Just in Time

EBA RTS on the Determination of Indirect Exposures to Underlying Clients of Derivative and Credit Derivative Contracts

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At a Glance

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Introduction

Introduction 1/2

- An undue concentration of exposures to a single counterparty has long been recognised as a central warning for banks' stability. In this context, in 1991, the Basel Committee for Banking Supervision (**BCBS**) issued the first **supervisory guidance on large exposures**.
- However, the fact that **no clear guidelines were available on how banks should measure their exposures to a single counterparty** and **on which factors they should consider when bearing in mind whether separate legal entities form a group of connected counterparties,** come out very fragmented practices across banks.
- Additionally, the 2008 financial crisis showed that banks did not always measure exposures to single counterparties in a consistent way.
- In this context, in addition to direct exposures, indirect exposures can also arise through financial instruments such as derivatives. Indeed, **a derivative contract can give rise to an indirect credit exposure when the issuer of the asset underlying the derivative is not the counterparty of the derivative contract.**

Introduction 2/2

- The definition of indirect exposures is provided by **Article 390(5) CRR**: '*Institutions shall add to the total exposure to a client the exposures arising from derivative and credit derivative contracts, where the contract was not directly entered into with that client, but the underlying debt or equity instrument was issued by that client*'.
- The rationale of Article 390 (5) of the CRR arises from the fact that **each time a derivative contract exists, the institution could suffer a loss as soon as the underlying client of the embedded derivative defaults.**
- Although, the definition at Article 390(5) does not provide an applied indications on how to measure the exposures leaving unclear some aspects concerning the scope of application. **This lack of common standards about these technical aspects could result in inconsistent interpretation across banks**.
- **The goal of EBA RTS is to provide a harmonized approach to identify and quantify the exposures arising from these financial instruments where the underlying debt or equity instrument was not issued by the direct counterparty of the contract**. In this regard, the RTS outlines the procedures to quantify the exposure amount for different categories of derivatives contracts in the trading and in the non-trading book.

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Large Exposures Framework

Large Exposure Framework 1/3

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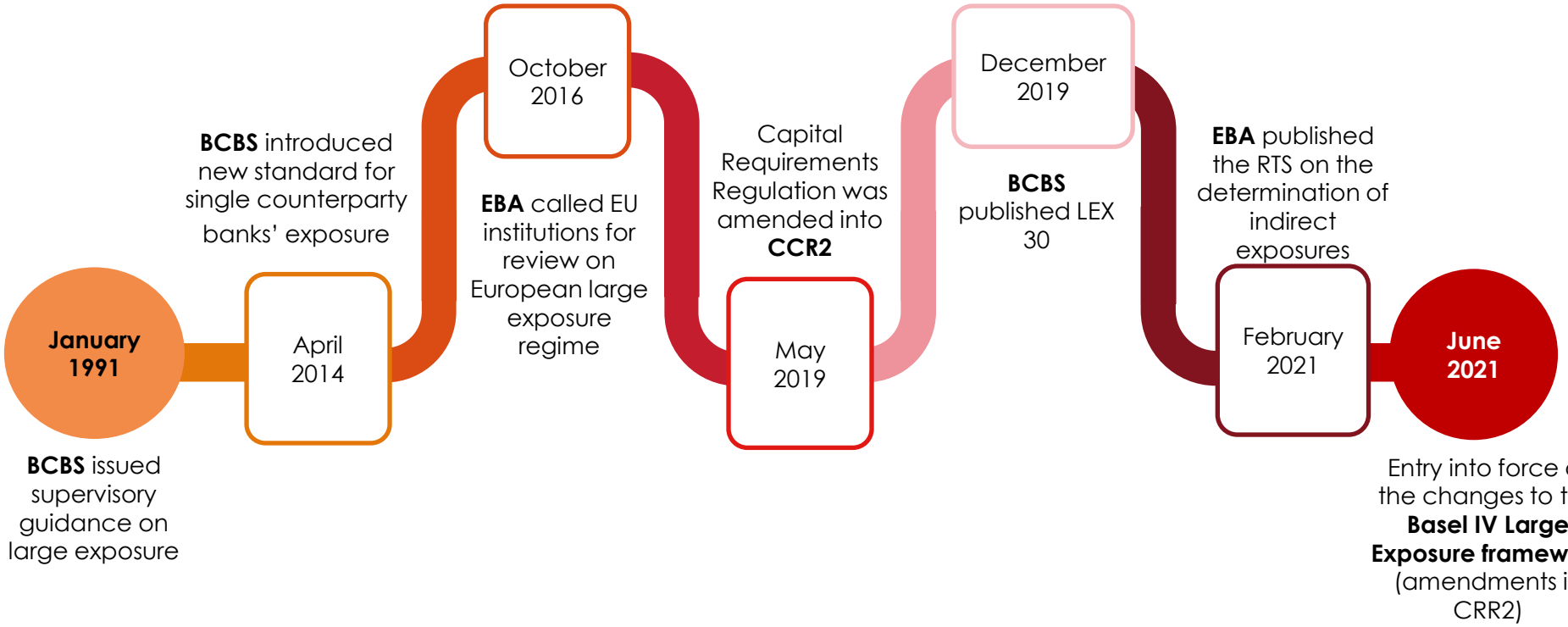
Through the years various measures on large exposures have been well-thought-out. A **brief overview of the main measures adopted** on this issue is shown below:



Large Exposure Framework 2/3

- In **January 1991**, despite the the Basel Committee on Banking Supervision (BCBS) introduced the first supervisory guidance on large exposure, the risk that **an institution with a strong capital ratio may fail if it experiences significant losses on large exposures, both in the event of a sudden failure of a counterparty or of a group of connected counterparties,** was not completely captured.
- In **April 2014**, the **BCBS** introduced a **new standard with the intention of guaranteeing that internationally active banks' exposures to single counterparties were appropriately monitored and limited.** Regarding this, note that banks are also exposed to other different types of concentration risk, such as sectoral and geographical concentration of asset exposures.
- In **October 2016**, the **EBA** issued an opinion in response to a European Commission call for advice, setting out its views on the **review of the European large exposures' regime**. In that opinion, the EBA called on the EU institutions to introduce some amendments with a view to:
  a) aligning the CRR with the Basel standard on large exposures,
  b) removing some exemptions
  c) improving some technical details.

Large Exposure Framework 3/3

- As part of the Basel IV reforms, in **May 2019**, **the Capital Requirements Regulation (CRR) was amended**. The amendments on the CRR2 ensured better alignment with the Basel standard (LEX). The new regulatory framework brings the following innovations:
  a) **New definition of Admissible Capital**: the capital that can be considered in calculating the large exposure limit is restricted to Tier 1 capital only.
  b) **Introduction of G-SIB exposure limit towards other G-SIBs**: the new regulatory framework introduces a new lower limit of 15% of Tier 1 capital for exposures of G-SIBs to other G-SIBs.
  c) **Extension in the use of the SA-CCR methodology**: the use of the SA-CCR methodology is required to calculate exposures in OTC derivatives, even for banks authorized to use internal model.
  d) **Obligations to report largest exposures** (both individual and on a consolidated basis).

- In **December 2019** the **BCBS** published a consolidated chapter – LEX Large exposures, Exposure measurement (**LEX 30**) – which describes the value of exposures to counterparties used in the large exposures' framework, including those for which a specific treatment is deemed necessary. The BCBS also published a LEX 30 version reflecting the new market risk requirements.

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Calculation Method

Calculation Method 1/12

General Background 1/3

- A derivative contract can give rise to a:
  - **a) Indirect credit exposure,** for which, depending on the underlying, there may be further diversification:
    - i. Underlying with a single reference name;
    - ii. Underlying with multiple reference names;
  - **b) Direct credit exposure.**
- Knowing that the latter, which is the risk of a loss that an institution A may suffer due to a default of counterparty C, is already captured in the large exposure framework, it is not treated in this EBA RTS.
- The indirect credit exposure, instead, stemming from issuer X of the underlying debt or equity instrument **shall be well-thought-out for the large exposures' framework because the default of underlying client X affects the value of the derivative and, therefore, it affects the maximum loss that an institution could face in the event of X's default.**

Calculation Method 2/12

General Background 2/3

- These RTS do not impact on the calculation of own funds requirements, their valuation or reporting. Especially, the indirect exposure values calculated based on these RTS do not affect the size of the trading book or non-trading book. **The purpose of the EBA RTS is to specify the measurement approaches for indirect exposures arising from derivative and credit derivative contracts and therefore consenting institutions to correctly identify and limit their large exposures**.

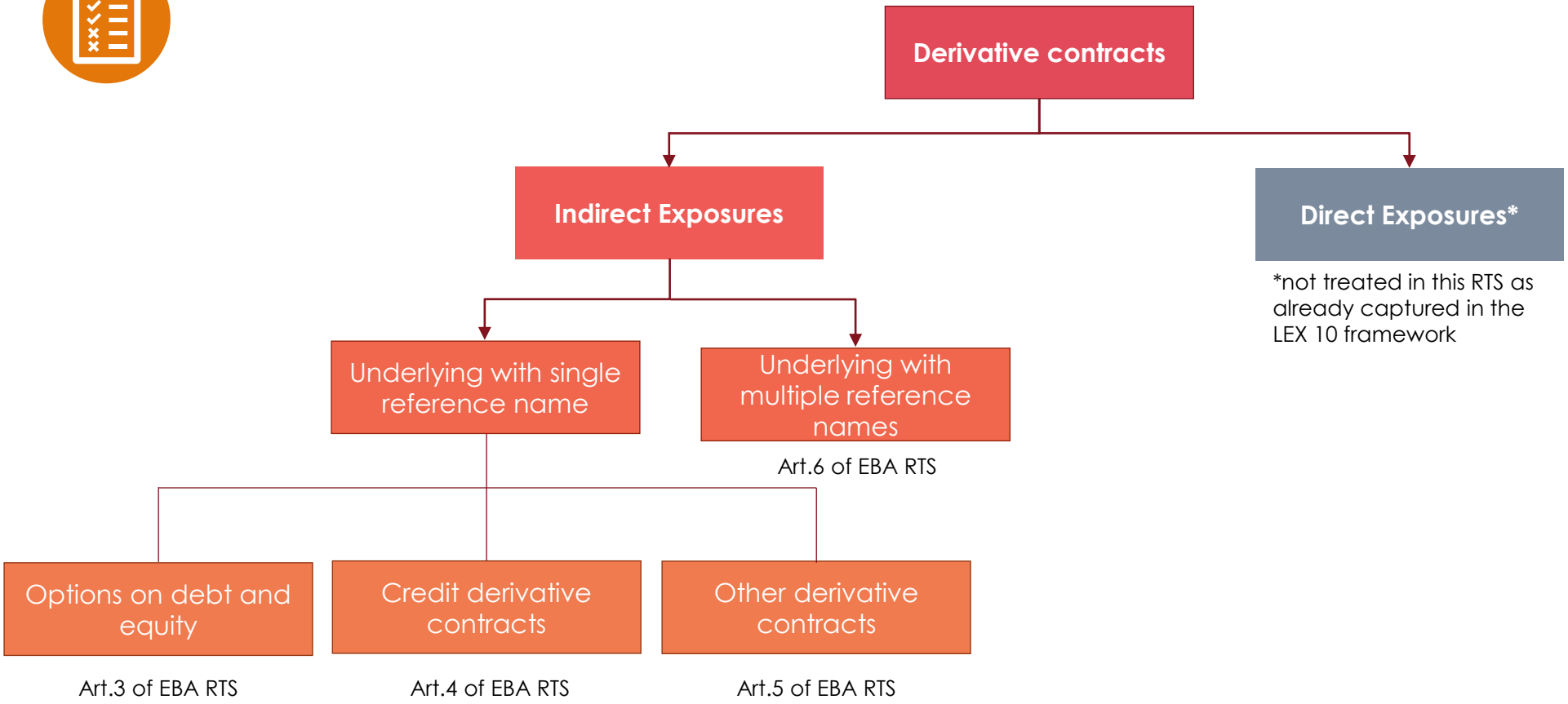
- Here below additional aspects of general application of the measurement methods:

  a) If the issuer of the underlying instrument is a **sovereign**, **such exposure would be excused from the large exposure limits**. However, an analysis of these exposures is still required because the large exposures regime still applies to them (even though no upper limit is established);

  b) The **indirect exposure arising from derivative contracts and credit derivative contracts for which the underlying does not involve a default risk of an indirect client X shall not be considered by institutions** (i.e. interest rate benchmarks, interest rate curvature spreads and exchange rates)

Calculation Method 3/12

General Background 3/3



Calculation Method 4/12

General Rules for Indirect Derivative Exposure 1/2

- A derivative must be allocated to the non-trading book or the trading book, on this purpose:
  a) CRR frames that institutions must define clear **policies, procedures and documented practices in order to determine the correct allocation** of derivative instruments to the trading book.
  b) CRR **strictly frames the ability of banks to move instruments** between the trading book and the non-trading book restricting possible reclassifications to exceptional circumstances.
- In general, and as required by the CRR provisions on large exposures, to obtain the total exposure to a client, it does not matter whether the indirect exposure is assigned to the non-trading book or the trading book, since an **institution needs to calculate its overall exposures by adding those in the trading book and in the non-trading book.**

Calculation Method 5/12

General Rules for Indirect Derivative Exposure 2/2

- CRR2:
  a) Allows the offsetting between positive and negative exposures held in the trading book as some specific condition are met*. It is never allowed the netting between positions held in the non-trading book and in the trading book nor the netting between non-trading book positions.
  b) The overall exposures to individual clients are relevant only when positive.
  c) Negative overall exposures shall be set to zero.

- **Institutions shall calculate the indirect exposure towards a client as the difference between the current *market value* of the derivative or credit derivative contracts and the amount that the institution would receive (A_d) or give (A_r) under the scenario of a default of the issuer of the underlying instrument when the settlement transactions take place**:

$$Indirect\ exposure\ value = market\ value + A_d - A_r$$

***** *Further information on those conditions are provided in the Annex 1*

Calculation Method 6/12

Derivative Contracts with a Single Underlying Reference Name

- Institutions shall distinguish between indirect exposures with single or multiple underlying reference names. For **indirect exposures with a single underlying reference name** the EBA RTS divide them into **three categories** (in line with examples provided for in the LEX standard).
- The RTS identify the methodology to calculate the exposure value for each of the three categories:

Options on debt and equity instruments	**Credit derivative contracts**	**Other Derivatives having as underlying a debt or equity instrument**
1	2	3

Calculation Method 7/12

Options on Debt and Equity Instruments 1/2

- **Options** are financial derivatives that give buyers the right, but not the obligation, to buy or sell an underlying asset (i.e., call and put options) at an agreed-upon price within a certain period or at a certain date. One of the main features of an option is its non-linear risk profile.
- For options, **to calculate the maximum loss it is necessary to consider fluctuations in option prices that would result from a default of the respective underlying instrument.**
- Having in mind the general formula, here below a resumptive table which shows: **the sign of the indirect exposure arising from long/short call and put options and, the exposure value**. 'MV' is the market value of the option and 'A_r' is its strike price.

Sign of the exposure/ Exposure value	Call option	Put option
Long	Positive/MV	Negative/(MV-A_r)
Short	Negative/-(MV)	Positive/-(MV-A_r)

Calculation Method 8/12

Options on Debt and Equity Instruments 2/2

Some technicalities can be found:

- For **put options not having the strike price available** at the transaction date but available at a later stage at any time, **the strike price should be set equal to the expected modelled strike price used for the calculation of the fair value of this option**.

- For options **not having the market value available on a given date**:

  a) the value of the option must be measured at the **fair value of the option**.

  b) where the market value and fair value of an option are **not available** on a given date, institutions shall take the **most recent of the market value or fair value**.

  c) if both market value and fair value are **not available**, institutions shall use the value at which the **option is measured with the applicable accounting framework**.

  This principle is also effective for the calculation of the indirect credit exposure for credit derivative contracts.

Calculation Method 9/12

Credit Derivative Contracts

- **A credit derivative** is a bilateral financial contract whose pay-off is linked to a credit event. The purpose of a credit derivative is to transfer credit risk and all or part of the income stream in relation to the borrower without transferring the asset itself. A credit derivative serves as a kind of insurance policy.
- **The indirect exposure underlying a credit derivative contract is equal to the market value of the credit derivative adjusted by the amount due or expected to be received in the event of default of the issuer of the underlying instrument**.
- It should be noted, however, that the protective effect of a credit derivative for which the institution is a protection buyer, may have already been recognized as a Credit Risk Mitigation Technique (CRMT). Therefore, **in order to avoid double counting, when recognizing the protective effect arising from those credit derivative contracts as a CRMT, institutions should set their indirect exposure values to zero.**
- In the case of **not available market value**, **the solution provided by the EBA RTS is the same for options on debt and equity instrument** (as shown in the previous slide).

Calculation Method 10/12

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Other Derivatives having as Underlying a Debt or Equity Instrument

- This category covers all **other derivatives** not belonging to the previous categories.
- **To determine the indirect exposure value of underlying debt or equity instruments, institutions shall treat those indirect exposures as positions in debt and equity instruments:**

  a) **Banks shall decompose derivative contracts that constitute a combination of long and short positions into individual transaction legs and apply the large exposures framework as if they had a position in those legs.**

  b) Only the transaction legs with default risk, where institutions have a risk of loss in the case of default, should be relevant for the calculation of the indirect exposures set out in this Regulation;

  c) Whenever **decomposition into individual transaction legs cannot apply,** the EBA RTS provide **a fallback calculation based on the maximum loss that could occur following the default of the underlying client to which the derivative refers**.

Calculation Method 11/12

Derivative Contracts with Multiple Underlying Reference Name 1/2

- In order to establish the exposure value of multi-underlying reference names, two methodologies can be identified:

  a) Where an **institution can look through all the components establishing the underlying of the derivative contract**, the indirect exposure value shall be calculated by looking at the variation in the price of the derivative assuming the default of each of the underlying reference names in the multi-underlying instrument **(look-through approach)**;

  b) Where an **institution is not able or it would be excessively onerous for the institution to perform a look-through on the underlying reference names itself**, the indirect exposure value shall be calculated assuming all underlying names default simultaneously **(fallback approach)** and by treating the exposure as a direct exposure to those underlying reference names of the derivative.

Calculation Method 12/12

Derivative Contracts with Multiple Underlying Reference Name 2/2

- About the **look-through approach** it is necessary to specify that:
  a) For each underlying exposure for which the issuer can be identified, **an institution shall add this exposure value to the other exposures the institution has to the same client;**
  b) If an institution cannot recognize the issuer of the underlying exposure, the indirect exposure value shall be assigned to:
     i. a **separate client if the exposure value does not exceed 0.25% of the institution's Tier 1 capital or exceeds 0.25% of its Tier 1 capital** and the institution can ensure, by means of the transaction's mandate, that the underlying exposures of the transaction are not connected with any other exposures in its portfolio;
     ii. to the **unknown client in other cases**.

- With respect of **fallback approach**, if the underlying reference names are assigned to the unknown client, **it would not be prudentially sound to use negative exposure values to offset positive exposure values as such those have been set to zero.**

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Final Remarks

Final Remarks 1/3

Among the main points of attention of these RTS we find: the interaction with the FRTB framework, the period for implementation (also considering the pandemic context) and the methodology for calculating derivative contracts with multiple underlying reference name

- The EBA RTS in question retain the important **interaction with the jump-to-default (JTD) framework under FRTB***:
  a) According to the latest version of LEX 30 (effective as of January 2023) and to ensure consistency, **institutions shall use the gross jump-to-default amount ('JTD') under the Fundamental Review of the Trading Book in order to identify the exposure values for trading book positions** (further information are provided in the Annex 2).
  b) The JTD approach applies to all trading book positions subject to credit risk and is **aimed at covering the risk of sudden default of the issuer of the instrument and applies to derivative contracts as well**.
  c) In particular, should the methodology be modified by the **JTD framework in 2023**, the EBA will have to **monitor, and possibly revise, these RTSs**. This need arises from the fact that the approaches illustrated in the previous slides would have limited benefits if the methodology were changed.

***** *On 12/03/21 EBA launched public consultations on its draft Regulatory Technical Standards (RTS) on gross jump-to-default (JTD) amounts.*

Final Remarks 2/3

- The EBA RTS propose different methodologies for the calculation of indirect exposures for different categories of derivative contracts with a single or multiple underlying reference names. **These methodologies are expected to be easy to implement and applicable by all institutions in a standardized method**.
  a) Even if institutions are already stressed by the outbreak of Covid-19 and the ongoing implementation of CRR projects, the length of the process for the approval of this RTS provide to institutions **adequate time to implement it**.

- The LT approach is likely to result in a multitude of small exposures, as it is more suitable for instruments with a limited number of underlings. The EBA has allowed **partial consultations only on those underlying instruments where it is not excessively burdensome**. In cases where the LT approach is not possible or is unduly burdensome, the institution should still calculate the indirect exposure value by observing the change in the price of the derivative in the event of default for all underlying names in the index or OIC.
  a) Furthermore, when the LT approach is not possible or not practical, **the fallback approach would be excessively conservative**. In particular, the requirement that exposure must be quantified assuming that all underlying names are in default at the same time is unrealistic, especially for diversified indices or OICs.

Final Remarks 3/3

- At the end of 2019, the volume of exposures recognised under Article 390(7) of the CRR mounted at EUR 85 bn, equal to **0.3% of the exposures to borrowers identified as relevant**.
  a) At bank level, **average values above 1% can be found in six countries** (Austria, Germany, Finland, France, Italy, Portugal).
  b) The **highest value at bank level is 11.4%** (Austria).
  c) At single-borrower level, it is possible to see **some cases** where this type of exposure represents a **significant percentage of the total exposure**.
- **The main conclusion of this analysis is that these RTS would likely affect about 1% of the Large Exposures reported at the end of 2019 at country level**.

Source: *"EBA/RTS/2021/03 - Final report: Draft Regulatory Technical Standards on the determination of indirect exposures to underlying clients of derivative and credit derivative contracts under Article 390(9) CRR2 4.1", Cost-benefit analysis / impact assessment, Quantitative analysis,19 February 2021.*

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Annexes

Annex 1 – LEX 30 - Exposure Measurement 1/4

Offsetting Long and Short Positions in the Trading Book

- **30.23** - Banks may offset long and short positions in the same issue (two issues are defined as the same if the issuer, coupon, currency and maturity are identical). Consequently, banks may consider a net position in a specific issue for the purpose of calculating a bank's exposure to a particular counterparty.
- **30.24** - Positions in different issues from the same counterparty may be offset only when the short position is junior to the long position, or if the positions are of the same seniority.
- **30.25** - Similarly, for positions hedged by credit derivatives, the hedge may be recognised provided the underlying of the hedge and the position hedged fulfil the provision of LEX30.24 (the short position is junior or of equivalent seniority to the long position).

Annex 1 – LEX 30 - Exposure Measurement 2/4

Offsetting Long and Short Positions in the Trading Book

- **30.26** - In order to determine the relative seniority of positions, securities may be allocated into broad buckets of degrees of seniority (for example, "Equity", "Subordinated Debt" and "Senior Debt").
- **30.27** - For those banks that find it excessively burdensome to allocate securities to different buckets based on relative seniority, they may recognise no offsetting of long and short positions in different issues relating to the same counterparty in calculating exposures.
- **30.28** - In addition, in the case of positions hedged by credit derivatives, any reduction in exposure to the original counterparty will correspond to a new exposure to the credit protection provider, following the principles underlying the substitution approach stated in LEX30.14*, except in the case described in LEX30.29.

**** LEX30.14:*** *Whenever a bank is required to recognize a reduction of the exposure to the original counterparty due to an eligible CRM technique, it must also recognize an exposure to the CRM provider. The amount assigned to the CRM provider is the amount by which the exposure to the original counterparty is reduced (except in the cases defined in LEX30.29).*

Annex 1 – LEX 30 - Exposure Measurement 3/4

Offsetting Long and Short Positions in the Trading Book

- **30.29** - When the credit protection takes the form of a credit default swap (CDS) and either the CDS provider or the referenced entity is not a financial entity, the amount to be assigned to the credit protection provider is not the amount by which the exposure to the original counterparty is reduced but, instead, the counterparty credit risk exposure value calculated according to the SA-CCR.12 For the purposes of this paragraph, financial entities comprise:

    1. regulated financial institutions, defined as a parent and its subsidiaries where any substantial legal entity in the consolidated group is supervised by a regulator that imposes prudential requirements consistent with international norms. These include, but are not limited to, prudentially regulated insurance companies, broker/dealers, banks, thrifts and futures commission merchants; and

    2. unregulated financial institutions, defined as legal entities whose main business includes: the management of financial assets, lending, factoring, leasing, provision of credit enhancements, securitisation, investments, financial custody, central counterparty services, proprietary trading and other financial services activities identified by supervisors.

Annex 1 – LEX 30 - Exposure Measurement 4/4

Offsetting Long and Short Positions in the Trading Book

- **30.30** - Netting across the banking and trading books is not permitted;
- **30.31** - When the result of the offsetting is a net short position with a single counterparty, this net exposure need not be considered as an exposure for large exposure purposes (see LEX30.16*).

**** LEX30.16:*** *The exposures considered in this section correspond to concentration risk associated with the default of a single counterparty for exposures included in the trading book. Therefore, positions in financial instruments such as bonds and equities must be constrained by the large exposure limit, but concentrations in a particular commodity or currency need not be.*

Annex 2 – Calculation of RWA for Market Risk 1/4

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Standardized Approach: Default Risk Capital Requirement

- The Jump to Default (JTD) risk, and corresponding amount, of an instrument is the loss that would be suffered by the holder if the issuer of the bond or equity were to default. The Default Risk Charge is intended to capture the Jump-to-Default (JTD) risk.
- Based on the new BCBS framework (2016) banks must follow four-steps for calculating the standardized DRC of the trading portfolios which containing both securitization and non-securitization:
    1. For each instrument exposed to counterparty calculating the gross JTD loss amounts;
    2. For the long and short exposures belonging to the same obligor calculating the netting of the JTD risk amounts that refer which resulting in the net long or net short JTD amount;
    3. Calculating the discounted hedge benefit ratio applied to net short exposures;
    4. Applying the default RWs for calculating DRC assuming no correlation to market risk.

Annex 2 – Calculation of RWA for Market Risk 2/4

Standardized Approach: Default Risk Capital Requirement

- The gross JTD risk position is computed exposure by exposure. For the purpose of DRC requirements, the determination of the long/short direction of positions must be on the basis of long or short with respect to whether the credit exposure results in a loss or gain in the case of a default. For derivative contracts, the long/short direction is also determined by whether the contract will result in a loss in the case of a default;
- The gross JTD is a function of the loss given default (LGD), which is fixed depending on the category of instrument, notional amount (or face value) and the cumulative profit and loss (P&L) already realised on the position:

$$JTD_{Long} = \max(LGD \cdot notinal + P\&L; 0)$$
$$JTD_{Short} = \min(LGD \cdot notinal + P\&L; 0)$$

- For credit derivatives, the notional amount of a CDS contract or a put option on a bond is the notional amount of the derivative contract
- In the case of a call option on a bond, the notional amount to be used in the JTD calculation is zero (since, in the event of default, the call option will not be exercised). In this case, a JTD would extinguish the call option's value and this loss would be captured through the mark-to-market P&L term in the JTD calculation.

Annex 2 – Calculation of RWA for Market Risk 3/4

Standardized Approach: Default Risk Capital Requirement

- Together with what said above, here below a table summarizing how we calculate the fundamental inputs of the JTD formula

Instrument	Notional	Bond-equivalent market value	P&L
CDS	Notional of CDS	Notional of CDS + MtM value of CDS	-MtM value of CDS
Sold put option on a bond	Notional of option	Strike amount - | MtM value of option |	(Strike - | MtM value of option |) - Nominal
Bought call option on a bond	0	MtM value of option	MtM value of option

- To account for defaults within the one-year capital horizon, the JTD for all exposures of maturity less than one year and their hedges are scaled by a fraction of a year.
- For derivative exposures, the maturity of the derivative contract is considered in determining the offsetting criterion, not the maturity of the underlying instrument.

***** P&L = Bond-equivalent market value - Nominal

Annex 2 – Calculation of RWA for Market Risk 4/4

Standardized Approach: Default Risk Capital Requirement

- Exposure to the same obligor may be offset. In the case of long and short offsetting exposures where both have a maturity under one year, the scaling can be applied to both the long and short exposures. Finally, the offsetting may result in net long JTD risk positions and net short JTD risk positions.
- On the base if instruments are a securitization or a non-securitization, they are allocated to a buckets. For calculating the weighted net JTD, default risk weights are set depending on the credit quality categories for each buckets.
- In order to recognise hedging relationship between net long and net short positions within a bucket, a hedge benefit ratio is computed as follow:

$$HBR = \frac{\sum netJTD_{Long}}{\sum netJTD_{Long} - \sum |netJTD_{Long}|}$$

- The capital requirement for each bucket is to be calculated as the combination of the sum of the risk-weighted long net JTD, the HBR, and the sum of the risk-weighted short net JTD, where the summation for each long net JTD and short net JTD is across the credit quality categories. In the following formula, DRC stands for DRC requirement; and i refers to an instrument belonging to bucket b:

$$DRC_b = max\left[\left(\sum_{i \in Long} RW_i \cdot netJTD_i\right) - HBR \cdot \left(\sum_{i \in Short} RW_i \cdot |netJTD_i|\right)\right]$$

Company Profile

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