Regulatory Roadshow
Basel IV - The new big wave
April 5th 2017
**Agenda**

- **01** Introduction
- **02** CRR II
  - Finalising Basel III and setting the stage for Basel IV
- **03** Basel IV
  - Getting ready for the next generation of RWA
- **04** IFRS 9
- **05** Supervisory activities regarding IRBA
Introduction
Please consider a buffer for the additional capital requirements defined under Basel IV in your capital planning by 2018.
(Anonymous ECB-employee to a German SSM-bank)
Basel IV in a Nutshell

Calculation of capital ratios under Basel III / CRR...

... and the of Basel IV affected topics:
Indicative impact on RWA

Total RWA

-10% 40% 150%

Distinct increase of CVA Risk Capital Charge

SA new

-5% 20% 190%

RWA-increase e.g. institutions, specialized lending, participations

FRTB (Standardized approach)

0% 40% 400%

Particular impact on options and credit risks

Mirage or phantom menace?
Indicative impact on RWA

Total RWA
-10% 20% 150%
70% Floor: 30%
80% Floor: 41%

SA new
-5% 7-10% 190%

FRTB (Standardized approach)
0% 40% 400%

Distinct floor of CVA Risk Capital Charge
RWA-increase e.g. for institutions, specialised lending, participations
Particular impact on options and credit risks

Mirage or phantom menace?
From Basel IV to CRR II

CRR II / CRD V
(Draft of EU COM as of November 23rd, 2016)
Entry into force of CRR II

2016

CRR II – draft published

EU Commission published CRR II draft on November 23rd, 2016

2017 +

Entry into force

CRR II enters into force after finalisation of trilogue between Commission, Parliament and Council

+ 2 years

Application date

Application date two years after entry into force

Two exceptions:

- MREL: application on January 1st 2019
- IFRS 9: application with entry into force
Strategy& can support banks to evaluate their business model along four dimensions

**Strategic responses to ‘Basel IV’**

1. **Capital management**
   - Assess impact on regulatory requirements and adjust capital plan accordingly
   - Identify measures to raise capital and/or deleverage balance sheet

2. **Portfolio composition**
   - Identify strategic impact on business lines and products
   - Recalibration and optimization of business mix and asset portfolios – increased focus on fee business

3. **Product structure**
   - Identify key drivers of product specific cost of capital under Basel IV
   - Restructure products offered and adapt pricing to reflect these drivers

4. **Operations**
   - Update models to reflect Basel IV approach
   - Set-up operational processes for additional reporting requirements (e.g. DD)

**Integrated ‘Basel IV’ implementation plan**

- Perform impact analysis
- Identify and implement short term required measures
- Develop implementation plan for required long term adjustments

**Specific strategic responses to ‘Basel IV’**

- Identify capital impact and review capital planning and identify capital measures
- Review growth strategy, portfolio composition and capital allocation
**Leverage Ratio**

**New requirements:**

- CRR II introduces a binding LR requirement of 3% for all institutions, that has to be met with Tier 1
- Business models and portfolios with relatively low RWA compared to their volume are affected most severely
- Assuming a RWA based Tier 1 requirement of 8.5% (minimum requirements + capital conservation buffer), the critical average RW (RWA/LR exposure) is 35.3%. That means that portfolios with a lower RWA density will attract a higher LR than RWA Tier 1 requirement. Note: The critical EAD based average RW can even be higher than 35.3%.
- Capital buffers lead to lower CARW, LR buffers for G-SIIs to higher ones. Basel IV will affect RWA density (increased RW and EADs, floors).

**Consequences**

- Integration of LR in capital planning process and financial controlling
- Impact analysis on business models and portfolios
- Analysis of the interaction with Basel IV effects
- Integration of LR requirements in the New Product Process
The draft CRR contains a separate Title under Part Six (Liquidity) to introduce a binding NSFR for institutions. The implementation was applied in accordance with the requirements as described by the Basel Committee in BCBS 295 and 375. The definitions for calculating the NSFR are similar to the ones used for the liquidity coverage ratio (LCR).

The new Title IV of Part Six: The net stable funding ratio for institutions (Art. 428 CRR 2.0)

1. The net stable funding ratio (Art. 428a and 428b CRR 2.0)
   - Specifies the definitions and the general design of the NSFR which is calculated as the ratio of available stable funding to required stable funding

2. General rules on calculation NSFR (Art. 428c - 428h CRR 2.0)
   - Clarifies the general rules to calculate the NSFR and gives information for dealing with some specific issues like derivatives transactions, secured lending and capital market-driven or intragroup transactions

3. Available stable funding (Art. 428i - 428o CRR 2.0)
   - Defines the general rules to calculate the amount of available stable funding and the ASF factors applicable to the regulatory capital and to different liabilities depending on their characteristics

4. Required stable funding (Art. 428p – 428ag CRR 2.0)
   - Defines the general rules to calculate the amount of required stable funding and the RSF factors applicable to different assets and off-balance sheet exposures depending on their characteristics

\[
\text{NSFR} = \frac{\text{Available Stable Funding (ASF)}}{\text{Required Stable Funding (RSF)}} \geq 100\%
\]
**TLAC and MREL – additional capital requirements for institutions**

**TLAC**

Total loss absorbing capacity

- 21 Principles of the Financial Stability Board (FSB) for all G-SIIs ab 2019
- Standardised additional RWA-requirement for alle GSIIIs
  - 2019: 16% + capital buffer / 6% Leverage ratio
  - 2022: 18% + capital buffer / 6,75% Leverage ratio
- Regulatory Own Funds as a starting point + definition of specific requirements for additional bail-in capital

**MREL**

Minimum requirements eligible liabilities

- EU Initiative: Banking Recovery and Resolution Directive (BRRD) complemented by EBA RTS / Delegated Regulation and national implementation for all CRR-institutions
- Institutionspecific minimum ratio based on the resolution scenario acc. to resolution plan and the corresponding capital required for loss absorption and recapitalization of functions that cannot be liquidated
- Regulatory Own Funds as a starting point + definition of specific requirements for additional bail-in capital

Integration of FSB proposals into the European framework via CRR amendment + BRRD update for further clarification on TLAC and MREL interaction
BRRD is modified to allow for a harmonized implementation of TLAC and MREL

**Level of application**

**TLAC & MREL**: requirement on resolution entity level and subsidiary level; relevant entities defined by Resolution Authority  
**MREL**: waiver for subsidiaries possible (preconditions: same member state; own funds waiver exists)

**Requirement**

**TLAC**: EU G-SIIs; 18% RWA + buffer and 6.75% Leverage exposure measure (90% for subsidiaries of non-G-SIBs) + individual add-on + guidance  
**MREL**: all institutions; individual requirement max. 2x (minimum requirement + SREP buffer (P2R)) + buffer for market confidence + guidance

**Eligibility criteria**

**TLAC & MREL**: combination of FSB and BRRD criteria amended by requirements for capital instruments  
Instruments fully paid-up; not purchased or financed by group member, purchase not financed by the institution; subordinated (only for TLAC), not guaranteed or secured by group member, no netting rights, no incentives for early redemption, no early redemption clause for investor; call option only for issuer and subject to supervisory approval, repayment cannot be accelerated, interest independent from credit standing, PONV clause, collateralized guarantees within a group possible

**Excluded instruments**

**TLAC & MREL**: harmonized criteria derived from FSB and existing BRRD  
Covered deposits; deposits org. maturity <1year; deposits eligible for deposit guarantee; secured liabilities; client liabilities; fiduciary liabilities; institution liabilities org. maturity <7days; system operator liabilities rem. maturity <7days; tax liabilities; employee liabilities; critical service liabilities, liabilities to DGS, liabilities from derivatives; structured liabilities  
**MREL**: structured liabilities for which the principal amount is known in advance can be included

**Investments in eligible liabilities**

**TLAC holdings**: additional 5% threshold for trading positions maturity < 30days on gross basis; if exceeded: Inclusion of non-significant holdings on net basis in 10% CET1 threshold for non-significant investments in G-SIIs

**Disclosure & Reporting**

**TLAC**: at least semi-annual reporting: disclosure of main features analogously to existing own funds; ranking creditor hierarchy, amount of eligible liabilities, amount of pari passu instruments, amount of excluded liabilities  
**MREL**: disclosure and at least annual reporting of eligible liabilities incl. composition of maturity profile and insolvency ranking
Fundamental Review of the trading book
The new market risk requirements at a glance

Share of instruments designated to banking book over all instruments (TB+BB)

<table>
<thead>
<tr>
<th>Instrument Type</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting trading asset/liability</td>
<td>22%</td>
</tr>
<tr>
<td>Market making activity</td>
<td>10%</td>
</tr>
<tr>
<td>Equity investment fund</td>
<td>56%</td>
</tr>
<tr>
<td>Listed equity</td>
<td>21%</td>
</tr>
<tr>
<td>Options</td>
<td>16%</td>
</tr>
</tbody>
</table>

Material weaknesses of current approaches...

- Treatment of credit risk in the trading book
- Weaknesses of VaR approach
- Hedging and diversification
- Liquidity of trading book positions
- Transparency and comparability of RWA

... require fundamental review

1. **Banking book/trading book boundary** to be more objective
   - Additional tools for supervision

2. New **Standardised approach** increases risk sensitivity of RWA calculation
   - Marked increase of complexity

3. **Internal Model Method** using ES instead of VaR
   - Changes to model approval process
   - Floor based on standardised method
Fundamental Review of the Trading Book
General requirements and provisions

The financial instrument has to be assigned to the trading book!

1. Does the instrument belong to the Correlation Trading Portfolio?
   - Is the position processed on a trading desk?
   - Does an Underwriting Commitment exist?
   - Does a Net Short Position get evoked in the banking book?
   - ...

2. Is the position e.g.
   - A not-listed equity security?
   - A real estate holding?
   - A retail- and SME-loan?
   - Securitisation Warehousing?
   - A participation in a fund without the daily opportunity of a look through?
   - ...

3. Is a resale in the short run planned?
   - Shall be realised gains from short-term price movements?
   - ...

Designation to trading book UNLESS
Explicit permission!

The financial instrument has to be assigned to the banking book!

Positions which are by the distinction not defined as trading book positions have to be assigned to the banking book.
To take account of the principle of proportionality and allow smaller institutions the continued use of a simplified standardized approach for market risk, the following provisions are included:

- The current standardized approaches remain unchanged (Art. 326 to 361 CRR)
- All institutions will be able to use these approaches until the date of application of CRR II
- After the end of the transitional period, the use of the simplified standardized approach is limited to institutions with medium-sized trading books (Art. 325a CRR II)

<table>
<thead>
<tr>
<th>Small Trading Book</th>
<th>&lt;= 5%</th>
<th>&lt;= 50 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium Trading Book</td>
<td>&lt;= 10%</td>
<td>&lt;= 300 million</td>
</tr>
<tr>
<td>Large Trading Book</td>
<td>&gt; 10%</td>
<td>&gt; 300 million</td>
</tr>
</tbody>
</table>

- No market risk capital requirements, application of credit risk approaches
- Permanent use of existing market risk standardised approach possible
- FRTB approaches to be applied, multiplier of 65% during first 3 years

**Fundamental Review of the Trading Book**

**Revised standardized approach**

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Basel IV Regulatory Roadshow

PwC

April 2017
Fundamental Review of the Trading Book
Revised standardized approach

The draft CRR contains the revised standardized approach for market risk as described by the Basel Committee in BCBS 352. Changes as compared to the Basel text include:

- Preferential treatment for EU sovereigns and covered bonds when computing the Default Risk Charge
- Changes to the treatment of derivatives in the Default Risk Charge

1 Sensitivities-based Method (Art. 325e – 325l CRR 2.0)

   - Delta: A risk measure based on sensitivities of a bank’s trading book to regulatory delta risk factors
   - Vega: A risk measure that is also based on sensitivities to regulatory vega risk factors to be used as inputs
   - Curvature Risk: Non-linear risk

2 Default Risk Charge (Art. 325w CRR II)

   - A risk measure which captures the incremental risk not captured by the delta risk of price changes in the value of an option

3 Residual risk add-on (Art. 325v CRR II)

   - A risk measure to capture residual risk, not covered by 1. or 2.
   - CRR II: RTS on definition of exotic instruments
**Fundamental Review of the Trading Book**

Risk charge calculation for Delta and Vega Risk

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### Calculation approach for capital requirements

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Regulatory formula</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Allocation of positions to risk classes, buckets and risk factors</td>
<td></td>
<td>Risk assessment base for delta and vega risks are the sensitivities of the trading book positions</td>
</tr>
<tr>
<td>2. Calculation of weighted sensitivities per bucket via given supervisory RW</td>
<td>$s_{k,r_t} = V_t(r_t + 0.0001, c_s_t) - V_t(r_t, c_s_t) / 0.0001$</td>
<td>Find a net sensitivity across instruments to each risk factor $k$</td>
</tr>
<tr>
<td>3. Calculation of weighted sensitivities per bucket via given supervisory RW</td>
<td>$W_S_k = s_k RW_k$</td>
<td>The weighted sensitivity $W_S_k$ is the product of the net sensitivity (e.g. $s_k$) and the corresponding risk weight ($RW_k$)</td>
</tr>
<tr>
<td>4. Aggregation of weighted sensitivities per bucket</td>
<td>$K_b = \sqrt{\sum_{k=1}^{n} W_S_k^2 + \sum_{k=1}^{n-1} \rho_{kl} W_S_k W_S_l}$</td>
<td>The risk position for Delta (respectively Vega) bucket (b) must be determined by aggregating the weighted sensitivities to risk factors within the same bucket using the corresponding prescribed correlation $\rho_k$</td>
</tr>
<tr>
<td>5. Aggregation of capital requirements (EM) at asset class level</td>
<td>$EM = \sqrt{\sum_{b=1}^{m} K_b^2 + \sum_{b=1}^{m-1} \sum_{c=b+1}^{m} \gamma_{bc} S_b S_c}$</td>
<td>The Delta (respectively Vega) risk charge is determined from risk positions aggregated between the Delta (respectively Vega) buckets within each risk class, using the corresponding prescribed correlations $\gamma$</td>
</tr>
</tbody>
</table>

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Delta and vega risks are computed using the same aggregation formulae on all relevant risk factors in the Sensitivities-based Method. However, delta and vega risks must be calculated separately, with no diversification benefit recognised between delta and vega risk factors.
# SA-CCR & simplified SA-CCR: taking account of proportionality

<table>
<thead>
<tr>
<th>Full SA-CCR (BCBS 279)</th>
<th>Full SA-CCR refers to the approach proposed by the Basel Committee (BCBS 279)*</th>
<th>Size of on- and off-balance sheet derivative business &gt; 10% of total assets or &gt; 150 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simplified SA-CCR CRR II</td>
<td>Less granular requirements in comparison to Full SA-CCR</td>
<td>Size of on- and off-balance sheet derivative business &lt;= 10% of total assets and &lt;= 150 million</td>
</tr>
<tr>
<td>Original Exposure Method CRR II</td>
<td>A revision of the current Original Exposure Method</td>
<td>Size of on- and off-balance sheet derivative business &lt;= 5% of total assets and &lt;= 20 million</td>
</tr>
</tbody>
</table>

## Components to calculate the exposure amount for derivatives

*Calculation of \( EAD \) using SA-CCR*

\[
EAD_{SA-CCR} = \alpha \times (RC + \text{Multiplier} \times \text{AddOn})
\]

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alpha</strong></td>
<td>Supervisory factor ( \alpha = 1.4 )</td>
</tr>
</tbody>
</table>
| **Replacement Cost** | - Current replacement costs  
- Calculation depending on secured/unsecured transactions  
- Considering parameters of collateral agreements for secured transactions |
| **Multiplier** | - Accounts for over-collateralization and negative mark to market values  
- Reduces add-on in these cases |
| **AddOn** | - Potential future increase of current exposure  
- Depends on volatility of the underlying |
Large Exposure

Trading book
Offsetting long and short positions in different issues of one client is not permitted when the short position is senior to the long position.

Counterparty credit risk
SA-CCR, simplified SA-CCR or OEM has to be used, as applicable. MtM-method and IMM are no longer allowed.

CRMT / collateral
CRMT has to be applied for LE purposes accordingly when used for RWA purposes. Collateral effect has to be taken into account when calculating the exposure to the protection provider or issuer of the financial collateral (substitution).

Exemptions
Full exemptions for EU sovereign exposures will be repealed until 2022. Exemptions for trade exposures and default fund contributions will only applicable for qualified central counterparties.

No Tier 2 capital allowed
The large exposure definition and the large exposure limit refer only to the institution’s Tier 1 capital.

Limit breaches in exceptional cases
Institutions are required to report a plan for the timely return below the LE limit. EBA develops GL to specify the exceptional cases, the time considered appropriate for returning to compliance and the relevant measures to be taken by the institutions.

Lower LE limit
G-SIIIs are not allowed to incur exposures to another G-SII larger than 15% Tier 1.
**Equity investments in funds**

**Definition of Funds**

All collective investment undertakings (CIUs), including investment compartments thereof, which raise capital from a number of investors, with a view to investing it in accordance with a defined investment policy for the benefit of those investors.

**Regulated funds**

(UCITS or AIF that are allowed to be marketed in the EU)

- All underlying exposures of the funds are risk weighted as if they were directly held by the institution.
- In accordance with the limits set in the CIU’s mandate and relevant legislation as a sum of on-balance sheet, off-balance sheet and derivative exposures.
- If LTA or MBA is performed by a third party a factor of 1.2 applies to the risk weighted assets.
- To account of the increased risk because the institution has to rely on a third party instead of its own information.

**Unregulated funds**

Not applicable.

**Methods to calculate the risk weighted exposure amount of a CIU in the banking book**

- **Look-through approach** (LTA):
  - All underlying exposures of the funds are risk weighted as if they were directly held by the institution.
- **Mandate-based approach** (MBA):
  - In accordance with the limits set in the CIU’s mandate and relevant legislation as a sum of on-balance sheet, off-balance sheet and derivative exposures.
  - If LTA or MBA is performed by a third party a factor of 1.2 applies to the risk weighted assets.
  - To account of the increased risk because the institution has to rely on a third party instead of its own information.
- **Fall-back approach** (FBA):
  - Applicable risk weight = 1.250%
# Other Basel III changes

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SME-Factor</strong></td>
<td>- Slightly reduced SME-Factor</td>
</tr>
<tr>
<td></td>
<td>- Additional factor of 0.85 introduced</td>
</tr>
<tr>
<td><strong>Infrastructure Financing</strong></td>
<td>- Factor of 0.75 applied to all positions</td>
</tr>
<tr>
<td></td>
<td>- Available to SA- and IRB-positions</td>
</tr>
<tr>
<td><strong>IFRS 9</strong></td>
<td>- Transitional regulation during the period 1(^{st}) January 2019 until 31(^{st}) December 2023 for IFRS banks, by steps of 20%</td>
</tr>
<tr>
<td></td>
<td>- Outstanding: Effects and dependencies to exposure and EL calculation not clarified! Treatment in 2018?</td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td>- Reporting relief for small institutions</td>
</tr>
<tr>
<td></td>
<td>- National development banks are excluded from CRD</td>
</tr>
<tr>
<td></td>
<td>- Reporting of the financial impact of implementing the ITS on reporting until 2019</td>
</tr>
<tr>
<td><strong>Disclosure</strong></td>
<td>- Disclosure requirements apply on a sliding scale depending on the institutions’ size</td>
</tr>
<tr>
<td><strong>Investment Funds and Financial Holding Companies</strong></td>
<td>- Investment firms (systemic: requirements of amended CRR; non-systemic: CRR requirements before amendments)</td>
</tr>
<tr>
<td></td>
<td>- Financial Holding Companies (FHC) (Introduction of a direct authorization requirement)</td>
</tr>
</tbody>
</table>
Overview of disclosure requirements of phase I (BCBS 309) and phase II (BCBS 356)

**BCBS 309 (Phase I)**
- Credit risk
- Counter-party credit risk
- Securitizations
- Market risk
- Accounting and RWA
- Remuneration
- Capital components
- Encumbrance
- Liquidity risk
- Operational risk
- G-SIB
- Interest rate risk in the banking book

**BCBS 356 (Phase II)**
- Regulatory ratios
- Prudent valuation
- TLAC (Total loss absorbing capacity)
- Hypothetical RWA
- Countercyclical capital buffer
- Changes in market- and operational risks

**Phase II**
- BCBS 255 (G-SIB)
- BCBS 197 (Remuneration)
- BCBS 221 (Capital)
- BCBS 270 (LR)
- BCBS 272 (LCR)
- BCBS 295 (NSFR)
- BCBS 107 (Basel II: OpRisk)
- BCBS 368 (Interest rate risk)
# New disclosure requirements at a glance

The Basel Committee bundles and complements existing proposals for disclosure in an comprehensive consultation paper (BCBS 356)

## Existing papers
- Capital
- G-SIB indicators
- Leverage Ratio
- LCR
- NSFR
- Remuneration

## Phase I (BCBS 309)
- Risk Management & RWA
- Reconciliation balance sheet to regulatory
- Credit risk
- Counterparty credit risk
- Securitizations
- Interest rate risk in the banking book

## Phase II (BCBS 356)
- Key Metrics
- Floor
- Prudent Valuation
- TLAC
- Countercyclical capital buffer
- Market risk
- OpRisk
- Hypothetical RWA

## Entry into force
- 2016 – 2019: open
- 2016/2017: 2017/2019
- 2017/open: open

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Basel IV Regulatory Roadshow
PwC

April 2017
Revised Pillar 3 Disclosure Requirements: Challenges and conclusions

Scope of disclosure
Significant subsidiaries will probably have to meet a lot of the disclosure requirements also on single entity level

Disclosure intervals
In addition to the annual disclosure a lot of data must be disclosed every half year or quarterly

Reconciliation of balance sheet and regulatory exposure
• Annual reconciliation from accounting to regulatory consolidation
• Annual detailed reconciliation of balance sheet values (exact balance sheet classification, book values) to regulatory risk types and reconciliation of carrying amounts to regulatory exposure values for CR SA and IRBA
• Balance sheet and regulatory information for each individual transaction required
• Other challenges particularly in risk provisioning, off-balance sheet derivatives, balance sheet netting and collateral, prudent valuation...

Extent of disclosure
The number of disclosure tables and forms increases with phase II to 67 tables (instead of 40 tables in Phase I)

- Banks must ensure more frequent disclosure in time with the publication of annual reports and are obliged to make the disclosure in a single document
- In particular, the objectives of transparency, comparability and coordination are in focus of the revisions
- Comparability should be ensured between the institutions by specifying formatting templates
Motivation for a revision of the SA for Credit Risk

Shortfalls on current SA led to the publication of two CP’s

Reasons for the revision of SA

Weaknesses of current SA

Insufficient risk sensitivity

- Basel IV objectives
  - Aim to balance risk sensitivity and complexity

- Simple feasibility instead of drawing on internal modelling

- Cutback of national discretions in order to increase comparability in capital requirements

Outdated calibration

- Introduction of mandatory capital floors based on revised SA frameworks

National discretions

Proposals by the Basel Committee

1st Consultative Document (BCBS 307)

- Consideration of replacing references to external ratings with a limited number of risk drivers
- The alternative risk drivers vary based on the particular type of exposure and have been selected on the basis that they are simple, intuitive, readily available and capable of explaining risk across jurisdictions

Consultation

2nd Consultative Document (BCBS 347)

- Reintroduction of the use of ratings, in a non-mechanistic manner, for exposures to banks, corporates and SL
- Modification of the proposed risk weighting of real estate loans, with loan-to-value ratio as the main risk driver
- Proposals for exposures to multilateral development banks, retail and defaulted exposures, and off-balance sheet items
# SA approach for credit risk
Increased risk weights for participations and unrated banks

## Current rumors – SA

### Institutions
- Four grades instead of three under the SCRA: A+=30%; A = 40%; B = 100%; C = 150%
- Banks with single A rating receive a 30% risk weight under the ECRA

### Corporates
- Corporates with ratings between BBB+ and BBB- receive a risk weight of 75% (instead of 100%)
- Risk weight for unrated corporates and investment grade reduced from 75% to 65%; risk weight for SME reduced from 85% to 75%

### Retail
- Risk weight reduction from 75% to 45% for certain credit cards

### Subordinated debt, participations
- Covered Bonds: CRR approach 1:1 copied by Basel

## Exposure Classes

### Risk weights based on external ratings
- Risk weights ranging between 20 and 150% (due diligence required)
- Unrated institutions: "Standardised Credit Risk Assessment" with risk weights of 50, 100 and 150%

### Risk weights based on external ratings
- Risk weights ranging between 20 and 150%
- Unrated institutions: 100%

### Multiplier for SME
- Risk weight = 0% for specific development banks
- Other: external rating
- Risk weight = 0% for specific development banks
- Other: external rating
- Risk weight = 85% for SME
- Unrated: 100%

### Granularity criterion and low value criterion
- Risk weight = 75%
- Unchanged risk weight = 75%
- Risk weight = 100% if not all of the criteria (product criterion, low value criterion) are met

### Institutions: Risk weight = 250%/deduction
- Risk weight = 150% for subordinated debt
- Risk weight = 250% for equity instruments
**SA approach for credit risk**

LTV based RW and new classes for real estate

### Current rumors – SA

**Residential Real Estate**
- Risk weight below 55% (if LTV = 20%)
- Risk weight above 55% (if LTV = 75%)
- IPRE: risk weights of the 2. CP reduced by 10-20%

**Commercial Real Estate**
- Risk weight of 60% if LTV < 55%
- Risk weight of the counterparty if LTV > 55%
- IPRE: no „Realkreditsplitting“ allowed

→ changed definition of „depends on CF“ (not only CF of the estate but also the CF of the entire company)

→ housing companies use the LTV-table which does not depend on the CF
### SA approach for credit risk
Introduction of specialised lending exposures and other changes

#### Exposure Class

<table>
<thead>
<tr>
<th>Regulations for exposures to sovereigns, central banks and public sector entities are not in the scope of BCBS 347.</th>
</tr>
</thead>
</table>

#### New SA (CRR)

**Specialised Lending**

- Project financing: pre-operational 130% and operational 100%
- Object finance receives risk weight of 80%

**CCF and other changes**

- Credit conversion factors (CCFs)
  - UCC = 10% instead of 0%; others = 40%; trade financings = 20%
- FX-Adjustment factor: only for retail exposures

#### Revised SA (BCBS 347)

- If emission ratings are available and approved: Risk weight ranging between 20 and 150% (analogue corporations)
- If no ratings available: Risk weight depending on the phase of the project: 100 to 150%
- Minimum credit conversion factor for off-balance positions: 10% + overall increase of CCFs
- Consideration of currency mismatch (loan currency ≠ client’s main currency)

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_Controversial rumors – SA_

**Specialised lending**

- Project financing: pre-operational 130% and operational 100%
- Object finance receives risk weight of 80%

**CCF and other changes**

- Credit conversion factors (CCFs)
  - UCC = 10% instead of 0%; others = 40%; trade financings = 20%
- FX-Adjustment factor: only for retail exposures
Revised securitisation framework

**Securitisation Internal Ratings-Based Approach (SEC-IRBA)**

**Securitisation External Ratings-Based Approach (SEC-ERBA)** (If permitted in jurisdiction)

**Securitisation Standardised Approach (SEC-SA)**

**Basel IV**

- Reduced complexity
- The revised hierarchy relies on the information that is available to the bank and on the type of analysis that it can perform on a specific transaction
- Reduction of mechanistic reliance on external ratings
- The capital requirements have been significantly increased, commensurate with the risk of securitisation exposures
- Strengthening of risk sensitivity
- Introduction of minimum risk weight of 15% for securitisations
- Introduction of minimum risk weight of 100% for re-securitisations
- Introduction of caps to risk weights of senior tranches and originators

**Specific changes to earlier consultations**

- Elimination of granularity adjustment if using external ratings
- Adjustments to effect of maturity on capital requirements
**Impact on overall RWA**

Example calculations show significant increase of RWA

### Increase of RWA in exposure class banks

<table>
<thead>
<tr>
<th>Large universal bank</th>
<th>Special institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 27% CRR BCBS 347</td>
<td>+ 110% CRR BCBS 347</td>
</tr>
</tbody>
</table>

- Exposures in **unrated banks are the biggest drivers** of an increase in RWA
- Risk weights increase from 20% to 50% in case of omission of applicability of the sovereign risk weight

### Increase of RWA in exposure class subordinated debt and participations

<table>
<thead>
<tr>
<th>Large universal bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 150% CRR BSBS 347</td>
</tr>
</tbody>
</table>

- **Increase of risk weights from 100% to 250% for participations** leads to significant RWA uplift

### Overall impact on RWA

Large universal bank

+ 36%

Further reasons for an increase in RWA due to BCBS 347
- Implementation of exposure classes IPRE and ADC
- Implementation of exposure class specialized lending
# Proposed changes to the IRB approach

## Future of IRBA & BCBS 362 and TRIM

<table>
<thead>
<tr>
<th>Basel Committee</th>
<th>BCBS 362</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modification proposal of Basel Committee on Banking Supervision (BCBS) concerning the Internal Rating Based Approach (IRBA), both the advanced (A-IRB) and the foundation IRB (F-IRB). The suggested changes of the consultation paper include:</td>
<td></td>
</tr>
<tr>
<td>• <strong>Reduction of complexity of the regulatory framework and improvement of comparability</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Reduction of excessive variability in capital requirements for credit risk</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EBA</th>
<th>Future of IRBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necessary regulatory action to improve the comparability of IRB models, i.e.:</td>
<td></td>
</tr>
<tr>
<td>• <strong>Application area of IRB models</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Definition of default and treatment of defaults</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Application of credit risk mitigation techniques</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Calibration and validation of risk parameters</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Treatment of defaulted positions</strong></td>
<td></td>
</tr>
<tr>
<td>Implementation due to the end of the year 2020 (Implementation phase 2 – 2.5 years)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ECB</th>
<th>Targeted Review of Internal Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-annual review processes for internal models of ECB supervised institutions as a part of the Single Supervisory Mechanism (SSM). Main objectives:</td>
<td></td>
</tr>
<tr>
<td>• <strong>Recovery of trust in IRB models</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Increase of reliability and adequacy of the models</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Increase of comparability and quality improvement of internal models</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Determination of consistent standards and supervision guidelines</strong></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of discretions in the IRB approach used for particular risk positions</td>
<td></td>
</tr>
<tr>
<td>Adjustment of definition of default and higher requirements for parameter estimation procedures</td>
<td></td>
</tr>
<tr>
<td>On-site review of internal models and data request carried out by the ECB</td>
<td></td>
</tr>
</tbody>
</table>

PwC

Basel IV Regulatory Roadshow

PwC

April 2017
Concern regarding the quality of internal models
BCBS 362: The committee's response

Focus
- Reduction of complexity and increase of comparability
- Reduction of excessive variability of capital requirements

Main contents
1. Scope of internal models
   No future use of F-IRB and A-IRB approaches for specific portfolios, if model parameters are not estimated reliably or if modeling requirements not fulfilled

2. Floors for model parameter
   Implementation of Floors for PD/LGD/EAD in order to ensure a minimum of conservatism for portfolios for which IRB approaches remain allowed

3. Methods of parameter estimation
   More specifications for parameter estimation methods and treatment of collateral are provided in order to reduce the RWA variability for portfolios for which IRB approaches remain allowed

Next steps
- Consultation ran until 24 June 2016
- QIS has been conducted in 2016 to test the feasibility and sensitivity of proposed changes
- BCBS wants to finalise the changes before the end of 2016

April 2017
**BCBS 362**

Prohibition of IRBA for corporates, institutions and SPVs

- IRBA not allowed for (i) banks and other financial institutions, (ii) large corporates (total assets >50bn euro) and (iii) equity instruments
- A-IRB (with estimation of LGD und CCF) not allowed for corporates with revenues >200m euro
- For specialised lending only the standardised approach (SA) or the Supervisory Slotting Criteria Approach (SSCA) are permitted
- So far no changes for exposures to sovereigns, but a prohibition of IRBA is considered

**BCBS proposal concerning application area**

**Expected impact shown in Examples**

<table>
<thead>
<tr>
<th>Corporation</th>
<th>Rating</th>
<th>RW A-IRB</th>
<th>RW SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosch</td>
<td>AA-</td>
<td>11%</td>
<td>20%</td>
</tr>
<tr>
<td>Siemens</td>
<td>A+</td>
<td>14%</td>
<td>50%</td>
</tr>
<tr>
<td>BASF</td>
<td>A</td>
<td>18%</td>
<td>50%</td>
</tr>
<tr>
<td>Daimler</td>
<td>A-</td>
<td>23%</td>
<td>50%</td>
</tr>
<tr>
<td>Deutsche Telekom</td>
<td>BBB+</td>
<td>29%</td>
<td>100%</td>
</tr>
<tr>
<td>RWE</td>
<td>BBB</td>
<td>35%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Ø Risk weights</strong></td>
<td></td>
<td>22%</td>
<td>62%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPV</th>
<th>Rating</th>
<th>RW IRB</th>
<th>RW SSCA</th>
<th>RW SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energies</td>
<td>A-</td>
<td>25%</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>Ship financing</td>
<td>CCC</td>
<td>248%</td>
<td>250%</td>
<td>120%</td>
</tr>
<tr>
<td>Project financing</td>
<td>B</td>
<td>151%</td>
<td>115%</td>
<td>150%</td>
</tr>
<tr>
<td>Real estate financing</td>
<td>BB+</td>
<td>54%</td>
<td>90%</td>
<td>120%</td>
</tr>
<tr>
<td><strong>Ø Risk weights</strong></td>
<td></td>
<td>120%</td>
<td>131%</td>
<td>125%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Rating</th>
<th>RW A-IRB</th>
<th>RW SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>DZ-Bank</td>
<td>AA-</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>MünchenerHyp</td>
<td>AA-</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>DekaBank</td>
<td>A</td>
<td>28%</td>
<td>50%</td>
</tr>
<tr>
<td>Hypo Real Estate</td>
<td>A-</td>
<td>35%</td>
<td>50%</td>
</tr>
<tr>
<td>Commerzbank</td>
<td>BBB+</td>
<td>44%</td>
<td>50%</td>
</tr>
<tr>
<td>HSH Nordbank</td>
<td>Baa3</td>
<td>65%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Ø Risk weights</strong></td>
<td></td>
<td>34%</td>
<td>40%</td>
</tr>
</tbody>
</table>

The partial prohibition of the IRB approach might lead to an increase of RWA by a factor of 2 - 3 for top corporates and to an increase by 20-80% for receivables from banks. For specialized lending, the examples clearly show the loss of risk-sensitivity when switching from the IRB to the CR SA approach and an increase in RWA of around 60% (when excluding the Shipping exposure in the depicted example).
**BCBS proposes to apply PD, LGD and CCF floors in portfolios that remain eligible for the use of IRB**

**BCBS proposed parameter floors**

<table>
<thead>
<tr>
<th></th>
<th>Unsecured</th>
<th>Secured</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate</td>
<td>5bps</td>
<td>25%</td>
</tr>
<tr>
<td><strong>LGD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortgages</td>
<td>5bps</td>
<td>-</td>
</tr>
<tr>
<td>QRRE transactors</td>
<td>5bps</td>
<td>50%</td>
</tr>
<tr>
<td>QRRE revolvers</td>
<td>10bps</td>
<td>50%</td>
</tr>
<tr>
<td>Other retail</td>
<td>5bps</td>
<td>30%</td>
</tr>
<tr>
<td><strong>EAD/CCF</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* BCBS states that it is **cautious about making the floors too high** because it might incentivise banks to take part in more risky activities and intends to test alternative values in a QIS during **2016**

**Expected impacts for banks**

- **Revision of segmentation criteria used for LGD and CCF** in order to minimize the effects of the new floors being applied
- **Increase of capital requirements** where the floors for LGD (secured or unsecured) and CCF are activated
- **Change of masterscales** where the first rating bucket has a PD lower than the new floor, which implies the recalibration of the associated models
- **Less inclination to use IRB because the output capital floors still apply** (BCBS is still considering (i) an aggregate output calibrated between 60-90% or (ii) output floors at a more granular level)
The changes to parameter estimation will affect LGD modeling and credit risk mitigation strategies.

**BCBS proposed changes to the estimation of risk parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PD</strong></td>
<td>- No significant changes, but rather specifications to ensure consistency (e.g. TTC PD, use of downturn years for calibration)</td>
</tr>
</tbody>
</table>
| **LGD**   | - Increasing haircuts to 50% for receivables, CRE/RRE and other physical collateral in the F-IRB approach  
- Decreasing minimum LGD values for secured exposures  
- No minimum collateralisation requirements as in Basel II  
- Separate downturn add-on component with possible floor |
| **CCF**   | - Banks using F-IRB are required to use supervisory CCFs set out in the SA  
- Estimation of CCFs using internal models is no longer allowed for non-revolving commitments under A-IRB  
- Additional constraints on estimation practices are proposed |
| **M**     | - Maturity under A-IRB determined based on the expiry date of a facility (the use of the repayment date would be prohibited) |
| **CRM**   | - Conditional guarantees are prohibited under A-IRB  
- Own estimates of collateral haircuts not allowed under F-IRB  
- Only full substitution approach (PD of the guarantor) allowed for the recognition of guarantees and credit derivatives under F-IRB |

**Expected impacts for banks**

- **Revision of banks’ collateralisation strategies**
- **Adjustment of the LGD modelling framework** to incorporate the supervisory-determined floor formula and a potential floor to the downturn add-on
- **Revision of the scope of use of CCF own estimates** with the SA being applied for a larger range of exposures
- **Amendment of the CRM policies, practices and types of eligible collaterals**
Background of the revised CVA risk capital charge framework

**Objectives of the revised CVA risk capital charge framework**

1. **Consideration of exposure component within the revised CVA Risk Capital Charge framework**
   → Exposure component is an important driver of the CVA.

2. **Alignment to accounting best practices in connection with the accounting CVA**
   → Development of ‘Best Practices’ for the determination of the accounting CVA (IFRS 13)

3. **Alignment to Fundamental Review of the Trading Book (FRTB)**
   → Market risk factors are a main driver to derivative’s exposure component

**Components of the revised CVA risk capital charge framework**

<table>
<thead>
<tr>
<th>FRTB-CVA framework</th>
<th>Named after FRTB to reflect consistency</th>
<th>Basic CVA (BA-CVA) framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMA-CVA</td>
<td></td>
<td>BA-CVA</td>
</tr>
<tr>
<td>SA-CVA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Deleted after consultation*

- IMM
- Balance sheet
- IMM
- Balance sheet
- IMM
- SA-CCR
**Standardised Measurement Approach (SMA)**

**Uniform calculation approach for OpRisk**

**Business indicator**

- **Interest-, operating lease, and dividend component**
  - Criticism that banks with a high interest margin must hold relatively high capital requirements
  - Considering interest-bearing assets in the calculation

- **Financial component**
  - Considering the absolute net result of trading and banking book

**Current rumors – OpRisk**

- Only three bucket instead of five buckets in discussion
- No differentiation with regard to bank size
- Significantly reduced capital requirements

**Bucket 1**

- Smaller banks (BI up to €1 billion) don’t have to evaluate loss data for the time being

**Bucket 2 – 5**

- Capital requirement equals the BI multiplied by a factor

**Capital Requirement acc. SMA**

The capital requirement acc. SMA for pillar 1 is always binding, regardless of whether the OpRisk value is smaller in Pillar 2, equal to or greater.
**IFRS 9 substitutes IAS 39**

**New C&M**

### IAS 39

**Amortised Cost**
- LaR
  - fix / determinable CFs
  - no active market

**HtM**
- fix / determinable CFs
- active market
- Hold to maturity

**FVOCI (with Recycling)**
- AfS
  - residual category

**FVPL**
- all equity-/debt-titles with trading intention
- Fair Value option

### IFRS 9

**Debt instruments**
- Business model „hold“ + SPPI fulfilled
- Amortised Cost
- yes
- no

**Equity instruments**
- Trading intention
- FVOCI Option
- no
- yes

**Derivatives**
- FVOCI (without Recycling)
- FVPL
- yes

**FVOCI (with Recycling)**
- FVPL
- no

---

Basel IV Regulatory Roadshow
PwC

April 2017
Significant effects at a glance

**Treatment at implementation date**

- Changes in the assessment base (book value) IFRS 9 for RWA, the leverage ratio, large exposure and own funds (deductions)

**Treatment of loan loss provisions and expected losses**

- Differences between CR-SA and IRBA
  - CR-SA: impairments have to be considered in the exposure value
  - IRBA: Comparison of impairments with Expected Loss (EL)
- IAS 39 value as assessment base under static consideration of changes

**Prudential Filters**

- Elimination of AFS category under IFRS 9
- Financial assets of category FVOCI are not subject to requirements of prudential filters

**Prudent Valuation**

- IFRS 9 may lead to different classification of assets compared to IAS 39
  - Previously measured at fair value; can possibly be valued at cost and vice versa → this leads to new assets subject to Prudent valuation
# Significant effects at a glance

<table>
<thead>
<tr>
<th>Definition of default</th>
<th>• Regulatory requirements for the determination of past due must be procedurally included in the guideline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity buffer</td>
<td>• Impact on operational requirements of Art. 417 CRR due to the business model, “Hold” under IFRS 9</td>
</tr>
<tr>
<td>FINREP</td>
<td>• Changes in FINREP templates due to IFRS 9 → final version of the template depends on the IFRS 9 endorsement</td>
</tr>
<tr>
<td>Market risk</td>
<td>• New classification criteria, limiting the possibility of switching positions between banking and trading book for reasons of regulatory arbitrage</td>
</tr>
<tr>
<td>OpRisk</td>
<td>• Possible impacts on business indicator due to IFRS 15</td>
</tr>
</tbody>
</table>

Basel IV Regulatory Roadshow
PwC
April 2017
Impact of first implementation

Impact on own funds at implementation date of IFRS 9

- **Dynamic:** Consideration of P&L and OCI losses of the ongoing FY as well as non-yearly earnings after supervisory approval → Application of current IFRS 9-values for Q1 2018 (Art. 36 (1) a CRR in conjunction with Art. 13 No. 1 Delegated Act (EU) No. 241/2014; Art. 26 Par. 2 CRR)
- **Static:** No recognition of adjusted deductions or earnings under the year if no audit opinion exists; as long as implementation losses are offset → Application of IAS 39-values (Art. 26 (2) CRR)
- **Special regulations:** remains to be seen

Impact on accounting value due to changed valuation under IFRS 9

- RWA
- Leverage Ratio
- Large Exposure
- Own funds (Deductions)
**Definition of default**

1. If the obligor is past due more than 90 days, a default shall be considered to have occurred acc. to Art. 178 CRR. The following exceptions do not lead to a default:
   - Materiality thresholds and technical defaults
   - Special provisions for the retail business

2. If the obligor is unlikely to pay his obligations, a default shall be considered to have occurred acc. to Art. 178 CRR. In case that a SCRA (Specific credit risk adjustment) has been recognised, unlikeliness of the payment is confirmed (art. 178.3b).

3. Contractual modifications trigger stage transfer to stage 2 or even to stage 3.

Current EBA’s IRBA project could further affect IFRS 9, e.g. change in materiality threshold for default definition.
Treatment of regulatory risk provisions and capital shortfall (1/3)

IFRS 9 Impact on regulatory risk provisions

Impact on assessment base according to the multi-stage model for risk provisions

Stage 1
Performing → 12-month-EL (Gross interest calculation using effective interest rate)

Stage 2
Credit deterioration → Lifetime-EL (Gross interest calculation using effective interest rate)

Stage 3
Impairment → Lifetime-EL (Net interest calculation using effective interest rate)

Potential impacts on capital shortfall

- **Increase of risk provisioning** according to IFRS 9: Definition and differentiation of the relevant allowances
- **Status-quo deficit**: Decrease, or as the case may be, building of a surplus within the IFRS 9 implementation (expected increase of risk provisioning)
- **Status-quo surplus**: Increase due to expected increase of risk provisioning under IFRS 9

Dependent on the situation, greatest parts of additional, accounting risk provisions can be compensated by regulatory capital
# Treatment of regulatory risk provisions and capital shortfall (2/3)

<table>
<thead>
<tr>
<th>IRBA</th>
<th>Regulatory</th>
<th>IFRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD:</td>
<td>Through the cycle</td>
<td>Point-in-time</td>
</tr>
<tr>
<td></td>
<td>Floor regulations 0.03% Art. 163 par. 1 CRR</td>
<td>No floor required</td>
</tr>
<tr>
<td></td>
<td>(under Basel IV 0.05%)</td>
<td></td>
</tr>
<tr>
<td>LGD:</td>
<td>Dependent on economic cycle Art. 181 Abs. 1b C</td>
<td>Workout LGD</td>
</tr>
<tr>
<td></td>
<td>Direct &amp; indirect costs Art. 5 Abs. 2 CRR</td>
<td>Only direct costs</td>
</tr>
<tr>
<td></td>
<td>Risk free (interest) rate plus markup</td>
<td>Effective rate</td>
</tr>
<tr>
<td></td>
<td>Downturn factor</td>
<td></td>
</tr>
</tbody>
</table>

IRB shortfall calculation, comparing IRB EL and Accounting provision.

<table>
<thead>
<tr>
<th>CR-SA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ECL accounting provision shall lower exposure value based on art. 111 CRR</td>
<td></td>
</tr>
<tr>
<td>➔ Fallback on accounting value for respective accounting standard</td>
<td></td>
</tr>
<tr>
<td>➔ If needed, change of accounting value due to reclassification under IFRS 9</td>
<td></td>
</tr>
</tbody>
</table>
Treatment of regulatory risk provisions and capital shortfall (3/3)

- **IFRS 9 impacts**

  ![Diagram](image)

  **Comparison:** Allowances from accounting vs. regulatory expected losses

<table>
<thead>
<tr>
<th>IFRS 9</th>
<th>Regulatory law</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1</strong></td>
<td>12 months - EL</td>
<td>Only if the duration of the instrument &lt; 12 months: 12 months EL acc. to IFRS 9 &lt; than EL₁₂Mon, as regulatory law always assesses LIP = 1.</td>
</tr>
<tr>
<td><strong>Stage 2</strong></td>
<td>Lifetime EL</td>
<td>Difference between both, as regulatory law does not know a lifetime treatment concerning non-defaulted receivables</td>
</tr>
<tr>
<td><strong>Stage 3</strong></td>
<td>Lifetime EL</td>
<td>Equality is due to probability-weighted scenario treatment not possible; Impact n/a, as ELBE determination is not yet clear</td>
</tr>
</tbody>
</table>
**Treatment of IFRS 9 effects on capital under CRR II**

With the endorsement of IFRS 9 into EU law, institutions are expected to face severely higher risk provisions for financial instruments, resulting from the calculation of lifetime expected losses for financial instruments categorised as stage 2 under IFRS 9. As a transitional provision, the inclusion of these increased risk provisions into CET 1 capital is phased in over a five year horizon:

- The reduction in regulatory capital caused by the increased risk provisions for stage 2 financial instruments is partly reversed by adding the difference between the regulatory (12m) EL and the Risk provisions (EL$_{lifetime}$) (adjustment amount) to CET 1 capital.
- The adjustment amount is subject to a multiplier so that starting in 2014, the full effect of IFRS 9 risk provisions is included in CET 1.
- CRR II contains no provisions with regard to the calculation of exposure values or the regulatory EL calculation.
- As IFRS 9 is applied from 2018 while CRR II enters into force in 2019, there is no transitional provision in place for 2018.
**Significant effects at a glance**

<table>
<thead>
<tr>
<th>1</th>
<th>Treatment of loan loss provisions and expected losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Differences between CR-SA and IRBA</td>
<td></td>
</tr>
<tr>
<td>– CR-SA: impairments have to be considered in the exposure value</td>
<td></td>
</tr>
<tr>
<td>– IRBA: Comparison of impairments with Expected Loss (EL)</td>
<td></td>
</tr>
<tr>
<td>• IAS 39 value as assessment base under static consideration of changes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Prudential filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Elimination of AFS category under IFRS 9</td>
<td></td>
</tr>
<tr>
<td>• Financial assets of category FVOCI are not subject to requirements of prudential filters</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Prudent valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFRS 9 may lead to different classification of assets compared to IAS 39</td>
<td></td>
</tr>
<tr>
<td>• Previously measured at fair value; can possibly be valued at cost and vice versa → this leads to new assets subject to Prudent valuation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Definition of default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory requirements for the determination of past due must be procedurally included in the guideline.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Liquidity buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact on operational requirements of Art. 417 CRR due to the business model, “Hold” under IFRS 9</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6</th>
<th>FINREP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes in FINREP templates due to IFRS 9 → final version of the template depends on the IFRS 9 endorsement</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7</th>
<th>Market risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>New classification criteria, limiting the possibility of switching positions between banking and trading book for reasons of regulatory arbitrage</td>
<td></td>
</tr>
</tbody>
</table>

Changes in the assessment base (book value) IFRS 9 for RWA, the leverage ratio, large exposure and own funds (deductions)
EBA’s and ECB’s activities regarding the IRB approach
EBA is developing detailed regulation on key aspects of the IRB approach

Consultation
Final GL/RTS
Implementation

1. IRB Assessment Methodology
   - Mainly focused on the assessment of IRB compliance by competent authorities
   - Provides clarification on various topics covered in the subsequent phases
   - Covers all types of supervisory assessment

2. Definition of default
   - Since definition of default is a fundamental concept, it must be addressed before the estimation of risk parameters
   - Changes will apply to both the IRB and STA
   - Requires adjustment to both current policies and historical data

3. Risk parameters
   - Comprehensive EBA guidelines on estimation of risk parameters
   - Recalibration of PD and LGD in Phase 3 will be based on the adjusted definition of default

4. Credit Risk Mitigation
   - No plans to introduce significant changes
   - Most EBA developments on hold because the Basel Committee is currently working on the review of the CRM framework
   - The scope of the work mandated by the CRR covers several RTS

Across phases: Transparency
Implementation of Basel III disclosure proposals (Pillar 3 disclosures)

Structure and timeline of the regulatory review

Done
Done
Done
Q2 2017 (expected)

<table>
<thead>
<tr>
<th>Consultation</th>
<th>Final GL/RTS</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done</td>
<td>Done</td>
<td>Q2 2017 (expected)</td>
</tr>
<tr>
<td>July 2016</td>
<td>September 2016</td>
<td>Q3 2017 (expected)</td>
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<tr>
<td>immediate</td>
<td>2020 year-end</td>
<td>2020 year-end</td>
</tr>
</tbody>
</table>

Basel IV Regulatory Roadshow
PwC
April 2017
**TRIM as ECB’s answer to the weaknesses in credit risk models**

**TRIM** is an abbreviation for the Targeted Review of Internal Models, which will be performed in systemically important financial institutions during 2016-2018.

### Key objectives of TRIM

1. Assess reliability and comparability of rating systems
2. Promote consistency by publishing supervisory guidelines and giving recommendations to institutions
3. Enhance expertise on internal models available within SSM
4. Ensure that risks and capital requirements are calculated correctly

### Key components of TRIM

- **Coordination with EBA/BCBS** regulatory developments to accommodate upcoming changes
- **Leverage of IRB model stocktake 2015** (7000 models were analysed on a granular level to arrive at 2400 model groupings)
- **The SSM claims that it will use a targeted approach** based on material regulatory topics requiring harmonization with varying tools and degrees of intensity used for different types of models
- **Integration of TRIM-related activities** in regular model validation (infrastructure, tools, processes & methodologies) starting with 2018
- **Although TRIM is lead by SSM model experts**, external consultants will also be involved for targeted reviews
**RTS on materiality threshold for past due obligations**

Structure and application of materiality threshold

**Objective:** Increased comparability of capital requirements across banks in the same jurisdiction, while ensuring that local particularities are properly considered.

### Absolute component

- **Sum of all past due amounts** related to the credit obligations of the obligor **towards the banking group**
- Lower or equal to **€100** for **retail exposures***, and **€500** for all **other exposures** (non-retail)

### Relative component

- **Percentage of the credit obligations past due** in relation to the total amount of all on-balance sheet exposures to the obligor (excluding equity exposures)
- Lower or equal to **1%**. Competent authorities can raise this level up to **2.5%**

### Conditions

- Thresholds shall be applied no later than 31 December 2020 and remain consistent over time.
- Competent authorities shall notify EBA of the levels of the thresholds set in their jurisdictions, which should reflect a level of risk that they consider to be reasonable.
- Harmonisation of practices shall reduce the burden for cross border banks.
- Major impacts in the calculation of RWA/EL, and indirectly on other exposures through PD/LGD estimates.

---

* Retail exposures as defined in CRR article 147 (2d).
** For exposures secured by residential or SME commercial real estate in the retail exposure class, as well as exposures to public sector entities.
Guidelines on the application of the default definition

Default triggers and operationalisation

**Implementation**

- **Date of application:** 01/01/2021
  - CA may accelerate the timeline of this transition at their discretion

- **Significant implementation period for IRB banks**
  - SA banks also impacted

- **Introduced changes to be verified by Internal validation**

- **Permission from CA should be obtained by 01/01/2021**
  - Final deadline for submitting application to be agreed with CA

**Requirements on the application of CRR article 178 on the definition of default:**

<table>
<thead>
<tr>
<th>Past due criterion</th>
<th>Indications unlikeness to pay</th>
<th>External data</th>
<th>Return to a non-default status</th>
<th>Consistency in application</th>
<th>Retail exposures</th>
<th>Documentation, internal policies, risk management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counting of days past due</td>
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<td>Sum of all amounts past due on a group basis on a daily basis</td>
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<td>Conditions for technical default recognition</td>
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<td>Non-accrued status</td>
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<td>Credit risk adjustments</td>
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<td>Sale of credit obligations</td>
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<td>Distressed restructuring</td>
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<td>Bankruptcy</td>
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<td>Other Indications of unlikeness to pay</td>
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<td>Governance Process</td>
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<td>Alignment of the internal vs. external default definition</td>
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<td>Quality of associated documentation</td>
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<tr>
<td>Assess impact from conceptual differences</td>
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<tr>
<td>Apply margin of conservatism (if needed)</td>
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<tr>
<td>Minimum conditions for a reclassification to a non-defaulted status</td>
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<td>Monitoring of the effectiveness of the policy</td>
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<tr>
<td>Ensure the default of a single obligor is identified across all exposures</td>
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<tr>
<td>Default across types of exposures</td>
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<tr>
<td>Level of application</td>
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<tr>
<td>Facility level, including implementing a pulling effect criterion</td>
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<tr>
<td>Obligor level, with relevance to the treatment of joint exposures</td>
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<tr>
<td>Timeliness of the identification of default</td>
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<tr>
<td>Document default definition policies</td>
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<tr>
<td>Internal governance (approval, validation and review)</td>
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</tr>
</tbody>
</table>
## Summary and your next steps

<table>
<thead>
<tr>
<th>Capital requirements</th>
<th>The Basel Committee differentiates clearly between the topics, where an increase of the RWA is aimed (Market Risk, securitisations) and other (standardised approaches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The impacts on the institutes depend strongly on the business activity and the used methods</td>
</tr>
<tr>
<td></td>
<td>The calibration of the Basel Committee is not finished yet</td>
</tr>
<tr>
<td>Implementation costs</td>
<td>The implementation costs will be significantly higher than they were for the implementation of Basel III</td>
</tr>
<tr>
<td></td>
<td>Especially banks using internal models will be affected with the requirement of parallel calculation with the standardised method</td>
</tr>
<tr>
<td></td>
<td>The highest implementation costs should be in the subject area of market risk</td>
</tr>
<tr>
<td>Strategic implications</td>
<td>Identify strategic impact on business lines and products</td>
</tr>
<tr>
<td></td>
<td>Recalibrate and optimise business mix and asset portfolios, expect increased focus on fee business</td>
</tr>
<tr>
<td></td>
<td>Identify key drivers of product specific cost of capital under Basel IV</td>
</tr>
<tr>
<td></td>
<td>Restructure products offered and adapt pricing to reflect these drivers</td>
</tr>
<tr>
<td></td>
<td>Assess impact on regulatory requirements and adjust capital plan accordingly</td>
</tr>
<tr>
<td></td>
<td>Identify measures to raise capital and/or deleverage balance sheet</td>
</tr>
</tbody>
</table>

### What has to be done now

- Analyse at an early stage the impacts on your bank, especially topics that have potentially high impacts or where the Basel requirements are already final. Perform test calculations!
- Develop your response to the Basel IV reforms
- Develop a project plan to implement the new requirements
Thank you for your attention.

**Martin Neisen**  
Partner – Global Basel IV Leader  
Phone: +49 69 95853328  
Mobile: +49 15153800865  
E-Mail: martin.neisen@de.pwc.com

**Árpád Balázs**  
Partner – Assurance Leader  
Phone: +36 1 461 9163  
Mobile: +36 30 202 0925  
E-Mail: arpad.balazs@hu.pwc.com

**Emőke Szántó-Kapornay**  
Manager – FS Assurance -  
Local Contact for Basel IV  
Phone: +36 1 461 9295  
Mobile: +36 30 689 5460  
E-Mail: emoke.szanto-kapornay@hu.pwc.com

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