BASEL COMMITTEE ON BANKING SUPERVISION

BANK FOR INTERNATIONAL SETTLEMENTS

16 September 2005

QIS 5 data quality questionnaire

The purpose of this questionnaire is to survey bank practice in order to better understand the reliability and dispersion of QIS 5 results. The questions are not intended to test banks' compliance with the Basel II Framework. Indeed, the fact that certain practices are mentioned here should not be taken as an indication either that such practices will be encouraged (or even allowed) in implementation, or that they are a standard industry practice. Banks should not be discouraged from completing the QIS 5 if their practice does not yet fully conform with the requirements in the Basel II Framework.

In the remainder of this questionnaire, two types of questions have been distinguished according to their importance for the analysis of the results.

- The answers to **questions with an asterisk (*)** will be important for the analysis of QIS 5 as well as for the work of certain other working groups of the Basel Committee. Members of the OC/QIS Group are therefore asked to ensure that they will be in a position to provide answers to these questions for each of their participating Group 1 banks in time for inclusion in the QIS 5 analysis work. Question 10 should be answered by all banks aiming at the Standardised approach.

- By contrast, the answers to all remaining questions are intended to provide supervisors with guidance when talking to their banks about the QIS 5 process. Supervisors might wish to collect answers on some of the questions in a systematic way; however these questions can also be used as an aide-mémoire to support bilateral discussions with banks once the results have been collected.

Whilst the majority of the questions relate to the IRB approaches, the questions in sections 1, 2, 5 and 6 are also relevant for non-IRB banks and supervisors will need to have a feel for the answers also from banks only providing data for the Standardised approach.

Questions

1.   General questions on credit risk data

Q 1*   Please indicate whether the bank is able to allocate its exposures appropriately along the various exposure classes and if not, what serious obstacles were experienced.

Q 2*   Describe material instances in which exposure amounts included in each worksheet are approximated based on available information because systems are not adequate for generating exposure data in the specific form requested.

Q 3*   If the bank is providing data for the IRB approaches, please indicate whether the bank is able to assign appropriately all its exposures to grades within every portfolio and if not, what serious obstacles were experienced and what assumptions had to be made to produce a meaningful distribution of the exposures of every portfolio across grades.

Q 4*   Please indicate how credit risk mitigation has been taken into account by the bank. (Please complete per portfolio if necessary.)

☐   The bank has taken into account all available collateral and guarantees.

☐   The bank has assessed the value of collateral and guarantees for a sample of its portfolio and generalised the effect to the portfolio as a whole.

Please describe the nature of the sample. Was it a true random sample, or a convenience sample? In what respect could the convenience sample differ from a true random sample?

☐   The bank has only taken into account collateral and guarantees where data were available.

For what percentage of loans is data on collateral and guarantees available? Please describe whether there are any systematic differences between loans for which collateral data is available and loans for which this is not the case.

☐   Other.

Please explain.

Q 5   Please indicate how the value of collateral has been assessed.

Are the estimates unbiased or conservative? If own haircuts are used, how have they been determined?

Q 6   Please explain whether the bank used IFRS-based data or data based on other national GAAP for this exercise.

If the bank already participated in previous exercises, and the accounting principles differ from these exercises with significant impact (for instance, because of a change in the accounting or reporting rules) please explain the impact on the QIS 5 results. Please also mention whether the bank expects to adopt different accounting principles at the time of implementation and this is expected to have an impact on the results.

2.   Standardised approach

Q 7   Please indicate the external credit assessment institutions (ECAIs) whose ratings are used to determine the risk weights within the Standardised approach.

Q 8   How are the ratings of these ECAIs mapped to the risk weights categories within the Standardised approach?

Q 9   Which portion of the individual portfolios (in terms of exposure value) is covered by these ECAIs?

Q 10*   What portion of the unrated exposure amount will still be unrated after implementation?

3. IRB approaches

3.1 PD estimation (FIRB and AIRB)

Please provide answers for all the questions in either section 3.1.1 or 3.1.2 for each of the bank's most material rating system(s) in each regulatory portfolio (an 80% coverage target may be appropriate).

3.1.1 Corporate, SME corporate, bank and sovereign portfolios

Q 11* What data has been input into the sample for estimation?

□ The bank's own default data.

How many years of data have been used? On which period of time? Of this total number of years, please indicate how many years with individual operations data have been used and how many years with aggregated data were employed.

□ External data.

How many years of data have been used? On which period of time? Please identify the source/vendor and any criteria that have been applied to confirm its suitability.

□ The bank's own default data supplemented from an external source.

How many years of data have been used? Please identify the source/vendor and any criteria that have been applied to confirm its suitability.

Q 12* Changes in credit quality over the economic cycle … (please choose one option only)

□ are primarily reflected in ratings assigned to obligors, rather than in the PDs assigned to ratings.

□ are primarily reflected in PDs assigned to ratings, rather than in the ratings assigned to obligors.

□ have little effect on either PDs or ratings, since PDs and ratings already reflect conservatism or stress.

□ have little effect on either PDs or ratings, since PDs and ratings already reflect an extended time horizon.

□ are reflected in both PDs and ratings.

Q 13* Total predicted defaults, defined as IRB PDs multiplied by the number of exposures, will… (please choose one option only)

    ☐   (a) remain relatively stable.

    ☐   (b) vary with the economic cycle as might be expected from a portfolio rated by S&P or Moody's (with some migration between grades) and to which default rates averaged over a very long term have been assigned.

    ☐   (c) vary more than suggested by (b), perhaps because PDs are averaged over a shorter term (e.g. 5–6 years) or because there is more migration than observed among the grades assigned to corporate borrowers by Moody's or S&P.

    ☐   (d) reflect the full volatility of conditional PDs. This could arise because conditional PDs define grades, and the average conditional PD is assigned to each grade. Although the PD assigned to each grade is stable, migration will mean that the full volatility of macroeconomic conditions is reflected in total predicted defaults.

    ☐   (e) Other.

        Please explain, indicating whether the resulting volatility is closest to that associated with options (a)–(d).

Q 14* What portion of risk-weighted assets has been rated by this model?

3.1.2 PD estimation retail portfolios

Q 15* Changes in credit quality over the economic cycle … (please choose one option only)

    ☐   are primarily reflected in ratings assigned to obligors, rather than in the PDs assigned to ratings.

    ☐   are primarily reflected in PDs assigned to ratings, rather than in the ratings assigned to obligors.

    ☐   have little effect on either PDs or ratings, since PDs and ratings already reflect conservatism or stress.

    ☐   have little effect on either PDs or ratings, since PDs and ratings already reflect an extended time horizon.

    ☐   are reflected in both PDs and ratings.

Q 16* Please classify the sensitivity of total predicted defaults (defined as IRB PDs multiplied by the number of exposures) to the economic cycle on a scale of 1–4 This scale should be conditional on the asset class in question where: 1 – relatively stable; 2 – mild fluctuation; 3 – strong fluctuation; and 4 – predicted defaults reflect the full volatility of conditional PDs.

Q 17* How many years of data have been used in the pool allocation and PD estimation process? On which period of time?

Q 18* What portion of risk-weighted assets has been rated by this model?

3.2   LGD estimates (AIRB and Retail IRB only)

As in some cases a bank may have used a relatively simple LGD estimation methodology on a "best-effort basis" since the envisaged methodology is still under active development, the bank should indicate whenever an answer to the questions in section 3.2 would change as soon as the methodology that is still under development is applied.

Q 19*   In which asset classes or at which more granular level does the bank employ internally developed (expected) LGD estimation models based on internal default data and in which cases external models and/or external data?

How did the bank ensure that external data are representative for the bank's actual exposures? If external data are used, in which cases do they comprise market data and which kind of data is used (for example, credit spreads of traded defaulted or non-defaulted debt)?

Q 20*   (a)   Does the bank first estimate an (expected) LGD (or a recovery rate) on a facility basis that was later aggregated to an (expected) LGD for the respective exposure bucket, usually represented by a column in the QIS spreadsheet ("bottom-up approach"), or does the bank estimate (expected) LGD directly on a bucket level ("top-down approach")?

(b)   Does this methodology depend on the asset class?

Q 21*   In which way and to what extent are (direct and indirect) work-out costs incorporated in the (expected) LGD estimation methodology? Please describe the types of costs included. Please complete per portfolio if necessary.

Q 22*   Please complete per portfolio if necessary:

(a)   Which discount method is used for the (expected) LGD estimation? Does it depend on the asset class?

(b)   Are different discount methods used for defaulted and non-defaulted exposures?

(c)   Does the bank's methodology account for the opportunity costs of holding defaulted assets over the workout period?

Q 23*   In which asset classes or at which more granular level (e.g. which facility) (if any) does the bank face practical constraints in particular for the measurement of downturn effects? If ad-hoc assessments are used in these cases, please describe their key idea.

Q 24   (a)   Does the bank define downturn conditions at a more granular level than the asset class (e.g. at the facility level)? If yes, at which level?

(b)   How does the bank define downturn conditions for each asset class (or for each more granular level)?

(c)   In which asset classes (or at which more granular level) is the economic downturn identified on a cross-country basis instead of a country-by-country basis?

Q 25   How does the bank determine dependencies between default rates and loss rates or recovery rates for each asset class (or for each more granular level)?

Q 26 (a) How does the bank incorporate identified dependencies between default rates and recovery rates to produce LGD parameters consistent with identified downturn conditions?

(b) Has the bank's own default data been used for the validation of the LGD estimates? If so, how? If not, how was the suitability of the data confirmed?

Q 27* In which asset classes (or at which more granular level) and on which basis does the bank consider downturn LGDs to be equal to the long-run default-weighted average LGDs?

Q 28* Please indicate whether the bank uses the same data and the same default definition for estimation of PD and LGD. (Please choose one option only.)

☐ (a) Default definition and data set are identical.

☐ (b) Data set is identical, default definitions are different.

☐ (c) Default definition is identical, data sets are different.

☐ (d) Data set and default definitions both are different.

For (b) and (d), please describe the differences in the default definitions for PD estimation and LGD estimation. Please indicate whether either default definition tends to identify defaults that are not identified as defaults under the other definition.

For (c) and (d), please describe the difference between the data sets. Please also describe any mapping procedure that is used to achieve consistency between the data sets and with different default definitions.

3.3 Credit risk mitigation

Q 29 (a) Has the bank been able to separate exposures eligible for the double default framework and report them in the respective worksheets?

(b) Does the bank intend to apply the double default framework after implementation?

Q 30 Please answer the following questions for those guaranteed exposures which are subject to PD substitution or the double default framework under the AIRB approach.

(a) For what proportion of exposures has the bank used the LGD of the guarantee?

(b) How has the bank estimated the LGD of the guarantee?

(c) What data did it use, covering what years?

(d) What criteria did the bank use for using the LGD of the guarantee rather than the LGD of the underlying transaction?

(e) If the bank had used the LGD of the underlying transaction rather than the LGD of the guarantee, estimate the effect this would have as a relative change to capital for these exposures.

3.4 EAD estimates (AIRB and Retail IRB only)

Q 31 How have the EAD estimates been obtained?

☐ The bank uses an external model that generates EAD estimates.

What kind of data have been used for calibration? Please identify the model and vendor if applicable.

☐ The bank uses an internal model that generates EAD estimates.

What kind of data have been used for calibration?

☐ The bank has generated EAD estimates for a sample of its exposures and generalised these estimates to the portfolio as a whole.

Please indicate whether the sample used was a random sample (e.g. the bank has manually collected the required data for a certain percentage of its exposures) or a convenient sample.

☐ A historical average EAD has been used to approximate EAD for different segments of the bank's portfolio.

Please indicate the time period covered.

☐ Other.

Please specify.

Q 32 Please indicate whether the bank uses the same data and the same default definition for estimation of PD and EAD. (Please choose one option only.)

☐ (a) Default definition and data set are identical.

☐ (b) Data set is identical, default definitions are different.

☐ (c) Default definition is identical, data sets are different.

☐ (d) Data set and default definitions both are different.

For (b) and (d), please describe the differences in the default definitions for PD estimation and EAD estimation. Please indicate whether either default definition tends to identify defaults that are not identified as defaults under the other definition.

For (c) and (d), please describe the difference between the data sets. Please also describe any mapping procedure that is used to achieve consistency with external data sets and with different default definitions.

Q 33 Has the bank's own default data been used for the validation of the EAD estimates? If so, how? If not, how was the suitability of the applied data confirmed?

Q 34 Where, why and how has the bank applied conservatism in its EAD estimates?

4. Trading book-related issues

Q 35   How have collateral and margin agreements been treated in the calculation?

Please explain if the firm has been able to model margin agreements for the Internal Model Method (IMM) or used a shortcut approach. Please describe if the treatment is different according to types of portfolios, contracts or counterparties.

Q 36   How has netting been treated in the calculation?

Has the firm incorporated cross product netting in the calculations? Please describe if the treatment is different according to types of portfolios, contracts or counterparties.

Q 37   If the IMM was used, is the calculation compliant with the Committee's document on *The application of Basel II to Trading Activities and the Treatment of Double Default Effects?*

Q 38   If IMM was used, what approach(es) did the firm use to calculate the exposure?

Please describe (e.g. EPE or VaR, analytic or simulation model). Does the approach differ depending on the contracts, portfolios or counterparties, etc.? Has the firm identified any particular issue about compliance of the approach used for the calculations with the regulatory requirements on use test for IMM?

5. Securitisation

5.1   Current Accord

Q 39   Treatment of liquidity facilities

  (a)   What proportion of the unrated exposure belongs to liquidity facilities?

  (b)   What proportion of the liquidity facilities have an original maturity of more than one year?

5.2   Standardised approach

Q 40   Treatment of "unrated exposure subject to concentration ratio in EU"

  (a)   What is the applied average concentration ratio?

  (b)   What is the applied average risk weight?

Q 41   Treatment of liquidity facilities

  (a)   What proportion of the liquidity facilities have an original maturity of more than one year?

  (b)   Please indicate the applied risk weight.

5.3 IRB approaches

Q 42   What types of underlying exposures are not subject to the IRB approaches?

Q 43   For what types of exposures neither the RBA, the IAA nor the SF can be used? What was the reason for the inability of using neither the RBA, the IAA nor the SF?

     ☐   An IAA does not exist for this asset class.

     ☐   Available information did not allow to apply the RBA, the IAA or the SF and such information will not be available in the future.

     ☐   Sufficient data is available but due to technical issues the data could not be used for QIS purposes.

Q 44   For how many transactions where the bank acts as an investor is it able to calculate K_{irb}?

Q 45   Please describe very briefly the methodology behind the application of internal ratings of ABCP positions.

6.   Operational risk

6.1   Standardised approach (if applicable)

Q 46   Please indicate whether the bank was able to allocate its income appropriately along the various business lines and if not, what serious obstacles were experienced.

6.2   AMA (if applicable)

Q 47   What analytical framework was used to quantify operational risk exposures?

Q 48   What was the unit of measurement in the assessment of operational risk exposures (e.g., major business lines, second level business lines, across all loss types, etc.)?

Q 49   Describe how the following elements were individually incorporated into this
         framework:

         (a)   *Internal data.* How were internal data incorporated into the model? Are
                 there components of the model that rely solely on internal data? If so, how
                 did the bank assess data sufficiency?

         (b)   *External data.* Were external data a direct input to the bank's model? If so,
                 describe the process for determining when external data were included. If
                 external data were not used as a direct data input, how were they used
                 (e.g. scenario analysis, fit severity distributions, and/or understanding
                 industry experience, etc.)?

         (c)   *Scenario analysis.* Describe how scenario analysis was used in the
                 analytical framework. Were scenarios a direct input into the bank's model?
                 If so, describe the process used to determine when scenarios were
                 included.

         (d)   *Business environment and internal control factor assessments* (and any
                 other qualitative adjustment factors). Were business environment and
                 internal control factor assessments included in the bank's model? What
                 parameters did the bank incorporate into its model to adjust the operational
                 risk exposure number to reflect these qualitative assessments?

Q 50   (a)   What weighting scheme or methodology was used to incorporate each of
                 the four components listed above?

         (b)   Did the weighting vary by business line and/or event type, or for different
                 units of measurement?

Q 51   (a)   What specific statistical distributions (e.g., frequency and severity) were
                 used to fit loss data?

         (b)   Did these vary by data type (i.e. internal, external, scenario), business line,
                 or event type? If so, how?

Q 52   Were adjustments made to internal or external data to account for changes in the
         scale or scope of the business, or factors such as inflation?

Q 53   Describe any correlation and diversification benefit assumptions used as part of the
         operational risk exposure calculation.

         *Specifically, what model parameters were used as they relate to these assumptions
         (e.g., an x% correlation in operational losses across different business units)?
         Describe how the bank arrived at these assumptions and the process to ensure that
         these assumptions are reasonable. If there is a diversification benefit, is that amount
         held at the consolidated entity level or allocated back to the business line? If so,
         how?*

Q 54*   Does the operational risk exposure number represent the sum of expected losses
         (EL) plus unexpected losses (UL), or UL only?

Q 55   If the operational risk exposure number represents UL only, provide the following information:

(a)   Provide the EL amounts, and describe how EL is derived (e.g. statistically measured, subjective estimation, etc.).

(b)   Describe how EL is accounted for. In particular, describe if operational risk EL is addressed through GAAP-compliant reserves/provisions, pricing or other internal business practices.

(c)   Describe the methodology used to categorise fraud-related losses as UL or EL.

Q 56   What loss data thresholds were used to collect the internal data underlying the calculations reported?

Please be as specific as possible. If different thresholds were used for different business lines and/or event types, then each threshold should be listed together with a brief rationale for why that threshold value was chosen. Was there a mechanism through which losses under the threshold were reflected in either EL or in the estimate of the operational risk exposure (EL+UL)?

Q 57   Describe the methodology used to take account of the effects of insurance.

Q 58   Describe how the bank is planning to allocate group AMA capital to subsidiaries. Please provide details on the methodology that would be used.