Industry / Joint US Agencies – Cross-Product Netting Follow-up

Cross Product Netting: Standardized solution for exposure calculation

- The industry supports retaining the Internal Models Methodology (IMM) for calculating counterparty credit risk exposure. Subject to supervisory approval, under the current rules, IMM remains the only approach that is allowed to recognize diversification benefits – across SFTs and derivatives under a qualifying cross-product master netting agreement (QXPMNA)

- While IMM can enhance risk sensitivity, the industry highlights the need for a standardized solution that also recognizes the netting benefits of QXPMNAs. Key reasons include:

  - Provide non-IMM banks an approach that recognizes cross-product netting benefits aligned to existing recognition under a standardized approach for a single product netting set. In addition, a standardized approach is always needed as a fall-back. This concerns both risk-based capital requirements as well as SCCL.

  - Other parts of the framework that rely on standardized exposure measures, such as:

    - CCR from default fund contributions, which require a rule methodology for clearinghouses to compute QXPMNA exposures

    - Other potential areas, such as the derivative PFE component of the Leverage Ratio

- To address these, the industry has proposed an "extended SA-CCR" approach that calculates a standardized exposure measure recognizing netting across SFTs and derivatives under a qualifying and enforceable QXPMNA

  - Analysis to date has focused on use cases related to:

    - Risk-based counterparty credit risk calculation, and

    - Default fund contribution within the context of cross-margin agreements covering both SFTs and derivatives

  - Further analysis is required to determine how the solution could apply to other aspects of the framework

Criteria for the selection of exposure approaches for derivatives and SFTs

What guardrails should apply if different standardized methodologies to calculate exposures for derivatives/SFTs exist (i.e., SA-CCR/collateral haircut vs extended SA-CCR)?

- A bank may use the extended SA-CCR methodology only if:
    - It has a qualifying cross-product master netting agreement across derivatives and SFTs.
    - The bank effectively integrates the risk mitigating effects of cross-product netting into its risk management and other information technology systems.
    - The cross-product netting set includes derivatives.
- Where these conditions are not met, a bank must use product specific methodologies provided in the rule.
- Extended SA-CCR should be capped at the sum of standalone collateral haircut (SFT) and SA-CCR (derivative) calculations as netting and broader diversification benefits are risk reducing and should not increase exposure beyond the standalone amounts.
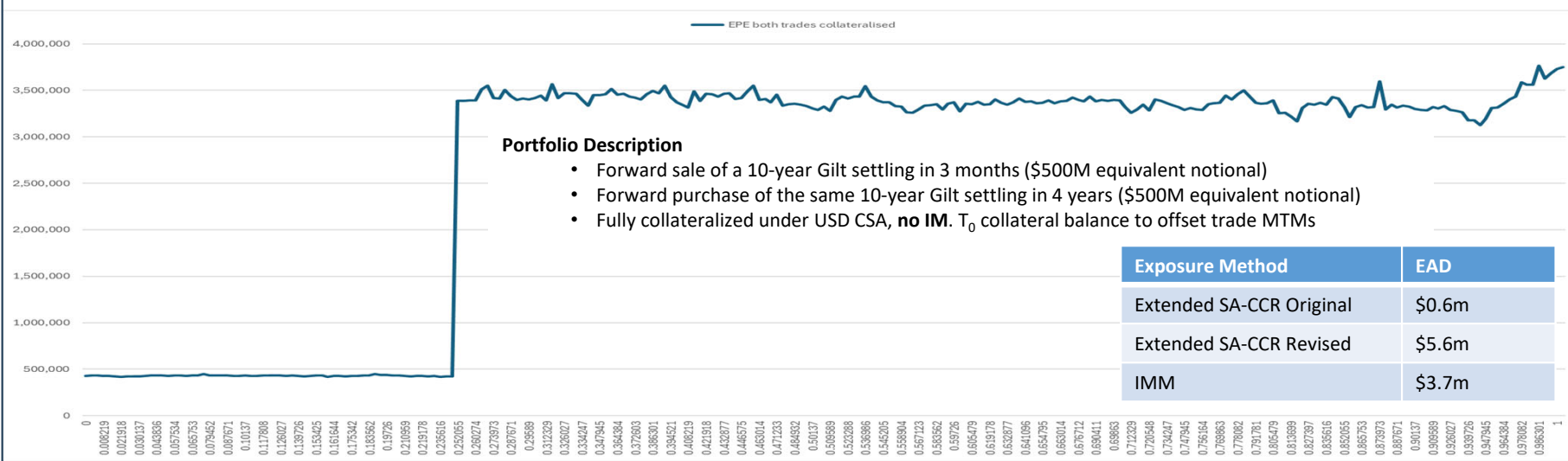
What guardrails should apply if different methodologies to calculate exposures for derivatives/SFTs exist (i.e., IMM vs standardized methodologies including SA-CCR, extended SA-CCR, and collateral haircut)?

- Consistent with the approach, a bank would have to use IMM for exposures it received supervisory approval for. As per section 132(d)(10), a bank would be able to use a standardized methodology for material portfolios only on a temporary basis and for immaterial portfolios on a permanent basis.
- If the US Agencies decided to retain IMM, we would expect similar provisions to be included to avoid cherry picking between standardized and modelled approaches.

Extended SA-CCR Approach: Adjustments to reduce limitations with original approach

- The original extended SA-CCR approach has been refined to address two key areas:

  - **Calibration to Modelled Exposures:**[1] Decrease in the amount of netting benefits between the forward sales/purchases arising from SFTs against the actual derivatives.

  - **Maturity Mismatch:** The extended SA-CCR method has been modified to mitigate concerns that an existing SA-CCR issue – lack of consideration of mismatches between short-term and long-term positions on the degree of netting/offsetting – would be exacerbated due to the interplay between SFTs, which are generally short-term, and derivatives, which tend to be medium- to long-term. IMM accounts for this maturity mismatch in the exposure calculation:

Illustration of the maturity mismatch issue based on modelled exposure beyond repo roll-off:

— EPE both trades collateralised

Portfolio Description
- Forward sale of a 10-year Gilt settling in 3 months ($500M equivalent notional)
- Forward purchase of the same 10-year Gilt settling in 4 years ($500M equivalent notional)
- Fully collateralized under USD CSA, **no IM**. T_0 collateral balance to offset trade MTMs

Exposure Method	EAD
Extended SA-CCR Original	$0.6m
Extended SA-CCR Revised	$5.6m
IMM	$3.7m

[1] Modelled exposures = MC Simulation using LSEG Open-source Risk Engine (ORE) for the relevant portfolios

New Extended SA-CCR: Addressing the two identified concerns through targeted adjustments

1) Calibration to Modelled Exposures:

This can be addressed by increasing the hedge disallowance factor from 0.01 to 0.05 that is applied to the square of the netted exposure amount across SFTs and derivatives, reducing the netting benefit between SFTs and derivatives from 10% to 22.5%. This effective ~ 80% cap on the netting benefit across SFTs and derivatives:
- Aligns with the cap applied by exchanges for cross-margining methodologies; and
- Ensures that results include a material buffer compared to modelled results for equivalent portfolios.

2) Maturity Mismatch:
To capture the maturity "roll-off" effect, compute a notional weighted maturity ratio (MR) and use it to adjust the contribution of the extended SA-CCR EAD to the gross derivatives EAD:

$$MR = \frac{Notional\ Weighted\ SFT\ Maturity}{\min(\max(Notional\ Weighted\ SFT\ Maturity, Notional\ Weighted\ Derivatives\ Maturity), 1)}$$

$$Cross\ Product\ EAD = \begin{cases} (1-MR) \times SA-CCR\ EAD + MR \times Extended\ SA-CCR\ EAD, \text{if}\ SA-CCR\ EAD > Extended\ SA-CCR\ EAD \\ Extended\ SA-CCR\ EAD, \text{otherwise} \end{cases}$$

- SA-CCR EAD includes the derivatives in the cross-product netting set is based on the current SA-CCR methodology
- A notional weighted maturity calculation is not a new concept needed under the advanced approaches to the extent a bank does not use IMM. As such, this revised concept utilizes established concepts
- As mentioned before, the Cross Product EAD should be capped at the sum of the SA-CCR EAD and Collateral Haircut EAD

Maturity mismatch: Portfolio Illustration

Portfolio:

Portfolio Example 2		Bilateral or cleared	Notional (US$)	Margin Agreement	Netting Agreement	Cross Product Master Netting Agreement	IM	VM
Trade 1	3-month Term Reverse Repo on 10 year GBP Gilts $500M vs $500M cash equivalent	Cleared	500,000,000	MarginAgt1	MNA1	QXPMNA1	0	Cash USD
Trade 2	10year OTC client cleared IR Swap Rec Fixed v Pay Float on 3M SONIA	Cleared	500,000,000	MarginAgt2	MNA2		0	Cash USD

SA-CCR Details:

Hedge Disallowance Factor = 0.05			
		Extended SA-CCR	New Extended SA-CCR
Trade Type	Trd1: Gilt Reverse Repo	Trd2: Client Cleared IR Swap	
Start Date (Days)	0	0	
Maturity Date (Days)	62	2500	
End Date (Days)	2500	2500	
MPOR	5	5	
Asset Class	IR	IR	
Supervisory Duration	7.87	7.87	
Maturity Factor	0.21	0.21	
Cash Leg Notional	500,000,000		
Security Leg Notional	500,000,000	500,000,000	
Adjusted Notional	3,934,693,403	3,934,693,403	
Supervisory Delta	1	-1	
Maturity Bucket	3	3	
Effective Notional	834,674,516	-834,674,516	
SA-CCR Supervisory Factor	0.50%	0.50%	
Addon (Trd)	4,173,373	-4,173,373	
PFE	4,173,373	4,173,373	
Addon (QXPMNA)	933,194		
Max(V - C, 0)	0	0	
PFE Multiplier		1.00	
PFE Multiplier (QXPMNA)	1.00		
10y GBP Gilt Supervisory Haircut	2.83%		
PFE			4,717,732
Hedge Disallowance	933,194		

0.05 proposed vs. 0.01 original hedge disallowance = 933,194 - 417,337 = 515,857

$$\begin{aligned} Extended\ SA-CCR\ EAD &= 1.4 \times (RC + PFE\ Multiplier \times PFE\ QXPMNA) \\ &= 1.4 \times (0 + 1 \times 933,194) \\ &= \mathbf{1,306,472} \end{aligned}$$

$$\begin{aligned} SA-CCR\ EAD &= 1.4 \times (RC + PFE\ Multiplier \times PFE\ Trd\ 2) \\ &= 1.4 \times (0 + 1 \times 4,173,373) \\ &= \mathbf{5,842,722} \end{aligned}$$

$$\begin{aligned} Maturity\ Ratio\ (MR) &= \frac{\left(3,934M \times \frac{62}{250}\right)}{\min\left(\max\left(\left(3,934M \times \frac{62}{250}\right), \left(3,934M \times \frac{2500}{250}\right)\right), 1\right)} \\ &= \frac{0.248}{\min(\max(0.248, 10), 1)} \\ &= \mathbf{0.248} \end{aligned}$$

Since Extended SA-CCR EAD < SA-CCR EAD,

$$\begin{aligned} QXPMNA\ EAD &= (1-MR) \times SA-CCR\ EAD + MR \times Extended\ SA-CCR\ EAD \\ &= (1-0.248) \times 5,842,722 + 0.248 \times 1,306,472 \\ &= \mathbf{4,717,732} \end{aligned}$$

Results across multiple maturities, hedged and unhedged for IR + Hedged EQ Asset Class portfolio

IR Asset Class: Offsetting Risk Factor Portfolio GBP Gilts vs. SONIA

IR Asset Class: Same-sided Risk Factor Portfolio GBP Gilts vs. SONIA

EQ Asset Class: Offsetting Risk Factor Portfolio SPX Index
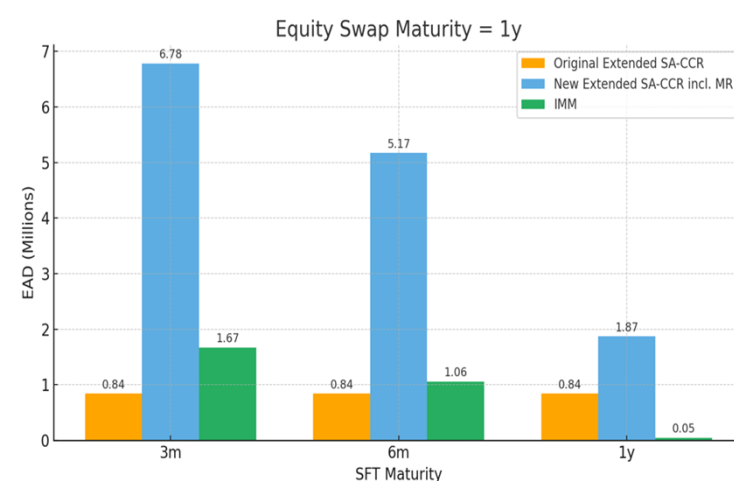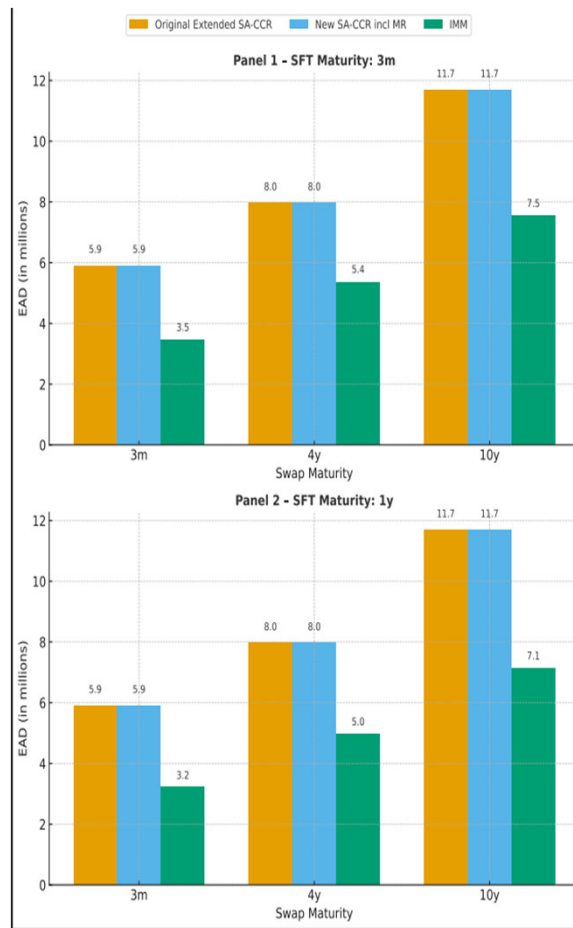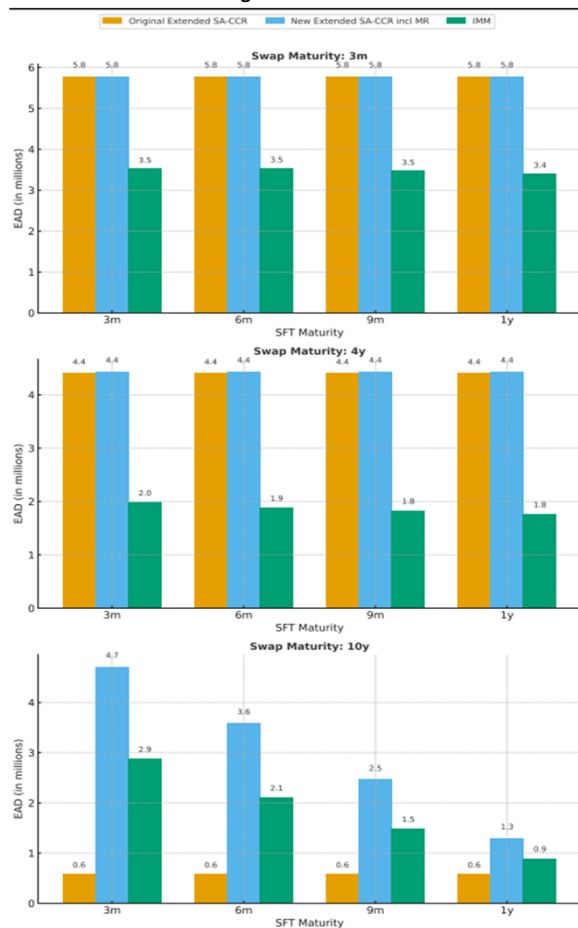
- These charts illustrate the results under each method for a set of portfolios across IR, EQ asset classes with same-sided or offsetting risk factors.

- Results remain materially higher than indicative modelled outputs across a wide range of asset classes and directional exposures.

- All portfolios are assumed to be fully collateralized, margined daily, with 10-day MPOR. USD Cash collateral. T_0 Collateral = T_0 MTM. No IM.

Specific considerations in the context of the maturity mismatch adjustment

Overnight/Open SFTs:

- Overnight repos/open repos would be included in the extended SA-CCR approach. The maturity used in the notional weighted average calculation as part of the maturity mismatch adjustment would be floored at the relevant MPOR applicable to the calculation.

- This results in negligible hedge recognition from overnight/open repo positions compared to term repos and long-dated derivatives.

Exception to maturity mismatch adjustment across SFTs and derivatives:

- While the industry acknowledges the concerns around the maturity mismatch given the generally short dated nature of SFTs and therefore proposes the maturity mismatch adjustment as outlined before, it would note that under certain conditions banks should be allowed to calculate the exposure for a cross-product netting portfolio up to the first MPOR, i.e., without the maturity adjustment, consistent with the standard SA-CCR methodology.

Mechanics of Client Close-out in the Context of Cross Product Netting (1)

Banking Organization Closing Out Client to Cleared Transactions/Counterparty to Non-cleared Transactions – Netting at Client Clearing Agreement/Master Agreement Level

Close-Out Process – Cleared Transactions at Two Clearinghouses

1. Close out transactions at each clearinghouse and calculate net close-out amounts separately.

    - When closing out, the intermediary banking organization could use several strategies based on the product (e.g., futures, cleared repos), the terms of the client clearing agreement, the rules of the applicable clearinghouse and any applicable portfolio margining programs.

    - The objective is to execute all actions swiftly to reduce exposure and minimize losses to the intermediary banking organization, using available collateral to cover any losses.

    - The intermediary banking organization may have one client clearing agreement covering transactions at both clearinghouses (e.g., futures at two clearinghouses) or two separate client clearing agreements (e.g., one agreement for futures at one clearinghouse and a separate agreement for cleared repos at a different clearinghouse). Assuming the contractual close-out rights under each agreement are substantially similar, the number of agreements should not affect the close-out mechanics.

2. Determine a single net close-out amount owed to one of the parties (after setting off collateral held).

    - Collateral may be subject to client cross-product margining programs across, some of which are still under development. However, in any case, the intermediary banking organization will apply collateral pursuant to the terms of the client clearing agreement.

Close-Out Process – Non-cleared Transactions Included

- The banking organization calculates a close-out amount based on the provisions in the relevant master agreement. In general, the close-out amount represents the economic cost of replacing the terminated transactions.

- If netting cleared and non-cleared transactions, repeat steps above substituting the non-cleared master agreement for one of the client clearing agreements.

Enforceability of Cross Product Netting in Case Law

- Qualifying cross-product master netting agreements must satisfy the same legal review requirements as qualifying master netting agreements.
    - Among other things, the legal review must conclude that in the event of a legal challenge (including one resulting from default or from receivership, bankruptcy, insolvency, liquidation, resolution, or similar proceeding) the relevant judicial and administrative authorities would find the agreement to be legal, valid, binding, and enforceable under the law of the relevant jurisdictions.

- Opinions are obtained in each relevant jurisdiction.
    - As an example, the March 15, 2025 ISDA US netting memorandum addresses, among other things, the enforceability of "Non-Enumerated Transactions" and "master netting agreements" under the Bankruptcy Code, the Federal Deposit Insurance Act (FDIA), the New York Banking Law (NYBL), and Title II of Dodd-Frank (the Orderly Liquidation Authority, or OLA).
    - As noted in the ISDA US netting memorandum, Section 561 of the Bankruptcy Code broadly addresses the exercise of contractual netting rights with respect to one or more safe-harbored transactions or master netting agreements. The memorandum also discusses Section 561 of the Bankruptcy Code and comparable provisions under the FDIA, NYBL, and OLA.

Clarifications on Tier 1 Leverage Request

Preferred option: Asset exclusions from the Tier 1 leverage denominator.

While we support regulatory efforts to adjust the Tier 1 leverage ratio, our preferred policy option is asset exclusions. Similar rationale applies for excluding on-balance sheet US Treasuries from the denominator of the Tier 1 Leverage ratio as under the SLR. We also recommend excluding central bank deposits from leverage ratios to support market resiliency and allow banks to act as shock absorbers during stress.

Appendix I: Figures supporting charts

IR Asset Class: Portfolio with offsetting Risk Factors
Short Gilts v Long Rates (via Forward Sale UK Gilts / Pay SONIA Rec Fixed IR Swap)

Current

Swap Maturity	Gilt Maturity	SFT Maturity			
		3m	6m	9m	1y
3m	10y	14,325,129	14,325,129	14,325,129	14,325,129
4y	10y	16,833,847	16,833,847	16,833,847	16,833,847
10y	10y	19,984,857	19,984,857	19,984,857	19,984,857

Extended SA-CCR

Swap Maturity	Gilt Maturity	SFT Maturity			
		3m	6m	9m	1y
3m	10y	5,790,484	5,790,484	5,790,484	5,790,484
4y	10y	4,408,795	4,408,795	4,408,795	4,408,795
10y	10y	584,272	584,272	584,272	584,272

New Extended SA-CCR incl. Maturity Ratio (+ 0.05 Hdg Disallowance)

Swap Maturity	Gilt Maturity	SFT Maturity			
		3m	6m	9m	1y
3m	10y	5,790,600	5,790,600	5,790,600	5,790,600
4y	10y	4,441,541	4,441,541	4,441,541	4,441,541
10y	10y	4,717,732	3,592,742	2,467,752	1,306,472

IMM

Swap Maturity	Gilt Maturity	SFT Maturity			
		3m	6m	9m	1y
3m	10y	3,527,121	3,541,082	3,474,428	3,408,746
4y	10y	1,981,756	1,884,273	1,829,647	1,763,629
10y	10y	2,886,706	2,115,653	1,493,106	900,368

IR Asset Class: Portfolio with non-offsetting Risk Factors
Short Gilts v Short Rates (via Forward Sale UK Gilts, Rec SONIA / Pay Fixed IR Swap)

Swap Maturity	Gilt Maturity	SFT Maturity (3m - doesn't matter)		
		Current	Extended SA-CCR	New Extended SA-CCR incl. MR
3m	10y	14,325,129	5,900,203	5,900,203
4y	10y	16,833,847	7,962,436	7,962,436
10y	10y	19,984,857	11,685,443	11,685,443

IMM

Swap Maturity	Gilt Maturity	SFT Maturity	
		3m	1y
3m	10y	3,454,184	3,208,344
4y	10y	5,364,725	4,967,133
10y	10y	7,535,448	7,139,556

EQ Asset Class: Portfolio with offsetting Risk Factors
Equity Reverse Repo and Equity Swap on SPX

Method	Swap Maturity	SFT Maturity		
		3m	6m	1y
Current	1y	23,400,000	23,400,000	23,400,000
Extended SA-CCR	1y	840,000	840,000	840,000
New Extended SA-CCR	1y	6,782,618	5,165,235	1,878,297

IMM

Swap Maturity	SFT Maturity		
	3m	6m	1y
1y	1,671,135	1,063,708	50,569

Appendix II: Generating IMM Figures

- LSEG Open-Source Risk Engine (ORE) used (system & model documentation available at https://www.opensourcerisk.org/documentation/?)
- **Portfolio Specifics**
  - Reverse Repo represented as forward sales with:
    - Cash leg = Security leg [cash amount on settlement approximately equals GBP Gilt market value

      ($Qty * Dirty\ Price$) on trade date]
  - Derivatives (IRS/Equity TRS) booked close to ATM
  - Collateral Assumptions:
    - Single CSA covering both forward sale and derivative with 0 threshold and MTA, daily margining, and 10-day MPOR
    - USD cash VM (T_0 collateral balance equal to T_0 MTM of both trades added to portfolio)
    - No IM

- Bond price simulation used to compute forward sale exposures dependent on interest rate curve model dynamics only, via association of the Gilt to a discount curve:
  - No credit curve/spread dynamics associated with the UK Gilt in exposure runs
  - Price determined by the DCFs of coupon + face value for each IR curve per scenario path (x1000)

- Forward sale credit exposure determined by the simulated value of the security leg versus the specified cash amount on settlement.