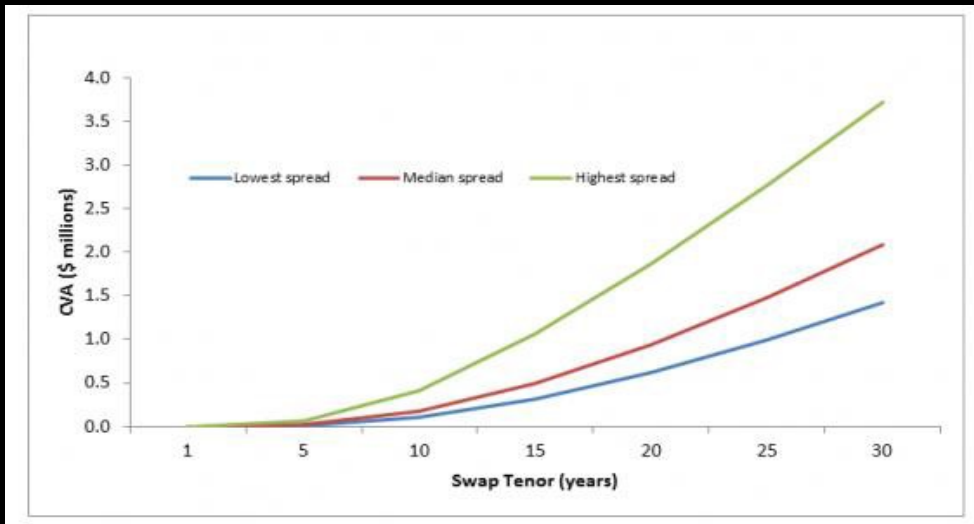
Export ▾

- Export Breakdown
- Export CRIF
- Export AcadiaSoft CRIF
- Send AcadiaSoft CRIF

- Manage Daily Margin Events (Margin Calls, Disputes, Interest and Substitutions)
- Direct access to real-time trade and market data
- Automated messaging via AcadiaSoft MarginSphere
- Dispute Management
- Interest Management
- Audit Trail
- Reconciliation
- Liquidity Shortfall analysis
- Transparency into SIMM breakdown, CRIF file to SFTP
- Auto-send CRIF to AcadiaSoft Initial Margin Exposure Manager for SIMM reconciliation

# Non cleared transactions (two types)

1. **Non-collateralised**:  $XVA = CVA + \text{Additional charges (FVA, KVA)}$ 
  - Accounting standards, US 2007 and IFRS 13: True MTM must incorporate the possibility of losses due to default
  - Quoted Price transparency
  - Portfolio optimisation, Income Statement gains
2. **Collateralised**:  $XVA + \text{Posting Collateral (CSA, SIMM)}$



Menu Search Bloomberg

Watch Full Coverage of Market Selloff FOR MORE >

OPINION | VIEW

## It Cost JPMorgan \$1.5 Billion to Value Its Derivatives Right

This is a really long story about Libor, basically.

By [Matt Levine](#)  
January 15, 2014, 10:51 PM GMT

Last quarter, JPMorgan's financial results included a [\\$1.5 billion loss](#) due to implementing a funding valuation adjustment in its accounting for uncollateralized over-the-counter derivatives and -- wait, where are you going? Somewhere where people don't talk about accounting and derivative valuation? Oh, yeah, okay, that's fair, I cannot really argue with you. Go in



# Credit Risk: IFRS 13 Reporting for Derivatives

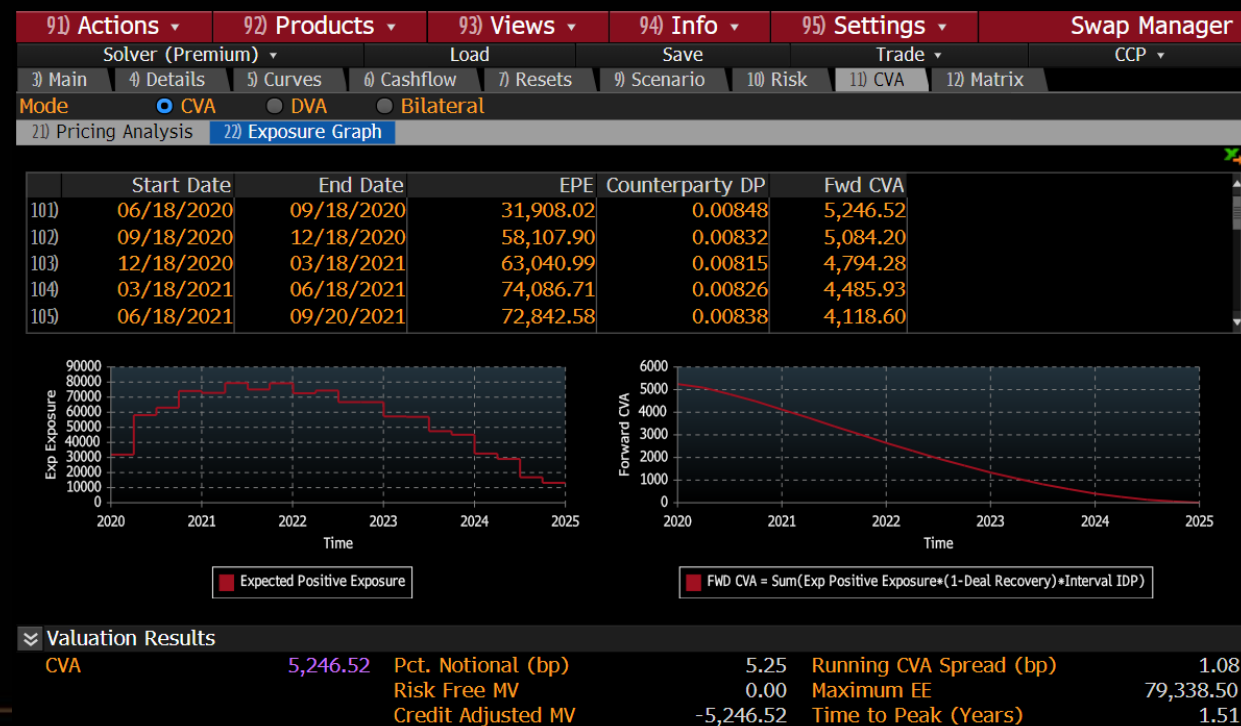
---

- **IFRS 13: CVA's to be included in mark-to-market reporting for OTC derivatives**
  - Mainly a formality, tick-the-box exercise: Monthly or quarterly calculations for financial reporting
  - Can also be part of front office activities (pre-trading quoting) and risk management (PFE limits). However, XVA trading is not yet widely practiced in Russia, EE and Balkans, despite being a must in Western Europe and Middle East
  - Regardless, this introduces the practice of estimation of CVA as it affects company financial statements, and therefore needs to have an **appropriate methodology**

# Traditional CVA approximation calculations drawbacks

- Analytic approach, not Monte Carlo simulations. Limited Deal types support
- Single Deal exposure, not Portfolio Level
- No Potential Netting, Collateral and Capital benefits
- No Credit Provisions (Mandatory or Optional)

- All of these challenges can be addressed with MARS XVA enterprise solution



SWPM<GO>

# Multi Asset Risk System: XVA

Views ▾ View Manager Actions ▾ Settings ▾ (Demo) Multi Asset Risk System: XVA

SA-CCR DEMO [06/16/20 11:10:05 PM] ▾ No Scenario Valuation Date 06/16/20 Position Date 06/16/20 🔍

Reporting Currency USD Simulation Currency

Book Summary > XVA Europe

Hide Filters «

▾ Sector

- Automo... 1
- Capital... 1
- Food &... 1
- Multi-U... 1
- N/A 1

More...

▾ Country

- DE 1
- FR 2
- GB 2
- NL 1

▾ Credit Curve

- CAFP E... 1
- DEVOBA... 1
- MAN GR... 1
- NAT GR... 1
- RENAUL... 1

More...

Worksheet	CVA/DVA Metrics		Group by	Counterparty						
Netting Set	MTM	MTM Change	CVA	CVA Chg	DVA	DVA Chg	BCVA	BCVA Chg		
Carrefour SA	-881,022	-43,277	-8,428	1,105	14,732	-1,455	6,270	-352		
└ Carrefour SA	-881,022	-43,277	-8,428	1,105	14,732	-1,455	6,270	-352		
Man Group PLC	288,191	-29,849	-209,970	15,352	14,420	-3,066	-186,738	10,257		
└ Man Group PLC	288,191	-29,849	-209,970	15,352	14,420	-3,066	-186,738	10,257		
National Grid PLC	-787,005	-43,651	-3,937	374	14,435	-1,423	10,483	-1,051		
└ National Grid PLC	-787,005	-43,651	-3,937	374	14,435	-1,423	10,483	-1,051		
Renault SA	-439,509	765	0	0	1,837	-236	1,801	-228		
└ Renault SA	-439,509	765	0	0	1,837	-236	1,801	-228		
Unilever NV	-412,492	601	0	0	1,806	-230	1,805	-230		
└ Unilever NV	-412,492	601	0	0	1,806	-230	1,805	-230		
Volksbank Raiffeisen...	-912,447	7,332	-2,358	29	10,258	-1,813	7,650	-1,700		
└ Volksbank Raiffeis...	-912,447	7,332	-2,358	29	10,258	-1,813	7,650	-1,700		

# Credit Risk: IFRS 9 Reporting for Loans

---

- **IFRS 9:** Sell-side banks now need to define internal IFRS 9 benchmarks, including hedge accounting and credit worthiness, which includes:
  - Accounting not only for occurred (past), but expected credit losses: **ECL, CECL**
  - Not only downside is considered, but also upside: positive macro scenarios
  - Stress tests: loans specific scenarios -> to see and stress-test PDs and LGDs for the entire term structure of the loan:
    - if a credit quality of a loan deteriorates (move from Pillar 1 to Pillar 3):
      - Pillar 1 (PD up to 1y)
      - Pillar 2
      - **Pillar 3 -> non performing loan -> PDs and LGDs for the entire term of the loan and macroeconomic scenarios**

# MARS Credit Risk – Example – Automobile Manufacturers

No scenario:

Multi Asset Risk System: Credit Risk											
CREDIT RISK [Demo] 04/23/21											
Positions Credit Risk											
Scenario No Scenario Eval Date 23-Apr-2021 04/22/2021 19:20 Run Scenario											
Group by Ult Parent & Issuer Report Eval Date 01-Apr-2021 Report No Scenario											
Issuer	Position	LGD	Rec Rate	Model ...	Default Probability (DP)						
					6M	1Y ↓	3Y	5Y	10Y	20Y	
Renault SA	4,000	.07	.93	110	.0033	.0109	.0402	.0588	.1099	.2152	
Renault SA	4,000	.07	.93	110	.0033	.0109	.0402	.0588	.1099	.2152	
Faurecia SE	17.029	.00	.00	95	.001	.0051	.0296	.0478	.0925	.2102	
Faurecia SE	17.029	.00	.00	95	.001	.0051	.0296	.0478	.0925	.2102	
Ford Motor Co	4,000	.52	.48	115	.0008	.0038	.0226	.0372	.0748	.1723	
Ford Motor Co	4,000	.52	.48	115	.0008	.0038	.0226	.0372	.0748	.1723	
General Motors Co	4,000	.52	.48	99	.0004	.0026	.0197	.0341	.0695	.1611	
General Motors Co	4,000	.52	.48	99	.0004	.0026	.0197	.0341	.0695	.1611	
Daimler AG	4,000	.07	.93	63	.0001	.0011	.0135	.0262	.056	.1332	
Daimler AG	4,000	.07	.93	63	.0001	.0011	.0135	.0262	.056	.1332	
Toyota Motor Corp	4,000	.30	.70	21	0	.0004	.0087	.0191	.0429	.1093	
Toyota Motor Corp	4,000	.30	.70	21	0	.0004	.0087	.0191	.0429	.1093	

Issuer Details											
Security Name ↑	Position	LGD	Rec Rate	Cost Price	Model CDS	Credit Grade	ECL		DPs		
							ECL 1Y	3M	3M	3M	
RENAUL 1 11/28/25	1,000	.07	.93	92.71	110	HY2	.67		.0008		
RENAUL 1 ¼ 06/24/25	1,000	.07	.93	92.9	110	HY2	.67		.0008		
RENAUL 1 ⅛ 10/04/27	1,000	.07	.93	88.26	110	HY2	.64		.0008		
Renault SA	1,000	--	--	25.23	110	HY2	--		.001		

# MARS Credit Risk – Example – Powerful, Flexible Scenarios

## Example Scenario

Scenario Details

Name **CreditRisk Sample 1**

Summary Settings IR Equity Comdty Inflation Credit FX

- [-] Credit Risk
  - [-] Public Banks
    - Market Cap Decreases by 15%
    - Price Volatility Increases by 10%
    - Long-Term Debt Increases by 10%
  - [-] Public Non-Bank Financials
    - Market Cap Decreases by 10%
    - Price Volatility Increases by 10%
  - [-] Public Non-Financials
    - Market Cap Decreases by 25%
    - Price Volatility Increases by 33%
    - Long-Term Debt Increases by 10%
  - [-] Private Banks
    - Tier 1 Ratio Decreases by 5%
    - Non-Performing Loans Increases by 5%
    - Tangible Equity to Assets Decreases by 5%
    - Return on Assets Decreases by 5%
  - [-] Private Non-Financials
    - Current Liabilities Increases by 10%
    - Total Liabilities Increases by 10%
    - Book Equity Decreases by 10%
    - Cash Decreases by 10%

## Result

Views Actions Export Settings Multi Asset Risk System: Credit Risk

CREDIT RISK [Demo] 04/23/21

Positions Credit Risk

Scenario CreditRisk Sample 1 Eval Date 23-Apr-2021 12:28 Run Scenario

Group by Ult Parent & Issuer Report Eval Date 23-Apr-2021 Report CreditRisk Sample 1

Issuer	Position	LGD	Rec Rate	Model ...	Default Probability (DP)					
					6M	1Y ↓	3Y	5Y	10Y	20Y
[-] Renault SA	4,000	.07	.93	166	.032	.0576	.1045	.1268	.2266	.4202
[-] Renault SA	4,000	.07	.93	166	.032	.0576	.1045	.1268	.2266	.4202
[-] Faurecia SE	17,029	.00	.00	147	.0152	.0345	.0826	.1073	.1951	.3655
[-] Faurecia SE	17,029	.00	.00	147	.0152	.0345	.0826	.1073	.1951	.3655
[-] Ford Motor Co	4,000	.53	.47	275	.0136	.0297	.0681	.0884	.1611	.2937
[-] Ford Motor Co	4,000	.53	.47	275	.0136	.0297	.0681	.0884	.1611	.2937
[-] General Motors Co	4,000	.52	.48	240	.0081	.0206	.0569	.0774	.1412	.2517
[-] General Motors Co	4,000	.52	.48	240	.0081	.0206	.0569	.0774	.1412	.2517
[-] Daimler AG	4,000	.07	.93	116	.0038	.0121	.0428	.062	.1149	.2153
[-] Daimler AG	4,000	.07	.93	116	.0038	.0121	.0428	.062	.1149	.2153
[-] Stellantis NV	3,000	.51	.49	156	.0016	.0066	.0325	.0507	.0971	.2147
[-] Stellantis NV	3,000	.51	.49	156	.0016	.0066	.0325	.0507	.0971	.2147

[-] Issuer Details

Security Name	Position	LGD	Rec Rate	Cost Price	Model	CDS	Credit Grade	ECL		DPs
								ECL 1Y	3M	
RENAUL 1 11/28/25	1,000	.07	.93	92.71	166	HY5		364.01	.0161	
RENAUL 1 1/4 06/24/25	1,000	.07	.93	92.9	166	HY5		364.9	.0161	
RENAUL 1 1/8 10/04/27	1,000	.07	.93	88.26	166	HY5		347.13	.0161	
Renault SA	1,000	--	--	25.23	166	HY5		--	.0161	



# Credit Risk

- Standard Approach for Counterparty Credit Risk (SA-CCR, 754\_P),
  - RWA's: regulatory capital to cover counterparty credit risk in OTC derivatives

**June  
2021**

**Oct  
2021**

**Jan  
2022**

**European Union**



**Russian Federation**



**United Kingdom**



**Hong Kong**



**United States**



# SA-CCR: High Level Overview

754-P Regulation:

$$BPC = \alpha \times (BTP + BIP)$$

SA-CCR Basel recommendation:

$$EAD = \alpha * (RC + \text{Multiplier} * \text{Add-on})$$

$$BTP = \max(CC - \text{CO}; 0)$$

$$BTP = \max(CC - BM - \text{CO}; M_{\text{nop}} + \text{CI}_{\text{min}} - \text{CO}; 0)$$

$$RC = \max(FV - \text{NICA}; 0)$$

$$RC = \max(FV - VM - \text{NICA}; TH + MTA - \text{NICA}; 0)$$

## **Replacement Cost**

current exposure:

- non-margined
- margined

## **PFE**

Multiplier: [5%, 100%]

- Accounts for negative FV and over-collateralisation

Add-On: potential future increase of current exposure:

- non-margined: 1Y
- margined: margin period of risk

# Implementing SA-CCR: Challenges and Impacts

---



## Implementation Timeline

Use of SA-CCR mandated in certain jurisdictions already. Being phased in globally between now and 2022. There is a tight timeline for compliance.



## Increased Capital Charges

While SA-CCR is intended to be more risk sensitive than its predecessor, regulatory capital requirements for counterparty credit risk will in general be increased.



## Calculation Complexity

Calculating SA-CCR requires complex aggregation of position level metadata



## Pricing

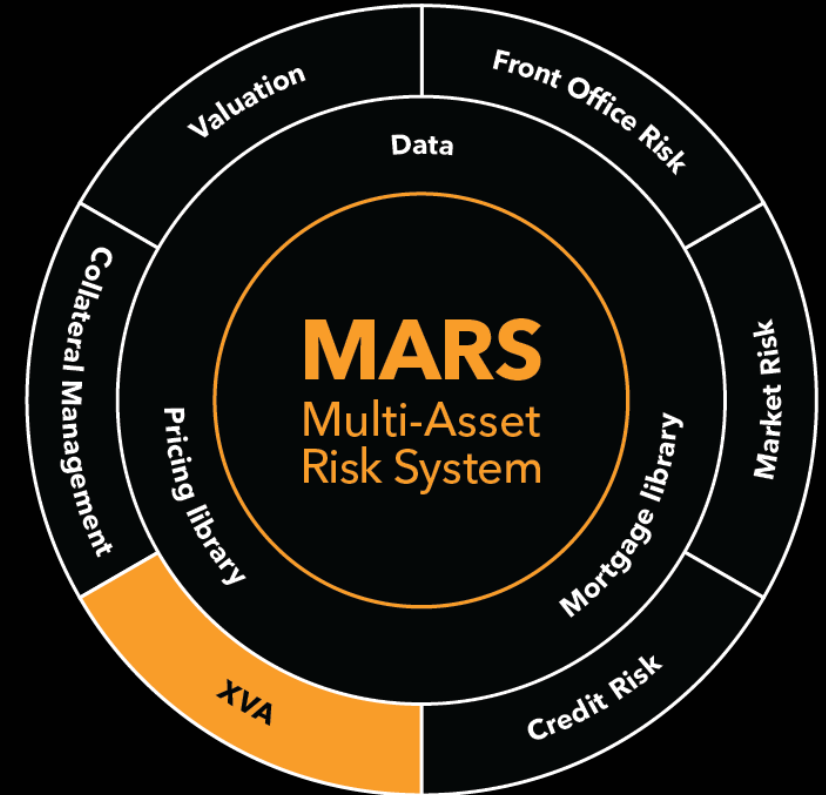
As regulatory capital requirements have increased it has become more important to quantify these costs pre-trade

# MARS XVA and SA-CCR

MARS XVA delivers:

- SA- CCR based EAD for bilaterally traded and centrally cleared OTC derivatives is calculated within MARS XVA and used to calculate the associated capital requirement at the netting set level
- Expected SA-CCR capital requirements not just today but at future dates as well. MARS XVA uses these profiles as the basis of a Capital Valuation Adjustment (KVA)

Comply with the regulatory reporting requirements today and also calculate the expected lifetime cost, both end of day and pre-trade



# MARS XVA: SA-CCR Summary

Views ▾ View Manager Actions ▾ Settings ▾ (Demo) Multi Asset Risk System: XVA

Fixed-float cross-currency swap curves will change on 10 Sep, 2021. See more »

SA-CCR DEMO [09/02/21 11:10:02 PM] ▾ No Scenario Valuation Date 09/02/21 Position Date 09/02/21 🔍

Reporting Currency USD Simulation Currency USD

Book Summary > XVA Americas:SACCR

Hide Filters <<

▼ Sector

Automo... 1

Banks 1

Chemic... 1

Electric... 1

Health ... 1

More...

▼ Country

CA 2

US 7

▼ Credit Curve

ABXCN ... 1

DANAHE... 1

EMN US... 1

F CR U... 3

FCO US... 1

More...

▼ S&P Credit Ra...

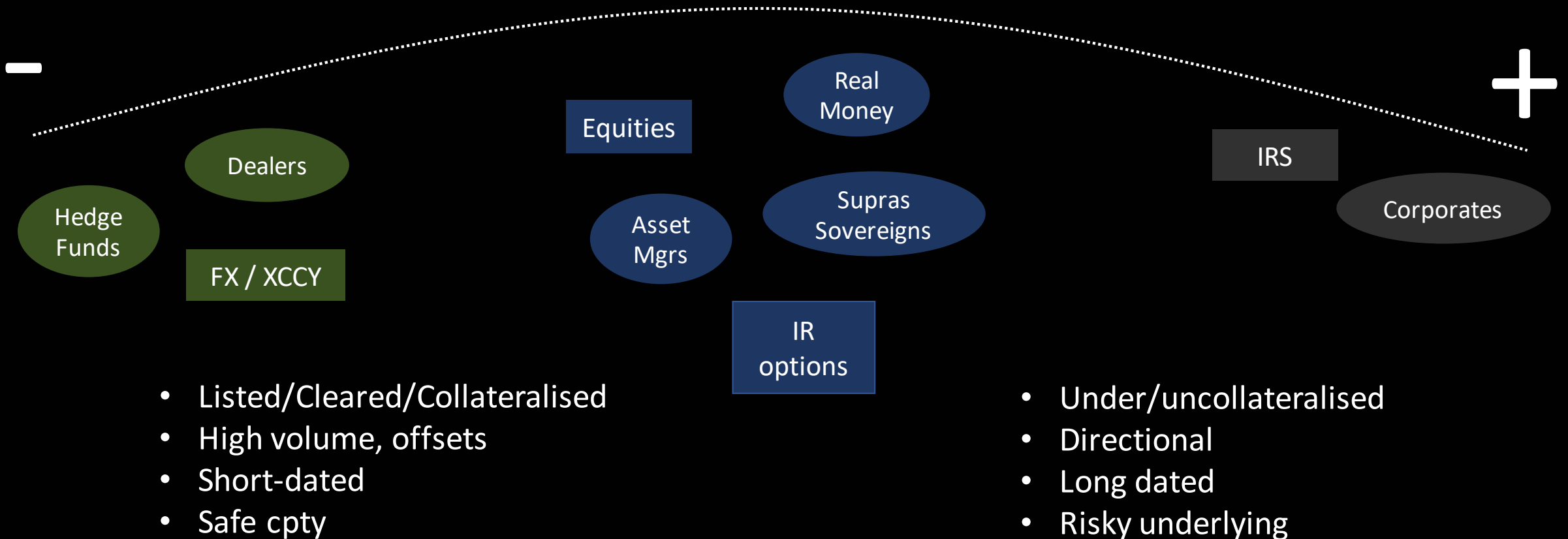
Worksheet Counterparty Capital Summ ▾ Group by Counterparty ▾

Netting Set	Counterparty CAP	Counterparty RWA	SA-CCR EAD	SA-CCR RC	MTM
█ Barrick Gold Corporation	157,706	1,213,126	1,516,408	634,622	634,622
└ Barrick Gold Corporati...	157,706	1,213,126	1,516,408	634,622	634,622
█ Danaher Corporation	160,921	1,237,856	1,547,320	606,108	606,108
└ Danaher Corporation	160,921	1,237,856	1,547,320	606,108	606,108
█ Eastman Chemical	211,263	1,625,098	2,031,372	704,788	704,788
└ Eastman Chemical	211,263	1,625,098	2,031,372	704,788	704,788
█ Ford Motor Company	143,154	1,101,184	1,376,480	512,049	512,049
└ Ford Motor Company	143,154	1,101,184	1,376,480	512,049	512,049
█ Ford Motor Credit Comp...	134,153	1,031,945	1,289,932	450,228	450,228
└ Ford Motor Credit Com...	134,153	1,031,945	1,289,932	450,228	450,228
█ International Business ...	120,827	929,436	1,161,795	404,669	404,669
└ International Business...	120,827	929,436	1,161,795	404,669	404,669
█ Kentucky Power Compa...	67,927	522,519	653,148	0	-774,146
└ Kentucky Power Comp...	67,927	522,519	653,148	0	-774,146
█ Laurentian Bank of Cana...	185,332	1,425,629	1,782,036	649,057	649,057
└ Laurentian Bank of Ca...	185,332	1,425,629	1,782,036	649,057	649,057
█ Oracle Corporation	91,874	706,720	883,400	0	-128,923
└ Oracle Corporation	91,874	706,720	883,400	0	-128,923

Exposure at Default (EAD), RWA and Capital requirement calculations based on SA-CCR

Drill-down to asset class level contributions to PFE add-on

# Implementing SA-CCR: Impact on Capital Charges



# Credit Risk: PRIIPs

---

The EU Commission has adopted a [Delegated Regulation](#) which amends the regulatory technical standards (RTS) set out in Delegated Regulation (EU) 2017/653 on the presentation and contents of the Packaged Retail and Insurance-based Investment Products (PRIIPs) key information document (KID).

Under the PRIIPs Regulation, KIDs are provided to private investors when they purchase certain investment products, to ensure they have sufficient information to understand and compare products.

The new regulation introduces amendments to the:

- underpinning methodology and presentation of performance scenarios in KIDs;
- the presentation of costs and the methodology for the calculation of summary cost indicators;
- the presentation and content of information on past performance;
- the presentation of costs by PRIIPs offering a range of options for investment; and
- the alignment of the transitional arrangement for PRIIP manufacturers offering units of funds referred to in Article 32 of the PRIIPs Regulation as underlying investment options with the prolonged transitional arrangement set out in Article 32.

In terms of next steps, EU legislators need to sign off on the detailed measures before they come into force in July 2022.

# PRIIPs KID

---

- **Background**

- The **Packaged Retail and Insurance-based Investment Products (PRIIPs)** Regulation aims to enhance investor protection and improve confidence in financial markets.
- It came into effective in **January 2018** and impacts any firm selling financial products to “retail” investors within the European Union.
- The PRIIPs Regulation aims to place retail structured products and other packaged products providing the same economic exposure to investors on a level playing field by **increasing their transparency and comparability**.
- PRIIPs manufacturer are required to provide a **Key Investor Document (KID)** summarizing risks, performance and costs of the financial product in question.

- **Scope PRIIPs**

- Securities with embedded derivatives, derivatives, structured notes (including those issued by SPVs), Alternative investment funds (AIFs), Insurance-based investment products, UCITS (transitional period ends 2019, currently under KIID regime)



# PRIPs and MiFID II

---

- **Both require pre-sale disclosure “in good time” before the sale of a product, fund or service.**
  - PRIPs applies to funds and products marketed to retail investors and is about producing and issuing a standardised pre-sale document
  - MiFID II is more extensive: it covers both retail and institutional investors as well as the services provided around the products such as distribution/advice, discretionary management, trading, research and ongoing reporting
  - MiFID II places ongoing responsibility on advisers and distributors
  - Fund managers transaction cost calculation: PRIPs calculation includes the impact of any price moves between an order being given to the broker and being fulfilled (slippage cost).

# Derivative Library (“DLIB”) Overview

- Comprehensive platform to structure, distribute, price and manage derivatives, structured notes and dynamic strategies
- Offers unlimited coverage from simple, vanilla products to the most complex structures
- Cross-Asset Class coverage for Equity, Interest Rates, FX and Credit

The screenshot displays the Bloomberg Derivatives Library (DLIB) interface. The top navigation bar includes 'Actions', 'Products', 'Data & Settings', and 'Derivatives Library'. Below this, there are tabs for 'Deal', 'LifeCycle', 'Pricing', 'Market Data', 'Calibration', 'Scenario', 'Backtesting', and 'PRIIP(s)'. The main area is divided into two panels: a 'Deal Parameters Template' table on the left and a code editor on the right.

Variable Name	Type	Value
underlying	String	IBM US Equity
strike_value	Float	1.1
pay_currency	String	USD
notional	Float	100
strike_date	Date	07/31/2017
maturity_date	Date	08/01/2018
payment_date	Date	08/04/2018
Add variable...		

Below the table is a text input field labeled 'Enter group name to add'.

```

1  (***) Example Simple Vanilla Option (***)
2
3  let underlying = market(underlying) in
4
5  let initial_spot      = fix(strike_date,
6  underlying) in
7
8  let final_spot        = fix(maturity_date,
9  underlying) in
10
11 flow(payment_date, pay_currency,
12   max (notional * ((final_spot /
13   initial_spot) - strike_value), 0.0) )
14
15 (*
16  * This BLAN script is used as an example for
17  * illustration purposes.
18  * Clients must make sure that the input
19  * parameters entered into the
20  * script faithfully represent the term sheet
21  * that they would like to price.
22  *)
  
```

# PRIIPs Indicators in DLIB

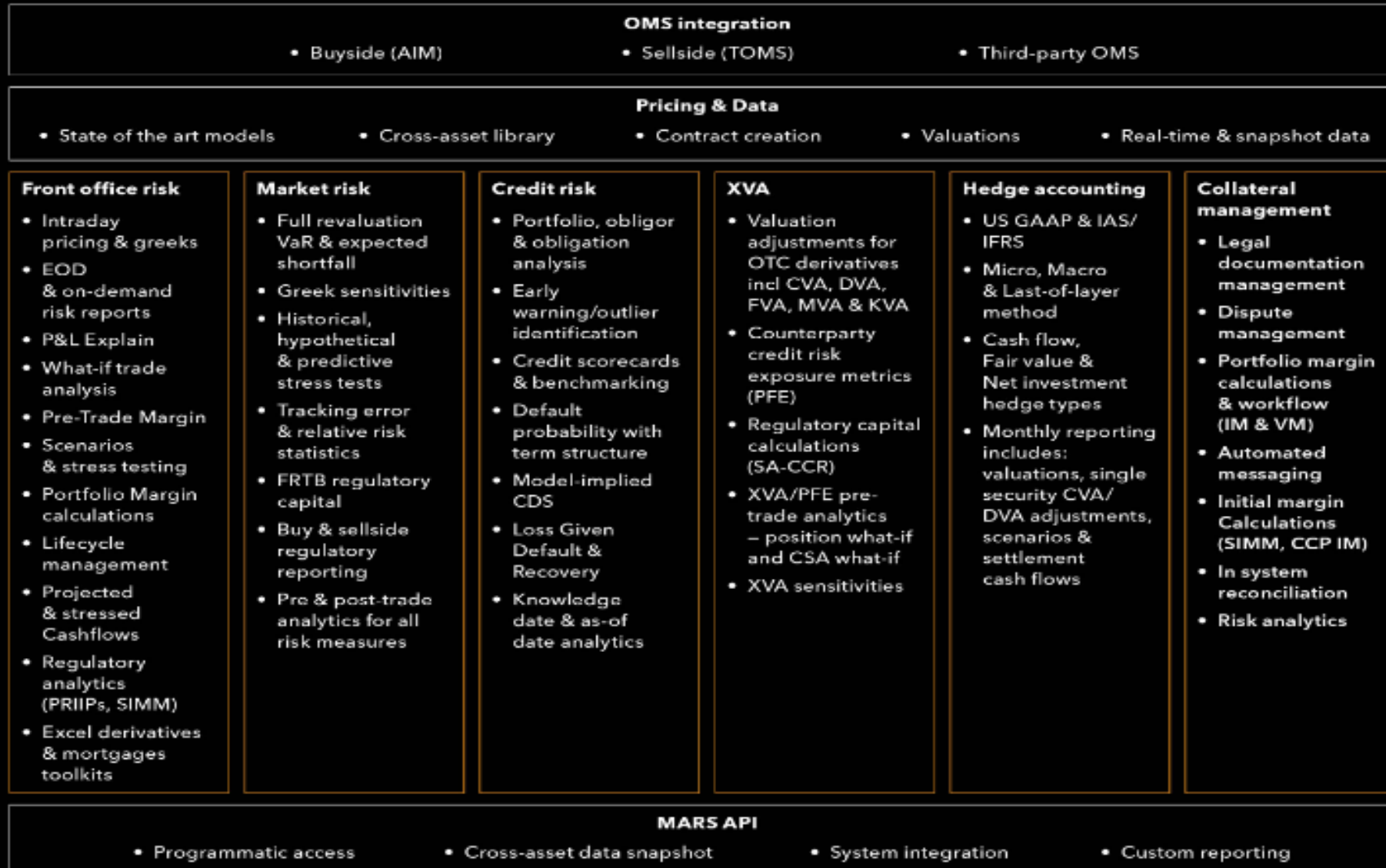
- Generates the required PRIIPs risk indicators and performance scenarios including structured products, OTC derivatives and funds.
  - Market Risk Measure (MRM)
  - Credit Risk Measure (CRM)
  - Summary Risk Indicator (SRI)
  - Intermediary Performance Scenarios
  - Reduction In Yield (RIY)
- Implements regulatory requirement of Bootstrap VaR Monte Carlo Simulation with Bloomberg fixing sources and using principal component analysis (PCA) for interest rates following the Regulatory Technical Standard (“RTS”) issued by the European Securities and Markets Authority (“ESMA”)

The screenshot displays the Bloomberg DLIB interface with several key sections highlighted by callouts:

- Model Input:** Shows parameters such as Model (Bootstrap), Valuation (1/17), Paths (10000), Funding (00 bp), Start Date (01/20/2015), and End Date (01/26/2017).
- PRIIP Input:** Shows parameters such as Credit Quality Step (0), VaR Per (97.5%), Upfront (00 bp), and Denominator (100).
- Risk Indicator Output:** Shows Summary Risk Indic (1), Mkt Ris (1), Crdt Ris (1), VEV (0.01%), VaR Pr (0.00%), and VaR Re (1.00%).
- Performance Scenarios:** A table showing performance metrics for Favorable, Neutral, and Unfavorable scenarios across different dates (01/27/2018, 01/27/2019, 01/30/2020).

Scenario		01/27/2018	01/27/2019	01/30/2020
Favorable	Before Cost	125.47	138.75	130.00
	After Cost	125.47	138.75	130.00
	Average Return	50.28%	76.51%	19.96%
	RIY		0.00%	0.00%
Neutral	Before Cost	110.00	110.00	110.00
	After Cost	110.00	110.00	110.00
	Average Return	19.74%	19.74%	
	RIY		0.00%	0.00%
Unfavorable	Before Cost	110.00	97.95	100.00
	After Cost	110.00	97.95	100.00
	Average Return	19.74%	-1.02%	0.00%
	RIY		0.00%	0.00%
Worst	Before Cost	16.90	7.54	100.00
	After Cost	16.90	7.54	100.00
	Average Return	-83.16%	-46.26%	0.00%
	RIY		0.00%	0.00%

# Bloomberg Risk Solutions (RISK <GO> on the terminal OR bloomberg.com/risk)



# Market Risk

---

- Basel 2 & 2.5, ICAAP frameworks
- Fundamental Review of the Trading Book (FRTB)
  - Only entities with Trading Book Size > Threshold
  - Will only come to Russia potentially post 2022-2023
- Standard Approach of CVA (SA-CVA)

# Market Risk: FRTB

1) Proxy Table										2) What-if ▾		3) Permission		Bloomberg Risk Management											
FRTB Demo										Status		Flash													
Run Date: Oct 19 2021										Positions: Oct 19 2021															
>> Total Capital C...										Business Unit		Firm ← M													
Stat As Noted										Breakdown By Firm		LOW ▾		Position <input checked="" type="checkbox"/>		View in USD ▾		Absolute ▾							
										GIRR		FX		CSR		CSR SEC		EQ							
Firm Hierarchy										Total Charge		DRC		RRAO		SBM		Total		Total		Total			
[-] Portfolio										6,530,483		430,906		0		6,099,577		1,718,534		619,751		620,770		-- 3,140	
[-] Fixed Income										3,805,917		424,927		0		3,380,989		1,718,534		1,041,686		620,770		--	
[-] Muni										905,882		221,961		0		683,921		214,632		257,906		184,268		--	
[-] Credit										1,311,660		202,966		0		1,108,694		239,057		479,781		389,857		--	
[-] Govt/Agency/IRD										2,975,745		40,423		0		2,935,323		1,637,017		1,043,997		254,309		--	
[-] London										1,428,556		24,887		0		1,403,670		1,323,321		37,744		42,605		--	
[-] /SWAP FLFL 04/22/23										1,446,949		0		0		1,446,949		1,321,054		125,895		--		--	
[-] UKT 4 1/4 12/07/27										297,873		24,887		0		272,986		65,495		163,638		42,605		--	
[-] Asia										882,787		0		0		882,787		841,019		41,768		--		--	
[-] NY										1,754,937		15,536		0		1,739,401		455,775		1,041,349		242,276		--	
[-] ABS										50,962		0		0		50,962		30,784		--		19,879		--	
[-] Currency										554,177		0		0		554,177		--		554,163		--		--	
[-] Cash										554,177		0		0		554,177		--		554,163		--		--	
[-] EQUITY										3,163,410		5,979		0		3,157,432		--		16,910		--		-- 3,140	

# Climate Risk

---

- New/on-going ECB and Bank of England **scenario requirements**.
- COP26 (November, Glasgow) - **emission reduction pledges** expected by COP26 (from governments, financial institutions, and companies) including interim targets and accountability mechanisms (e.g., annual reporting on progress).
- By June 2022, The **IFRS's** International Sustainability Standards Board completes its sustainability accounting standards based on TCFD, for adoption by jurisdictions globally.
- 2 Types of Risks: **Physical and Transition Risk** (please join David Croen's presentation tomorrow).



Thank you.