Effectively Preparing for the EBA's New Definition of Default by 2020

Dr Petr Zemcik, Senior Director, Economics & Business Analytics
Maria Valle Del Olmo, Associate Director-Senior Economist, Economics & Business Analytics

July 2019

Agenda

1. The Big Picture
2. EBA documents on the Definition of Default (DoD)
3. Regulatory Technical Standards (RTS) on the materiality threshold for credit obligations past due
4. Guidelines (GL) on the application of the DoD under Article 178
5. Is my institution ready? Checklist

Presenters

Content Solutions – Economics & Business Analytics

Petr Zemcik is a Senior Director at the Moody's Analytics London office who manages of a team of risk modelers in London and Prague offices. He frequently serves as an engagement lead and a head modeler for projects across several lines of business in Europe, Africa, and the Middle East to design and validate PD/LGD/EAD credit risk models for IFRS 9, A-IRB, and stress testing. He previously worked at CERGE-EI, a joint workplace of the Center for Economic Research and Graduate Education of Charles University in Prague and the Economics Institute of the Academy of Sciences of the Czech Republic, and at Southern Illinois University in Carbondale. He has published numerous articles on econometric methodology and on real estate bubbles in peer-reviewed professional journals such as Journal of Real Estate Economics and Finance, Journal of Housing Economics, and Journal of Multivariate Analysis. Petr holds a Ph.D. and MA in Economics from the University of Pittsburgh and MSc in Econometrics and Operations Research from the University of Economics in Prague.

Maria Valle Del Olmo is an Associate Director at the Moody's Analytics London office. Her responsibilities include leading client projects regarding capital and impairment forecasting and stress testing, particularly for retail and SME portfolios. During her career at Moody's, Maria has been involved in onsite client projects including an end-to-end IRB submission for a main UK challenger commercial bank and the development of an IFRS9 project for a middle sized overseas retail bank. Maria had previously worked for two major global banks and a well-known data analytics company. During her experience Maria has covered a wide spectrum of credit risk models including IRB, business as usual, stress testing, provisioning and economic capital models. She holds an MSc in Mathematics by the University Complutense of Madrid.

1

The Big Picture

Key Regulatory Documentation

Overview

Since its creation in 2011, the European Banking Authority (EBA) has been actively engaged in the creation of

» Regulatory Technical Standards (RTS)

» Guidelines (GL)

aimed at providing a single set of harmonised prudential rules for financial institutions throughout the EU.

The set of harmonised rules (the "Single Rulebook") is expected to ensure comparability of capital requirements across the EU and to help create a level playing field.

In this context, the EBA has also extensively worked on the development of an **IRB roadmap,** with the aim of reducing RWA variability across institutions using IRB models.

As part of this effort, the EBA has completed a number of regulatory products, covering topics identified as potential drivers of variability across institutions.

Some of the products already finalised by the EBA are:

IRB assessment methodology

- RTS on IRB assessment methodology (EBA/RTS/2016/03)

Definition of default (Dod)

- RTS on the materiality threshold of credit obligations past due (EBA/RTS/2016/06)
- GL on the application of the Definition of Default under Article 78 (EBA/RTS/2016/07)

Risk parameters estimation and treatment of defaulted assets

- GL on the estimation of PD, LGD and treatment of defaulted exposures (EBA/GL/2017/16)
- RTS on the specification of the nature, severity and duration of an economic downturn (EBA/ RTS/2018/04)
- GL for the estimation of LGD appropriate for an economic downturn (EBA/GL/2019/03)

The target deadline for the implementation IRB roadmap is 31 December 2020

Impacted areas

The changes are expected to have significant impact for banks, across different areas

Governance

Banks will need to perform a **gap analysis** and update their **internal policies** to reflect the new requirements.

IT

Significant IT effort is expected in terms of implementation of the new definition, particularly to ensure **timely identification of default** , including unlikeliness to pay requirements and back-casting historical **data** to recreate the new default definition.

Processes

The internal processes should be reviewed and updated, to gather the necessary information in a timely manner.

Modelling

Modelling teams need **assess the impact of the change in default in their IRB models** and if material, **recalibrate** the rating systems to the new definition. As IRB models are often **feeder models** to other models, the changes may impact **also on IFRS 9 and Stress Testing models**.

Validation

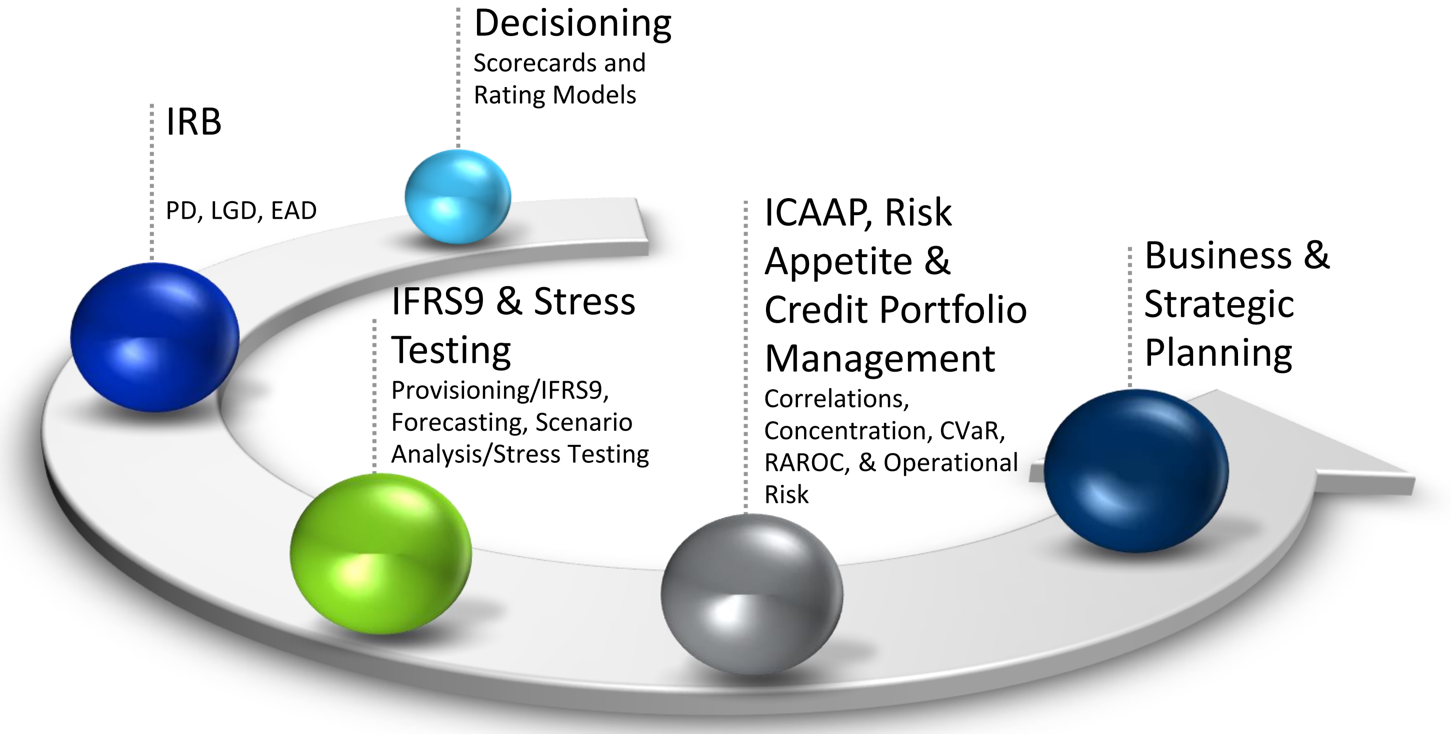
Changes in the rating systems as a result of the implementation of the new definition are required to be validated by the **Internal Validation** function. Adequate **Margin of Conservativism** is required when the new DoD cannot be fully recreated in the historical period considered in the reference datasets.

Audit

Audit should review regularly the robustness and effectiveness of the **process** used by the institution for the identification of default

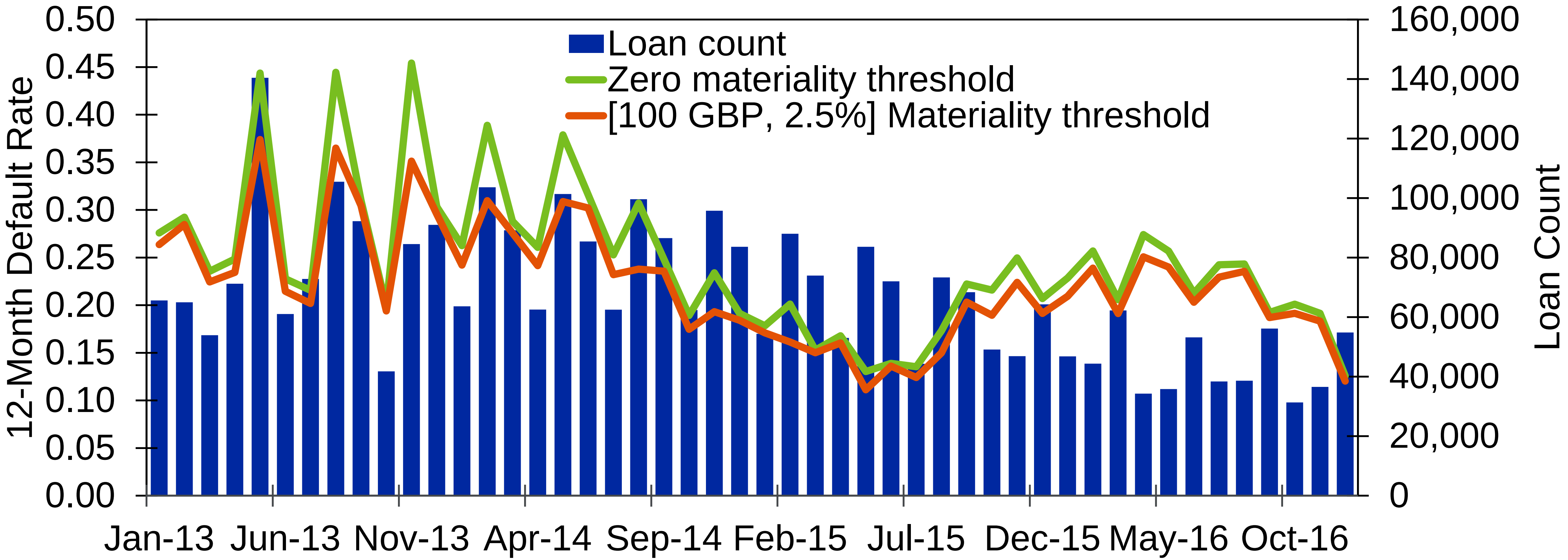
Affected Models

Standard Model Landscape



Small Difference for the UK Mortgages

UK RMBS Data – European Data Warehouse



2

EBA documents on the Definition of Default (DoD)

Linking the new DoD to CRD IV and CRR

EBA documents on the Definition of Default (DoD) (1/3)

The implementation of the Basel III rules in the EU is done via

1. The Capital Requirements Directive (CRD IV)
2. The Capital Requirements Regulation (CRR)

The CRD IV / CRR legislative package came into force in the EU in January 2014.

The CRR (regulation (EU) 575 / 2013) details the prudential requirements for credit institutions. The EBA has the mandate to develop a number of Regulatory Technical Standards (RTS) and Guidelines (GL) in connection with some CRR articles.

The following table summarises some of the documents finalised so far:

Area	Regulatory products	EBA code	CRR article mandate
IRB assessment methodology	RTS on IRB Assessment Methodology	(EBA/RTS/2016/03)	Articles 144 (2), 173 (3), 180(3b)
Definition of Default	RTS on the materiality threshold of credit obligations past due	(EBA/RTS/2016/06)	Article 178 (6)
	GL on the application of the Definition of Default under Article 78	(EBA/RTS/2016/07)	Article 178 (7)
Risk parameter estimation and treatment of defaulted assets	RTS on the specification of the nature, severity and duration of an economic downturn (EBA/ RTS/2018/04)	(EBA/ RTS/2018/04)	Article 502
	GL on the estimation of PD, LGD and treatment of defaulted exposures	(EBA/GL/2017/16)	Article 502
	GL for the estimation of LGD appropriate for an economic downturn	(EBA/GL/2019/03)	Article 502

Two regulatory products relating to the DoD

EBA documents on the Definition of Default (DoD) (2/3)

Definition of Default

Article 178

Regulation (EU) No 575 / 2013
(CRR)

RTS

Regulatory Technical Standards (RTS)

On the **materiality threshold** for credit obligations past due

(EBA / RTS / 2016 / 06)

Applicable for firms using either the **IRB** or the **Standardised approach** for regulatory capital calculation.

GL

Guidelines (GL)

On the **application of the Definition of Default** (DoD) under Article 178

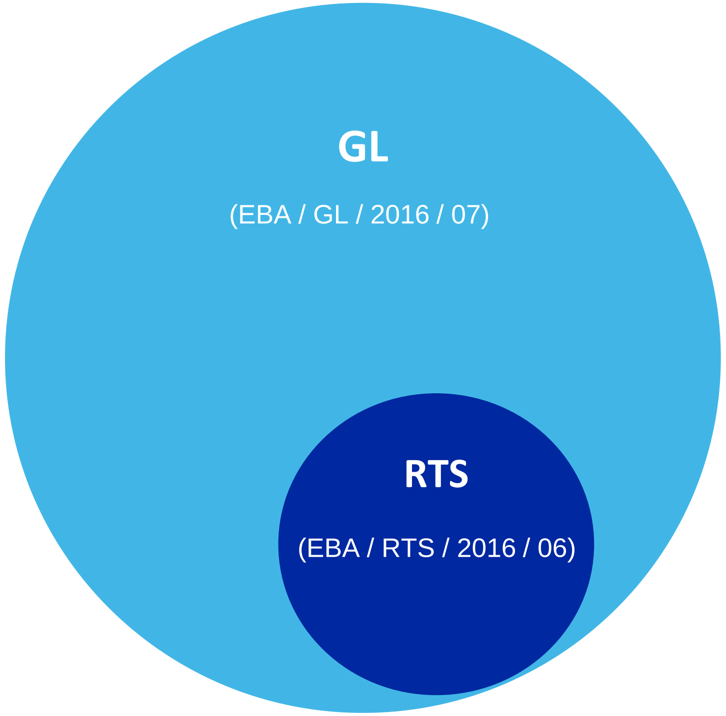
(EBA / GL / 2016 / 07)

Applicable for firms using either the **IRB** or the **Standardised approach** for regulatory capital calculation.

In addition, the EBA published an opinion on the use of 180 days past due (EBA / Op/ 2017/ 17) which applies only to banks using IRB approach for regulatory capital calculation.

An overview of the RTS and the GL

EBA documents on the Definition of Default (DoD) (3/3)



RTS on the materiality threshold for credit obligations past due (EBA/RTS/2016/06)

The RTS **specify the conditions according to which a competent authority shall set the threshold for credit obligations past-due**.

» Cover **one aspect of the definition of default**, which regards the threshold against which the materiality of a credit obligation past due is assessed. The RTS is referenced in the Guidelines.

» It is expected to have a significant implications for banks and represents a step forward towards the comparability of default risk and capital requirements across the EU.

» It is been endorsed European Commission a transformed into **EU regulation** (Commission delegated Regulation (EU) 2018 / 171). Therefore it is legally binding and directly applicable in all Member States.

» **Deadline for the application is no later than 31 December 2020**.

GL on the application of the DoD under Article 178 (EBA/GL/2016/07)

The GL **specify the requirements on the application of Article 178** of the CRR on the definition of default.

» Cover **all the aspects** regarding the definition of default, that is, the entirety of Article 178.

» Addressed to **competent authorities** and to **financial institutions.**
- Competent authorities should comply with the guidelines by incorporating them in their supervisory processes and legal framework. The RTS is referenced in the Guidelines.
- By extension, the financial institutions within each jurisdiction should comply with the guidelines as adopted by their supervisor.

» **Deadline for the application is no later than 01 January 2021**.

3

RTS on the materiality threshold for credit obligations past due

Summary of EBA / RTS/ 2016 / 06

RTS on the materiality threshold for past due obligations (1/4)

Key elements

The materiality threshold consists of an **absolute** and a **relative** component:

- absolute component - **maximum amount for the sum of all amounts past due owed by an obligor** to the institution, the parent undertaking or any of its subsidiaries
- relative component – **percentage reflecting the amount of the credit obligation past due in relation to the total amount of all on-balance sheet exposures** to the institution, the parent undertaking and any of its subsidiaries.

» The obligor should be considered defaulted **when both the absolute and the relative threshold are exceeded during 90 consecutive days**.

» For retail exposures the definition can be applied at facility level.

» Different absolute components of the threshold between **retail** and **non-retail.**

The following table summarises the thresholds values specified in the regulation:

	Absolute threshold	Relative threshold *
Retail	Shall not exceed 100 EUR	1 %
Non retail	Shall not exceed 500 EUR	1 %

» The RTS gives some **flexibility to competent authorities to adopt a relative threshold different than 1%, but always in the range between 0% and 2.5%**, if considered more reasonable within their jurisdiction (needs to be justified to the EBA).

The RTS on the materiality threshold for credit obligations past due (EBA/RTS/2016/06) was endorsed transformed into EU regulation on February 2018 (Regulation (EU) 2018/171) . It is **legally binding** and directly applicable to all Member States.

Deadline for the application is 31/12/2020

Examples of Application

RTS on the materiality threshold for past due obligations (2/4)

European Central Bank (ECB)

» In order to comply with the RTS, the ECB published Regulation (EU) 2018/1845 on the materiality threshold for credit obligations past due, applicable to at all significant institutions within the Single Supervisory Mechanism (SSM).

» In line with the EBA recommendations, the following thresholds apply:
- **Retail** - 1% relative threshold, € 100 absolute threshold.
- **Non-Retail** – 1% relative threshold € 500 absolute materiality threshold.

Prudential Regulatory Authority (PRA)

» Following the release of the Policy Statement 7/19, the PRA has amended Article 11.4 of the Supervisory Statement 11/17 in order to comply with the EBA requirements. Financial Institutions in the PRA jurisdiction have to comply with the requirements by December 2020.

» In line with the EBA recommendations, the following thresholds apply:
- **Retail** - 0% relative threshold, £0 absolute threshold.
- **Non-Retail** – 1% relative threshold, a sterling equivalent of €500 absolute materiality threshold.

Other EU competent authorities

Competent authorities may determine the absolute threshold in local currency equivalent of €100 / €500 or re-set it to better align with the domestic price levels.

Thresholds Significantly Differ Within the ECB Jurisdiction

RTS on the materiality threshold for past due obligations (3/4)

Situation before the implementation

	Absolute threshold		Relative threshold	
	Retail	Non-retail	Retail	Non-retail
Belgium	bank-specific		0%	
Cyprus	€ 500	€ 1,000	0%	10%
France	€1 or bank-specific		0% or bank-specific	
Germany	€ 100		2.50%	
Greece	€50 Mortgages: €100 or bank-specific	€500 or bank-specific	2% of credit limit or 5% of regular instalment or bank-specific	
Ireland	Only bank-specific			
Italy	€ 0	€ 0	5%	
Malta	€ 0		0%	
Netherlands	Only bank-specific			
Portugal	€50 or bank-specific		0%	
Spain	Only bank-specific			

Source: ECB Costs and benefits analysis

Target situation

All banks in the SSM

by December 2020

	Absolute threshold	Relative threshold
Retail	100 EUR	1 %
Non retail	500 EUR	1 %

*Banks under the ECB jurisdictions should have notified the ECB (before June 2019) the exact date they intend to comply with the deadline.

A Bit of History… and Deadlines on the Horizon

RTS on the materiality threshold for past due obligations (4/4)

Oct 2014
First draft published – start of the consultation

Jan 2015
Consultation ended, 22 responses collected and published on the EBA's website.

Jun 2016
Final RTS published by EBA reflecting the public consultation feedback. Passed to the European Commission.

Oct 2017
EC publishes the draft EU regulation

Feb 2018
Published in the Official Journal of the EU.

Dec 2020
Application deadline <u>(31/12/2020)</u>

4

GL on the application of the DoD under Article 178

Overview of EBA / RTS / 2016 / 07

Overview GL on the application of the DoD under Article 178

Overview

- The deadline for the application is 1 January 2021
- Applicable for firms using either the **IRB** or the **Standardised approach** for regulatory capital calculation.
- Institutions using the IRB approach should assess and, where necessary, **adjust their rating systems** (PD, LGD & EAD) so as to reflect the new definition of default, applying the following principles:
  - **Adjust the historical data** based on the new definition of default, particularly **as a result to the introduction of the new materiality threshold.**
  - Assess the impact on **all risk parameters** and on **RWAs** after the relevant adjustments on historical data.
  - Include additional **margin of conservativism (MoC)** in order to compensate for possible distortions in risk estimates resulting from inconsistent definition of default in the historical data used for modelling purposes.
- All changes to IRB models due to the implementation of the new default definition are required to be verified **Internal validation function**

Topics

- The guidelines provides detail requirements for the following aspects of the DoD:

Past due criterion → Unlikeliness to pay → External data → Return to non-default → Consistency → Retail Exposures → Documentation, management & processes

Past Due Criterion in the Identification of Default

Topics covered in the GL on the application of the DoD under Article 178 (Topic 1/ 7)

Past due criterion – summary of requirements

This section of the GL specifies the requirements for :

» The **counting of days past due,** including:

- ✓ details for specific cases such as:
  - changes in the payment schedule
  - disputes between the obligor and the institution
  - changes of obligor due to merger & acquisitions
- ✓ requirements regarding the **calculation** (i.e. sum of all amounts past due that are related to any credit obligation of the obligor) and the **frequency of update**, which should ensure a **timely identification of default**.

» **Technical past dues ,** which should **not to be classified as defaults**.

» The **materiality threshold,** in line with the requirements of the RTS (EBA/RTS/2016/06) previously discussed.

» Specific guidance/requirements for **Exposures to central governments, local authorities and public sector entities** as well as a set of **provisions applicable for factoring and purchased receivables.**

Challenges and / or areas of attention

01 The introduction of the **new material thresholds** is expected to have as significant impact in risk parameters and capital requirements. Models will need be to recalibrated to the new default definition.

02 All detected errors that lead to a **technical past due situations** should be rectified by the institutions in the shortest timeframe possible. For IRB institutions, technical past dues should not be flagged as defaults in the reference dataset.

03 The calculation of sum past due should allow for a **timely identification of default** and up-to-date and consistent whatever the scope is (decision making, internal risk management, reporting, etc.)

Indications of Unlikeliness to Pay

Topics covered in the GL on the application of the DoD under Article 178 (Topic 2 / 7)

Past due criterion | **Unlikeliness to pay** | External data | Return to non-default | Consistency | Retail Exposures | Documentation, management & processes

Unlikeliness to pay – summary of requirements

This section of the GL provides details regarding the requirements necessary for an obligor to qualify as unlikely to pay.

» Non-accrued status
» Specific Credit Adjustment (SCRA)
» Sale of a credit obligation at a material credit-related loss
  - Non credit-related sales are not to be considered default.
  - The credit related loss (L) is considered material L > 5%, where
    - ✓ L = (E – P) / E
    - ✓ E is outstanding amount of the obligations subject to sale.
    - ✓ P = Price agreed for the sold obligations

P is the price agreed for the sold obligations

» Distressed restructuring
  - Concessions towards debtors facing financial difficulties, likely to result in a diminished financial obligation.
  - The diminished financial obligation (D0) is considered material if D0>1%, where
    - ✓ D0 = (NPV0-NPV1) / NPV0
    - ✓ NPV0 is the net present value of cash flows (including unpaid interest and fees) expected under contractual obligations before the changes in the terms and conditions of the contract, discounted using the customer's original effective interest rate.
    - ✓ NPV1 is the net present value of the cash flows expected based on the new arrangement, discounted using the customer's original effective interest rate.

» Bankruptcy.
» Other indications of unlikeliness to pay - including the use of external information.

Challenges and / or areas of attention

01 Implementation the **detailed requirements** regarding the definition of **distressed restructuring formula**, may imply significant IT effort, particularly om the timely identification of default.

02 Institutions should consider information available in **external databases** (credit registers, public information sources, and financial analyst's reports,…) indicating financial difficulties of the debtor as indicator of unlikeliness to pay.

03 Institutions should have clear policies and procedures of application of the criteria for unlikeliness to pay.

Application of the Definition of Default to External Data

Topics covered in the GL on the application of the DoD under Article 178 (Topic 3 / 7)

Past due criterion | Unlikeliness to pay | **External data** | Return to non-default | Consistency | Retail Exposures | Documentation, management & processes

External data – summary of requirements

IRB banks using external data for the purpose of estimating their internal models, should take into account the following requirements:

» Verify whether the definition of default used in the external data is in line with Article 178 of the CRR.

» Verify whether the definition of default used in external data is consistent with the definition of default as implemented by the institution in terms of:

- the counting of days past due
- the type and level of materiality threshold
- the definition of distressed restructuring
- the type and level of specific credit risk adjustments and criteria to return to non-default status

» Document performed analysis and identified differences.

» For each difference (1) assess whether the alignment to the internal definition of default would lead to an increased or decreased default rate or if it is possible to determine (2) perform appropriate adjustments in the external data or be able to demonstrate that the difference is negligible in terms of impact in risk parameters and own funds.

Challenges and / or areas of attention

01 Institutions should be able to demonstrate competent authorities the broad equivalence with the internal DoD.

02 When differences exist but are not possible to overcome with adjustments in the external data, institutions are required to adopt an appropriate Margin of Conservativism (MoC).

Criteria for the Return to a Non-Defaulted Status

Topics covered in the GL on the application of the DoD under Article 178 (Topic 4 / 7)

Past due criterion | Unlikeliness to pay | External data | **Return to non-default** | Consistency | Retail Exposures | Documentation, management & processes

Return to non-default – summary of requirements

This section of the GL provide the requirements for the **cure definition**.

» In terms of **probation period** the guidelines specify it should be

a. At least **3 months** for all types of defaults (except distressed restructured)
b. At **least 1 year** for defaults due to **distressed restructuring**

» The **probation period** can be different for different types of exposures.

Challenges and / or areas of attention

01 Banks should define clear criteria and internal policies reflecting the definition of cure.

02 Banks should monitor the effectiveness of the policy in terms of:

- Impact in cure rates
- Impact on multiple defaults
- changes of status

03 An excessive number of multiple defaults would be an indication that the bank should update the policy.

Consistency and Retail Exposures

Topics covered in the GL on the application of the DoD under Article 178 (Topic 5-6 / 7)

Past due criterion | Unlikeliness to pay | External data | Return to non-default | **Consistency** | **Retail Exposures** | Documentation, management & processes

Consistency in the application of the DoD

This section of the GL specifies the requirements for the consistent application of the definition of default:

- Across single obligors
- Across types of exposures

Retail Exposures - Level of application

- For retail exposures, the DoD can be applied at facility level.
- Banks should choose the level of application (facility vs. obligor) in a way that reflects their internal risk management practices.
- Banks can apply the DoD at the facility level for some types of retail exposures and at the obligor level for some other type of exposures (e.g. Other Retail vs. Retail SME asset classes).
- Even when the DoD is applied at facility level, if there are indications of unlikeliness to pay that affect the overall situation of the obligor rather that of the individual exposures, all the exposures to the obligor should be considered defaulted **regardless of the level of application of the DoD**.

Challenges and / or areas of attention

01 Where the exchange of client data among different legal entities within an institution is not possible due to **consumer protection regulations**, **bank secrecy or other legislation** institutions should inform their competent authorities of this impediment and estimate the materiality.

02 If the unique identification of defaults across the different legal entities, geographies, etc. is excessively burdensome for the institution – e.g. requiring the development of overly complex mechanisms - banks can deviate from this requirements if they can demonstrate that there are very few obligors in common and their exposure is not material (e.g. retail).

03 Ensure that the **internal** and **external** figures reflect a situation where all exposures are correctly classified.

Documentation, Policies and Risk Management Process

Topics covered in the GL on the application of the DoD under Article 178 (Topic 7 / 7)

Documentation, policies and process – summary of requirements

Timeliness identification of default

» Automatic processes such as counting days past due should be performed on a daily basis.

» Manual processes should be updated with a frequency that guarantees the timely identification of default.

» Control mechanisms should ensure that the relevant information is used in the default identification process.

Documentation

» Document policies regarding the DoD including all triggers for the identification of default and the cure criteria.

» Produce specifications for the definition of default.

» Keep an updated register of the definition of default.

Governance

» Adopt adequate mechanisms and procedures in order to ensure that the DoD is implemented and used in a correct way.

Challenges and / or areas of attention

01 Where the exchange of client data among different legal entities within an institution is not possible due to **consumer protection regulations**, **bank secrecy or other legislation** institutions should inform their competent authorities of this impediment and estimate the materiality.

02 The daily calculation requirement for automatic processes may imply significant IT efforts for some financial institutions.

03 Institutions to update their IT specifications and to keep a register of the DoD. Internal Audit reviews regularly the robustness and effectiveness of the process.

A Bit of History… and Deadlines on the Horizon

Timeline for GL on the application of the DoD under Article 178

Sep 2015
Consultation Paper on the GL first published (EBA/CP/2015/15).

Jan 2016
Four months consultation period ends.

Jul 2016
EBA/GL/2016/07 draft published.

Questionnaire is sent out to banks to inquire information about the expected impact.

Sep 2016
EBA publishes the Quantitative Impact Study (QIS) related to the questionnaire.

Mar 2017
Competent authorities communicate to the EBA their intention to comply with the GL.

Jan 2021
Application deadline (**01/01/2021**)

New Definition Will Reduce Unwarranted RWA Variability

Quantitative impact assessment hints at a modest increase in the capital charge

EBA's QIS contains a qualitative and a quantitative part to better assess the DoD impact:

Qualitative

Responses to the EBA questionnaire re-affirmed that some of the RWA variability stems from key differences in terms of DPD rule, materiality thresholds across banks.

Treatment of SCRA
Contagion effect
Materiality threshold
Probation period
Sale of credit obligations
Technical default recognition

Quantitative

Using banks' self-reported data in conjunction with COREP EBA found that the impact on SA banks might be negligible, while a change in the capital charge is on the cards for IRB Banks where the new DoD has an impact on the estimated risk parameters.

ΔDR | $\Delta\, LGD$ due to $\Delta CR, \Delta RR$

ΔEL | ΔRWA | $\Delta ELBE$

CET-1 Impact

New default definition will likely reduce the average Common Equity Tier 1 ratio of around 20 basis points for IRB Banks leading to a modest increase in capital charge.

$$\Delta CAR_{CET1} = \frac{CET1 + \Delta CET1}{RWA + \Delta RWA} - \frac{CET1}{RWA}$$

5

Checklist

Is My Institution Ready?

Checklist

1

Gap analysis

Perform detailed **gap analysis** covering all aspects of the DoD framework. Areas covered should include data, processes, systems, models & policies.

2

Remediation

Design a remediation plan with clear timelines and responsibilities aimed at **addressing the identified gaps**.

3

Implementation

Produce IT specifications to translate the new requirements in the internal bank's IT systems and retrospectively apply the new default definition to the historical data. Maintain a **register** of the changes to the default definition.

4

Documentation

Review **internal policies** to reflect the new requirements and ensure compliance with regulations.

5

Modelling

Assess the impact of the new DoD **on risk parameters**, including the dependencies with other models.

Perform re-calibrations of PDs, LGDs and EADs to the new default definition and more generally to the new requirements of the IRB regulatory roadmap.

6

Impact assessment

Conduct **assessment** to understand the **impact on re-calibrated parameters and** in terms of Risk Weighted Assets (RWA).

Q&A

Question? Contact us at help@economy.com

MOODY'S ANALYTICS

United States
121 North Walnut Street
Suite 500
West Chester PA 19380
+1.610.235.5299

United Kingdom
One Canada Square
Canary Wharf
London E14 5FA
+44.20.7772.5454

Australia
Level 10
1 O'Connell Street
Sydney, NSW, 2000
Australia
+61.2.9270.8111

Prague
Washingtonova 17
110 00 Prague 1
Czech Republic
+420.22.422.2929

moodysanalytics.com