UniCredit response to the EBA consultation on draft regulatory technical standards (RTS) specifying an economic downturn and Guidelines related to the estimation of loss given default (LGD) appropriate for conditions of an economic downturn.

UniCredit Group supports EBA's efforts to harmonize IRB framework and welcomes the opportunity of participating to the consultation on the European Banking Authority (EBA) Second *Draft RTS on the Specification of the Nature, Severity and Duration of an Economic Downturn*, as well as the *Guidelines for the estimation of LGD appropriate for an economic downturn".*

We are aware of the importance to improve and ensure the credibility of Risk Weighted Assets (RWA) reducing its variability, in particular regarding the downturn identification and LGD estimation, that can be particularly challenging.

Nonetheless, given the significant impact these RTS and Guidelines can have on the RWA, we would like to raise in the following some issues that in our opinion need further clarification or amendments.

In more detail, regarding the RTS to identify an economic downturn, we deem that the EBA list of economic factors which are relevant for the purpose of specifying the nature of an economic downturn for a considered type of exposure is complex to retrieve, especially on a 20-year look back horizon. Furthermore, in case of more than one downturn, we are concerned about the choice of identifying the most severe downturn period, and we suggest to use the average, that is in our opinion, more representative of a downturn realization.

With respect to the Guidelines, instead, we deem some further details are needed on many aspects, particularly those related to the recognition the observed impact of downturn and its interactions with other estimation purposes (ELBE, IFRS9, Stress Test), as well as those related to the interaction between downturn, model component, and attribution of the downturn effect at overall LGD level in the estimation approaches proposed. Finally we deem critical the adoption of the Reference Value Approach as a challenger for the estimation, especially where a solid estimation has been possible, and we rather propose to use it as an alternative to the adoption of a +20% add-on when the observed or estimated impact is not available.

Finally, we deem important to provide clarifications regarding what mentioned in Article 5 (Final Provisions) with respect to the entrance into force on the 31st of December 2019 of the RTS on nature, severity and duration of an economic downturn. Indeed, since all the IRB Repair Program - including also the EBA Guidelines on LGD downturn estimation - should be targeted by end - 2020, we deem fundamental to ensure full alignment of the implementation of this complementary guidelines, given also of the strict interconnections to each other, and considering that the full package is aimed at reducing the unjustified variability of the LGD estimates.

Questions on RTS

Q1: Do you have any concerns around the workability of the new approach (e.g. data availability issues, burden on the analysis, split between the definition of the economic downturn and its impact on the internal loss data)?

With regard to the workability of the new approach we have two major concerns. In particular:

- On the **Severity** of the economic downturn, as specified in Article 3 of the RTS, **the choice of identifying the downturn period as the most severe one** remains, in our opinion, critical. In case of more than one downturn period, we deem that all of them represent relevant empirical evidences that should be considered in calibrating the downturn estimate. Since Article 181(3) of the CRR related to severity, nature and duration, does not necessarily require to use the worst case scenario, we suggest to consider, instead of the most severe, the most representative scenario, that could be calculated as an average value of the observed economic factors within all the historically occurred downturn events. **Furthermore, the Credit Factors and LGD** (conditioned to the analysis of their significance with the dynamics of the loss rates as correctly stated also in Section 5 of the Guidelines) **should be representative not necessarily of the "worst downturn period" ever registered, but of the downturn period if characterized by higher values then the long run**.

- On the **Nature** of downturn, **it would be beneficial to better define "what is a downturn event" taking into account the different characteristics of each economic factors considered** (e.g. for GDP a downturn event is when a negative yearly variation occurs). Moreover, Article 2 reports a **long list of economic factors** aimed at identifying the nature of an economic downturn that are **hardly retrievable and not always available on a 20 years time span**. As shown in the table below on the EUROSTAT (official EU Statistical Bureau) statistics, a number of requested series are not available or do not cover the whole time series requested.

  Table 1- List of economic factors

Economic factor	Eurostat code	Eurostat Index name	Index specification	Years available
GDP			Current prices, million purchasing power standards	
	tec00001	Gross domestic product at market prices	Euro per capita	2006 – 2017
			Million euro	
	tec00114	GDP per capita in PPS Index	(EU28 = 100)	2005 – 2016
			Chain linked volumes (2010), euro per capita	
	sdg_08_10	Real GDP per capita	Chain linked volumes, percentage change on previous period, per capita	2000 – 2017
	tgs00003	Regional gross domestic product by NUTS 2 regions - million EUR		2005 – 2016
	tgs00004	Regional gross domestic product (million PPS) by NUTS 2 regions		2005 – 2016
	teina010	Gross domestic product, current prices	Million EUR - Seasonally and calendar adjusted data	2015 – 2017
Unemployment rate	tgs00010	Unemployment rate by NUTS 2 regions		2006 – 2017
	tgs00053	Long-term unemployment rate (12 months and more) by NUTS 2 regions	% of active population	2006 – 2017
	tps00203	Total unemployment rate	%	2006 – 2017
			Total	
	tipsun20	Unemployment rate - annual data	Less than 25 years old	From 1995 or 2000 to 2017 depending on countries
			From 25 to 74 years old	

Furthermore, as clarified by the Table, the large variety of index sub-specifications within the same macro-economic factor may be a relevant and undesired source of risk estimate and RWA variability. As a matter of fact, even using the same macro-economic factor, different institutions may actually select different sub-specification of the same variable, thus maintaining the current heterogeneity that this RTS wants to reduce. In this regard, we suggest to provide a **clear reference of the sources where the data should be collected** (in order to allow all Banks to adopt the same sources fostering a proper harmonization) both for EU and not EU countries, as well as for different industries (for the customization and co-movement analysis required in paragraph 3).

Furthermore, in our view, two more points should be better addressed:

- we suggest to provide detailed indication on the **prioritization of the macroeconomic indicators** which should be taken in consideration for the downturn estimation. We deem that, in order to identify the downturn period, some indicators must be associated with other macroeconomic factors, e.g. a pick in a factor time series shall be relevant only if combined with picks observed on other factors (considered with a high priority). With reference to the **Article 3** on the severity of downturn, we think it should be better clarified whether in paragraph 2 the possibility to start the 12-months period for the considered economic factor at any points in time means to adopt e.g. quarterly data of annual realization of the economic factor or to have a different reference date (e.g. March, June, etc.), keeping in any case a yearly frequency. This choice is relevant for the

analysis of adjacent peaks/trough and the possibility to have longer than 12 months period of downturn;

- **the adoption of absolute value (i.e. level) of the economic factors** (as in the **graphical examples reported in the explanatory section) are, in our view, not appropriate** considering that, as proved in the economic literature, the factors considered in the analysis are typically integrated of first order with trend components. Given also the need to assess the significance of the economic downturn with respect to the loss rates, we suggest to use its variation, using as a support the analysis at absolute level.

Q2: Do you see any issues of applicability of this RTS for estimating conversion factors appropriate for an economic downturn identified in accordance with this RTS?

The same issues considered above are valid also in the estimation of the CFs. **In addition, since no GL is provided for CFs downturn estimation that in period of downturn and in presence of strong EWS / credit monitoring processes** (strongly required also by ECB Guidance to banks on Non Performing Loans), **it is important to remark that** the exposure and the credit limit can be shrunk by means of managerial actions, thus resulting in lower CFs.

Furthermore, the different time horizon of CFs realization (1-year compared to the LGD one, covering typical a multi-year fashion) should be taken into account when the downturn effect should be included into downturn EAD estimation.

Questions on the Guidelines

Question 1: Do you think that additional guidance around the estimation of LGD in-default, which reflect downturn conditions, is needed? If yes, could you provide examples of sound methodologies for transposing downturn LGD estimates from performing to non-performing exposures?

UniCredit deems that a section on the LGD in-default should be added, in order to guarantee an appropriate estimate. With respect to the estimation of the downturn impact on defaulted assets, we think that the analysis **should necessarily take into account the vintage of the exposure as, independently from the downturn impact, the probability of loss is higher the longer is the time in default (too old defaults have limited possibility of recoveries).** A possible estimation approach is to fraction the overall sample used in the LGD performing exposures by vintage up to the Maximum Recovery Period identified for open cases, as indicated in the EBA Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures, GL/2017/16.

Given the downturn period (identified according to the RTS), in order to have a vintage dependent impact, the estimation can be run separately on each sample defined according to the reference dates.

If a large dataset is available allowing this type of analysis, and a progressive lower impact with longer vintage is observed in a clear and statistically significant way, a lower downturn effect can be recognized. Otherwise, **in case lack of data does not allow a sound estimate, the impact adopted on performing exposures can be used as a backstop** as proposed into the Explanatory Box**,** allowing full reconciliation between performing and defaulted assets LGD estimation. In this case, given the uncertainty due to the lower availability of data for longer reference date, there would be an expected increase of RWA absorption on defaulted assets characterized by higher vintage .

Question 2: Do you share the concern that the proposed policy in paragraph 15 could create an undue burden if applied to every downturn period identified? If yes, in order to better balance the accuracy of the estimations and its operational complexity what evidence should be provided by institutions in order to justify the exemption of identified downturn periods from the proposed policy in paragraph 15?

UniCredit shares the concern on the proposed policy in paragraph 15 and agrees that the strict adoption of the policy proposed, entailing potentially multiple downturn periods for multiple calibration segments, can create a not negligible operational burden and a difficult interpretation of the outcomes.

Thus, we deem appropriate to define clear rules aimed at limiting the inclusion of downturn periods with respect to their representativeness. We suggest to simplify the proposed policy, adopting the following actions:

- **Reducing the list of economic factors** reported in Article 2 of the RTS for identifying the nature of economic downturns to those easily available and highly correlated to the observed data;
- **Adopting a rolling 20 years period** (covering roughly two economic cycles), in order to exclude too old downturn periods that, being related to a historical phase longer than 20 years, can lack of representativeness for the future in particular for the extreme negative economic phases[1]. Therefore, in our view, the adoption of the 20 years period rolling windows - unless no downturn event be included and going back is necessary in order to detect a downturn event - can be an objective rule to avoid the risk of very old cases of downturn potentially not representative anymore.
- Considering the opportunity of excluding from the downturn period definition also clearly identifiable exogenous structural breaks such as the creation of European Union or the adoption of EUR currency .

As a general remark on paragraph 15, **we deem critical** that, when considering the case of multiple downturn period and impossibility of estimation, the EBA suggests the adoption of the "*highest average downturn LGD estimate on a considered calibration segment*". As already stated

[1] e.g. the 2008-2009 financial and economic crises will not be representative in year 2030, as that downturn can be only compared to the big crises of 20s-30s years of the XX° century.

in our comments on RTS (reported in our answer to Q1), in fact, **we deem that the average value on downturn periods would better represent the loss rates in negative phases of the cycle.**

Question 3: Do you agree with the proposed level of downturn LGD estimation set out in paragraph 14? In particular, do you support the concept that the downturn LGD estimates of different calibration segments could be based on different downturn periods? Is the policy on the level of downturn LGD estimation as well as the relation between the level of downturn LGD estimation and the relevant downturn periods sufficiently clear?

UniCredit thinks that the proposed level of the downturn LGD estimation could be better detailed.

As a general consideration we are skeptical on the inclusion of different downturn period for different calibration segments, as it can lead to results difficult to interpret, or situation in which too few observations can generate instability in results

Furthermore, in some cases the adoption of segmentation criteria is aimed at managing specific idiosyncratic characteristics linked to the specific portfolios. We deem therefore more appropriate to keep the analysis **at type of exposure as reported within the Article 2 of RTS on downturn period identification**, reducing the operational burden as well as the complexity underlying.

On the level of clarity of the policy on the level of downturns LGD estimation as well as the relation between this and the relevant downturns period, UniCredit thinks that several areas of the Guidelines can provide further details, as better explained in the answers below.

Question 4: Do you consider the description of the approaches to be sufficiently clear?

UniCredit deems that the approaches described in section 5 and 6 should be better clarified.

In relation to **downturn LGD estimation based on observed impact** (Section 5), we deem that

- **further details should be provided on how reconcile the observed impact of downturn with other estimation purposes (ELBE, IFRS9, Stress Test) considered the relevant interaction among them.** In order to recognize the observed impact of downturn, we suggest to adopt the same statistical approach proposed for Section 6 (downturn LGD estimation based on observed impact). In this way, the relation between economic factors and observed loss data can be estimated and used also for other purposes, simply replacing the historically observed downturn figures with current /forward looking/stressed economic condition in order to propagate to ELBE, IFRS9 and Stress Test effects;

- **further details should be provided on the time lag that should be considered in estimating the relation between recovery / loss rate and the economic factors realizations;**

- **finally, related** with the relation specified above, **some further clarifications are necessary on the definition of significant impact of downturn on the relevant model**

components: in particular, for what pertain LGD model, UniCredit asks more details on the level of significance in the relation **between observed loss rate and economic factor** (as reported in paragraph 24). In fact, **this affects the recognition of a downturn effect once this GL will enter in force**.

As a general remark, relevant for both Section 5 and 6, UniCredit deems that the interaction between downturn, model components and the attribution of the downturn effect at overall LGD level (i.e. with the inclusion of all model components) should be better clarified.

In order to better catch the interaction with the downturn it would be beneficial to disentangle the effect at model component in order to concentrate on those more relevant: in particular we can expect that downturn effect will be relevant for cure rate and time in default. In fact, a credit file in a phase of "soft collection", can be affected by a period of downturn in terms of reduced possibility to cure and, once migrated to liquidation, the downturn might be finished and the liquidation could evolve in a more positive way, and vice versa.

On the other hand, for the liquidation phase, it would be more meaningful to consider only the closed not cured cases, since these ones are flattered by the artificial cash flows. Furthermore the inclusion of open cases imply an inference that would turn the final outcome in being an estimation based on another estimation.

Finally, in order to ensure the proper effect at overall LGD level, avoiding the risk of doubling the effect as per paragraph 29, the estimation of downturn at model components level should be rather used as an instruments **by worsening only those model components of the overall estimation affected by downturn in a certain period of the NPL cycle and then looking at the different level of increase of the estimates compared to the long run ones**. As illustrative example, let us assume a long run average overall LGD risk quantification sample where for each defaulted facility "i" within the time series covering from the "Oldest default date" available and the "sample cut-off date" at the moment of downturn LGD estimation, the overall long run LGD estimates is represented by the combination of the following two model components:

- cure ratio;
- LGD for Liquidation and Cure Scenarios

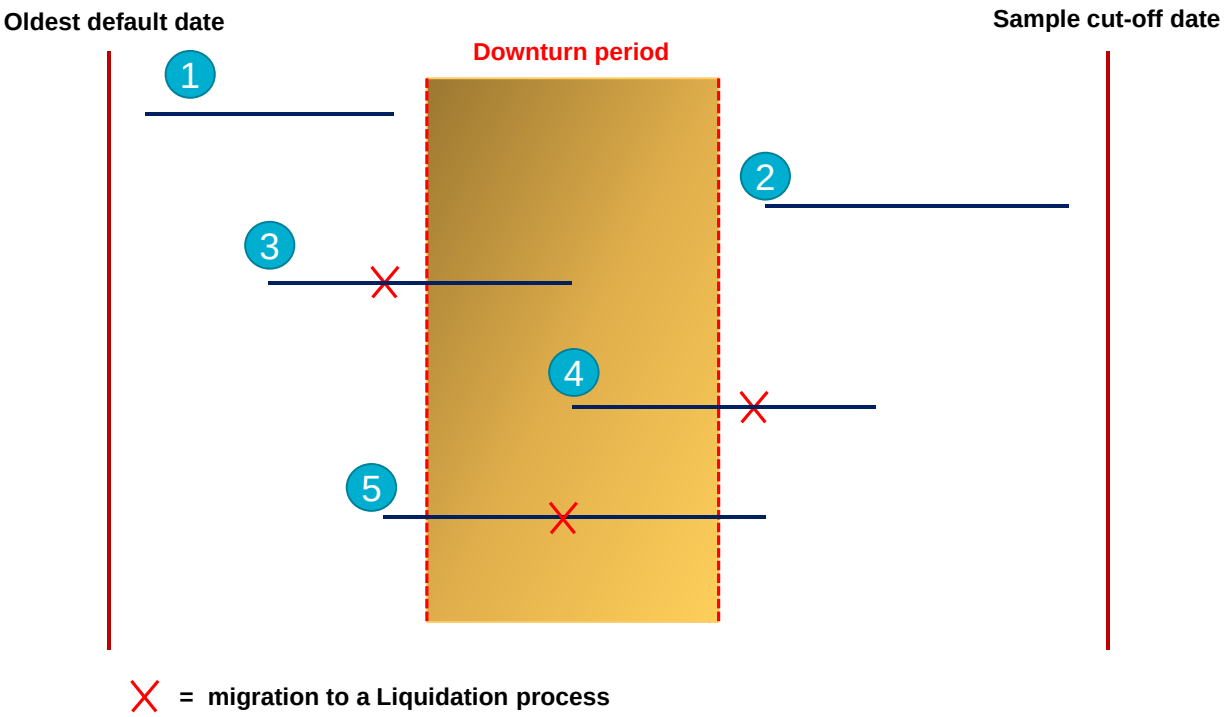
$$LGD_{i,overall} = \left(P_{i,cure} * LGD_{i,cure}\right) + \left(P_{i,Liq} * LGD_{i,Liq}\right) \quad (1)$$

where

- $P_{i,cure}$ is the cure ratio estimate resulting from the LGD model given the risk factors of i-th defaulted facilities;
- $LGD_{i,cure}$ is the LGD estimate for cure scenario resulting from the LGD model given the risk factors of i-th defaulted facilities;
- $LGD_{i,Liq}$ is the LGD estimate for liquidation scenario resulting from the LGD model given the risk factors of i-th defaulted facilities;
- $P_{i,Liq} = 1 - P_{i,cure}$

Following Section 5 or Section 6 a downturn impact is estimated both for cure ratio and for Liquidation scenario, therefore a downturn estimate for both model components is applied ($P_{i,cure\_Dwt}$ and LGD_{i,Liq_Dwt} respectively).

Figure 1 –Long Run average overall LGD risk quantification sample



In the long run average overall LGD quantification sample (see the chart above) we can have the following cases:

- Cases 1 and 2, where the observed defaulted facilities default windows (i.e. time interval between starting and end date of default, including also probation period and independence period treatment as for paragraph 101 of EBA Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures, EBA/GL/2017/16) fall completely outside the downturn period;
- Case 3 where the defaulted facilities are affected by the downturn period exclusively in the Liquidation phase (i.e. after the red cross);
- Case 4 where the defaulted facilities are affected by the downturn period exclusively in the pre-Liquidation phase;
- Case 5 where both phases are impacted by the downturn.

In this context the Downturn LGD of case 5 should be equal to:

$$LGD_{i,overall\_Dwt} = \left(P_{i,cure\_Dwt} * LGD_{i,cure}\right) + \left(P_{i,Liq\_Dwt} * LGD_{i,Liq\_Dwt}\right) \quad (2)$$

whereas in case 3 and 4 the downturn period should not affect the model components because in the former (the latter) the $P_{i,cure\_Dwt}$ (LGD_{i,Liq_Dwt}) should not be impacted:

$$LGD_{i,overall\_Dwt} = \left(P_{i,cure} * LGD_{i,cure}\right) + \left(P_{i,Liq} * LGD_{i,Liq\_Dwt}\right)$$ for case 3 (3)

$$LGD_{i,overall\_Dwt} = \left(P_{i,cure\_Dwt} * LGD_{i,cure}\right) + \left(P_{i,Liq\_Dwt} * LGD_{i,Liq}\right)$$ for case 4 (4)

In a context of representative overall LGD quantification sample, as required by Regulation, the overall downturn LGD estimates can be defined by getting a downturn adjustment based on the ratio between:

$$Dwt\_adjustment = \frac{\frac{1}{N}\sum_{i=1}^{N} LGD_{i,overall\_Dwt}}{\frac{1}{N}\sum_{i=1}^{N} LGD_{i,overall}} \quad (5)$$

considering all the defaulted facilities crossing the downturn period (i.e. all the cases 3, 4 and 5).

This approach would take into account the NPL-cycle phase as well as the multiyear nature of the LGD parameter. In fact, cases that are already in a Liquidation phase will be affected only in the realization of its workout process, whereas cases in a pre-Liquidation phase might risk, more likely, to migrate to a Liquidation scenario. Given the composition of cases 3, 4 and 5 in a representative overall LGD quantification sample, the downturn effect of the single model components (based either on observed or estimated impact) are reverted at overall level, avoiding biased effects. Furthermore this will be a relevant element for the inclusion of the downturn effect on LGD in-default estimation since in this case the different stage of the NPL-life cycle is a relevant information for the estimation.

Question 5: Do you agree to the limitation of approaches for quantification of downturn LGD estimates? If not, which other approaches should be considered? Would you prefer the alternative policy considered – if yes how should a minimum MoC be established in this case?

In general, with regard to Section 6, UniCredit is critical on quantifying the MoC based on the residual of the regression (as reported in paragraph 24 and 25). Indeed the residual of the regression are affected by idiosyncratic effects, related to the portfolio characteristics, that can create an unavoidable volatility not related to the adjustment applied on a backward basis for the extrapolation. Since the extrapolation is performed by means of the estimated coefficient, we suggest to consider the standard error of the beta coefficients of the regression as a basis to calculate the MoC.

We propose an alternative in order to calibrate MoC using the standard errors: let $\overline{Y_t}$ be the average yearly realized LGD values and $\widehat{Y_t}$ the extrapolated value according to the formula reported at page 23, it can be possible to extrapolate a $\widehat{Y_{t,cons}}$ where the beta coefficients are increased /decreased (according to their relation with the economic factors) by their respective standard errors in such a way to get a positive difference between $\widehat{Y_{t,cons}}$ and $\widehat{Y_t}$

$$\widehat{Y_{t,cons}} = \alpha + \left(\widehat{\beta_1^1} \pm St.Error_1^1\right) \cdot e_{t-l_1}^1 + \left(\widehat{\beta_2^1} \pm St.Error_2^1\right) \cdot e_{t-l_2}^1 + \left(\widehat{\beta_n^k} \pm St.Error_n^k\right) \cdot e_{t-l_n}^k \quad (6)$$

$$MoC_A = \widehat{Y_{t,cons}} - \widehat{Y_t} \quad (7)$$

Question 6: Do you expect that the total exposure amount or share which is treated with the policy proposed in Section 7 is material?

UniCredit deems that the total amount of cases treated under section 7 should remain immaterial, as the internal time series of loss data are long enough to include at least the big financial-economic crises of 2008-2009 resulting as the worst realization at least for GDP and we should be able to analyze at least one downturn period pursuant to letter (a) of paragraph 15. As a consequence, the application of the approach proposed in section 7 would be extremely limited.

Nevertheless, as already pointed out in Question 1, adopting the criteria of the worst economic factor realization for downturn period identification can lead to periods not covered by the internal time series of loss data. This can entail an extensive recourse to Section 6 or a not negligible increase of conservativeness due to MoC (to be applied having not the possibility to assess the impact although bad realization of an economic factor within the time series of internal data).

Let's consider the following example:

- unemployment rate economic factor;
- time series of internal data starting from 2005;
- worst realization of unemployment rate: 20% in 2001;
- second worst realization of unemployment rate: 18% in 2009

According to the RTS rule, the downturn period for unemployment rate is the year 2001. Thus the Section 6 approach should be tested. In case no significant relation can be detected between internal loss data and unemployment rate after 2005 no extrapolation can be done and thus we would end up in a MoC due to the impossibility to analyze the downturn period. However, in this example we have a negative realization of unemployment rate in 2009 and the absence of a relation might be due to the fact that the loss rates are basically not sensitive to the downturn effect. However, in this situation we would be forced to apply a MoC notwithstanding a sound empirical analysis has proved that there is no relation. **Thus we deem more appropriate, as said in Question 1, to provide a harmonized definition of "what is a downturn" rather than simply adopt a definition based on the "worst realization" and use this in order to detect if downturn years are available or not in the internal time series.** If downturn years are included in the internal time series, a sound analysis can be done and the adoption of MoC would be limited to cases where really limited possibility to study a relation occurs and where the level of uncertainty is higher.

Question 7: Do you have specific examples of types of exposures which will fall under the policy proposed in Section 7?

UniCredit deems improbable to fall under situation depicted in Section 7 as most of the time series of internal data of loss rates would detect at least the financial and economic crises occurred in 2008-2009. Nevertheless we confirm the relevance of the contents reported in the reply to Question 6.

Question 8: Do you agree to require a minimum MoC quantified via a fixed add-on to the long-run average LGD? If not, which of the alternatives should be considered? Do you see reasons for differentiating the fixed add-on according to exposure classes?

W**e view as critical the inclusion in the final downturn LGD of a 20% add-on when the observed or estimated impact is not available**, as we deem it is not economically meaningful and overly penalizing. Therefore we disagree with the proposal of a minimum MoC quantified via fixed add-on **as well as the calculation of the minimum MoC as the max (0,min(20%, 105% - LRAVLGD)** as reported in Question 9.

In addition, the interplay between the downturn approach envisaged in the GL could potentially double count the effect derived by the implementation of the Basel package that foresees input floors on both the secured and unsecured component of the LGD and the application of higher haircut to the value of the collateral. As a matter of the fact, the Committee's choice is driven from the possibility of limiting less realized value of collateral types during stressed periods. Given this intention explicitly declared by Basel committee, we deem the worst scenario of realized loss and the +20% add on are unduly punitive.

In alternative we propose to adopt the Reference Value Approach, as described in section 8, as a proper solution in order to quantify the MoC when the observed or estimated impact is not available. See Question 10 for more detail.

Question 9: Do you agree to the minimum MoC as the max(0,min(20%, 105% - LRAVLGD)?

See answers to Questions 8 and 10

Question 10: Is the policy regarding the reference value sufficiently clear? Alongside with the potentially limited applicability of the reference value to the downturn LGD estimation according to paragraphs 18-19, for what reasons could the reference value feasibly be omitted? Do you agree to the proposed clarification of the role of the reference value?

As already pointed out in other consultations (as the previous downturn consultation and the TRIM Guidelines consultations) we deem critical the adoption of the Reference Value Approach as a challenger for the estimation, especially where a solid estimation has been possible, i.e. Section 5 and Section 6. The mandatory comparison of the estimates with the reference value not linked at all with the economic factors charges the Institutions with a complicated "burden of proofs" in front of Regulator, although the mandate required to EBA by Article 181(3) makes explicitly reference to the "Economic downturn".

In addition, the Reference Value Approach, looking at the two single years with the highest total economic losses, might be impacted by the effect of NPLs massive disposals, that are used as a strategy for accelerating the reduction of NPL stock on the banks' balance sheet. However, as

already mentioned in Question 8 the Reference Value Approach can be a valid alternative in the cases described by Section 7, **when the observed or estimated impact is not available** and the adoption of a +20% add-on is foreseen.

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