

To: Basel Committee on Banking Supervision  
Re: Consultative Document  
The New Basel Capital Accord  
April, 2003 (CP3)

### Comments Relating to Segmentation of Retail Credit Portfolios

We are pleased to have this opportunity to comment on certain issues regarding requirements for segmentation of retail credit portfolios, and to suggest areas where additional, specific guidance from the Committee would be useful in helping banks to meet those requirements.

#### BACKGROUND:

CP3 requires that banks segment their retail credit portfolios into pools, so as to satisfy certain key requirements. We understand these to include:

- (i) Homogeneity of risk behavior within each pool
- (ii) Meaningful differentiation of risk across pools
- (iii) Distribution of the portfolio across pools
- (iv) Stability of each pool's risk behavior over time

To satisfy these criteria, banks are required to consider several categories of risk drivers, including:

- (i) Borrower risk characteristics
- (ii) Transaction risk characteristics
- (iii) Delinquency of exposure

#### NUMBER OF SEGMENTS:

We wish to note a potential sizing problem for the number of required retail segments. An important contributing factor is the need, generally, to model borrower default separately for each account. Unlike the corporate space, it is generally problematic to establish an overall borrower rating and default probability, for retail credits.

First, borrower risk-characteristics and transaction risk-characteristics are not easily separable. A reflection of this is that application and behavioral scoring typically take place at the product level for each borrower. Although we typically find a correlation among these scores, they usually are not the same. A borrower will, for example, generally have a higher score, and hence a lower PD, for a home mortgage than for a revolving credit.

Second, there typically are no cross-default provisions, as is the custom in corporate credit. Instead, for example, a default in the current account will typically trigger a lower score and higher PD, but not a default, in the mortgage account.

Third, there are different capital allocation requirements for the three main product groups: Mortgages, Qualifying Revolving Credits, and All Other Retail.

As a result of all these considerations, and in the absence of further assumptions about borrower behavior, PD pool assignments will likely be made at the account level, not the borrower level. This contributes to a potential sizing problem for number of required segments.

We have modeled the number of pools that might be required for retail banks with different portfolio size and mix configurations. Depending upon how the various segmentation requirements are interpreted, the number of required segments might easily reach or exceed 1,000! Another key determinant is, for each product, the number of application and behavior score bands used to estimate PD, and used as well for decisions on pricing and commitments. It is not unusual to find at least 10 such bands per product. Additional segmentation, based upon collection scores for purposes of predicting LGD and EAD behavior, further multiplies the number of segments for each product. Then factors such as vintages, delinquencies, and overrides may still further multiply the number of required segments.

## NUMBER OF MIGRATION PATHS

The number of required segments drives the number of possible migration possibilities, from one segment to another. Even allowing for the fact that many migrations are impossible (e.g. cross-product migrations), the number of legitimate migration possibilities may well be an order of magnitude greater than the number of segments, so that, with 1000 segments, it is not difficult to visualize a requirement for at least 10,000 migration possibilities!

This could present major obstacles to the effective use and maintenance of the risk-based segmentation framework. For example, Migration Matrices can play an important role in such areas as:

- Risk-based pricing
- Loss forecasting and provisioning
- Capital planning
- Early problem recognition and remedial management
- Collections and recovery workflow planning and scheduling

We believe that it is important to maintain this functionality, for purposes of the Use Test, and also to realize further the potential of the risk-based segmentation framework.

## NEED FOR ADDITIONAL GUIDELINES

A bank's practical ability to establish, validate and maintain, and effectively use the required segmentation will depend crucially on its being able to meet the regulatory requirements with a much smaller number of segments, and with a very much smaller number of migrations, than those numbers indicated above. Though circumstances vary from bank to bank, we suggest that something on the order of 100-200 segments, and perhaps 1000-2000 migration possibilities, may represent close to the practical limits for many banks, even though finer granularity may help to reduce capital requirements.

We suggest, therefore, that further and, perhaps, more specific guidelines be issued dealing with the requirements for segmentation of retail credit portfolios. In particular, further clarification in the following areas would be useful and appreciated:

- (i) Appropriate measures for judging:
  - Homogeneity with respect to PD, LGD, and EAD
  - The meaningful differentiation of risk, and the distribution of the portfolio across risk segments
  - Stability of risk parameters over time
- (ii) Further clarification regarding what is meant by homogeneity with respect to EAD. We believe that you intend this to mean homogeneity in the way that current exposure is adjusted upward to reflect future drawdown of unused lines and commitments.
- (iii) The extent to which various risk drivers such as overrides, vintage, product, and delinquency necessitate their own, separate segmentations. In other words, to what extent need "Homogeneity" apply to the risk drivers, as well as to the PD, LGD, EAD risk measures?
- (iv) Taking this point still further, the ability to view each account as, in effect, a "Bucket of One", with PD, LGD, and EAD estimated via statistical functions defined on those risk drivers deemed to be relevant for that account. We note that the "Bucket of One" would seem to satisfy the requirements for homogeneity, and for distribution, but that further guidelines with respect to stability would be useful. This could involve, for instance, various aggregations to form portfolio partitions made up of larger buckets for which migration matrices are monitored.
- (v) Criteria for ongoing validation and maintenance of the segmentation schema, and how this might impact segmentation requirements. One issue, where further guidance would be particularly helpful, is how to judge whether the

actual risk behavior, observed over a year or less, is consistent with average behavior expected over the economic cycle.

- (vi) Any further guidance on stress testing, and its impact on segmentation, would like wise be most helpful.

Thank you for the opportunity to submit these comments. We hope that you find them useful.

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