

# Focus on PBA & CRT Tests

EBA Report on SRT

# Executive Summary

Following discussions with the EBA regarding the recent EBA Report on SRT, as well as wider CRR 'quick fixes', we have put together the ensuing slides to highlight our anticipated impacts of the proposed Principal Based Approach and updated Commensurate Risk Transfer tests from the EBA Report on SRT.

We have analysed the tests against a range of real-world transactions chosen to represent a range of asset classes, capital treatment and structures that are common across Santander SRT transactions.

A summary of our analysis follows, which we think would be valuable to walk through in a follow up meeting if you agree.

# Contents

	Slide
Preliminary Observations	4
Interpretation and Assumptions	5
Summary of Real-world Examples:	6
<b>1. Project Finance</b> ; F-IRB portfolio; SEC-IRBA	7
<b>2. SME Leases</b> ; Standardised portfolio; SEC-SA	8
<b>3. Auto loans</b> ; A-IRB portfolio; SEC-IRBA	9
<b>4. Large Corporate Loans</b> ; A-IRB portfolio; SEC-IRBA	10

## Background on EBA proposed tests

- **Applicable for SRT transactions at issuance only**
- **Not relevant for full-deduct transactions**
- EBA advocates **grandfathering of all existing SRT transactions**
- JST has told us **that they will NOT refer to the EBA Report** in their evaluation of current deals until it is formally included in their Rule Book

## Preliminary observations / conclusions

- Tests pose **significant concern for pro-rata structures,**
- Following asset class/features struggle to pass the new SRT tests:
  - **Standardised (Example 3) and Foundation-IRB (Example 1) assets**
  - **Long-dated/slow amortising assets (Example 1)**
  - **Low Reg EL portfolios (Example 4)**
  - **Synthetic excess spread**
- **Divergence between internal and regulatory EL affects ability to pass tests and be economically feasible.**
- **Double counting stress in highly conservative back-loaded scenario.**
- Of four real-world representative deals, **all four fail to pass the new SRT tests.**
- **Certain asset classes (e.g. Medium & Large Corporate and FI's; Example #4) cannot pass back-loaded tests and maintain a positive economic value.**
- **Significant reduction in economics for all other structures considered.**

**Economics of certain asset classes aforementioned will no longer make sense economically with the structural changes required to meet overly conservative EL + UL scenarios, particular under back-loaded EL scenario to demonstrate CRT.**

## Background

- **Principle Based Approach Test** (Recommendation 12):  
New test to demonstrate **at least 50% of UL transferred to investors**, developed as improvement to simplistic mezzanine test.

$$\frac{\text{Regulatory UL on transferred positions}}{\text{Regulatory UL of underlying portfolio}} \geq 50\%$$

- **Commensurate Risk Transfer Test** (Recommendation 13):  
To demonstrate that the capital relief of the transaction is commensurate to the risk that is transferred. **Test is not new, but the prescribed lifetime modelling is new and much harder to pass.**

$$\frac{\text{Capital presec.} - \text{Capital postsec.}}{\text{Capital presec.}} \leq \frac{\text{Lifetime EL} + \text{Regulatory UL on transferred positions}}{\text{Lifetime EL} + \text{Regulatory UL of underlying portfolio}}$$

## Interpretation and Assumptions

- **Modelled on quarterly basis**
- **Scheduled loan amortisation only**; CPR = 0%
- **Even loaded EL (all SRT transactions)** – fixed Regulatory EL % [IRB] (IFRS 9 EL % [SA]) applied and charged against each quarter's outstanding balance.
- **Back loaded EL (pro-rata amortisation only)** – Aggregate nominal EL calculated as per even loaded scenario across portfolio life, distributed with 33.3% of losses occurring in first 2/3 and 66.6% of losses applied in final 1/3.
- **UL event size** – Initial portfolio size x Portfolio RW% x Minimum Reg. Capital (8%)
- **UL event timing** – Split evenly over final 4 quarters transaction – Where final period is assumed to be the date at which a clean-up call could be exercised based on scheduled amortisation and even loaded EL only (excluding UL).
- **Excess spread** – modelled to effectively reduce the transferred losses for Traditional and Synthetic SRT [numerator]. For Traditional SRT that meet the **Market Test**, then underlying portfolio losses are also reduced by same amount [denominator]. *Note: examples that follow do not include Excess Spread but inclusion would make passing tests harder.*
- **Pro-rata Amortisation Trigger** – Assumed that during quarterly modelling EL and UL are incorporated in determining whether the cumulative loss trigger has been breached.

## Summary of Real-World analysis

Ref	Asset Class	Capital treatment		EL	UL	Placed tranche size	Cum. loss trigger to Sequential	Even loaded		Back loaded		Comments
		Pre-	Post-					PBA	CRT	PBA	CRT	
1	<b>Project Finance</b> (Long-dated & slotting)	F-IRB	SEC-IRBA	0.68%	5.35%	10.30% (FLT+Mezz)	1.48%	PASS	PASS	FAIL	FAIL	<ul style="list-style-type: none"> <li><b>Fails due to long-dated slow amortisation</b> (reduced nominal protection at time of UL event)</li> <li><b>Very high losses due to F-IRB EL/UL</b> (c.36% loss rate in final year of back-loaded scenario).</li> </ul>
2	<b>Leases</b> (Standardised)	STD	SEC-SA	0.11%	5.13%	14.20% (Mezz)	0.66%	PASS	FAIL	PASS	FAIL	<ul style="list-style-type: none"> <li><b>Very large standardised UL event</b> (regulatory) <b>compared to lower EL</b> (accounting for SA portfolio)</li> <li><b>Requires lower trigger to sequential at significant economic cost</b></li> </ul>
3	<b>Auto loans</b> (High reg EL)	A-IRB	SEC-IRBA	0.84%	4.98%	8.40% (Mezz)	1.50%	PASS	PASS	PASS	FAIL	<ul style="list-style-type: none"> <li><b>High reg EL</b>, especially when back-loading losses which avoids triggering subordination event.</li> <li><b>Requires lower trigger to sequential</b> at potentially significant economic cost</li> </ul>
4	<b>Corporates</b> (Low reg EL)	A-IRB	SEC-IRBA	0.12%	3.97%	6.60% (Mezz)	0.50%	FAIL	FAIL	FAIL	FAIL	<ul style="list-style-type: none"> <li><b>Low reg EL</b> means very low sequential trigger is necessary.</li> <li><b>Cannot amend structure to pass back-loaded scenario and maintain a positive economics</b></li> </ul>

**\*Note:** An unfunded, Corporates RCF and a Standardised Auto dealership financing SRT transaction were also investigated and found to pass tests; mainly due to short-dated assets/rapid amortisation post-replenishment which helps maintain outstanding protection at the time of UL event. These demonstrate that **portfolios with bullet or rapid amortisation profiles should be less affected by these new tests.**

# New PBA/CRT Tests – Example 1

SEC-IRBA, F-IRB,  
Project Finance

## TRANSACTION SUMMARY

Tranche	AP	DP	T	Retained	Fixed Rate	RW (SEC-IRBA)
Class A	10.30%	100.00%	89.70%	100.00%		15.00%
Class B	5.50%	10.30%	4.80%	10.50%	9.65%	796.22%
Class C	0.00%	5.50%	5.50%	10.50%	9.65%	1,250.00%

- Synthetic SRT securitisation of a portfolio of global **Project Finance (F-IRB)** loans with a **long-dated, slow amortisation profile**.
- Pro-rata amortisation, with triggers to sequential in line with the EBA SRT DP (including Loss Balance  $\geq 1.48\%$ )
- No excess spread, 12 month replenishment period

Ptf Metric	Value
SCRAs	0.15%
Reg EL	0.68%
UL	5.35%
Excess Spread	N/A
Ptf WAL	5.41 yrs

## PBA/CRT TEST RESULTS

### 1. Evenly Loaded:

Principle Based Approach (PBA) Test			PASS
Regulatory UL on transferred positions	5.09%	1,034,139,298	
Regulatory UL of the underlying portfolio	5.35%	1,088,567,682	
Ratio $\geq 0.5$			PASS
CRT Test			PASS
Ratio 1 (Capital Reduction as a %):			69.02%
Capital pre sec including EL (i.e. EL shortfall)	5.88%	1,196,313,753	
Capital post sec. on retained pos.	1.82%	370,662,267	
Ratio 2 (Risk Transferred to Third Parties as a %):			93.66%
Lifetime EL + reg. UL on transferred pos.	8.23%	1,673,167,574	
Lifetime EL + reg. UL of the underlying portfolio	8.79%	1,786,500,131	
Ratio 1 $\leq$ Ratio 2			PASS

### 2. Back Loaded:

Principle Based Approach (PBA) Test			FAIL
Regulatory UL on transferred positions	0.90%	183,537,047	
Regulatory UL of the underlying portfolio	5.35%	1,088,567,682	
Ratio $\geq 0.5$			FAIL
CRT Test			FAIL
Ratio 1 (Capital Reduction as a %):			69.02%
Capital pre sec including EL (i.e. EL shortfall)	5.88%	1,196,313,753	
Capital post sec. on retained pos.	1.82%	370,662,267	
Ratio 2 (Risk Transferred to Third Parties as a %):			42.45%
Lifetime EL + reg. UL on transferred pos.	3.73%	758,380,145	
Lifetime EL + reg. UL of the underlying portfolio	8.79%	1,786,500,131	
Ratio 1 $\leq$ Ratio 2			FAIL

Ref	Structure	Scenario	PBA Test	CRT Test	EV (€) (Lifetime)	CoC (Deal)
1	Actual (see above)	Evenly Loaded	PASS	PASS	+25.9m	7.66%
		Back Loaded	FAIL	FAIL		
2	Senior CE = <b>18.00%</b>	Evenly Loaded	PASS	PASS	-11.2m	16.32%
		Back Loaded	PASS	PASS		
3	Subordination Event Loss Balance Trigger = <b>0.75%</b>	Evenly Loaded	PASS	PASS	+2.6m	13.11%
		Back Loaded	PASS	PASS		
4	Fully <b>Sequential</b>	Evenly Loaded	PASS	PASS	-13.6m	17.04%
		Back Loaded	PASS	PASS		

ACTUAL

## CONCLUSION:

- Some real-world transactions that pass the existing SRT/CRT tests will **fail the EBA's updated tests**
- Only possible to pass by making structural changes that **significantly worsen the economics**
- Extremely difficult to pass updated tests for either **longer-dated** or **F-IRB** portfolios
- Selling down to 5% note retention worsens outcome of back-loaded CRT as day 1 capital saving increases by greater rate than the risk sold

# New PBA/CRT Tests – Example 1

SEC-SA, STD  
Leasing assets

## TRANSACTION SUMMARY

Tranche	AP	DP	T	Retained	Fixed Rate	RW (SEC-IRBA)
Class A	15.00%	100.00%	85.00%	100.00%		15.00%
Class B	0.80%	15.00%	14.20%	0.00%	3.40%	800.40%
Class C	0.00%	0.80%	0.80%	100.00%		1,250.00%

- Modified from a real-world full deduct synthetic modelled as a synthetic SRT referencing **Polish leasing assets**<sup>1,2</sup> (Standardised)
- Pro-rata amortisation on classes A and B, with a trigger to sequential (Default Balance ≥ 3.60%)
- No excess spread<sup>3</sup>, two year replenishment period

Ptf Metric	Value
SCRAs	0.11%
IFRS 9 EL	0.11%
UL	5.13%
Excess Spread	N/A
Ptf WAL	2.96 yrs

## PBA/CRT TEST RESULTS

### 1. Evenly Loaded:

Principle Based Approach (PBA) Test			PASS
Regulatory UL on transferred positions	2.85%	159,233,219	
Regulatory UL of the underlying portfolio	5.13%	286,767,310	
Ratio >= 0.5			PASS
CRT Test			FAIL
Ratio 1 (Capital Reduction as a %):		66.72%	
Capital pre sec including EL (i.e. SCRAs)	5.13%	286,439,711	
Capital post sec. on retained pos.	1.71%	95,321,957	
Ratio 2 (Risk Transferred to Third Parties as a %):		51.38%	
Lifetime EL + reg. UL on transferred pos.	2.86%	159,700,797	
Lifetime EL + reg. UL of the underlying portfolio	5.56%	310,850,369	
Ratio 1 <= Ratio 2			FAIL

### 2. Back Loaded:

Principle Based Approach (PBA) Test			PASS
Regulatory UL on transferred positions	2.79%	155,686,954	
Regulatory UL of the underlying portfolio	5.13%	286,767,310	
Ratio >= 0.5			PASS
CRT Test			FAIL
Ratio 1 (Capital Reduction as a %):		66.72%	
Capital pre sec including EL (i.e. SCRAs)	5.13%	286,439,711	
Capital post sec. on retained pos.	1.71%	95,321,957	
Ratio 2 (Risk Transferred to Third Parties as a %):		51.38%	
Lifetime EL + reg. UL on transferred pos.	2.86%	159,700,797	
Lifetime EL + reg. UL of the underlying portfolio	5.56%	310,850,369	
Ratio 1 <= Ratio 2			FAIL

Ref	Structure	Scenario	PBA Test	CRT Test	EV (€) (Lifetime)	CoC (Deal)
1	Actual (see above)	Evenly Loaded	PASS	FAIL	+6.7m	10.72%
		Back Loaded	PASS	FAIL		
2	Senior CE = <b>20.00%</b>	Evenly Loaded	PASS	PASS	+3.2m	14.25%
		Back Loaded	PASS	PASS		
3	Subordination Event Loss Balance Trigger = <b>1.35%</b>	Evenly Loaded	PASS	PASS	+2.3m	15.15%
		Back Loaded	PASS	PASS		
4	Fully <b>Sequential</b>	Evenly Loaded	PASS	PASS	+2.3m <sup>4</sup>	15.15%
		Back Loaded	PASS	PASS		

ACTUAL

## CONCLUSION:

- Only possible to pass by making structural changes that **significantly worsen the economics**
- Extremely difficult to pass updated tests for **STD** portfolios, even where the average RW (c.64%) is low compared to other STD asset pools



# New PBA/CRT Tests – Example 3

SEC-IRBA, A-IRB,  
Auto loans

## TRANSACTION SUMMARY

Tranche	AP	DP	T	Retained	Fixed Rate	RW (SEC-IRBA)
Class A	9.70%	100.00%	90.30%	100%		15.00%
Class B	1.30%	9.70%	8.40%	0%	7.50%	1038.47%
Class C	0.00%	1.30%	1.30%	100%		1,250.00%

- Synthetic SRT securitisation over a portfolio of **French consumer auto loans (A-IRB)** referencing new and used cars
- Pro-rata amortisation, with triggers to sequential in line with the EBA SRT DP (including Loss Balance  $\geq 1.50\%$ )
- Junior tranche retained; No excess spread; 12m replenishment period

Ptf Metric	Value
SCRAs	0.27%
Reg EL	0.84%
UL	4.98%
Excess Spread	N/A
Ptf WAL	2.97 yrs

## PBA/CRT TEST RESULTS

### 1. Evenly Loaded:

Principle Based Approach (PBA) Test		PASS
Regulatory UL on transferred positions	4.98%	933,173,202
Regulatory UL of the underlying portfolio	4.98%	933,173,202
Ratio $\geq 0.5$		100.00%
CRT Test		PASS
Ratio 1 (Capital Reduction as a %):		61.89%
Capital pre sec including EL (i.e. EL shortfall)	5.55%	1,039,758,165
Capital post sec. on retained pos.	2.11%	396,300,000
Ratio 2 (Risk Transferred to Third Parties as a %):		85.37%
Lifetime EL + reg. UL on transferred pos.	6.07%	1,138,950,030
Lifetime EL + reg. UL of the underlying portfolio	7.12%	1,334,180,955
Ratio 1 $\leq$ Ratio 2		PASS

### 2. Back Loaded:

Principle Based Approach (PBA) Test		FAIL
Regulatory UL on transferred positions	1.42%	266,111,172
Regulatory UL of the underlying portfolio	4.98%	933,173,202
Ratio $\geq 0.5$		28.52%
CRT Test		FAIL
Ratio 1 (Capital Reduction as a %):		61.89%
Capital pre sec including EL (i.e. EL shortfall)	5.55%	1,039,758,165
Capital post sec. on retained pos.	2.11%	396,300,000
Ratio 2 (Risk Transferred to Third Parties as a %):		34.36%
Lifetime EL + reg. UL on transferred pos.	2.44%	458,427,588
Lifetime EL + reg. UL of the underlying portfolio	7.12%	1,334,180,955
Ratio 1 $\leq$ Ratio 2		FAIL

Ref	Structure	Scenario	PBA Test	CRT Test	EV (€) (Lifetime)	CoC (Deal)
1	Actual ( <i>see above</i> )	Evenly Loaded	PASS	FAIL	+2.2m	8.98%
		Back Loaded	PASS	FAIL		
2	Senior CE = <b>17.30%</b>	Evenly Loaded	PASS	PASS	-12.0m	16.62%
		Back Loaded	PASS	PASS		
3	Subordination Event Loss Balance Trigger = <b>0.65%</b>	Evenly Loaded	PASS	PASS	+1.9m	9.19%
		Back Loaded	PASS	PASS		
4	Fully <b>Sequential</b>	Evenly Loaded	PASS	PASS	-7.6m	14.30%
		Back Loaded	PASS	PASS		

ACTUAL

### Conclusion:

- Transaction fails PBA and CRT test under back loaded scenario due to delay in EL recognition and therefore amortisation trigger which leaves insufficient protection by the time of UL event.
- Possible to pass CRT by reducing cumulative loss trigger 85bps at **cost of transaction economics**; Increasing CE/fully Sequential to pass tests is at an unfeasible economic cost.

# New PBA/CRT Tests – Example 4

SFM/SEC-IRBA, A-IRB,  
Large Corporates

## TRANSACTION SUMMARY

Tranche	AP	DP	T	Retained	Fixed Rate	RW (SEC-IRBA)
Class A	7.00%	100.00%	93.00%	100%		15.00%
Class B	0.40%	7.00%	6.60%	0%	9.65%	910.05%
Class C	0.00%	0.40%	0.40%	100%		1,250.00%

- Synthetic SRT securitisation of a portfolio of **large and medium corporate loans and Fis (A-IRB)**, issued under previous securitisation framework<sup>1</sup>
- Pro-rata amortisation, with triggers to sequential in line with the EBA SRT DP (including Loss Balance ≥ 0.50%)
- Junior tranche retained; No excess spread; 12m replenishment period

Ptf Metric	Value
Reg PD	0.28%
Reg EL	0.12%
UL	3.97%
Excess Spread	N/A
Ptf WAL	2.61 yrs

## PBA/CRT TEST RESULTS

### 1. Evenly Loaded:

Principle Based Approach (PBA) Test			FAIL
Regulatory UL on transferred positions	1.24%	871,479,849	
Regulatory UL of the underlying portfolio	3.97%	2,796,599,117	
Ratio >= 0.5		31.16%	
CRT Test			FAIL
Ratio 1 (Capital Reduction as a %):			62.96%
Capital pre sec including EL (i.e. EL shortfall)	4.09%	2,883,447,357	
Capital post sec. on retained pos.	1.52%	1,068,172,313	
Ratio 2 (Risk Transferred to Third Parties as a %):		29.76%	
Lifetime EL + reg. UL on transferred pos.	1.28%	899,116,547	
Lifetime EL + reg. UL of the underlying portfolio	4.29%	3,021,727,246	
Ratio 1 <= Ratio 2			FAIL

### 2. Back Loaded:

Principle Based Approach (PBA) Test			FAIL
Regulatory UL on transferred positions	1.18%	833,542,325	
Regulatory UL of the underlying portfolio	3.97%	2,796,599,117	
Ratio >= 0.5		29.81%	
CRT Test			FAIL
Ratio 1 (Capital Reduction as a %):			62.96%
Capital pre sec including EL (i.e. EL shortfall)	4.09%	2,883,447,357	
Capital post sec. on retained pos.	1.52%	1,068,172,313	
Ratio 2 (Risk Transferred to Third Parties as a %):		29.80%	
Lifetime EL + reg. UL on transferred pos.	1.28%	900,420,809	
Lifetime EL + reg. UL of the underlying portfolio	4.29%	3,021,727,246	
Ratio 1 <= Ratio 2			FAIL

Ref	Structure	Scenario	PBA Test	CRT Test	EV (€) (Lifetime)	CoC (Deal)
1	Actual ( <i>see above</i> )	Evenly Loaded	FAIL	FAIL	+6.0m	12.18%
		Back Loaded	FAIL	FAIL		
2	Senior CE = <b>15.00%</b>	Evenly Loaded	PASS	PASS	-62.7m	26.24%
		Back Loaded	PASS	PASS		
3	Subordination Event Loss Balance Trigger = <b>0.06%</b>	Evenly Loaded	PASS	PASS	-38.4m	21.36%
		Back Loaded	PASS	PASS		
4	Fully <b>Sequential</b>	Evenly Loaded	PASS	PASS	-38.4m	21.36%
		Back Loaded	PASS	PASS		
5	NEW: Subordination Event Minimum Protection = <b>2.9%</b>	Evenly Loaded	PASS	PASS	-4.9m	14.45%
		Back Loaded	PASS	PASS		

ACTUAL

### Conclusion:

- **PBA and CRT test fail under both scenarios** due to very low reg EL, subordination event doesn't trigger, leaving insufficient protection at time of UL event.
- **Cannot pass tests under back loaded scenario and maintain positive transaction economics**, as economic calculations considers a much lower EL only.

<sup>1</sup> Historic transaction utilises SFM RW% in first year of modelling economics only; WAM calculation pre-dates EBA WAM guidelines, calculated as WAM + Revolving Period