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February 8, 2017

Mr. Andrea Enria
European Banking Authority
One Canada Square (Floor 46)
Canary Wharf
London E14 5AA
United Kingdom

Re: Consultative Paper – Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures

Dear Mr. Enria:

The Institute of International Finance (IIF) welcomes the European Banking Authority (EBA) Consultation Paper *Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures*. The IIF strongly supports efforts to ensure the credibility of Risk Weighted Assets (RWA) calculations and reduce RWA variance and commends the EBA for pursuing this agenda.

The IIF continues to promote greater harmonization of credit risk modeling practices, parameters, and assumptions. We maintain that the risk-sensitivity delivered by internal models is of critical importance in banking, as it ensures appropriate signaling and encouraging desired behaviors, while simultaneously acknowledging the need to improve comparability and transparency of banks' models.

This was highlighted in the IIF RWA Task Force's Final Report in November 2014, which contained 78 recommendations for harmonization within credit risk modeling, 18 of which related specifically to the Probability of Default (PD), and 28 on Loss Given Default (LGD). Within the scope of these recommendations, we had also identified some areas that would benefit from clearer regulatory guidance and/or greater supervisory consistency. We see the EBA's Consultation Paper as being highly constructive, in providing greater regulatory clarity as well as championing the process of harmonization, and ultimately in improving modeling capabilities and outcomes.

Concurrently, we note that the IIF RWA Task Force's analysis identified that some sources of RWA variance reflect legitimate differences between banks' portfolios, data histories and risk management policies and practices. In the pursuit of appropriate harmonization, it is important to distinguish between (i) modeling differences that are accurate representations of underlying differences, and (ii) those items causing RWA variances due to interpretations and definitions that are unrelated to underlying risks.

As such, the IIF is pleased to convey our broad support of the EBA's proposals, while also identifying some specific technical items that we feel warrant some further consideration. Our detailed responses to each of the 25 questions posed in the Consultation Paper are set out in the

following pages, but we wish to briefly highlight six themes that feature in our feedback, as follows:

- We suggest that the Guidelines be strengthened by providing a common measure for the degree to which models are of the point-in-time (PIT) nature.
- While we agree with the EBA's proposal for the discounting rate, we propose clarifications on what the discounting rate is meant to represent, how it should be calculated and updated, as well as some considerations regarding the fixed spread.
- The treatment of interest and fees after default is critical, and fees and interest should be treated separately from recovery of the outstanding principal. Interest payments should only be added as positive cash flow (if paid) and not negative in the economic loss calculation. Including interest as a negative component in the economic loss calculation would lead to a double discounting effect.
- In the case that the use of provisions for ELbe/BEEL is disallowed, we suggest a materiality threshold or proportionate treatment when the proportion of defaulted exposures to overall performing exposures is immaterial
- We propose the introduction of a materiality threshold, or a more proportionate treatment, for cases in which the margin of conservatism (MoC) only has a small impact on PD levels.
- On the issue of representativeness of data in LGD models, we note the potential for double or triple counting the effect of the MoC, and seek clarification on how calibration would work.

Where possible, we encourage greater alignment of prudential and accounting standards, or at least acknowledgement of the specific items where there are such differences.

We also understand that the Guidelines would not only apply to future models, and banks may need to redevelop all PD models for definition of default changes, and LGD models will need to be at least recalibrated for these Guidelines and the RTS. Given the considerate operational burden, we suggest a phase-in approach for models that need to be reworked.

The IIF notes the current debate at the Basel Committee on Banking Supervision (BCBS) which may affect application of these Guidelines. We encourage the EBA to liaise with its international regulatory peers, and to escalate these proposed Guidelines for consideration at Basel fora, to help support greater international consistency and comparability.

The IIF hopes that our comments are helpful as the EBA finalizes these Guidelines, and we welcome ongoing dialogue on this important matter. As in the past, the IIF stands ready to provide further input and any necessary expansions or clarifications on our comments. If you have any questions on the issues raised in this letter, please contact myself or my colleagues Brad Carr (bcarr@iif.com) and Natalia Bailey (nbailey@iif.com).

Sincerely,

Andrés Portilla
Managing Director, Regulatory Affairs

Responses to the 25 Questions posed in the Consultation Paper:

GENERAL ESTIMATION REQUIREMENTS
Question 1:
4.1 Do you agree with the proposed requirement with regard to the application of appropriate adjustments and margin of conservatism? Do you have any operational concern with respect to the proposed categorization?

The IIF is broadly supportive of this proposal, and agrees[1] with the need to develop a set of criteria identifying when there is a need for a margin of conservatism (MoC). The proposed framework goes in the right direction, and will assist in harmonizing practices. We note however the following points in which we would welcome clarification:

Firstly, as a matter of interpretation, the IIF seeks confirmation that the categories and examples should be seen as a checklist of potential sources of uncertainty that are to be evaluated, with the potential outcome that there can be zero for a category. On that basis that this is in fact a checklist of potential sources of uncertainty, we are supportive of the proposal to harmonize, which we agree would help to reduce an area of RWA variance.

We also seek clarification on paragraph 30, as it could be interpreted that the requirement is to separately estimate the individual MoCs accounting for different uncertainties on a risk parameter level, and apply the sum of the individual uncertainties. Accordingly, we ask for clarification that the resulting MoC at risk parameter level should be applied, or double counting should be reflected.

We propose the introduction of a materiality threshold, or a more proportionate treatment, for cases in which the MoC only has a small impact on PD levels (e.g. a certain percentage). This threshold could apply to cases such as a retail model that uses 50 or more risk drivers in a model, with several risk drivers having some conservative treatment (e.g. to account for missing information in legacy cases, or with respect to the treatment of outliers).

Secondly, while it will be useful to show the level of MoC at risk parameter level explicitly, we note that in many cases it may be operationally difficult to exactly quantify the MoC. One point to consider is the scenario in which a bank significantly improves their recovery processes, and has an expectation that this will improve the accuracy of its LGD estimates, but the level of that effect is uncertain. Therefore, the bank might not apply a correction for the changed processes, instead accepting the resulting MoC until the effect can be quantified. In practice, this does not influence the level of the risk parameter but only the "transparency" around the size of the MoC applied. We would suggest in such cases to make a determination to allow the case where the magnitude of the MoC is an estimate if it can be assured that the level is sufficient.

Thirdly, we suggest adding a qualifier to paragraph 25c(i) to read – "rank ordering errors that lead to distorted capital requirements". Given that RWA depends on the exposure distribution, it is possible to construct cases where due to inadequate rank ordering, misclassifies significant exposures, but these may be less so if a bank has a very high separation power.

Lastly, to prevent different interpretations in quantification and in application of adjustments and margin of conservatism among banks, countries, and national supervisory authorities, we encourage the EBA to provide (i) definitions for the categories and methodological aspects in

[1] IIF RWA Final Report, PD recommendation #13, p. 208.

estimating MoC, and (ii) a method of standardization for the meaning and the application of the sentence "… not distorted due to the necessity for excessive adjustments" on paragraph 34.

PD Estimation

Question 2:

5.1 Do you see any operational limitations with respect to the monitoring requirement proposed in paragraph 53?

We note that most banks currently calculate annual PDs on an annual basis, and for those that calculate more often the frequency varies by type of exposure. The monitoring requirement to calculate the one-year default rates at least quarterly would pose a small burden to some banks, and it may have cost implications that may need to be factored in the overall cost/benefit assessment of the proposals. We would welcome clarification on the motivation for the monitoring.

Question 3:

5.2 Do you agree with the proposed policy for calculating observed average default rates? How do you treat short term contracts in this regard?

The IIF agrees with the proposed policy for calculating observed average default rates. We support further harmonization to non-overlapping windows to further reduce more variance and facility implementation.

On the question of short term contracts, given that there is currently no special treatment on the regulation, most of our members treat short term contracts as any other contract. Independently from the expiration date of the contract, no special treatment is applied, and banks are of the view that such contracts should not be considered a source of bias for the calculation as it represents the actual observed default rate of the institution, consistently with its portfolio composition. Therefore, we would welcome clarification whether short term contracts are to be treated differently, and if so, guidance will be needed to avoid creating more variance.

Question 4:

5.3 Are the requirements on determining the relevant historical observation periods sufficiently clear? Which adjustments (downward or upward), and due to which reasons, are currently applied to the average of observed default rates in order to estimate the long-run average default rate? If possible, please order those adjustments by materiality in terms of RWA.

The IIF is supportive of the need to provide more clarity on the term "long-run average", and for the need for minimum requirements and treatment of common exceptions, as indicated in the IIF RWA Task Force (IRTF) report of November 2014. The IIF also reaffirms the need to include a downturn period within the history set.

The IIF considers that the paragraphs relating to the requirements on determining the relevant historical observation periods are sufficiently clear, but note a potential issue in the alignment of the concept of long-run average, and the 5-year benchmark proposed (in cases where the long-run average default rate does not equal the average of all observed one-year default rates). As such, we welcome clarification on paragraph 63a, which would seem to require a comparison between the adjusted long-run average default rates, and the observed average of one-year default rates of the most recent 5 years. In case a non-structural break is observed, a lower long-

run average default rate (in certain moments) is implicit in the inclusion of positive and negative economic periods, and may not require the application of a margin of conservatism.

Question 5:
5.4 How do you take economic conditions into account in the design of your rating systems, in particular in terms of:
a. definition of risk drivers,
b. definition of the number of grades
c. definition of the long-run average of default rates?

Firstly, the IIF commends the EBA for taking on a full debate aimed at exploring the different understandings of the terminology, in particular the multiple ways banks take into account economic conditions in the design of their rating systems.

We deem that the answers for Question 5 (5.4), Question 6 (5.5), Question 7 (5.6) and Question 8 (5.7) should be read concurrently, as the answers provided are thematically linked.

In 2014, the IIF undertook a throughout analysis of banks' RWA models, exploring the detailed modeling practices (for PD, LGD and EAD) for a geographically diverse sample of 43 major banks. One of the main findings was that some of the RWA variance stemmed from modeling choices taken by banks, among them the choice of point-in-time (PIT) and through-the-cycle (TTC) PD modeling. The topic was flagged as needing further analysis, and in 2016 the IIF undertook an additional analysis on a sample of 35 geographically diverse major banks, 17 of which were European. We share the view for a need for common terminology and measures to specify the different rating methodologies. See our response to Question 6 (5.5) and Question 7 (5.6) for the discussion on 'PIT-ness'.

The regulation currently requires that the range of economic conditions that are considered when making assessments must be consistent with current conditions and those likely to occur over a business cycle within an industry/region. In order to fulfill this requirement, then macroeconomic factors representing the cyclical factor need to be included, but banks' interpretation on how this should be done if the risk weight formula requires a long-run average PD varies. Banks approach the issue of the definition of PIT and TTC through different viewpoints[2].

When discussing **risk drivers**[3], only 28.6% of all sampled banks indicated considering certain risk drivers to be more inherently through-the-cycle than point-in-time. This represents 5 out of the 17 European banks that participated in the survey. Within this group, European banks indicated stale information such as financial data updated once a year to be a TTC risk driver, and behavioral data to be a PIT risk driver. The majority of European banks (9 out of 17) view the PIT and TTC definitions by measuring the degree of co-movements between the PD and the corresponding observed default rates.

When discussing the **number of risk grades**, a finding of the *IRTF Final Report* showed that the total number of grades varies greatly amongst banks from 12 to 34. It is also important to note that there is a difference in practice between retail and non-retail exposures.

In this case, the *IRTF Review: PIT and TTC PD Modeling* indicated that for banks' wholesale exposures, models typically generate a rating that is slotted into one of these grades, and then

[2] IRTF REVIEW: PIT and TTC Modelling, Figures, 2, 3 and 4, p. 11-12
[3] IRTF REVIEW: PIT and TTC Modelling, Figure 2, p. 11

mapped to a masterscale that links the rating to a long-run average calibrated PD. Over 58.8% of banks at the global level (and 6 out of 16 European banks) assign a customer a rating first on the basis of various customer-specific characteristics, then the customer is placed in a risk grade in accordance with its rating, and each risk grade is assigned a PD value.

In retail, banks' methods for PD estimation show a sizable number of banks (41.6% at the global level, and 6 out of 14 European banks) reported assigning a customer a score and then placing the customer in a risk grade/pool in accordance with its score, before assigning a PD value.

Methods for obtaining a PD vary widely, but it's important to note that an initial (rating) model may perform as a PIT, TTC or hybrid[4] depending on the factors taken into account or forecasted. Clearly discriminating between systemic and idiosyncratic risk at the obligor level is very difficult. The PD assignment process, also referred to as calibration, may be a second stage or third stage in the process of obtaining a PD. This calibration stage may have its own philosophy separate and indistinct from the first process. Therefore it is entirely possible to have a hybrid rating philosophy for the first stage, in which a wide range of obligors' information is considered to obtain that initial rating, and then have an adjustment stage , aimed at stabilizing the rating towards a long-run average default rate. We also note that the calibration phase may differ within a same bank for retail vs. non-retail portfolios. A bank may have a fixed calibration for their masterscale for non-retail portfolios, but this may be different for their retail portfolios.

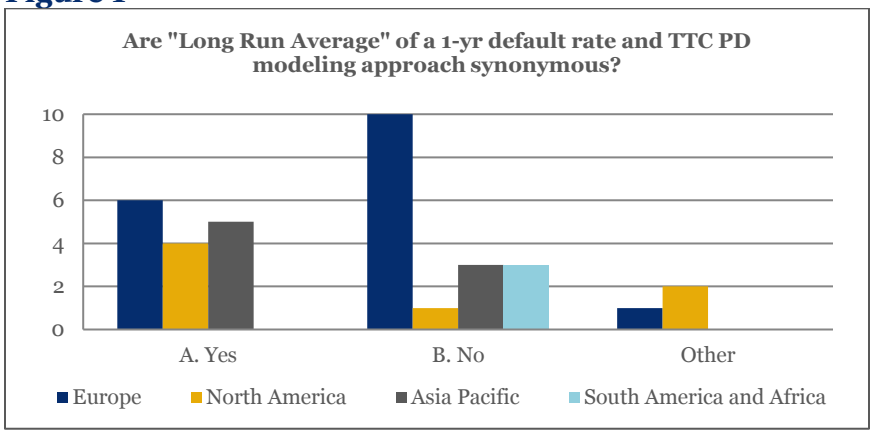
On the frequency of updating counterparties' risk grades, for non-retail portfolios, our findings show a strong bias to annual updates of risk grades (80% for wholesale, and 68% for other non-retail). This contrasts notably with the responses for retail portfolios (which were dominated by monthly updates), perhaps reflecting Retail portfolios' greater utilization of behavioral scoring techniques.

Finally, regarding the **definition of the long-run default rate** in terms of economic conditions. We surveyed banks on the assumption that TTC constitutes long-run average of a one-year default rate, where 17 out of 35 banks indicated that they did not view the terms to be synonymous. However, 15 out of those 35 banks view the terms to mean the same thing.

The differences were mainly geographical, with European banks viewing the terms to mean different things, although there were a few European banks that indicated the terms mean the same mainly due to the understanding that their supervisors understanding of the terms is to be synonymous. The main reason listed by most European banks for not viewing the terms to be synonymous was the understanding that TTC is to mean a full economic cycle, whereas the long-run average does not encompass a full economic cycle, and is more sensitive to macroeconomic conditions. Some view the long-run average to be longer than the economic cycle (i.e. 20, 30 years, depending on available data). We also note that "credit cycle" is typically used together with the term TTC, and separately to the terms economic cycle and long-run average. In our study, most European banks reported equating the long-run average to be synonymous with calibration. Therefore, a rating system can be sensitive to macroeconomic factors, and still be calibrated to the long-run average default rates.

[4] We define a "hybrid" PD as an estimate that lies somewhere between a 100% PIT and a 100% TTC. The IRTF Final Report survey results show a variety of practices and interpretations on hybrid PDs produced by different banks' Models. The fact that banks want to be both risk-sensitive in credit risk management and stable in their capital reserve leads to the creation of hybrid measures, which lie between PIT and TTC measures. This was the focus of our IRTF Review: PIT and TTC Modeling in 2016.

Figure 1



Source: *IRTF Review: PIT and TTC Modelling*

Additionally, it is important to note the potential effect on RWA variability stemming from the two different approaches to calibration. To explain further, banks could either calibrate to a long-run average default rate on portfolio level, or also satisfy all requirements for long-run average based on rating class level. When calibrating at a portfolio level, PDs stay relatively stable over time because it should always correspond to the long-run average default rates on the portfolio. On the other hand, calibrating at the rating grade level typically implies a construct of a rather PIT rating system with many migrations over time, where you assured that the PD assigned to the rating grade is stable over time, however the PD and capital requirements on portfolio level would fluctuate with changing economic conditions. The current framework has two different calibration approaches, which might significantly deviate, and may potentially lead to significant RWA variability. What is relevant is the effect on cyclicality of capital that results from the calibration approach.

Therefore, prescribing banks to first assign customer to rating grades and then assume rating grade level PD, is not common practice amongst the survey banks, and may not be as useful because it would mean banks could not recalibrate their rating methodology. As a first approach, many banks ensure that assignment of customers/obligors to rating grades fulfills the expectation on the default rate, and may start with a master scale assign PDs to rating grades and then ensuring that sorting of customers/obligors to rating grades corresponds to the intended PD. Therefore, there are two different outcomes depending on calibration on rating grade level or portfolio level.

To illustrate RWA difference due to different calibration approaches, the IRTF collected high level estimates of the variance in PDs calculated using different PD philosophies. These estimates give a general sense of the magnitude of possible variance in PDs and its contribution to RWA variance. A quantitative impact analysis with sufficient data will be required for a more accurate assessment.

The starting point grouped banks into three groups, and asked the three groups to submit information on their PD values:
1) Group A consists of banks that produce both PIT and TTC PD sets.
2) Group B consists of banks that produce a single set of PIT PDs.
3) Group C consist of banks that produce a single set of hybrid PDs.

Banks in Group A were asked to estimate the divergence between the PIT and TTC PD values through the economic cycle. For banks that produce a single set of PIT or hybrid PDs, the IRTF sought to measure how much the PD values diverge from a TTC PD, which presumably should be stable over the economic cycle.

The survey asked Group B and Group C banks to provide an estimate of the divergence in PDs between the peak value and the trough value. Theoretically, this difference divided by two would serve as a rough measurement of how different the PIT and hybrid PDs are compare to a TTC PD level.

Although the analysis was done separately for retail and non-retail, the following general observations can be made. The divergence between PIT and TTC PDs is larger for portfolios that are more correlated with cyclical changes, and smaller for riskier ones whose performances are not as much affected by the economic cycle. The significance of absolute PD divergence varies for portfolios with different performance. A 2% divergence may be a significant one for a low risk portfolio, but not necessarily the case for a riskier portfolio. Most banks responded that the variance in PDs was either 0 to 2%, or 2% to 4% on an absolute basis for both retail and non-retail exposures. More information on this example can be found in the *IRTF Review*.[5]

Question 6:
5.5 Do you have processes in place to monitor the rating philosophy over time? If yes, please describe them.

Question 5 (5.4), Question 6 (5.5), Question 7 (5.6) and Question 8 (5.7) should be read concurrently, as the answers provided are thematically linked.

We commend the EBA for undertaking this review. Currently no common understanding on the terminology and the processes in place that banks use for arriving to a PD, therefore monitoring (and back testing) the rating philosophy over time may not provide for comparison unless the terminology is first clearly defined. Consequently, we suggest that the Guidelines be strengthened by (i) providing an operational definition of what PIT and TTC mean, and (ii) providing a common measure for the degree of PIT-ness in models.

On the second proposal, there are a few directions to reach this objective.

The first is for regulators to define an agreed degree of 'PIT-ness' measure to apply to banks' rating models, and for the calibration tests to be modified in order to factor in the rating models degree of cyclicality. Banks models will consequently be developed with the desired degree of PIT-ness but in compliance with the other requirements, and annual validation will account for PIT-ness adjusted calibration framework.

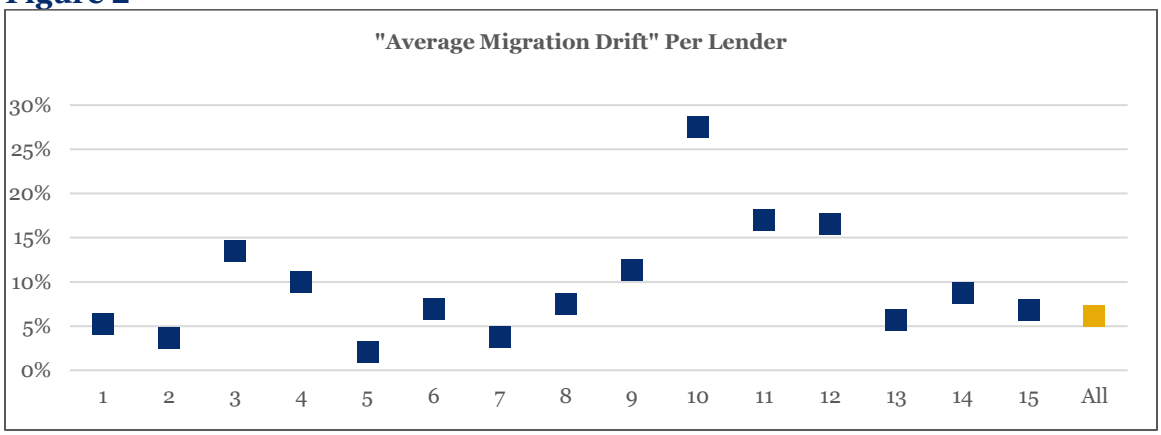
The second is for the industry to agree with regulators on a multidimensional approach to validation test. The idea here will be to develop a set of tests, each aimed at measuring the performance of the models and their compliance with different (even conflictual) regulatory requirements. Tests to be introduced are based on different hypotheses (correlations, degree of PIT-ness measures, etc.). The outcome would be a simultaneous assessment of the several dimensions in a traffic light approach involving both quantitative thresholds and qualitative judgments. The traffic light approach could be implemented with specific threshold for each

[5] See page 47-48, IRTF Review: Point-in-Time and Through-the-Cycle Modelling

test, differentiated for the degree of PIT-ness of the model, the target segment (corporate, retail, HDP, LDP, etc.) number of rating classes of the system, etc.

On this vein, we note GCD has been doing analysis on their data pool, in which 15 banks provided migration data, and the migration drift is observed by subtracting the number of downgrades from the number of upgrades, and dividing that by the number of borrowers at year 1 and year 2. Meaning that higher the "average migration drift", the higher the PIT-ness of the rating system. Figure 2 below shows how different migration act, highlighting even further the need for regulators to move to a more uniform definition or measurement of PIT-ness.

Figure 2



Source: *GCD PD/ODF/migrations datapool Summer 2016*
"Average migration drift" defined as "(#upgrades – #downgrades) / #borrowers at t1 and t2"

Question 7:
5.6 Do you have different rating philosophy approaches to different types of exposures? If yes, please describe them.

Question 5 (5.4), Question 6 (5.5), Question 7 (5.6) and Question 8 (5.7) should be read concurrently, as the answers provided are thematically linked.

Once again, we commend the EBA for undertaking this review. As indicated in Question 5 (5.4) there are different approaches for retail vs. non-retail exposures.

In the *IRTF Review*, 46% of participating banks reported using a TTC PD for mortgage and other-retail portfolios. A close second reported using a hybrid approach, with 37% for mortgages, and 29% for other retail exposures. Realizing that banks might generate different sets of PD estimates with different modeling philosophies, banks were asked to report on the number of sets of PDs used for the purpose of calculating RWAs and their corresponding modeling philosophy. A slight majority reported generating more than one set of PDs, both for Mortgage and Other Retail portfolios. For mortgages, of those banks that had responded to only a single set of PDs being generated, approximately 61.5% of the PDs were classified as a "hybrid" of PIT and TTC PDs, 23% responded that their Retail PDs produced were TTC, and only a small number responded that the PDs were PIT.

The findings were different for wholesale and other non-retail exposures, in which 54% reported using a TTC PD for wholesale, and 48% for other non-retail portfolios. A sizable percentage of banks, reported a hybrid approach, with 40% for wholesale, and 34% for other non-retail

exposures. The survey also asked banks to identify if different sets of PDs are generated for wholesale exposures. Responses indicated a split response (50/50) with no clear preference for either. For wholesale, of those banks that responded to only a single set of PDs being generated, approximately 58.8% of the PDs were classified as a "hybrid" of PIT and TTC PDs, and 35.3% of PDs being generated are classified as TTC, and only a small number of PDs are PIT.

It is also important to note that in our findings the majority of banks reported having different methods for estimating PDs for different types of exposures, in addition to having different philosophies for the different exposures. When comparing across business segments, TTC estimates are slightly more widely used for non-retail business, while hybrid estimates are used more in retail business. For the non-retail sector, TTC continues to be the most widely used rating philosophy for capital adequacy, but for other business segments the breakdown was closer to 50/50. Paragraph 444 of Basel II, which indicates that different model estimates could be used especially stands out for the retail sector, where for most business segments (except for capital adequacy, and provisioning) a hybrid approach is reported as the most widely used rating philosophy.

Question 8:
5.7 Would you expect that benchmarks for number of pools and grades and maximum PD levels (e.g. for exposures that are not sensitive to the economic cycle) could reduce unjustified variability?

The IIF currently does not have a strong view as to whether benchmarking for the number of pools and grades and maximum PD levels could reduce unjustified variability, but believes this warrants further investigation. The work done by GCD on the variability of the master scales of banks certainly raises awareness to this area.

GCD's approach was to benchmark "masterscales" by mapping the various master scales to one "common ground", in which each bank was required to map their internal rating grade to an "external (S&P) rating grade equivalent". This process is well embedded in the banks and used for other purposes, such as Pillar III. GCD then compared the average PDs of those "external (S&P) rating grades", which shows a variability to be further analyzed. On a log-scale investment grade PDs appear more different between member banks. Masterscales start spreading from BB- onwards when looking at the absolute difference.

As such, we believe a possible approach could be to define a standard common "masterscale" and mapped these to a "common ground" for transparency and comparability purposes, such as Pillar III. The IRTF work noted that there is a wide range of grades among different banks, with different portfolio compositions and ratings distribution. In addition, some banks introduce managerial masterscales for business purposes if the compulsory number of grades does not have a good fit for the portfolio.

We noted that a differentiated approach between retail, non-retail and LDP models might be necessary.

LGD Estimation

Question 9:

6.1 Do you agree with the proposed principles for the assessment of the representativeness of data?

The IIF is broadly supportive of the proposal, and agrees with the overall concept, on the need for common principles for the assessment of the representativeness of data. There are however, some concerns with the requirement to use all observed defaults, and disallowing the removal of observations that are not fully representative.

As outlined in our comments in reference to Question 1 (4.1), we are concerned that operationalizing the proposed principles will lead to statistical uncertainty. For example, if only 2/3 of observed defaults were considered representative, then there remains 1/3 of the sample that warrants an adjustment, for instance via the margin of conservatism. As such, we welcome clarification on how calibration would work in this case in order to mitigate double or triple counting the effect of the margin of conservatism.

Additionally, a relevant concern is how to consider extraordinary recovery processes, such as NPL disposals and non-conventional recovery processes, as well as merger and acquisitions cases authorized by ECB/NCAs.

Some members raised a concern that in such cases, the inclusion of all observed defaults has the potential of endangering the representativeness of the development sample. Given that disposals are a necessary measure for restoring confidence and contributing to financial stability, we propose specific treatments should be introduced in the final Guidelines. For example, either the facilities subject to disposal should be properly weighted and be jointly evaluated with a probability of the disposal event, or some modelling choices be adopted to extrapolate the market conditions (e.g. risk premium, liquidity premium) from the recovery observed. This treatment could last until macroeconomic indicators (to be defined by EBA) show a sound recovery trend; as already stated by the ECB in its Financial Stability Report (requesting the setting of "a deep and liquid market for NPLs").

Question 10:

6.2 Do you agree with the proposed treatment of additional drawings after default and interest and fees capitalised after the moment of default in the calculation of realised LGDs?

The IIF is supportive of the notion, but we note that there seems to be a lack of distinction for additional recoveries charged by the bank to the borrower, such as restructuring fees, when these correspond to economic gains. In this case, the Guidelines text may be introducing confusion between accounting schemes and the concept of economic loss (i.e. contractual interest is not considered in the numerator of the loss rate computation).

The treatment of interest and fees after default is critical, and fees and interest should be treated separately from recovery of the outstanding principal. Interest payments should only be added as positive cash flow (if paid) and not negative in the economic loss calculation. Including interest as a negative component in the economic loss calculation would lead to a double discounting effect – especially given the proposed relatively high xbor + 5% discount rate which is likely to be higher than the interest rate charged by banks to their clients. The economic loss would be too high which becomes evident when looking at the extreme event of 0 payback of the

outstanding principal by the client after default. Figure 3 below, provided by GCD, illustrates this point.

Example A:
Assuming a borrower defaults in 2012 with an EAD of 100, yearly interest payments of 4%, default period 2 years.

100	EAD
31.12.2012	Default Date
31.12.2014	Resolution Date
4%	Discount Rate Contract
5.6%	Discount Rate EURIBOR + 5%

This leads to scheduled payments

	Date	Nominal	Discounted[6]
Interest	31.12.2013	4	3.79
Interest	31.12.2014	4	3.59
Recovery	31.12.2014	108	96.88

In case 1 assumed to be paid, in Case 2 to be not paid.

Case 1: No recovery

EBA	Economic Loss	107.38	LGD	107%	*Economic Loss = EAD + Interest - Recovery*
Alternative	Economic Loss	100.00	LGD	100%	*Economic Loss = EAD - Recovery*

Case 2: Full recovery

EBA	Economic Loss	10.49	LGD	10%	*Economic Loss = EAD + Interest - Recovery*
Alternative	Economic Loss	3.12	LGD	3% [7]	*Economic Loss = EAD - Recovery*

Source: *GCD Consortium*

The proposed EBA approach would lead to LGDs greater than 100% in case of no recovery which does not seem correct. On the other hand, the approach without increasing the economic loss results in an LGD of 100% which is the expected outcome. In the other extreme event "full recovery" the EBA proposal still leads to a relatively high LGD, indicating the double counting of the interest. The alternative without increasing the economic loss still leads to a positive LGD which reflects the late payment and time cost of the interest payment. Therefore, GCD's analysis of the EBA proposal shows that the approach seems overly conservative and leads to some unexpected results.

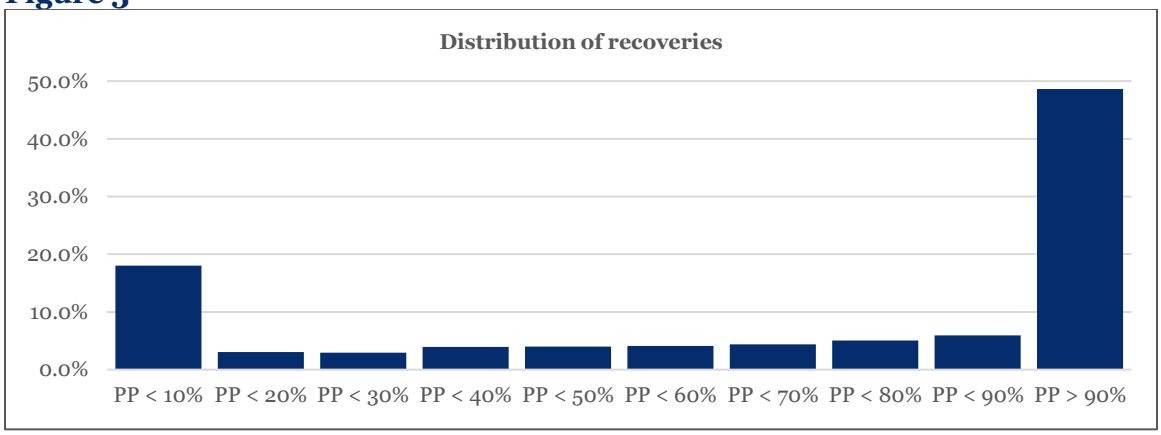
The EBA discusses this second approach in the Consultation paper but rejects it as "not sufficiently prudent" because it "in some cases this approach would lead to negative realised LGD even if the outstanding amount was not fully recovered" (p. 66). Example A shows that

[6] Discount Rate applied of EURIBOR+5% (i.e. 5.6%)
[7] Where there is a full recovery, the 3% LGD represented here is impacted by the difference between the loan contract rate and the discount rate applied.

this is not likely to happen because of the interest rate effect. One could of course imagine a rare combination of cash flows where the LGD would be negative. For these cases a floor of 0 could be a better approach and it avoids making the calculation too conservative in general.

From a data perspective the events of "no recovery" and "full recovery" are very likely and lead to the typical bimodal distribution of LGD. Figure 3 below shows the bimodal distribution for a corporate default portfolio. The treatment of fees as negative cash flow in the economic loss calculation cannot be rejected with the same argument above. It is also more important to tackle the interest rate payments as they occur in 20% of defaults. Fee payments occur only in 5% of defaults.[8]

Figure 3



PP = Principal Payment / Outstanding Amount at Default
Source: *GCD Consortium*

On that basis, the IIF view is that interest should be treated only as positive cash flow (if paid), thus "paying" for the time value of money. Consequently, considering interest bookings as negative cash-flow means, in effect, discounting twice. Concurrently, the inclusion of fees aiming at indirect costs as negative cash flows in the loss calculation may lead to the double counting of internal costs.

Typically, post-default drawings can be treated for LGD either by netting them off incoming cash amounts on a discounted basis or by adding them as part of the starting EAD. The IRTF Impact Analysis showed that when the second method is used, typically a lower LGD is given. For LGDs close to zero the difference is small, whereas the difference is high for high LGDs. In the *IRTF Final Report* the majority of respondents indicated using the first method. It is our understanding that the EBA considered the approach of not increasing the economic loss by the amount of fees or interests after default, but that due to differences between the discounting rate and the interest rate applicable after default the value of money in time and recoveries related to the amount outstanding at the moment of default would not be reflected correctly.

Another relevant topic warranting clarification is the treatment of unpaid late fees and interest, as banks had different understandings of the language on the Guidelines. Current practice is for banks to include these in the denominator of the loss rate until the entrance in the default status (or until the entrance in the litigation phase if a multi-stages model is applied). However, the language in the Guidelines appears to ask that in case of recovery of late interest that have not been previously capitalized the moment of recovery should be considered a moment of

[8] Source: GCD Consortium

capitalization. As such, we ask for clarification in this Guideline, as well as the terminology used herein. Our view is that cash-in should always be considered cash-in without any specific treatment, to avoid distorting the economic loss estimation.

Question 11:
6.3 Do you agree with the proposed specification of discounting rate? Do you agree with the proposed level of the add-on over risk-free rate? Do you think that the value of the add-on could be differentiated by predefined categories? If so, which categories would you suggest?

The IIF is broadly supportive of this proposal, and we agree that the clarifications set will assist in harmonizing practices and reducing RWA variance. The Guidelines could be strengthened by establishing a governance process for review and revising of the discount rate to avoid unwanted and frequent changes to LGD and RWA, which could stem from EURIBOR movements or comparable interbank rates.

This section of the Guidelines text is consistent with the finding of the IIF RWA Task Force report of November 2014. Therein, we identified the discounting rate as one of the main drivers of variability for LGD. The impact analysis also shows that the development of 'best practices' related to the choice of discount rates can especially reduce some of this variability; discount rates used by banks vary between 4% and 15% and the GCD data shows that the two extremes yield an RWA difference of approximately 8%. Our study also showed that 60% uses a fixed rate while the remaining 40% use a variable rate dependent on factors such as: loan currency, time to collection, and loan contract based.

The IRTF had previously reported that we did not have an especially strong view as to which basis of discount rate should be used, although we agreed that the proposed use of the most recent rate prior to restructuring is likely to be more practical. Our main recommendation was for the regulatory community to impose a uniform approach to discount rates.

While we agree with the overall concept, from a harmonization perspective it will also be helpful to receive more guidance on the following items in order to prevent different interpretations and different practice.

- Firstly, it is of paramount importance to determine what discount rates are supposed to represent, and how they should be calculated and updated (i.e. should it be spot rate at a given date that needs to be updated monthly, or some sort of average to be updated less frequently).
- Secondly, it is important for banks to understand the underlying concept and methodology to compute the add-on value.
- Thirdly, the use of a fixed spread of 5% may not differentiate enough amongst different perspectives for retail vs. non-retail exposures.
- Fourthly, given that the years before the introduction of the Euro were characterized by high volatility of the risk free rates, it may be useful to derive a proxy to account for data before 1999.
- Lastly, we also seek a clarification of whether the LGD performing is meant to be an estimate of the future possible loss. If this is correct, then should it be interpreted that a forward-looking perspective should follow? It was noted by some banks that if LGD performing is an estimate of future possible loss, then using the reference date of estimation as opposed to the default date would better reflect a forward looking perspective.

Empirical results provided by GCD corroborate the view that generally, the idea of a risk free premium + add on seems appropriate. As such, the discount rate should be based on a combination of the risk free rate and risk premium for systematic resolution risk at the time of default. The resolution risk reflects the uncertainty of cash flows during the period between default and resolution. Empirical results show that:

1. the empirical add-on is on average 1.8% and significantly lower than 5% for all years 2000-2013;
2. the empirical add-on appears to have a negative correlation with the risk-free rate therefore compensating variation in the risk-free rate. A flat add-on does not have this effect.

Given that the average loan discount rate for non-retail corporates is 5%, and risk free rate on average is 2.4%, the EBA's proposed discount rate (risk free plus 5%) will be slightly higher than the contract discount rate, thus adding an automatic layer of conservatism. We note that this added layer of conservatism should be taken into consideration to avoid double counting, or applying conservatism twice in the LGD model.

The method used by GCD to compute Figures 4 and 5 below for measuring the systematic resolution risk is based on a "Market equilibrium model". This method is based on the assumption that the link between measure for systematic risk and sensitivity to market excess returns is reasonable. The component consists of a component Beta based on asset correlation multiplied by a component for the market risk premium MP. Asset correlations are derived from a point-in-time frailty regression model for log recoveries applying segmentation by geography and a segmentation by industry.

Figure 4

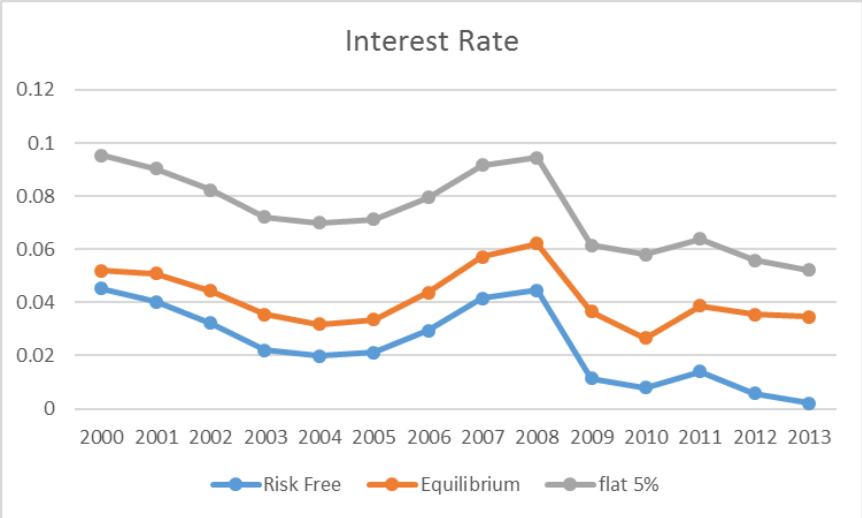
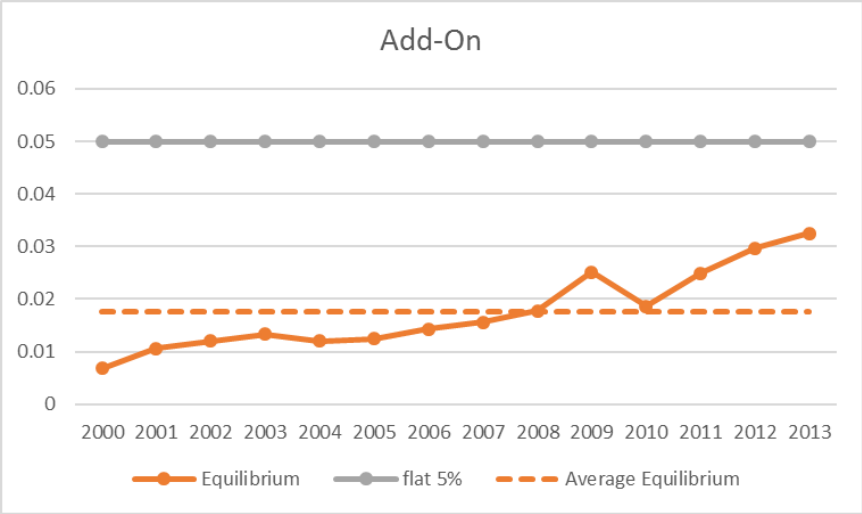


Figure 5



Note that EURIBOR is used for the calculation of the risk free rate.

In the context of the BCBS proposal which disallowed the use of models for certain exposures, we seek to clarify the scope of this Guidelines. Additionally, we seek to clarify if there something specific that applies to expert-based and non-statistical models.

Question 12:
6.4 Do you agree with the proposed approach with regard to the specification of historical observation period for LGD estimation?

We are supportive with the notion that the time-series for LGD must be "as broad as possible". We note that this should be jointly evaluated with the Guidelines on Margin of Conservatism, as well as how it fits with the entire framework (considering for example to exclude non-representative years due to strong changes in the recovery processes from the sample).

Question 13:
6.5: Do you agree with the proposed treatment of incomplete recovery processes in obtaining the long-run average LGD?

In general, we broadly agree with the proposed treatment of incomplete recovery processes in obtaining the long-run average LGD, and view that these are in line with industry practices.

We note that banks' current treatment of unresolved cases in LGD estimates lacks consistency. The IIF had highlighted that although banks want to use the latest data available for LGD estimation, this data is incomplete as the workout cases relating to a particular year of default are incomplete. The *IRTF Final Report* findings showed that approximately 35% of the banks surveyed do not include these cases at all[9].

We suggest that a clarification be added to paragraph 138 (a) to allow to estimate future recoveries stemming from collaterals for open cases on which collateral has not yet been exercised. Additionally, we are of the strong view that having a minimum period of observation

[9] 65% of banks use the unresolved cases in differing ways. Some by calculating recovery only on the amount already recovered. A small number of banks use the provision recorded in the accounting books as the estimate of the final loss.

for triggering inclusion in the sample will allow for absurd data points to be removed. One way to accomplish this, would be for the minimum recovery period to be defined considering the maximum period of the recovery process as an input.

Lastly we note that the IIF asked for harmonization of three different aspects: (1) definition of 'resolved' loan for inclusion in LGD modeling; (2) method of treating unresolved loans both in historical LGD and in LGD estimates (e.g. extrapolation techniques deployed, noting that excluding unresolved loans brings about as many biases as extrapolating them); (3) treatment of recoveries after 'resolved' status is formally triggered. We also note that this topic should be considered in conjunction with our answers to Questions 6.1 on data representativeness, and Questions 7.3 on the calculation of defaulted assets. Additionally, the link of this topic with the economic cycle and the Downturn component should be carefully evaluated.

Question 14:
6.6 Do you agree with the proposed principles on the treatment of collaterals in the LGD estimation?

The IIF is broadly supportive of the proposed principles on the treatment of collaterals in the LGD estimation. This section is consistent with the recommendation of the IIF RWA Task Force report of November 2014, in which we recommended full convergence on the acceptance of financial collateral in LGD models.

We feel that the Guidelines could be strengthened by considering the recovery cash flows from collaterals (currently not recognized by the CRR), and this should be taken into account somewhere within the Guidelines. We also suggest that there should be a symmetrical treatment between collateral haircuts and the downturn component in LGD to prevent double counting of adverse events.

We also note that recognizing the sources of the cash flows and allocating them adequately to the specific collateral or unfunded credit protection may pose some operational challenges, such as collaterals may cover several exposures, operational difficulties in cases of disposals, etc. In this vein, LGD approaches should not unnecessarily separate the treatment of collateralised vs unsecured exposures as the recovery process is often managed at borrower level.

Question 15:
6.7 Do you agree with the proposed treatment of repossessions of collaterals? Do you think that the value of recovery should be updated in the RDS after the final sale of the repossessed collateral?

The IIF is broadly supportive of the proposed treatment of repossessions of collaterals. We note however some issues in the implementation of paragraph 150(d), which warrant further consideration. The proposed treatment will not be feasible without applying strong proxies, thus forcing the adoption of a margin of conservatism. As such, we seek clarification on how the price of disposal can be disentangled and not influenced by non-credit related components.

Question 16:
6.8 Do you think that additional guidance is necessary with regard to specification of the downturn adjustment? If yes, what would be your proposed approach?

The IIF considers that additional guidance with regard to the specification of the downturn adjustment is needed, but we expect this to be provided in the relevant Guidelines. The

proposals are in-line with methodologies and common practices, however additional components are necessary to clarify the notion of downturn, specifically on defaulted assets as many banks use this element as the differentiating one between ELbe and LGD in-default.

Banks' expectation is the guidance will consider (i) approaches based on macroeconomic indicators and how these relate with the loss rates, (ii) how idiosyncratic factors of the loss rates should be considered (i.e. not dependent on economic cycle but strongly influenced by the loss rates observed), as well as (iii) a proper definition of Downturn conditions.

Defaulted Exposures

Question 17:

7.1 Do you agree with the proposed approach to the ELbe and LGD in-default specification? Do you have any operational concerns with respect to these requirements? Do you think there are any further specificities of ELBE and LGD in-default that are not covered in this chapter?

In general, we agree with the proposed approach to the ELbe and LGD in-default specification. The IIF is supportive of the need for clarification in the form of further guidance regarding the capital requirement of defaulted assets. We note that while the proposed approach is appropriate, there are currently various methods to produce an ELbe model, ranging from specific multi default state models to simply removing the downturn effect from the usual LGD model or taking away stressed haircuts on collateral. Some firms directly build an LGD in-default model (deduct UL = LGDD - ELbe), others model the UL component (i.e. accounting for downturn, MoC, volatility, etc), and then deducting LGDD = UL + ELbe.

On that basis, we note the hypothetical examples in the *IRTF Final Report* of November 2014, in which we showed that the unexpected loss component (UL=LGD - ELbe) could lead to variance in RWA for defaulted exposures.

In particular, the notion of additional, unexpected losses during the recovery period needs further refinement. We further recommended that in benchmarking exercises focusing on RWA variance both EL and capital are taken into account so as to take account of EL, ELbe and the EL shortfall/excess.

Additionally, we would welcome additional details regarding the add-on over the ELbe to include downturn conditions, with some examples if possible. In our view, recovery rate variability due to negative macroeconomic conditions should be addressed by the downturn component, and the remaining volatility should be captured by MoC. Therefore, we would suggest clarifying the Guidelines to clearly identify the three components for LGD in-default (downturn, MoC, and other unexpected losses). In our view, in order to avoid potential overlapping of concepts, double counting and excessive conservatism, the concepts need to be properly differentiated, and the use of this UL component should be something exceptional and rare.

We understand that the CRR capital requirement is independent from the accounting framework, however we note that the coherence between the approaches should be at least considered. This answer should be read in conjunction with Question 7.5 in which we propose the introduction of a materiality threshold to allow the use of impairments for ELbe/BEEL when the proportion of defaulted exposures to overall performing exposures is demonstrated to be immaterial.

Question 18:
7.2 Do you agree with the proposed reference date definition? Do you currently use the reference date approach in your ELBE and LGD in-default estimation?

The IIF generally agrees with the proposed reference date definition, as the notion of a reference date is meaningful. Typically, the reference date is tested in model development, but not systematically retained.

Additionally, we note that the reference date definition depends also on the default definition and categorization (e.g. Past Due, Unlikely to pay, Bad Loans). Banks approaches vary, for some banks the approach currently more widely used for LGD in-default and ELbe estimation defines reference dates based on the vintage of the defaulted exposure. In case of secured/unsecured model, the vintage approach is typically applied just to the unsecured LGD, since the estimated haircut is kept constant until the recovery happens

Question 19:
7.3 Do you agree with the proposed approach with regard to the treatment of incomplete recovery processes for the purpose of estimating LGD in-default and ELBE?

The IIF agrees with the proposed approach for the treatment of incomplete recovery processes for the purpose of estimating LGD in-default and ELbe, as we believe this is consistent with the treatment of performing exposures.

We note that this question, should be read in conjunction with Question 6.1 and 6.5. Some banks noted that the inclusion of open defaults can heavily distort the estimates depending on the logic adopted for the modelling technique of defaulted assets. Banks were of the view that an example of how this would apply would be useful in clarifying some of the uncertainties with respect to which differences are expected with the analogous treatment for the performing LGD estimation.

Question 20:
7.4 Which approach do you use to reflect current economic circumstances for ELBE estimation purposes?

In line with the EBA Guidelines, the IIF agrees on the importance of including all relevant economic factors. Current economic conditions for ELbe estimation purposes are generally reflected via the nature of the collateral or the market of the equipment, and expert judgment by sector. Additionally, we note that there are some different understandings as to whether this is a new or existing requirement.

Question 21:
7.5 Do you currently use specific credit risk adjustments as ELBE estimate or as a possible reason for overriding the ELBE estimates? If so how?

For clarity, our interpretation of this section is that it is intended to disallow firms the ability to use impairments to determine their ELbe/BEEL, which is the approach used by several firms.

The proportion of defaulted exposures to overall performing exposures, as seen in Pillar 3 disclosures, is generally small. As such, requiring banks to model these exposures seems a disproportionate approach that is likely to not lead to a material reduction in RWA variance.

Additionally, impairments are heavily scrutinized by auditors prior to public disclosures in a firms' annual report to inform investors and shareholders.

We propose the introduction of a materiality threshold, or more generally the need for the adoption of a more proportionate approach, to allow the use of impairments for ELbe/BEEL when the proportion of defaulted exposures to overall performing exposures is demonstrated to be immaterial.

With consideration to the fact that these proposed Guidelines and IFRS 9 might not be aligned, the IIF recommends that the EBA widen the conditions under which firms are able to use provisions. This would avoid the need for either development of new BEEL models where these are immaterial.

Application of Risk Parameters

Question 22:

8.1 Do you see operational issues with respect to the proposed requirements for additional conservatism in the application of risk parameter estimates?

We note that while the proposed treatment is appropriate, it should be noted that as triggers are remediated, the conservative steps to the individual risk parameters, and/or RWA should be removed. It would therefore not require a material change request and approval. Additionally, clarification with some examples of the cases of "deficiencies related to implementation or application of risk parameters" would be useful.

Re-development, re-estimation and re-calibration of internal models

Question 23:

9.1 Do you agree with the proposed principles for the annual review of risk parameters?

The IIF agrees with the proposed principles for the annual review of risk parameters, but notes that clarity on the main objective is unclear – if the role is model optimality it may not consider the role of cost/benefit analysis for the banks.

We note that clarification on the definitions of the wording "re-calibration, re-development, re-estimation" is needed. These are three different processes that should be clarified, as it is not currently clear the appropriate treatment for LGD parameters.

Additionally, we seek clarification on paragraph 204. In cases a process is consistent with the requirements paragraphs 200-203 set up, a clarification is needed on the underlying concept for having a regular review of models. We note that the paragraph 202 ii with respect to the application to PD is sufficiently clear, and suggest for similar guidelines to be provided for LGD (in particular to what type of backtesting should be done).

We would welcome clarification on whether Annex IV is intended to be exemplary only to avoid different interpretations of the Guidelines.

Calculation of IRB Shortfall or Excess

Question 24:

10.1 Do you agree with the clarifications proposed in the guidelines with regard to the calculation of IRB shortfall or excess?

The IIF broadly agrees with the clarifications proposed to the calculation of IRB shortfall or excess as proposed on the guidelines. However, we note that this topic is very significant to certain jurisdictions and has the potential of not allowing a level playing field for certain countries.

Some banks are of the view that there is a misalignment between the interpretation of Basel and that of the EBA for the shortfall computation in case of partial write-off. These banks note that Basel (Basel II paragraphs 380-383) has it gross of partial write-off, not net.

In the context of the BCBS proposal which disallowed the use of models for certain exposures, we seek to clarify the scope of this Guidelines. Additionally, we seek to clarify if there something specific that applies to expert-based and non-statistical models.

Question 25:

11.1 How material would be in your view the impact of the proposed guidelines on your rating systems? How many of your models do you expect to require material changes that will have to be approved by the competent authority?

The IIF considers that on the issue of timing and operational burden for banks, having a package approach to new model changes could potentially minimize the approvals, timing, and supervisory burden.

We note that this answer should be considered together with the answers provided to the questions related to the MoC, and the LGD requirements. Banks anticipate that at least ¼ of all models will be impacted, and will potentially result in a material model change, implying significant costs for the institutions as well as the supervisors.

We also understand that the Guidelines would not only apply to future models, as such banks will need to redevelop all PD models for definition of default changes, and LGD models will need to be at least recalibrated for these Guidelines and the RTS. Given the considerate operational burden, we suggest a phase-in approach for models that need to be reworked.