

**Analysis of QIS4 Results versus Internal Economic Capital
Calculations – Level and Diversity**

Risk Management Association (RMA)

September 2005

I. Executive Summary.

The RMA Capital Working Group¹ is concerned over representations regarding the level and diversity of capital charges under Basel II for Advanced Internal Ratings-Based (“AIRB”) banks. Beginning with the U.S. agencies’ announcement in April, 2005 of a delay in the completion of the Notice of Proposed Rulemaking, and continuing with testimony before the House Committee on Financial Services in May, 2005, it appears that some regulators and other observers may view Basel II as entailing capital charges that are “too low” and “too diverse” across AIRB institutions. The analysis in this paper specifically addresses these concerns by incorporating QIS4 survey data from 12 of our member institutions, along with internal Economic Capital measurements of risk. We believe that the survey data clearly show that the capital requirements within Basel II are neither too low nor result in charges across institutions that are too diverse.

Our major findings are as follows:

- Basel I is not the appropriate starting point for assessing the adequacy of capital charges under Basel II because Basel II is risk-sensitive while Basel I is not.
- Basel II’s capital charges, because they are risk-sensitive, are necessarily cyclical in nature. The QIS4 survey was conducted during a benign recovery. However, some of our survey banks estimate that, during a future downturn, when risks are higher, Basel II charges for credit risk could be up to 35% higher than during the third Quarter of 2004 when QIS4 was undertaken. The Basel Accord, after all, is intended to provide a safeguard against major banks failing, especially during such downturns. It therefore would be more appropriate to compare the downturn-period Basel II capital charges against Basel I’s always-the-same capital charges.
- Comparing Basel II Pillar One capital charges to Basel I, without considering the Pillar Two treatment of internal capital assessments for *other risks*, such as the interest rate risk for mortgages in the banking book, greatly distorts Basel II’s effective capital requirements.
- Basel II, because it is risk-sensitive, necessarily will generate significant differences in capital requirements across Basel II banks. These differences, to a significant extent, reflect very real differences in the mix of business activity across Basel II banks. If Basel II did not generate such diversity it would not be doing its job. However, because of the inappropriate way in which Basel II Pillar

¹ The Capital Working Group of RMA (The Risk Management Association) consists of senior risk management officers at large banking organizations responsible for the measurement of risk and the determination of Economic Capital. The names of the institutions represented on the Capital Working Group, along with staff members contributing to the preparation of this memorandum, are shown in an Appendix. Individual banking organizations that are members of the Group may be responding separately on the matter of the QIS4 results and may hold opinions regarding Basel II that differ from those expressed in this paper.

One capital requirements are compared with Basel I, the diversity of capital charges across banks is inappropriately amplified.

- Basel II's capital charges for *credit risk* are substantially higher than best-practice internal Economic Capital requirements for credit risk, when appropriate adjustment is made for the differences between the way in which regulators and market practitioners define capital. This result may not be intuitively clear and requires a somewhat complex analysis of capital definitions and capital requirements which are the subject of Section IIC below.

II. Survey and Analysis

A. The level of Basel II capital charges.

Beginning with the *level* of the capital charges, there are primarily 3 sets of reasons why Basel II is, if anything, actually somewhat conservative.

1. Basel I is not the appropriate starting point for assessing the adequacy of capital charges under the new Basel II. Basel I, under which banks now operate, is extremely crude in its measurements of risk. For example, there is a 0% risk weight assigned to sovereign credits, even if the sovereign exhibits an unstable political situation and its debt is junk-bond-rated. Conversely, an 8% Total Capital charge is assessed for a triple-A-rated corporate credit within the U.S. Basel II, by comparison, is structured to take account of significant differences in the real risk of various credit activities of banks – it is designed to be risk-sensitive.

Further, Basel I, until the application within the U.S. of new capital rules dealing with securitization activities, permitted banks to engage in “regulatory capital arbitrage” to evade unfair capital charges for credit risk activities. Basel II embraces the new U.S. rules on securitization activities and expands upon them to significantly reduce or, for certain types of securitizations, eliminate the ability to engage in such capital arbitrage.

Basel I consisted, until the mid 1990's, of only a series of crude capital charges against the assets of the bank and did not at all address important risks such as operational risk or market risk. The mid-1990's additions to the Basel I capital charges – in the form of capital charges for market-risk in the trading account – did not fully capture all of the risks banks face, including market risk (and interest rate risk) within the banking book, operational risk, or other risks such as business risk, reputational risk, and legal risk. In comparison, under Basel II there is a clear enunciation of the 3 Pillars of prudential regulation. Under Basel II, Pillar One (the formal capital rules applying to all banks) specifically addresses credit risk, operational risk (for the first time), and trading account market risk. Pillar Two (the bank-by-bank examination or supervisory process) addresses *other risks*, including such important risks as market risk (interest rate risk) within the banking book.

We view Pillar Two as essentially a continuation of a supervisory policy begun in the U.S. in 1999 in which bank examiners specifically review the process by which the large, complex banking organization internally measures *all* of its risks and holds sufficient capital to meet these risks. Basel II embraces this U.S. policy which already had gone far to address the inadequacies of Basel I. Any comparison of Basel II Pillar One capital charges with the Basel I charges would be inappropriate and misleading without consideration of the supervisory assessment of adequate capital, including the assessment of capital for additional risks, under Pillar Two.

2. Basel II capital charges, because they are risk-sensitive, are necessarily subject to cyclical changes in risk levels. Therefore, because the QIS4 exercise was conducted during a historically benign recovery period, the capital charges were low relative to their levels at other points in the long cycle. AIRB banks must, under Basel II, compute Probabilities of Default (“PDs”) and Losses-Given-Default (“LGDs”) as inputs into the Basel-determined credit risk equations. Many of the AIRB banks have internal ratings on commercial credits that vary with the cycle. Under Basel II, such banks must use as PD inputs into the Basel credit risk equations the long-run average PD for a particular internal rating.

Therefore, during benign credit periods, with better ratings, these PDs will be lower and the capital charges under Basel II will be correspondingly lower. It is misleading to compare cyclically low Basel II credit risk capital charges with the always-the-same Basel I charges. Indeed, several banks among our Group have conducted internal analyses that indicate that, in a downturn, Basel II credit risk capital charges would rise by up to 35%. Since the Accord is intended to protect banks from failing, especially during downturn periods (when the risk of almost all bank activity rises), it is these downturn-period Basel II credit risk charges that, in combination with the op risk and market risk capital charges, are more comparable to the always-the-same Basel I capital charges.

In the consumer credit arena, similar cyclical effects occur to those in the commercial lending arena. For example, AIRB banks may estimate PDs based on a segmenting process in which consumer loans are placed in “buckets” based on key risk characteristics such as FICO scores, Loan-to-Value ratios, or recent payment history. During good times more loans are placed in the segments with high FICO scores, better payment histories, lower LTVs, etc. This then requires the bank to use the lower historical average PDs associated with these lower risk segments. Again, when credit risk is cyclically low, Basel II capital charges, reflecting actual credit risk, will also be low.

3. Basel II credit risk capital charges, when compared with best-practice internal Economic Capital measurements, are quite high (effectively twice the internal EC measurements). When combined with the other two Pillar One charges for market risk and operational risk, the result is that real, effective Basel II capital requirements² are not

² In this paper we use the term “real, effective” capital requirements to refer to the effect of Basel II on the amount of Tier 1 plus the ALLL that a bank must hold under the “well-capitalized” Total Capital standards

“low,” and could even become binding for some Basel II banks in some future downturn. The scientific basis for using internal Economic Capital (“EC”) measurements is well-established. But the proper manner in which to compare Basel II capital requirements against internal EC measurements is complex and requires further analysis of the way in which actual capital is defined by market practitioners versus regulators. This is the subject of Section C below.

B. The diversity of QIS4 results.

Overview. Our survey asked RMA Capital Working Group members to provide us with the “Results” tab of their final, revised QIS4 worksheets. In addition, we asked for internal Economic Capital calculations for credit risk, operational risk, bank-wide market risk, and “other” forms of risk. We then calculated median and quartile levels for various ratios that are discussed below.

Our survey results indicate that Basel II does indeed entail a wide diversity of Basel II capital results, when compared against the capital charges of the old Accord. While we question the use of Basel I for comparison purposes, we also believe that diversity in Basel II capital charges is an absolutely essential element of a truly risk-sensitive regulatory capital structure. There is a very wide diversity of business activity mix across our survey banks, and if Basel II did *not* result in diverse capital charges, Basel II would not be doing its intended job. For example, our survey data indicate that, within the commercial loan book, there must be very substantial differences across AIRB banks in the level of the PDs and LGDs they estimate for this book of business. These differences can be attributable either to actual differences in risk (banks with more in the way of junk-rated corporate loans would receive little or negative “benefit” from Basel II) or to differences in the degree of conservatism in which the AIRB banks measure PDs and LGDs.

Nevertheless, the amount of inherent diversity in actual risk across our banks is somewhat amplified both by the treatment of the EL charge and by the inappropriate comparison of Basel II Pillar One charges with Basel I. In particular,

- Basel II contains a capital charge for Expected Losses (“EL”). We have discussed at length in previous papers the inappropriateness of this charge, but we are not opposing its existence at this late state in this iteration of the Basel Accord.³ As a

within the U.S. The sum of Tier 1 plus the ALLL used to be called Primary Capital by regulators and is what the market views as being an approximation to mark-to-market equity. See discussion in Section IIC below.

³ See, for example, RMA, “Response to Basel’s Third Consultative Paper on the New Capital Accord,” July 2003. From an economic perspective, the ALLL is not needed to “cover” EL. Rather, spreads must cover all expenses, EL, and a return to Economic Capital. Even in an economic downturn, spreads on non-defaulted accounts generally are sufficient to cover EL, leaving the sum of the ALLL plus equity to cover unexpected losses. Thus, not only should there be no artificial reduction of the ALLL (due to the EL charge) but also the ALLL should be considered as real Tier 1 capital (which is how it is viewed by the market). When the bank books a \$100 new loan in the morning, and sets up a reserve of \$1 against the loan, the loan still has a market value of \$100 that afternoon, not \$99. The ALLL is real equity and was

result of the EL charge, banks with a significant proportion of business activity in high EL (but low Unexpected Loss rates, or “UL”) products, such as credit cards, are actually hurt by Basel II relative to Basel I (and relative to best-practice estimates of actual risk). That is, suppose two credit products have the same UL but very different ELs. In both cases, best-practice would require that credit pricing (yields) cover all costs plus EL, plus a return to capital. Since the two products have the same UL they would have the same internal measurement of risk in the form of Economic Capital, but they would charge very different credit prices because of the differences in EL. Under Basel II, the bank with the high EL is given no “credit” for its appropriately high pricing of the loan and must suffer a high EL capital charge. Meanwhile the bank with the low EL product suffers only a small EL charge. Therefore, removal of the EL charge would greatly diminish the apparent diversity in cross-bank Basel II charges.

- Basel II Pillar One contains a very low credit risk charge for single-family residential mortgages (a charge which is actually somewhat above best-practice internal estimates of *credit risk* capital for mortgages). Credit losses in mortgages have been very low over the long-term relative to other credit products such as unsecured corporate loans, and this has been true even during past and recent recessions. Therefore, PDs and LGDs entered into the Basel credit risk equations generate appropriately low credit risk capital requirements for mortgages. But a far greater risk associated with residential mortgage lending is interest rate risk in the banking book, which banks measure to be *several times higher than the credit risk* associated with mortgages. As a result, banks with significant residential mortgage lending books appear to be greatly helped by Basel II relative to the old Accord, so long as the bank’s own internal capital requirements for interest rate risk of mortgages (treated appropriately under Pillar Two) are ignored.

QIS4 Survey Results. To show how these issues impact the QIS4 survey results, and how the inappropriate comparisons with Basel I confuse matters, it is important to recognize that there are two separate and equally important classes of change instituted by Basel II. First, Basel II changes the Risk-Weighted-Asset (“RWA”) calculation for essentially all credit products (chiefly in a downward direction) and, second, Basel II reduces the amount of on-balance-sheet capital the Basel II bank can count as regulatory capital. These *capital deductions* occur in two ways.

First, Basel II imparts a new EL charge that did not exist in the old Accord. This charge reduces the amount of the ALLL that can count as Tier 2 capital and, in the extreme, if ALLL-EL is negative, the EL charge can reduce the amount of Tier 1 capital and other Tier 2 capital (such as subordinated debt) that the bank can use toward meeting the regulatory capital requirement. A second deduction from the amount of capital the bank can count toward regulatory capital requirements is the amount of the bank’s balance-sheet residual interests in securitizations sponsored by the bank. Typically, such

viewed as such in the 1980’s when regulatory capital requirements were expressed as “primary capital” requirements that included the ALLL.

residual interests represent a claim on the net interest margin generated by the special-purpose vehicle to which the bank has sold certain credits. Under the old Accord, such residual interests were assigned a 100% capital charge by multiplying the book value of the residual interests by approximately 12.5 to arrive at a RWA equivalent (against which an 8% capital charge was assessed). Under Basel II, rather than grossing up these assets, regulators impose a deduction in usable Tier 1 and/or Tier 2 capital in the full amount of the residual interests. Thus, RWA associated with such residual interests appears to go *down* under Basel II, relative to Basel I, when, in fact, there is no such reduction.⁴

In order to present a somewhat more appropriate comparison of Basel II to Basel I, we have calculated an *adjusted* Basel II RWA allocation for each of our 12 banks under which two items are added to the Basel II RWA: 1) the RWA equivalent of the EL deduction ($12.5 * EL$), and 2) the RWA equivalent of the capital deduction associated with residual securitization interests.⁵ We then calculated the percentage change in effective RWA as a result of going to Basel II. Table 1 below shows these calculations for our sample group, expressed as a median and quartile break-points, plus the average weighted percentage change (where the weight given to each of the 12 banks is the ratio of the bank's new RWA to the sample's average RWA). The calculations are shown for each of the major sub-portfolios of the banking book and, at the end, the overall percentage change in the bank's effective amount of RWA (including banking book RWA, trading account RWA, and op risk RWA. To conserve on space, we present the RWA percentage changes in the banking book for drawn lines only.

⁴ As a technical matter, the new treatment of residual interest is actually somewhat more punitive than under Basel I.

⁵ Under the current Accord, banks report the RWA equivalent of their residual interests. This number may be higher or lower than $12.5 * \text{residual-interests}$ because the actual multiplier is chosen to reflect the degree to which the actual total capital ratio of the bank is above the minimum 8% requirement. In our calculations shown in Table 1, we treated the residual interests in similar fashion to regulators' May 11 Congressional testimony (see footnote 6). Specifically, we added to Basel II RWA an amount equal to the residual interests multiplied by 12.5.

Table 1 shows that there is an effective decline in RWA for all credit types except Qualifying Revolving Exposures (mainly credit cards) for which there is a substantial increase in effective RWA. Home mortgages and HELOCs generate the greatest amount of effective RWA decline. As discussed earlier, these effects are due to the EL charge and the inappropriate comparison of Basel II Pillar One with Basel I which, for mortgages, ignores the internal capital charges for interest rate risk of mortgage lending.

Note that the median percentage *decline* in overall RWA is 18.27% whereas the average weighted decline is only 2.28%. These numbers represent lower declines than the results quoted by regulators at the May 11, 2005 testimony, because our sample is limited to only 12 of the 26 banks that participated in the QIS4 exercise. With one exception, the 14 banks *not* in our sample represent smaller institutions that do not have credit card portfolios (for which Basel II assigns very high capital charges), while many of the missing 14 have mortgage portfolios (that generate very low credit risk charges under Pillar One).⁶ However, our 12 banks encompass almost all of the very large institutions. Of the 12, four banks actually experienced *increases* in their effective RWA calculation under Basel II, and these banks were large enough in size to drive the average weighted decline in effective RWA down to only 2.28%. It should be noted here that it is the failure of the very largest, most complex banking institutions that would constitute a systemic threat to the U.S. financial system. Therefore, it is the average-weighted effects of Basel II – weighted by a measurement of bank size -- on which our analysis should be most focused.

Of the 12 banks in our sample, 3 exhibited declines in their actual Total Capital ratios as a result of Basel II, and another 2 exhibited minor improvements of less than 1 percent (not 1 percentage point). At the other end of the spectrum, 5 of the 12 banks exhibited improvements in their Total Capital ratios of more than 40%. This seeming bimodality, as explained above, is driven primarily by 3 categories of difference across these two groups of 5 banks each.

- 1) If the bank has a higher than ordinary EL charge (due to a large percentage of business activity in high EL products such as credit cards), Basel II will be less beneficial and may actually decrease the bank's capital ratios.
- 2) If the bank has corporate loans that are of lower apparent quality than ordinary, the bank will find Basel II to be less beneficial.
- 3) If the bank has a higher percentage of mortgage activity the bank will appear to benefit greatly from Basel II, so long as the Basel II internal capital charges for risks such as interest rate risk in the banking book are ignored.

Table 2 shows how each of the 10 banks compare with the group median calculation of 3 variables:

- The EL charge expressed as $(12.5 * EL / \text{new RWA})$. Median is 15.11%.

⁶ See "Basel II: Capital Changes in the U.S. Banking System and the Results of the Impact Study," testimony by Richard Riccobono, Acting Director, OTS, May 11, 2005 (Attachment 2).

- The effective percentage change in RWA associated with banking book wholesale loans (drawn lines only), which is the first line shown in Table 1 above. Median is -23.54%, see Table 1.
- The ratio of old Accord RWA for mortgages and HELOCs divided by old Accord total RWA for these assets. Median is 12.81%.

Table 2 shows a check-mark (√) in each instance when a particular bank's ratio differs significantly from the median ratio for the group.

Table 2 – Causes of low vs. high improvement in capital ratios				
Five Banks with low or negative improvement in regulatory capital ratios				
Bank	high EL charge	low or neg. improvement in corporate capital charges	low mortgage activity	
A	√	√	√	
B	√	√		
C	√		√	
D	√		√	
E		√		
Five Banks with high improvement (40% or more) in regulatory capital ratios				
Bank	low EL charge	high improvement in corporate capital charges	high mortgage activity	
F		√	√	
G	√	√		
H	√		√	
I	√		√	
J		√	√	

As indicated above, Basel II does not constitute a major regulatory capital savings for commercial loans of lesser credit quality. However, if an individual bank does not receive a major capital benefit it may not be because of lower quality loans. Rather, the bank in question may have a substantially more conservative way of estimating PDs and LGDs for corporate credits than other banks in the sample. However, our sense is that there is less diversity in the measurement of corporate loan risk parameters than in the measurement of retail loan risk parameters.

C. Comparing QIS4 Results with Internal Economic Capital Measurements.

Overview. This section compares the Basel II capital charges with the best-practice measurements of risk via Economic Capital calculations. Our analysis shows that Basel II capital charges are significantly higher than internal EC calculations. This is the case because regulators and market practitioners have very different views about the

definition of capital and what actually constitutes real effective capital. And the Basel II capital requirements could become “binding” on some of the AIRB banks during an economic downturn in which the Basel II charges can be expected to increase. This potential “bindingness” could cause regulators to require some banks to increase capital, even though internal measurements of adequate capital and external market measurements indicate the bank is well-capitalized.

Regulatory View of Capital Versus Internal EC. Regulators have sometimes equated internal EC calculations with banks’ Tier 1 capital levels (tangible equity). In such analyses one might take the “Well-Capitalized” Tier 1 capital requirement in the U.S. and compare this to a) the internal EC calculation at the bank, and b) the actual level of Tier 1 capital at the bank. Table 3 below shows these two comparisons for our survey group of 12 banks, with appropriate adjustment for any reduction in actual Tier 1 capital under Basel II due to either an ALLL-EL shortfall or a deduction of residual interests in asset securitizations from Tier 1 capital.

Table 3– Well-capitalized Tier 1 Requirement vs. Economic Capital⁷

	median	25th%tile	75 th %tile	ave. wtd.
Well-Capitalized Tier 1 requirement + Internal EC	0.76	0.61	0.88	0.87
Well-Capitalized Tier 1 requirement + Actual Tier 1	0.51	0.46	0.61	0.62

This sort of initial analysis could suggest that the Basel II AIRB capital requirements are significantly lower than internal economic capital measurements. Specifically, the well-capitalized Tier 1 requirements are, on a weighted average basis, 13% below internal EC measurements. However, as noted above, each bank holds a substantial cushion of capital over its own internal EC calculations in order to weather future downturns in which internal EC calculations are likely to rise. These cushions are quite large and, on an average weighted basis, are 67% over the survey banks’ internal EC requirements. The second line of Table 3 therefore suggests that, because of these capital cushions, Basel II capital requirements would have to rise by more than 50% before the capital requirements could be considered “binding.”

Market Practitioners’ View of Regulatory Capital versus Internal EC. Table 3 does not, however, capture the Basel II capital requirements expressed in the form of Total Capital charges. Also missing is the fact that none of the Basel II banks would be able to hold Tier 1 capital at the level of only one-half of their total regulatory capital levels. The market simply would not permit such levels of Tier 1 in relation to Total Capital. Indeed, the median ratio of Tier 1 to Total Capital among our 12 survey banks is 73%. Further, the market views the ALLL as real equity, just like Tier 1, so that it is the

⁷ In Table 3, for consistency, we used the required Tier 1 level calculated by regulators within the QIS4 exercise, then added one-half of any ALLL-EL shortfall to the Tier 1 requirement. We then multiplied the minimum Tier 1 requirement by 1.5 to reflect the 6% Well-Capitalized requirement in the U.S. (versus the 4% Basel minimum) to reach the Well-Capitalized standard. This approach makes the Table 3 numbers consistent with the approach used in Table 1.

sum of tangible equity plus the ALLL that the market views as the bank's total amount of real equity.⁸

A market view of Basel II capital requirements in comparison to internal EC therefore looks as follows. First, the Basel II Total Capital charge is multiplied by 1.25 to reflect the Well-Capitalized Total Capital to risk-weighted-assets standard of 10% in the U.S. rather than the 8% Basel minimum. Next, there is an expectation that only some percentage of this Total Capital charge could be met via the issuance of subordinated debt; the rest would be met via real capital of tangible equity plus the ALLL.

This real capital amount at the survey banks – Tier 1 plus the ALLL – tends to be a fairly stable and consistent percentage of Total Capital across the banks. The median ratio of such real capital to Total Regulatory Capital is 82%, with an inter-quartile range of 79% to 85%. Therefore, each bank's Total Well-Capitalized Regulatory Capital requirement should be multiplied by the bank's historical ratio of real capital to total capital, and this would be judged to be the “real, effective” capital requirement associated with Basel II Pillar One charges.⁹

Table 4 shows these real, effective Basel II capital charges for the 12 survey banks compared with internal EC and with actual real equity. In the table, we have adjusted the Total Capital charge appropriately to include the effects of the reduction in useable ALLL associated with the EL charge, and the reduction in Tier 1 and/or Tier 2 associated with the deduction of the residual interests in securitizations. Also, we have used the Well-Capitalized standard for Total Capital in the U.S. (10% instead of 8%).

Table 4 – The real, effective Basel II capital charge in relation to internal EC and actual real capital.

	median	25th%tile	75th%tile	ave. wtd.
Real, Effective WC capital requirement ÷ Internal EC	1.15	0.94	1.33	1.40
Real, Effective WC capital requirement ÷ Actual MTM equity	0.73	0.62	0.83	0.85

Table 4 presents a very different view of Basel II than does Table 3. Here, the real, effective Well-Capitalized Basel II capital requirement is 40% *above* internal EC (on an average-weighted basis) rather than 13% *below* internal EC. Further, on an average weighted basis, the real, effective Well-Capitalized Basel II capital requirement is only 15% below the actual real capital (tangible equity plus the ALLL) on the books of

⁸ More specifically, tangible equity plus the ALLL is a crude approximation of the amount of mark-to-market or mark-to-model equity held by the bank. A more rigorous methodology would involve marking-to-market or marking-to-model all liabilities and assets and then calculate the difference between these assets and liabilities as net equity.

⁹ We have discussed the market's view of capital definitions in several of the Group's past papers. However, this is the first time we have applied the term “real, effective” capital requirement to the process of taking the Well-Capitalized Total Capital requirement in the U.S. (10% of risk-weighted-assets) and then using the bank's historical use of subordinated debt in relation to its Total Capital to derive its “real, effective” capital requirement. This is also the first time these real, effective capital calculations have been made on an individual bank basis as part of a survey for the RMA Capital Working Group.

the survey banks, rather than 38% below, as would be indicated in Table 3. Indeed, of the 12 banks in our survey, 2 already would have real, effective Basel II capital charges above their current levels of Tier 1 plus the ALLL. These banks already would find Basel II to be “binding”.

Of course, it should be remembered that the analysis in Table 4 is based on the implicit assumption that each of the survey banks would continue to meet its Total Well-Capitalized Regulatory Capital charges by utilizing its historical amount of sub-debt in relation to Total Capital. If Basel II charges become too high, however, banks may be able to meet the increased charges with relatively more sub-debt that qualifies as Tier 2 capital. Such additional debt would be limited by market conditions and could entail increased debt servicing costs.

In the worst case, especially during a downturn, if the Basel II Well-Capitalized charges could not be met by sub-debt issuance, the regulatory requirements could begin to affect the supply of loanable funds at individual institutions. Some banks, in such a circumstance, could be pressured by their regulators to raise more equity (or divest assets) when the bank’s own internal estimates of risk, and the market’s estimate of the adequacy of its real capital, would point to the bank being well-capitalized. This suggests that the Basel II capital charges, rather than being “too low,” may be near to the point of affecting real resource-allocation decisions which, in our view, is an indication that the Basel II capital charges may be too high.

Why is Basel II potentially too high and possibly binding? The answer to this question can be found almost solely in the Basel II capital charges for *credit risk*. Table 5 below shows the Basel II real, effective capital charges for each of the 3 types of risk treated in Pillar One – credit risk, operating risk, and market risk – as a ratio to the bank’s own internal EC calculation for each type of risk.

Table 5 – Real, effective Basel II capital charges as ratios to internal EC calculations for each of the 3 types of risk covered within Pillar One

	median	25th%tile	75th%tile	ave. wtd.
Real, effective WC capital requirement for credit risk ÷ Internal EC for credit risk	2.07	1.35	2.18	1.99
Real, effective WC capital requirement for market risk ÷ Internal EC for market risk	0.07	0.00	0.36	0.41
Real, effective WC capital requirement for op risk ÷ Internal EC for op risk	0.81	0.58	1.16	0.97

As in Table 4, we have calculated the numerator under the market’s view of what is real capital and under the assumption that banks will continue to meet the Well-Capitalized Total Capital requirements with approximately the same proportion of subordinated debt as in the past. The glaring result in Table 5 is that the real, effective Basel II capital requirement for credit risk is, on an average weighted basis, *twice* that of internal EC calculations. This is due to a variety of factors that have been discussed in past RMA Capital Working Group papers, including the EL charge. For example, in

internal EC calculations only a UL charge is counted within internal EC, because spreads are calculated to more than cover EL.

At the same time, Table 5 shows that the real, effective Basel II capital charge for market risk is much lower than the internal charge, primarily because the Pillar One charge includes a market risk capital charge for the trading account but *not* an internally calculated interest rate risk charge within the banking book. Note also that the average weighted ratio of the Basel II charge for market risk is much higher than the median ratio of the Basel II charge to the internal market risk calculation. This is because the smaller banks in our sample are not subject to trading book market risk charges and therefore reported a zero in the numerator of the ratio of Basel II market risk charges to internal EC for market risk.

Finally, the operational risk Basel II capital charges are not too different from the banks own internal EC calculations, primarily because the AMA procedure for op risk capital is used by most of the survey banks. That is, when a fully internal models approach is used to measure op risk, the only significant difference between the internal capital charge for op risk and the regulatory charge is the use of a higher confidence interval internally than the 99.9% standard within the regulatory calculations. As a result, the internal EC charges for op risk are slightly above the regulatory charges.

III. Conclusions.

We are hopeful that our analysis will help clear up some of the confusion in looking at the level of the QIS4 survey results. We remain committed to the Basel II process and do not consider Basel II capital charges to be either too low or too diverse. Our analysis, rather, shows that, especially for our largest banks (for which the issue of the systemic effects of failure is paramount) the Basel II charges are approaching the level at which they could affect resource allocation decisions. In part, this is due to the cumulative conservatism that has been displayed, especially with respect to the establishment of credit risk charges under Basel II. This natural conservatism should be carefully monitored in the future. In particular, any proposals to assess arbitrary “multipliers” to the current Basel II capital charges, based on inappropriate comparisons to Basel I, should be avoided.

Indeed, any comparisons to Basel I should include considerations of a) the fact that Basel II capital charges will rise during downturns when risk of failure is its greatest (and Basel II banks will have to keep capital cushions to account for this increase in risk); b) Basel II capital charges, even in individual bank cases where it is lower than Basel I, is more effective than Basel I due to the circumvention of regulatory capital arbitrage; c) Basel II Pillar One capital charges, unlike Basel I, are accompanied by a Pillar Two process that looks at other risks not covered in Pillar One.

We remain hopeful that regulatory staff will continue to be receptive to the results of planned research projects that will address some of the outstanding issues pertaining to proper calibration of Basel II. As always, regulatory capital rules are most effective

when they are written, and updated, in the context of continual improvements in risk measurement procedures. In this regard, the RMA Capital Working Group views the Basel II formulation as effectively an ongoing *implementation process* for a forthcoming Basel III. In Basel III, regulators would establish Pillar 1 capital requirements for major banks that fully reflected best-practice *internal models* for credit risk, operational risk, market risk, and other types of risk.

The Pillar 2 process would focus on the quality of risk management and on the quality of risk measurement procedures that lead up to the formulation of internal risk models. There would be no EL charge so long as the bank can demonstrate that credit pricing is set to cover EL even during bad “draws” of the model’s risk factor(s). There also would be no instances in which regulatory-determined AVCs would be higher than or lower than best-practice estimates of AVCs.

The burden of proof with regard to AVCs, or their equivalents in alternative internal models, would be on the banks. There would be no minimum leverage ratio, since all regulators would understand that simple capital-assets ratios are quite misleading – a bank with a 3% capital-assets ratio could be quite a bit more sound than one with a 6% ratio, or vice-versa. For Basel III institutions, the ratio-based U.S. well-capitalized rules would be replaced with an internal models approach in which the well-capitalized standard was expressed in terms of a *higher confidence interval* than the minimum capital requirements, not as a higher ratio.

The real capital banks held to meet their best-practice-based regulatory capital requirements would involve either a formal marking-to-market methodology for net equity or a more simple expression of real capital as roughly equal to tangible equity plus the loan loss reserve. Disclosure rules would permit banks to express their capital cushions in terms of higher effective confidence intervals than the regulatory minimum confidence intervals or the well-capitalized confidence intervals.

And, most importantly, Pillar 1 capital requirements would be designed as a true minimum, evolving over time with careful attention to the corresponding evolution in best-practice measurement of all risks. The guiding principles of such capital regulation would be two-fold. First, the minimum soundness standard would ensure that the failure of a major bank would be an extremely isolated event. Second, the minimum capital requirements would not remotely become a factor in determining the allocation of scarce loanable funds across groups of borrowers or a factor in the determination of economic development in general. Only internal (bank) estimates of risk, and external (market) estimates of risk, given existing monetary and macro-economic conditions, would drive loan pricing and loan availability.

We remain optimistic that the good start embodied within Basel II as it now stands will be translated, in the not too distant future, into a fully-formed best-practices internal models approach that achieves the primary objectives of prudential regulation.

APPENDIX

Institutions in the RMA Capital Working Group:

ABNAMRO North American	Bank of America
Capital One	Citigroup
Comerica	HSBC/North American Holdings
JPMorganChase	KeyCorp
MBNA	PNC Financial Services Group
RBC Financial	State Street
SunTrust	Union Bank of California
U.S. Bancorp	Wachovia
Washington Mutual Bank	Wells Fargo

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