

**Measuring Credit Risk and Economic Capital in
Specialized Lending Activities – Best Practices**

RMA – The Risk Management Association

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Introduction and Summary

This paper provides a response to the proposed regulatory capital treatment of “specialized lending” activities (“SL”) within the Basel Quantitative Impact Survey (“QIS 3”) dated October 1, 2002. In addition, the paper provides a survey of best practices for measuring the risk of SL activities at 10 of the 17 RMA Capital Working Group banks – a group of the largest institutions in the U.S. and Canada. The survey covers the internal ratings process, the estimation of PDs and LGDs, and the measurement of Economic Capital (“EC”) for specialized lending products.

The survey results suggest several conclusions:

- 1) Basel is correct in *not* assigning asset-based lending to the SL category of loans. Indeed, historical loss volatility of asset-based lending generally is less than for other forms of commercial lending and all of the survey respondents treat asset-based loans within their general commercial lending capital framework. Thus, asset-based lending is not discussed in this paper.
- 2) The internal ratings process for SL credits are as sophisticated and developed as for other commercial credits, although the low number of SL defaults during the 1990’s suggests that the PD estimation processes are currently not as statistically robust as for ordinary commercial loans (for which far greater numbers of “bads” exist). As databases collect greater numbers of defaulted versus non-defaulted loans, this problem will be addressed as we approach implementation of Basel II.
- 3) The generally dim view of the commercial real estate (“CRE”) lending market – a view apparently held primarily by U.S. regulators – is no longer justified. At least 3 conditions no longer exist that led to poor CRE performance in the late 1980’s and early 1990’s:

¹ This response represents the view, as a whole, of the RMA Capital Working Group, whose members consist of the senior officers of their respective banks responsible for risk measurement and the determination of economic capital. The financial institutions and the staff members participating in the Group are listed in Appendix 1. Individual institutions may be responding separately to the various Basel Papers, and/or may hold differing views than those expressed in this Response

- a) Highly leveraged REITs
 - b) Tax laws in the U.S. that, at first, favored commercial real estate lending (by creating pure tax incentives for such investments), then, in the 1990's were repealed.
 - c) Absence of best practice *rating* procedures that, now, are widespread among CRE lenders.
- 4) The Basel II capital requirements for the Supervisory Slotting Approach result in significantly higher capital attributions for SL products than generated by best-practice internal EC models
- 5) The Basel II capital requirements for High Volatility CRE products (HVCRE) result in significantly higher capital attributions for such products than generated by best-practice internal EC models.

Overview

The 10 banks participating in the RMA specialized lending survey tended to specialize in only one or two of the lending types identified by Basel II as "SL." One of the 10 banks specialized in Project Finance, while the other 9 specialized in commercial real estate. Of these 9 banks, one specialized in multi-family residential lending (MFR). None of the survey banks indicated that they engaged in substantial Object Finance or Commodities Finance.

As a generality, participants indicated that since the CRE losses of the late 1980's and early 1990's, lending criteria, including the systematic use of risk-rating grids, have advanced to become as least as sophisticated and prevalent as those used in the rest of C&I lending. In some cases, SL involves greater delineation (e.g., in leverage requirements) than in C&I. At the same time, there are also some elements of subjectivity in SL that do not exist for C&I – for example, PF and CRE often involve what amounts to start-up financing, so that less emphasis can be placed on the historical, financial track-record of an obligor and more on the management capability of the sponsor. The distinguishing feature of SL, compared to C&I, is that the creditworthiness of an SL transaction is primarily determined by the cash flows expected from the underlying collateral rather than by the quality of the obligor (sponsor). The quality of a

bank's risk measurement techniques is therefore dependent on its ability to analyze those cash flows.

Some special features of the major SL transaction "types" should also be noted.

- Project finance is rapidly becoming dominated by one U.S. bank in competition with several large non-U.S. banks. Any substantial difference between the manner in which that U.S. bank's capital requirements for this type of SL are implemented vis a vis those of other Basel countries will naturally have competitive implications.
- SL credits are often syndicated. Thus, it is important that the Basel requirements most likely to be applicable to a non-sponsoring syndicate member – i.e., the Standardized and Foundation approaches -- not be onerous relative to the non-Advanced capital requirements for other types of commercial lending.

The U.S. regulators' somewhat skeptical view of CRE lending probably is based on the performance of the old, highly leveraged REITs. Today there are no such highly leveraged REITS, in part due to the repeal (in the U.S.) of tax legislation that fostered aggressive loan-to-value lending because of the tax-driven benefits of such transactions. Moreover, underwriting procedures have become more comprehensive and formal, resembling procedures used for other types of C&I lending (albeit with somewhat different risk drivers).

As a generality, participants view the *rating* process (and the overall underwriting process) for SL to be as good as for other forms of commercial lending. Nevertheless, a significant minority of survey participants view the PD (and possibly LGD) estimates as being somewhat "softer" than those attached to C&I credits. This is because, at most banks, there are fewer numbers of SL credits than other commercial credits, and therefore fewer defaults, thus making internal databases less useful for estimating PDs and LGDs. At the same time, there has been, with a couple of notable exceptions, less data sharing or other external sources of data on which to base PD and LGD estimates, than for other forms of commercial lending. The notable exceptions regarding external data include: a) rating agency studies on the performance of commercial real estate loan-backed securities, and b) a recent and ongoing S&P-coordinated study on project finance default and loss rates using data from 4 large global banks. Also, the greater granularity (and

therefore higher numbers of defaults) involving multi-family lending generally makes internal data on such lending more robust.

Where a bank relies on internal data to generate PD and LGD estimates, data are limited to only the past few years (with the exception of 2 institutions whose default and loss data cover more than the current and previous recessions). In general, the banks' response to this problem is two-fold. First, so long as the rating process is sound, there is no compelling reason to believe that PDs for any given rating should be higher for SL than for other commercial loans. In a couple of instances, respondents' measured default rates for CRE loans have been lower, for a given internal ratings, than for other C&I loans. LGDs are somewhat less of a problem since a common technique is to simply use the mean LGD observed over however few actual defaults have been experienced. Second, every bank surveyed indicates that it has begun collecting internal loan-by-loan performance data for all forms of SL. Thus, by the time Basel is implemented in 2007, PDs and LGDs based on internal data should be reasonably robust.

The internal rating and underwriting process

As indicated above, the underwriting and rating processes for SL are essentially identical to the procedures used for other C&I loans, except that the measurable risk "drivers" differ somewhat for SL.

1. Internal rating categories. All 10 respondents indicated that the same number and meaning of ratings (grades) were used for SL as for C&I. Including grades that encompassed "classified" assets, 7 of the 10 banks had 9 to 11 grades, while 3 banks had 19 to 22 grades (in these cases, the greater number of grades involved the appending of a (+) or (-) qualifier to the basic grade).
2. Limits on the grade for new originations. All respondents had a formal or *informal* policy of originating new credits no lower than a grade of X, which generally was the lowest non-"criticized" grade for SL credits. In some cases, the minimum SL grade was one grade above the minimum new origination grade for C&I. As an example, in a 10-grade system with a grade 6 being a pass credit (and grades 7 through 10 being special mention and classified credits), any new SL credit must be at least a grade 5. In one case the minimum SL grade for a new

origination was one grade below that of the minimum grade for other commercial loans.

3. Obligor versus facility ratings. Six of 8 banks that provided information in this category indicated that they now (or will shortly) produce both an obligor rating and a facility rating. The other two banks produce only a facility rating. In the case of having both an obligor rating and a facility rating, the obligor rating can be considered an indicator of PD while the facility rating can be considered an indicator of LGD. In the case of the single facility-only rating, this is considered more of an EL indicator rather than an LGD indicator. At least one bank produces an obligor default rating and a facility default rating, as well as a facility LGD rating. In this case, the facility default rating generally is the same or better than the obligor rating, since the facility rating takes into account the existence of liquid collateral and structure/control that would generally improve the rating of the facility over that of the obligor (reduce the probability of default). In all cases in which the bank establishes separate obligor and facility ratings this reflects practice in the rest of the commercial portfolio.
4. Risk drivers. The objective and subjective variables that go into determining ratings differ depending on the type of lending (e.g., project finance versus commercial real estate) but appear to be relatively uniform across banks engaging in the same type of lending. That is, the risk rating worksheets across banks look fairly similar. Rather than attempt an exhaustive listing of these “drivers” of risk ratings for all lending types, we concentrate below on the drivers for CRE. In a typical rating process, the bank would employ a risk rating “grid” something like the following.

Sample Risk Rating Grid

Risk Driver =	DSC ratio	LTV	Management Quality	Variable D	Variable E
Grade 1	DSC > x	LTV < x	a) experience, b) record over cycle c) mgmt. succession		
Grade 2	x > DSC > y	x < LTV < y	"		
Grade 3	y > DSC > z	y < LTV < z	"		
Grade 4	z > DSC > w	z < LTV < w	"		
Grade 5	w > DSC > u	w < LTV < u	"		
etc.	Etc.	etc.	etc.	etc.	etc.

In effect, the borrower is graded with respect to each risk driver, or independent variable. For each of these independent variables, the loan officer may be provided with instructions in the cells of the matrix (e.g., a grade 3 cannot be achieved with respect to the debt service coverage ratio unless the ratio exceeds z). In some cases, the instructions in the cells of the matrix are quite detailed. Further, there is often instruction regarding the relative weights of the variable-grades – i.e., the loan officer may be instructed to treat the DSC ratio as the most important variable. In effect, the risk rating matrices, which differ according to the type of product (e.g., CRE versus MFR), act like a kind of PD estimating function in which the determinate variable (left-hand side of the equation) is the rating, the indeterminate variables (right-hand side of the equation) are the variables listed across the top of the matrix, and the coefficients in front of the right-hand variables are not fixed, empirically-estimated coefficients but rather are somewhat subjective, as guided by internal policy. Here is a more or less complete listing of the independent variables as provided by the survey participants for CRE. The list includes variables that may affect either the obligor

rating or the facility rating (or the composite rating in the case of a single facility-only rating process).

- Debt Service Coverage Ratio
- Leverage Ratio of the obligor
- LTV
- Overall portfolio quality of obligor
- Obligor liquidity
- Management quality and experience
- Debt rating, if applicable, of obligor
- Property occupancy
- Property condition
- Cash Flow Volatility
- Guarantor, letter of credit, other collateral
- Payment history of obligor/guarantor
- Market vacancy rate and prospects
- Tenor and amortization
- Insurance

In addition, there may be off-matrix limitations on new credits such as portfolio composition limitations (geographic or by type of property), or grade limitations. Finally, the risk drivers for SL may be similar to those for other forms of commercial lending, but, as indicated above, there is an emphasis in SL on the collateral and the cash flows from the collateral, rather than on the quality of the obligor/sponsor. For some participants, SL is thought of as being more “transaction-oriented” rather than obligor-oriented.

5. Lending over the cycle. Because regulators appear to be currently focused on the issue, we asked participants to briefly describe how their SL lending, as well as their other commercial lending, “responds” to the peak of the cycle (i.e., is there some fashion in which lending is “reigned in” when there is a perception of a forthcoming downturn). In general, participants indicated that this was next to impossible, given the difficulty in predicting the timing of a downturn. Some respondents indicated that they use “cycle-neutral” ratings (and thus cycle-neutral

PDs and LGDs) so that they expect to lose market share near the peak (and vice versa) compared to other lenders. Others indicated that it was important to not “relax” the usage of the worksheets or rating matrices during the boom periods. Others indicated that they could not help but take all indicators into account, including internal macro forecasts, the actions of obligors (in taking steps to protect themselves from a perceived downturn, such as drawing down inventories), and the views of shareholders (e.g., via CreditMonitor™ in cases where the obligor is a publicly-traded company). Of course, the private ownership nature of most SL obligors made it more difficult to perceive the “market views” regarding such obligors. All of these considerations contribute to the general skepticism over being able to “respond” appropriately prior to cyclical downturns.

6. Rating management and credit management processes. In all 10 banks, the procedures set up for rating and reviewing SL credits are the same as for other commercial credits. In all but one of the banks, the account or deal officer is responsible for the rating, with senior manager or committee review at origination depending on such things as the size of the transaction. At one institution there is a complete separation of the rating process from the account or relationship management – that is, a credit executive is responsible for the rating, not the sales or relationship person. At all banks, a quarterly, semi-annual or annual review of the rating takes place with more frequent review of very large or troubled credits. At some banks, the perception was that the rating and review process was somewhat more stringent for SL credit than for other commercial credits, possibly because of the lesser number of SL credits relative to the rest of the commercial portfolio. Also, in some instances the structure of the facility necessitates monthly or even more frequent monitoring of the credit. For such credits one could argue that the rating is even more accurate than for ordinary C&I lending.

At all the banks, an SL transaction is managed by a specialist or within a specific business line, no matter the specifics of which relationship manager “sells” the transaction. For each of the three credit types covered by the survey – non-residential CRE, MFR, and PF – there exists a fairly well understood

definition of the transactions that should be subjected to the specialist approach. As indicated earlier, this delineation typically involves an underlying collateral that produces income.

Estimating and assigning PDs and LGDs

1. PDs by rating category. All but one of the respondents assigns PDs for SL transactions according to the rating – that is, all SL credits of a given rating receive the same PD. This is also the approach taken with regard to the rest of the commercial portfolio. One bank assigns PDs according to grade in the rest of the commercial portfolio but, with respect to SLs, assigns PDs based on finer gradations if possible (for example, where there exists external EDFs or external ratings). Of the group that assigns PDs according to rating, one bank notes that PD depends on both grade and tenor.
2. Use of PD estimation models. None of the respondent banks makes use of a formal, empirically derived PD estimation model for SLs. As described above, the rating process drives PDs, and ratings, in turn, generally depend on the use of risk rating matrices in which the “weightings” of each of the independent variables is somewhat subjective. One bank, however, employs a risk matrix in which the weightings are fixed and explicit. Thus, this bank in effect employs a PD estimation model in which the model’s coefficients are determined via an “expert system” rather than through pure empiricism. Also note that, generally for this group of respondent banks, in the rest of the commercial portfolio, vended PD estimation models (such as RiskCalc™ or CreditMonitor™) may be used in arriving at a rating, but it is still the rating itself that drives the PD estimate, not the other way around.² It is noteworthy that some of the respondent banks also validate their PD estimates over time to make sure that actual performance within a grade continues to be reflected in the PD estimates.

² This distinguishes this particular sample of banks from respondents in other RMA-sponsored surveys in which a few participants used formal PD estimation models to arrive at the PD for purposes of inputs into the internal EC model, regardless of the rating of the credit.

3. Estimating LGDs. As is the case for PDs, the banks generally do not use LGD “models” to estimate LGDs. Rather, the banks use some combination of an “expert system” and the observed simple means of LGDs for the actual defaults found in internal default databases. Such LGDs will differ depending on the transaction type (i.e., type of collateral and/or seniority).
4. Internal/external databases for estimating PDs and LGDs. In general, respondents’ internal databases were viewed as not yet sufficiently robust to support truly “hard” empirical estimates of PDs (although there was somewhat greater confidence in the LGD estimates). In most cases, SL default and loss data go back only a few years (5 or 6 years was the typical time frame). For two of the respondent banks, internal data on CRE and ABL performance goes back through the late 1980’s, early 1990’s recession. Often, the bank relies on the quality of its rating process and then assumes that PDs for each grade will no worse than those found in the commercial loan and commercial bond sectors (where studies exist on default rates by rating category). Alternatively, the bank may take the PDs computed from its internal default data (even though the data go back only a few years), then adjust these “internal-data-only” PDs according to commercial bond performance data from the rating agencies that go back much further in time. Even in the cases where internal historical data cover a large number of past years, the low numbers of outstanding SL credits and defaults hinder robust empirical work. An exception would be MFR lending, for which large numbers of “goods” and “bads” exist within the database of one of the survey respondents that maintains a significant MFR specialty.

As indicated earlier, external studies of SL defaults are rare, with exceptions for a) performance of commercial real estate backed securities, and b) a recent S&P sponsored study of project finance default and loss rates.

5. Historical volatility of loss rates for SL. We asked each respondent to comment on the observed historical volatility of loss rates for SL credits. The answers depended on the type of credit. Project finance loss rates were seen to have both a lower mean and lower standard deviation over time than other

forms of commercial lending. CRE was seen by 4 of 9 respondents to have a lower mean loss rate but a somewhat higher standard deviation than for other commercial loans, while 3 of the 9 banks did not know the volatility of historical loss rates, and 2 of the 9 thought loss means and standard deviations were similar to other forms of commercial lending.³

6. Exposures-at-Default (EADs). Most of the respondents used a measure of EAD equal to the outstanding balance plus some percentage (x) of the unused, available line, in similar fashion to the practice in “regular” commercial lending. These respondents said that the level of (x) depended on the grade and/or type of credit product. The level of (x) was derived from those defaults observed in the internal historical database. Some banks indicated that, for CRE, the credits tended to be fully drawn because of the built-in timing of the transaction (with the possible exception of construction lending); thus, the EAD was set at 100% of the line. One bank noted that, because of the built-in timing of draws, plus amortization features, actual EADs on CRE were often lower than the exposure a year prior to default.

Economic Capital Processes

1. Type of model. All respondents said that their internal Economic Capital (EC) model for SL credits was the same type of model used within the rest of the commercial portfolio. Of 9 banks providing input on this subject, 3 use default-mode, default correlation models, 3 banks use default-mode, obligor-asset-value (OAV) correlation models (similar to the regulatory model for Basel II), and 3 use Mark-to-Market OAV models (PortfolioManager™).
2. Differences in correlations and differences in EC output. Of the 9 respondents providing information on this subject, 3 said that they used identically the same correlations (whether default correlations or OAV correlations) in

³ Any analysis of historical loss volatility should be tempered by the reminder that past volatility may not be indicative of the current degree of “thickness” in the tail of the loss distribution. That is, for any given bank, the average degree of loss correlation within the portfolio can change over time, changing the thickness of the bad “tail.” Low (high) volatility in the past may not be indicative of low (high) volatility in the future.

assessing EC for SL credits as for other commercial credits. Four said that the OAV correlations differed by geography or industry so that, for example, CRE might be assigned a higher correlation than the average of other commercial loans because of the “industry” or because of where CRE credits were located. Two banks said that CRE involved, as an asset type, a higher OAV correlation, because of the implicit assumption that there was a non-zero correlation between LGDs and PDs. That is, in a model in which PD-LGD correlation is not explicitly accounted for, using higher OAV correlations than otherwise can approximate the effects of a positive PD-LGD correlation. Neither of the two banks was able to provide empirical evidence regarding the existence or level of the higher OAV correlations or the implied non-zero PD-LGD correlation.

3. Relationship between correlation and PD. There was a wide array in the level of the assumed correlation as PD rises. Of 6 banks using OAV correlation models, 4 banks said that their OAV correlations were invariant with PD (did not decline as PD rises, as in some of the regulatory models). Two banks using an OAV correlation model explicitly assumed declining OAV correlations as PD rises, on the grounds that lower quality obligors experienced defaults in a more idiosyncratic fashion than the bulk of obligors. One bank using a default-correlation model indicated that its default correlations rose as PD rises (in similar fashion to the implied default correlations associated with the Basel II OAV models) – although this bank indicated that the rise was not dramatic. Finally, one bank using a default correlation model indicated that its default correlations were invariant with PD, and one bank did not provide information on the issue.
4. Average weighted EC for SL credits. We asked the survey group to assess, in qualitative fashion, the average weighted EC associated with SL credits vis a vis the rest of the commercial portfolio. Of 9 respondents providing information, 3 said that average weighted EC for SL were about the same as for other loans, while 3 said that the question would be too difficult to answer or that it would be not relevant (because of the varying effects of PDs, and

LGDs on the one hand, versus default or OAV correlations on the other hand). One bank indicated that SL credits had generally lower PDs and LGDs than other commercial loans and that these lower PDs and LGDs offset the (assumed) higher OAV correlations being used in the SL models. Thus, for this bank, the average weighted EC for SL credits was lower than for other commercial loans. Three banks had the opposite result – the higher OAV correlations offset the generally lower PDs and LGDs, resulting in higher average EC for SL credits than for other commercial credits.

5. Time horizon. Interestingly, not all banks use a common one-year time horizon for their EC models for SL credits and other commercial loans. While 7 of 10 respondents did so, 2 others use a life of the loan horizon (and employ varying confidence intervals depending on the loan life). One respondent uses a combination of life of the loan horizons and a one-year horizon, depending on the type of commercial credit.
6. Confidence interval (soundness standard). Again, there was a wide variety in the confidence interval used for any given time horizon. For the one-year horizon, confidence intervals ranged from 99.5% to 99.97%. Notably, the bank using the 99.5% interval said that the lower confidence interval compensates in part for the bank’s inability to measure inter-risk-type diversification benefits. That is, a more liberal confidence interval was being used to compensate for the conservative practice of simply adding up the EC estimates for each of the major risk types – credit, market, and operational. For banks using life-of-the-loan horizons, of course, the confidence interval declines as the life of the loan increases (to maintain a constant “rating” concept of bank soundness).

Issues related to QIS3 – the appropriateness of proposed regulatory capital requirements

The current version of Basel II, as embodied within the Quantitative Impact Survey (QIS3) dated October 1, 2002, indicates that certain types of SL exposures will be subject to a “supervisory slotting” (“SS”) procedure rather than to a “regulatory model” approach. The SS approach would be applicable in either of two cases:

- Where the bank is not qualified by the supervisor to estimate PDs (for SL) for use within a the “regulatory model” approach (i.e., the Foundation or Advanced IRB approaches), or
- Where the bank is a qualified IRB-approach bank, but the particular type of Specialized Lending involves so-called High Volatility Commercial Real Estate (HVCRE).

In either of these two cases, rather than compute PDs and LGDs for use in determining regulatory capital, the bank must “slot” the SL credits into a 5-bucket regulatory “rating” system – Strong, Good, Satisfactory, Weak, Default. Fixed risk-weights (and therefore Total Capital requirements) are then assigned to each of these buckets. The RMA Capital Working Group does not find fault with the *criteria* for slotting (as expressed in the Basel working paper on SL and subsequent communications), and believes that advanced practice banks would have little difficulty in “translating” their own internal ratings into the 5 regulatory buckets. Rather, we are concerned that the regulatory capital requirement for each regulatory bucket may be too high when compared with best-practice methods for estimating economic capital. In the case of advanced-practice banks qualifying for the IRB approach in the rest of the commercial loan portfolio, we would much prefer the use of the “regulatory model” for HVCRE – even if the regulatory model used a set of obligor-asset-value-correlations that are somewhat higher than those used in the “regular” model for C&I loans and for the other types of specialized lending. In the case of banks using the “supervisory slotting” approach for either “ordinary” SL or HVCRE we are concerned that the resulting Basel capital requirements are too high and, therefore, may harm the markets for syndication of SL credits. Thus, even though the banks responding to this survey are unlikely to use the SS approach for ordinary SL credits, other banks participating in syndicated SL credits managed by the survey banks may be adversely affected by the arbitrary capital requirements for the regulatory buckets.

In order to gauge the appropriateness of the Basel II requirements for each of the “supervisory slots”, we asked each survey bank to calculate the average-exposure-weighted EC it would attribute to the SL credits in each of the buckets, under alternative confidence intervals. In actuality there are 10 regulatory buckets for SL credits, the 5 for

“ordinary” SL credits and the 5 for HVCRE.⁴ Table 1, following, shows the median EC allocations of the survey banks, expressed as a percentage of estimated exposures, for each of the 10 buckets, for the banks’ internal confidence intervals. The results for other confidence intervals are available but not shown for purposes of clarity – in general, the internal confidence intervals for the sample banks range around 99.9%.

⁴ In guidance provided within the National Discretion document for US banks, HVCRE are defined to include a) commercial real estate loans for office buildings, hotels, and single-use properties, b) acquisition, development, and construction (ADC) loans for such properties, and c) ADC loans for any other property where the borrower does not have substantial equity at risk and the source of repayment for the exposure is either (i) the uncertain sale of the property in the future or (ii) cash flows whose source is substantially uncertain (i.e., the property has not yet been pre-leased to the occupancy rate prevailing in that geographic market for that type of commercial real estate).

Table 1 – Median Internal EC for Basel II "SLOTS" for SL and HVCRE

	"Strong"				"Good"				"Satisfactory"			
	Internal	Basel TC	Basel Tier 1 "Well-Capt."	Internal	Basel TC	Basel Tier 1 "Well-Capt."	Internal	Basel TC	Basel Tier 1 "Well-Capt."	Internal	Basel TC	Basel Tier 1 "Well-Capt."
EC for Ordinary SL	2.46%	6.00%	4.50%	5.42%	8.00%	6.00%	8.30%	12.00%	9.00%			
EC for HVCRE	3.21%	8.00%	6.00%	4.34%	10.00%	7.50%	6.69%	14.00%	10.50%			

	"Weak"				"Default"				
	Internal	Basel TC	Basel Tier 1 "Well-Capt."	Internal	Basel TC	Basel Tier 1 "Well-Capt."	Internal	Basel TC	Basel Tier 1 "Well-Capt."
EC for Ordinary SL	10.53%	28.00%	21.00%	29.00%	50.00%	37.50%			
EC for HVCRE	9.59%	28.00%	21.00%	32.30%	50.00%	37.50%			

Note that the internal EC ratios, even though they are generally computed using a high confidence interval similar to that of the Basel Advanced IRB approach, are much lower than Tier 1 well-capitalized levels and Basel Total Capital levels. In other papers, the RMA Capital Working Group has made it clear that the arbitrary two-to-one relationship between Tier 1 and Total Capital requirements is, in itself, a problem that needs to be addressed. No matter the outcome of that issue, however, the Basel proposals for the “slots” are much too high, probably reflecting supervisory concern over the CRE lending conditions that existed in the 1980’s (but which have since been addressed by best-practice lenders).

The very high Basel capital proposals for SL activities using the “slotting approach” exists despite the use by the industry of somewhat higher asset-value-correlations (“AVCs”) than are used in ordinary commercial lending. The survey banks were asked to provide a table of internal EC calculations, for Commercial Real Estate (CRE) lending, within a defined matrix of PD ranges and LGD ranges (similar to the matrices used in past RMA Capital Working Group papers). Six of the 10 survey banks provided these data, showing internal EC for each of three confidence intervals – 99.5%, 99.9%, and the internal confidence interval – for each of the PD-LGD “cells” in the matrix. To conserve on space, Table 2, following, provides the median survey results for the LGD ranges that are most relevant to commercial real estate lending. A column at the end of the table shows that the implied AVC’s⁵ are on the order of 27%, compared to the AVCs of 24% and under used within the Basel model for the Advanced IRB approach for ordinary commercial credits.

⁵ An “implied” AVC is the AVC that results from plugging the median industry EC (for a given LGD and PD) into the Basel single-factor asymptotic risk model and solving “backwards” for the AVC. Some banks in the survey actually use internal risk models that are AVC models similar to the Basel model; others use loan-default-correlation models.

Table 2 -- Median Internal EC at Various Confidence Intervals for Commercial Real Estate Lending; Implied Asset-Value-Correlations

PD range	LGD = 10-20%				20-30%				30-40%			
	99.5% CI	99.9% CI	internal CI	99.5% CI	99.9% CI	internal CI	99.5% CI	99.9% CI	internal CI	99.5% CI	99.9% CI	internal CI
0-0.16%	0.31%	0.65%	0.84%	0.58%	1.51%	1.33%	0.56%	1.19%	1.95%	0.56%	1.19%	1.95%
0.16-0.32%	0.86%	1.39%	2.18%	1.07%	2.06%	2.77%	1.38%	2.64%	4.33%	1.38%	2.64%	4.33%
0.32-0.64%	1.43%	2.40%	3.17%	2.02%	3.40%	4.51%	2.58%	4.09%	6.59%	2.58%	4.09%	6.59%
0.64-1.28%	2.59%	4.18%	4.84%	3.67%	5.93%	6.04%	4.14%	6.76%	8.08%	4.14%	6.76%	8.08%
1.28-1.92%	3.50%	5.30%	6.34%	4.96%	7.50%	8.27%	5.72%	8.80%	10.16%	5.72%	8.80%	10.16%
1.92-2.56%	3.96%	5.68%	7.31%	5.60%	8.03%	9.84%	6.75%	9.95%	11.85%	6.75%	9.95%	11.85%
2.56-3.84%	4.88%	6.47%	7.89%	9.09%	12.69%	11.42%	8.83%	11.70%	14.27%	8.83%	11.70%	14.27%
3.84-5.12%	4.68%	5.84%	7.30%	9.98%	13.69%	12.07%	9.57%	13.49%	13.26%	9.57%	13.49%	13.26%
5.12-7.68%	5.57%	6.96%	8.69%	11.62%	15.11%	14.11%	11.03%	15.04%	15.52%	11.03%	15.04%	15.52%
7.68-10.0%	6.51%	8.13%	10.16%	13.02%	16.16%	16.19%	13.40%	17.51%	18.23%	13.40%	17.51%	18.23%
10-20%	8.36%	10.45%	11.57%	14.81%	17.29%	18.78%	16.25%	20.00%	23.21%	16.25%	20.00%	23.21%
>20%	9.78%	11.57%	11.31%	15.78%	18.16%	20.08%	21.24%	24.27%	26.66%	21.24%	24.27%	26.66%

PD range	LGD = 40-50%				50-60%				Implied AVCs; CI = 99.9% LGD = 35%
	99.5% CI	99.9% CI	internal CI	99.5% CI	99.9% CI	internal CI	99.5% CI	99.9% CI	
0-0.16%	0.68%	1.44%	2.51%	0.81%	1.69%	2.66%	0.81%	1.69%	27%
0.16-0.32%	1.69%	3.14%	5.37%	1.97%	3.75%	5.39%	1.97%	3.75%	27%
0.32-0.64%	2.96%	5.10%	6.74%	3.54%	6.10%	7.03%	3.54%	6.10%	26%
0.64-1.28%	5.15%	8.41%	9.37%	6.16%	10.06%	11.18%	6.16%	10.06%	28%
1.28-1.92%	7.12%	10.97%	12.61%	8.52%	13.12%	15.04%	8.52%	13.12%	27%
1.92-2.56%	8.41%	12.41%	14.08%	10.07%	14.87%	16.81%	10.07%	14.87%	26%
2.56-3.84%	10.70%	14.83%	17.30%	12.55%	18.12%	20.29%	12.55%	18.12%	25%
3.84-5.12%	12.30%	17.34%	17.05%	15.03%	21.19%	20.84%	15.03%	21.19%	25%
5.12-7.68%	14.00%	19.08%	19.37%	18.12%	24.56%	24.21%	18.12%	24.56%	24%
7.68-10.0%	17.22%	22.52%	22.23%	21.05%	27.52%	27.17%	21.05%	27.52%	25%
10-20%	20.89%	25.72%	27.98%	25.53%	31.43%	32.66%	25.53%	31.43%	25%
>20%	22.36%	26.63%	32.37%	27.33%	32.54%	37.71%	27.33%	32.54%	35%

The last column in Table 2 shows that, internally, the banks in the group tend to assign somewhat higher implied AVCs to CRE than Basel does for “regular” commercial lending – indeed, within their own models, the survey banks use somewhat higher AVCs for CRE than within their own models for “regular” commercial lending. The reader should note, however, that the results within Table 2 encompass a range of CRE activities, including both “HVCRE” and “ordinary” Specialized Lending. Note further that, if Basel were to allow Advanced banks to use the Basel commercial lending model for all forms of SL as well as “regular” commercial lending, the resulting Basel capital requirements would be somewhat below best-practice internal EC measurements for CRE. The RMA Capital Working Group, of course, has long argued that Basel requirements *should* be true minimums, set somewhat below the best-practice level of estimated internal Economic Capital.

Appendix 1

Institutions in the RMA Capital Working Group

Bank of America	Bank of Montreal
Bank of New York	Bank One
Citicorp	Comerica
Discover Financial Services	FleetBoston Financial
JPMorganChase & Co	KeyCorp
PNC Financial Services Group	Providian Financial
Royal Bank of Canada	Union Bank of California
Wachovia	Washington Mutual Bank
Wells Fargo	

Banks providing internal economic capital data for this survey

Bank of America
KeyCorp
Union Bank of California
Wachovia
Washington Mutual Bank
Wells Fargo

Banks providing other types of data and information for this survey

Bank of America
Citigroup
FleetBoston Financial
JPMorganChase
KeyCorp
PNC Financial Services Group
Union Bank of California
Wachovia
Washington Mutual
Wells Fargo

Staff participating in drafting or reviewing this response

Bank of America: John S. Walter, Senior Vice President, Risk Capital & Portfolio Analysis

FleetBoston Financial: Ranga Rangarajan, Managing Director-Mgt. Sciences, Corporate Strategies; Larry Mielnicki, Senior Vice President; Mike Fadil, Director of Credit Research; William Schomburg, Director, Economic Methodologies

JPMorganChase & Co: Michel Araten, Senior Vice President; Adam Gilbert, Managing Director

KeyCorp: Ashish K. Dev, Executive Vice President, Enterprise-Wide Risk Solutions, Robert Kula, Senior Vice President, Director of Economic Capital; Michael Pykhtin, Asst. Vice President, Capital Allocations

PNC Financial Services Group: Shaheen Dil, Senior Vice President, Portfolio Development Group; Terry Jewell, Senior Vice President & Manager, Risk Analytics

Union Bank of California: Paul C. Ross, Senior Vice President, Portfolio Risk Management; John Chittenden, Senior Vice President, Financial Planning & Analysis; Desta G. Medhin-Huff, Vice President, Portfolio Risk Management

Wachovia: James V. Johnson, III, Senior Vice President, Treasury Risk Management; Robert A. Gray, Vice President, Treasury Support; Gary Wilhite, Senior Vice President, Risk Management, Portfolio Management Group; Rhea D. Thornton, Managing Director, Wachovia Securities

Washington Mutual Bank: Alexander Kipkalov, First Vice President, Economic Capital Group; John Stewart, Vice President, Economic Capital Group

Wells Fargo: George Wick, Senior Vice President, Portfolio Strategies

RMA - The Risk Management Association: Pamela Martin, Director of Regulatory Relations & Communications

Mingo & Co.: John Mingo, Managing Director