DATE: August 17, 2006

MEMORANDUM TO: Board of Directors

FROM: Sandra L. Thompson, Acting Director
Division of Supervision and Consumer Protection

SUBJECT: Notice of Proposed Rulemaking Regarding *Risk-Based Capital Standards: Advanced Capital Adequacy Framework*

Proposal: That the Board of Directors of the Federal Deposit Insurance Corporation approve publication of the attached Notice of Proposed Rulemaking regarding *Risk-Based Capital Standards: Advanced Capital Adequacy Framework* (NPR) in the Federal Register for a 120 day comment period. The NPR would be issued on an interagency basis by the FDIC, the Board of Governors of the Federal Reserve System, the Office of the Comptroller of the Currency and the Office of Thrift Supervision (together, the Agencies).

The proposed rule, based on selected elements of the Basel II capital framework published in June, 2004, would require some core banks, and permit other banks, to use an internal ratings-based approach to calculate regulatory credit risk capital requirements and an advanced measurement approach to calculate regulatory operational risk capital requirements. The NPR seeks industry and public comment on various aspects of the proposed implementation, including whether to allow core banks to use simpler approaches to calculate their risk-based capital.

Recommendation: That the Board approve publication of the NPR for comment.

Concur:

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Douglas H. Jones
Acting General Counsel

I. Introduction

The Board is being asked to approve for publication in the Federal Register the attached interagency NPR based on the new capital accord entitled "International Convergence of Capital Measurement and Capital Standards: A Revised Framework" (Basel II or New Capital Accord) published in June 2004 by the Basel Committee on Banking Supervision (BCBS or Basel Committee). The NPR explains how the U.S. banking and thrift agencies (Agencies) propose to adopt the advanced internal ratings-based approaches to assessing credit risk capital charges and the advanced measurement approaches to assessing operational risk capital charges. The use of these approaches would be required by a core group of large and internationally active U.S. banking institutions and allowed by a select group of other banks that, on an opt-in basis, are able to qualify for the framework.

Publishing this NPR would represent the continuation in the U.S. of a process begun in earnest in 2001 with the publication of the Basel Committee's second consultative paper (its first consultative paper in 1999 was a significantly different and more modest proposal). The BCBS in 2001 urged banks to begin preparations for the advanced approaches "now."[1] In the intervening time, both banks and supervisors around the world have devoted considerable resources to these preparations.

A byproduct of these efforts has been an increased commitment of resources to the development of quantitative approaches to risk measurement and management at large banks. Other things equal, increased use of quantitative risk management should improve the safety and soundness of these banks and provide useful information to the supervisory process. Increased bank emphasis on practices such as independence in the assignment of credit risk grades also appears to have been a byproduct of the Basel II implementation process.

The NPR describes a risk-based capital framework that is procedurally more comprehensive than the current risk-based requirements, in the sense that all credit risk

[1] BCBS, Overview of the New Basel Capital Accord, January 2001, paragraph 97.

exposures could, in principle, be subject to a capital requirement under the NPR. For example, there is now no risk-based capital required for most unused retail lines of credit or for commercial loan commitments maturing in less than one year, whereas the NPR would require some capital for these items. The NPR also contains a capital charge for operational risk whereas the current rules do not. Moreover, under the NPR a bank's capital requirement potentially varies continuously with the measured risk it assigns to its credit exposures, as opposed to the current rules that require the same capital for all exposures fitting within broadly defined risk buckets. Other things equal, these aspects of the NPR are more risk-sensitive than the current rules.

The Board also should be aware that there are potentially significant issues with the NPR framework that may yet need to be addressed. The reduction in capital requirements suggested by the most recent U.S. quantitative impact study of the proposed framework was both substantial, and in the staff's opinion unacceptable from a safety-and-soundness perspective. Interagency analysis revealed that banks assigned substantially different capital requirements to similar or even identical credit exposures, and from the staff's perspective this complicates the assessment of the risk-sensitivity of the framework. Finally, substantial differences in risk-based capital requirements between banks adopting this framework, and those that do not, could have unintended competitive effects.

In recognition of such concerns, the Agencies are proposing to implement the advanced approaches under controlled conditions and safeguards that allow time for further work, and are intended to ensure capital outcomes that are consistent with the agencies' objectives.

The New Capital Accord allows three options for calculating capital requirements, which includes an Advanced Internal Ratings Based Approach which has been proposed in this NPR, and a Standardized Approach. Recently, the Agencies received written requests to allow core banks to use the Standardized Approach. This NPR includes a request for comments on the use of credit and operational risk capital

requirements similar to those provided under the New Accord, including a U.S. version of the Standardized Approach that could take the form of the forthcoming Basel 1A proposal. The comment process will provide additional time and potentially new insights for the Board to consider when reaching any future decision about how to proceed with this rulemaking.

II. The New Capital Accord

A. Background

The use of banks' internal risk assessments to set capital requirements dates back to 1996 and the market risk amendments to the Basel I accord. For certain instruments held in trading accounts, these amendments permitted banks to set required capital based on their own empirically supported estimates of value-at-risk (VaR), a statistical estimate of a market value loss on the instrument that is considered highly unlikely to be exceeded (in this market risk context, the regulatory standard is that the bank should have 99 percent confidence that the VaR-estimated loss would not be exceeded during a ten day period).

It was logical to ask whether similar quantitative approaches might someday be used to estimate capital requirements for credit risk. The credit-risk VaR on an exposure would be, by analogy with the market risk rules, a credit loss that is highly unlikely to be exceeded during some relevant time period. Quantifying credit risk VaRs involves the exercise of informed judgment in many areas such as the probabilities that different types of loans would default, what would be the loss in the event of default, and to what extent defaults might be correlated through time.

An initial step towards the limited use of credit risk VaR to set capital requirements came in June, 1999, when the BCBS published a Consultative Paper (CP-1). The Committee announced in CP-1 that it had decided to revise the 1988 international capital accord commonly known as Basel I. In its 62 pages, CP-1 described

a framework that would ultimately become known as the standardized approach; essentially an incremental refinement of Basel I. CP-1 also indicated the BCBS believed the use of internal risk estimates by certain large banks could help to refine further the risk sensitivity of capital requirements. It acknowledged the subjectivity inherent in the use of such estimates and stated that its expectation was that such estimates would be used, initially, in some simple way such as slotting loans into predefined risk weight buckets. It stated an intention not to reduce overall capital requirements, and to ensure capital parity between standardized and advanced banks.

In January, 2001, the BCBS published CP-2. CP-2 and other accompanying public documents stated that the Committee's work had revealed that many banks were capable of robust estimates of borrower default probabilities and that some banks had developed, or soon would develop, the capability to accurately estimate loss given default and exposure at default. CP-2 identified a formula for setting capital requirements for wholesale loans using these key risk factors as inputs. The risk-weight calibration of the formula had been developed based on surveys of large banks and trade organizations and the use of proprietary credit risk models. CP-2 indicated the Committee's intention that the goal of no significant reduction in capital requirements applied to banks that would use the standardized approach, while banks using the most advanced approaches would be expected to have a capital incentive of a magnitude that was yet to be determined. It identified a two year transition period during which any individual bank's risk based capital requirement could fall by at most 10 percent relative to a foundation approach. Capital requirements under the foundation approach were envisioned to be roughly two or three percent less than the requirements under the standardized approach. CP-2 urged large banks to begin immediate preparations for the advanced approaches.

In late 2002 and early 2003, the BCBS conducted its third quantitative impact study (QIS-3). The large banks surveyed reported a slight overall decline in capital requirements under the most advanced approach. The BCBS announced that QIS-3 provided comfort the new framework broadly met the Committee's overall capital objectives.

In April, 2003, the Committee published CP-3. CP-3 included a complete set of formulas for determining capital requirements for both wholesale and retail credit risk, as well as a capital requirement for operational risk. Under CP-3, risk weighted assets were required for both unexpected losses (the absorption of which is the traditional function of capital) and "expected losses" (the absorption of which is the traditional function of the loan loss reserve). CP-3 also required banks' loss given default estimates to be reflective of the loss likely to be experienced during stressful conditions. CP-3 did not describe any specific goals regarding overall capital requirements. It relaxed the CP-2 constraint on individual banks' potential reduction in risk-based capital requirements during the two year transition period. Whereas CP-2 had envisioned, in effect, a maximum 12-13 percent reduction in capital requirements during the two year transition, CP-3 allowed for a 10 percent reduction the first year and a 20 percent reduction the second year. The Committee indicated its intention to publish a final version of the new accord by the end of 2003.

On August 4, 2003, the agencies issued an advance notice of proposed rulemaking (ANPR) (68 FR 45900) that sought public comment on selected regulatory capital approaches contained in CP-3. These approaches included the internal ratings-based (IRB) approach for credit risk and the advanced measurement approaches (AMA) for operational risk (together, the advanced approaches). The ANPR solicited public comment on a number of issues. The agencies received approximately 100 public comments on the ANPR from banks, trade associations, supervisory authorities, and other interested parties.

The most significant change the U.S. agencies elected to pursue as a result of the ANPR related to the capital treatment of "expected loss." In October, 2003, the BCBS announced the so-called "Madrid compromise," which eliminated the risk-weighted assets formerly required for "expected loss." To offset this change, the BCBS announced that certain capital adjustments (described later in this memorandum) would be made in respect of the difference between each bank's loan loss reserve and its expected losses.

The conceptual change involved with the Madrid compromise required additional work that was sufficiently wide-reaching that the publication of a final version of the new accord was delayed.

In June 2004, the Basel Committee published the New Capital Accord. This version, that has since become variously known as the midyear text, final text or revised framework, reflected the Madrid compromise methodology by requiring risk-weighted assets to be computed only for "unexpected losses." It included a single scaling factor of 1.06 that would multiply each bank's credit risk capital requirements (roughly reflecting the additional capital that would be required to ensure the capital impact of the Madrid compromise would be approximately neutral relative to the QIS-3 results). The June 2004 text described the Committee's overall capital objective as being broad maintenance of the overall level of capital, while providing some incentives for banks to adopt the advanced approaches. The text also indicated the Basel Committee's expectation that the New Capital Accord would be used by individual countries as a basis for national consultation and implementation. Work continued at the BCBS on certain items of unfinished business from the June 2004 text. Those included refinements to the capital requirements for market risk, expanded recognition of the effects of guarantees, and a new way of modeling exposures to counterparty credit risk. This new work was conducted jointly by a Basel-IOSCO task force and published by the BCBS in July 2005. The Basel-IOSCO proposals are incorporated in this NPR and the market risk NPR the Board is also considering today.

In late 2004 and early 2005, the agencies conducted a quantitative impact study (QIS-4) to examine the potential effect of the New Capital Accord on minimum regulatory capital requirements at the largest banks in the United States. The QIS-4 did not include an assessment of the additional Basel-IOSCO work referenced above. The results of the QIS-4 exercise indicated that the New Capital Accord could result in an unacceptable decline in minimum regulatory capital requirements (a more detailed discussion of the QIS-4 exercise and results is provided later in this memorandum).

In September, 2005, the agencies announced their intention to move forward with implementation of the New Capital Accord, subject to additional prudential safeguards designed to prevent actual declines in minimum regulatory capital of the magnitude suggested by the QIS-4 exercise from occurring. These safeguards included a one year delay in the targeted effective date of the regulation, a longer transition to the unconstrained use of the Basel II risk-based requirements, limitations on the amount risk-based capital requirements at individual banks could decline during the transition period, and the retention of U.S. leverage and Prompt Corrective Action requirements.

With the framework of the September, 2005 agreement in place, the agencies proceeded to work on a notice of proposed rulemaking for Basel II. The NPR describes a number of objectives in relation to overall capital outcomes and the impact on competition. These objectives are not part of the proposed regulation, but are statements about that regulation—what the agencies would hope to accomplish and avoid in implementing the regulation. We summarize these overall objectives at the outset, before any discussion of the regulation itself, because in the staff's view they lay out the fundamental principles for proceeding with Basel II in the U.S.

The overall capital objectives described in the NPR are, in brief:

- Broad maintenance of the overall level of risk-based capital requirements;
- A 10 percent downward limit on aggregate reduction in minimum risk-based capital;
- Comparable capital requirements for similar portfolios;
- A level playing field between institutions that participate in Basel II and those that do not; and
- Retention of the leverage ratio and prompt corrective action.

The proposed rule describes a three pillar approach to capital regulation. Pillar 1 consists of regulatory capital requirements. Pillar 2 is supervision, and includes descriptions of the types of internal controls and systems banks adopting the new

framework are expected to have in place. Pillar 3 is transparency, and includes a set of public disclosures that would be required of banking organizations adopting the framework.

A comprehensive description of the attached NPR is beyond the scope of this memorandum. The remainder of this memorandum will highlight key aspects of the proposed framework, identify issues and concerns, and describe the safeguards that have been put in place to address those concerns. We also summarize some of the banking industry criticisms of the NPR that have surfaced since the Federal Reserve published it in March, 2006.

B. Pillar 1: Minimum Risk-Based Capital Requirements

It is important to clarify at the outset that U.S. banks and banking organizations are subject to a dual framework of capital regulation. A set of leverage requirements specify the minimum amount of tier 1 capital that banks and banking organizations must hold as a percentage of balance sheet assets. For insured banks, the leverage requirements are an integral component of the statutory framework of Prompt Corrective Action (PCA) mandated in the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA).[2] The leverage and PCA requirements would be unaffected by this proposed rule.

Risk-based capital requirements complement the leverage requirements by requiring capital for risks that are either not reflected on the balance sheet, or that pose materially more risk than the leverage requirements were designed to address. A complete description of the current risk-based capital requirements is beyond the scope of this memorandum. In summary, however, the current rules involve converting the notional amounts of off-balance sheet risks to on-balance sheet equivalents using defined conversion factors, and then requiring capital for the resulting on-balance sheet equivalents, and for all other balance-sheet items, using pre-defined risk-buckets. As

[2] Statutory PCA requirements apply only to insured depository institutions, not their corporate owners.

indicated earlier, some off-balance sheet items are exempted. Current rules also prescribe separate capital requirements for market risk (currently applicable to about 20 U.S. banks).

The framework described in this NPR changes the framework for calculating capital requirements for credit risk, and adds a requirement for banks to compute a capital requirement for operational risk. The mechanism for computing credit-risk capital is called the advanced internal ratings-based approach (A-IRB) and the mechanism for computing operational risk capital is called the advanced measurement approach (AMA). A separate NPR, also being considered today, proposes to change certain aspects of the market risk rule. Staff notes that other risks facing banks, such as interest rate risk on exposures held outside the trading account, liquidity risk and strategic or business risk, are excluded both from this proposed framework of risk-based capital requirements, and from the current risk-based capital requirements.

The risk-based capital proposals being discussed today would, collectively, greatly increase the complexity of the risk-based capital calculation for affected banks. The proposed requirements for IDIs to report on the details of those capital calculations in both their Call Reports, and to report on a confidential basis to the agencies, are described in another Federal Register notice (attached). Finally, as the implementation of much of this proposed rule would be judgment-driven, supervisory guidance on the implementation of the A-IRB and AMA approaches would be an integral part of the overall framework. Such guidance is expected to be published for comment later this year.

In round numbers, participants in the recent U.S. quantitative impact study reported that 83 percent of their minimum capital requirements under Basel II would be for credit risk, 11 percent of required capital would be for operational risk, and 6 percent of their required capital would be for market risk. The bulk of our description of the NPR proposals will accordingly focus on the capital requirements for credit risk.

Credit Risk. The Proposed Rule provides for the use of the A-IRB approach for determining risk-based capital requirements for credit risks. The A-IRB approach requires banks to estimate certain key risk parameters for each credit exposure or pool of exposures. Banks must then feed these risk parameters into pre-defined formulas (henceforth we will call these the "supervisory formulas"). The supervisory formulas identify the amount of risk-weighted assets that are required for each exposure or pool of exposures. The minimum capital requirement is then, by definition, eight percent of the risk-weighted asset amount (an adjustment to the capital requirement based upon the level of the institution's loan loss reserves is described later).

The IRB framework is broadly similar to the credit value-at-risk (VaR) approaches used by some banks as the basis for their internal assessment of the economic capital necessary to cover credit risk. It is common for a bank's internal credit risk models to consider a one-year loss horizon, and to focus on a high loss threshold confidence level. As with the internal credit VaR models used by banks, the output of the risk-based capital formulas in the IRB framework is an estimate of the amount of credit losses over a one-year horizon that would only be exceeded a small percentage of the time. The agencies' use of a one-year loss horizon is intended to balance the fact that banking book positions likely could not be easily or rapidly exited, with the possibility that in many cases a bank can cover credit losses by raising additional capital should the underlying credit problems manifest themselves gradually. The nominal confidence level of the IRB risk-based capital formulas (99.9 percent) means that if all the assumptions in the IRB supervisory model for credit risk were correct for a bank, there would be less than a 0.1 percent probability that credit losses at the bank in any year would exceed the IRB risk-based capital requirement.[3]

To calculate capital requirements for credit risk using the supervisory formulas, banks must estimate certain key risk inputs for each credit exposure or pool of exposures.

[3] Banks' internal economic capital models typically focus on measures of equity capital, whereas the total regulatory capital measure underlying this proposal includes not only equity capital, but also certain debt and hybrid instruments, such as subordinated debt. Thus, the 99.9 percent nominal confidence level embodied in the IRB framework is not directly comparable to the nominal solvency standards underpinning banks' economic capital models.

The first key risk parameter banks must estimate is the exposure at default, or EAD. This is a dollar amount, and it is important because it is the amount against which capital will be held. The EAD of a credit exposure must at least equal the amount of the exposure that is carried on the balance sheet. For portions of an exposure that reside off balance sheet, the EAD is the bank's own estimate of the amount of the exposure that would likely be owed the bank if there were a default. This contrasts with current rules: instead of converting off-balance sheet amounts using pre-defined regulatory conversion factors, these amounts are converted based on each bank's own estimate of the appropriate conversion factor.

The second key risk parameter determining the capital requirement for a credit exposure is the probability of default, or PD. The PD is the bank's estimate of the probability the borrower will default over the next 12 months. It is intended to be a conservatively estimated "through the cycle" average of default rates the credit exposure would be likely to experience during both expansionary and recessionary periods of economic activity. The framework gives banks significant flexibility as to how they will estimate their PDs, but these estimates are expected to be supported by historical data including default data from recession periods.

The third determinant of the capital requirement is the loss given default or LGD. LGD is the bank's estimate of the credit loss as a percentage of exposure in the event the borrower defaults. LGD is especially important because the capital requirement is a straight line multiple of the LGD. For example, required capital for an exposure whose LGD is 20 percent will be exactly one half the amount that would be required if the LGD were 40 percent. Similarly, required capital would be zero if LGD were zero. The LGD is expected to include all material credit related losses including indirect expenses and an appropriate risk-adjusted discount rate for defaulted assets held in a workout mode. It is also expected to reflect the loss experience likely to be realized during downturn conditions if this is likely to exceed a through the cycle default-weighted average. The portion of the LGD that is the through-the-cycle default weighted average is called the expected loss given default, or ELGD. Thus, LGD equals ELGD plus whatever

incremental loss, if any, would be expected to be experienced during downturn conditions. LGD estimates are expected to be supported by data or other analysis; banks that supervisors deem unable to estimate the effects of downturn conditions on LGD would be required to add a predefined amount to their ELGDs using a so-called "wedge function" described in the NPR.

For wholesale loans, the maturity (M) of the exposure is another important determinant of the regulatory capital requirement.

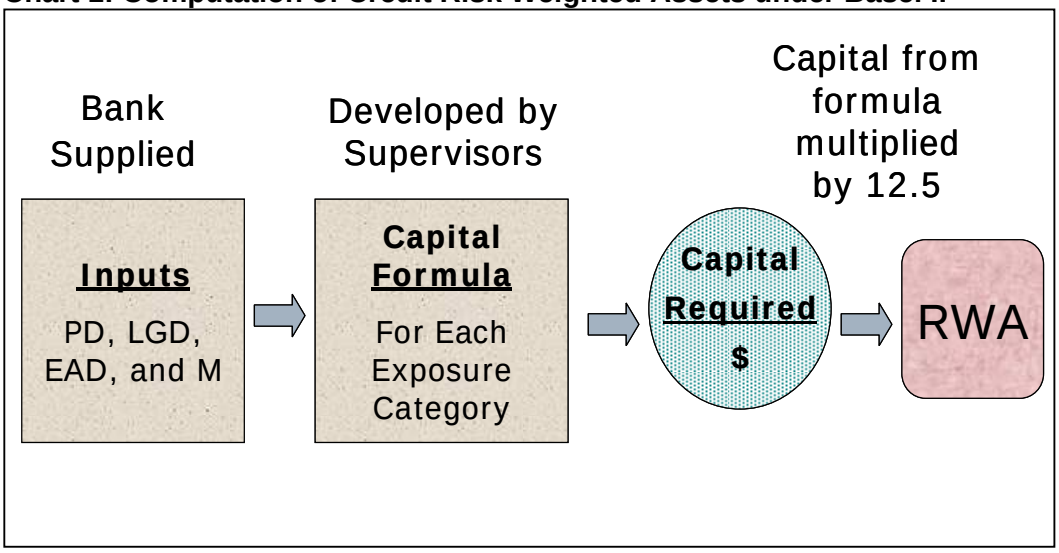
A final determinant of required capital for a credit exposure or pool of exposures is the expected loss or EL, defined as the product of EAD, PD and ELGD. For example, consider a pool of subprime credit card loans with an EAD of $100. The PD is 10 percent, in other words, $10 of cards per year are expected to default, on average. The ELGD is 90 percent, so that the loss on the $10 of defaults is expected to be $9. The EL is then $100 multiplied by 0.10 multiplied by 0.90, that is, $9. EL can be interpreted as the amount of credit losses the lender expects to experience in the normal course of business, year in and year out. If the total EL for the bank, on all its exposures, is less then its allowance for loan and lease losses (ALLL), the excess ALLL is included in the bank's tier 2 capital (this credit is capped at 0.6 percent of credit risk weighted assets). Conversely, if the total EL exceeds the ALLL, the excess EL is deducted from capital, half from tier 1 and half from tier 2. In this example, the EL that would be compared to the ALLL was a very substantial 9 percent of the exposure. The example is intended to illustrate that for subprime lenders or other lenders involved in high charge-off, high margin businesses, the EL capital adjustment may be significant.

The determination of capital requirements for credit risk is summarized schematically in Chart 1. The bank estimates its risk inputs, feeds them into a formula, and the formula determines the capital requirement. The NPR contains five separate

formulas for determining risk-weighted assets for credit risk, depending on the particular type of credit. The five formulas[4] cover:

- wholesale lending;
- high volatility commercial real estate lending;
- residential mortgage lending;
- qualifying revolving retail lending (e.g., credit cards); and
- other retail lending.

Chart 1: Computation of Credit Risk Weighted Assets under Basel II



Memorandum: EL = PDxELGDxEAD; M is not required for Retail Exposures

Table 1 shows the capital required per $100 of wholesale lending exposure for various combinations of PD and LGD (assuming a maturity of 2.5 years). An $8 requirement corresponds to the current rules. The table illustrates that capital requirements for wholesale lending under the NPR can range from much less than the current requirements to much more, depending on the PDs and LGDs used as inputs to the calculations. Table 2 considers only PD and LGD without considering the effects of

[4] The formulas are located in the NPR at the following locations: in the preamble discussion at V.B.4, Table C, p. 137 and in the regulatory text at Part IV. Section 31(e) Table 2, p. 355.

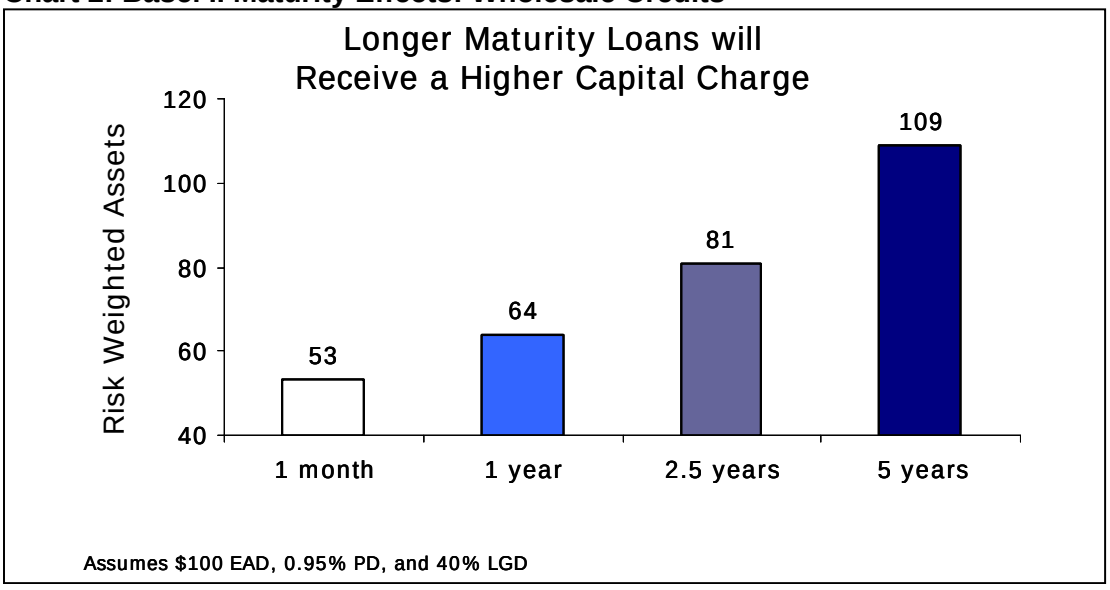
maturity; Chart 2 shows that the effects of maturity on the capital requirement are material.

Table 1: Wholesale UL Capital Requirement

	Loss Given Default							
PD	10%	20%	30%	40%	50%	60%	70%	80%
0.03%	0.26	0.51	0.77	1.03	1.28	1.54	1.80	2.05
0.05%	0.35	0.70	1.05	1.40	1.75	2.10	2.45	2.79
0.10%	0.53	1.05	1.58	2.11	2.64	3.16	3.69	4.22
0.25%	0.88	1.76	2.64	3.52	4.40	5.28	6.16	7.04
0.50%	1.24	2.48	3.71	4.95	6.19	7.43	8.66	9.90
1.00%	1.64	3.28	4.92	6.56	8.21	9.85	11.49	13.13
2.00%	2.04	4.08	6.13	8.17	10.21	12.25	14.29	16.33
5.00%	2.66	5.33	7.99	10.66	13.32	15.98	18.65	21.31

Assumed maturity is 2.5 years, $100 exposure. EL adjustments are not depicted; shaded cell represents dollar-weighted average capital requirement reported by QIS-4 participants.

Chart 2: Basel II Maturity Effects: Wholesale Credits



Tables 2 –5 show capital required per $100 of exposure for the four other exposure types (high volatility commercial real estate, mortgage lending, revolving credit, and other retail).

Table 2: High Volatility Commercial Real Estate UL Capital Requirement

	Loss Given Default							
PD	10%	20%	30%	40%	50%	60%	70%	80%
0.03%	0.35	0.70	1.05	1.39	1.74	2.09	2.44	2.79
0.05%	0.47	0.95	1.42	1.89	2.37	2.84	3.31	3.78
0.10%	0.71	1.41	2.12	2.83	3.54	4.24	4.95	5.66
0.25%	1.15	2.30	3.46	4.61	5.76	6.91	8.06	9.21
0.50%	1.57	3.14	4.71	6.28	7.85	9.42	10.98	12.55
1.00%	1.98	3.96	5.95	7.93	9.91	11.89	13.88	15.86
2.00%	2.31	4.61	6.92	9.23	11.53	13.84	16.15	18.45
5.00%	2.74	5.49	8.23	10.98	13.72	16.47	19.21	21.96

Assumed maturity is 2.5 years, $100 exposure. EL adjustments are not depicted; shaded cell represents dollar-weighted average capital requirement reported by QIS-4 participants.

Table 3: Residential Real Estate UL Capital Requirement

	Loss Given Default							
PD	10%	20%	30%	35%	40%	50%	60%	70%
0.03%	0.07	0.15	0.22	0.26	0.30	0.37	0.44	0.52
0.05%	0.11	0.22	0.33	0.39	0.44	0.55	0.66	0.78
0.10%	0.19	0.38	0.57	0.67	0.76	0.95	1.14	1.33
0.25%	0.38	0.76	1.14	1.33	1.51	1.89	2.27	2.65
0.50%	0.62	1.25	1.87	2.18	2.49	3.12	3.74	4.37
1.00%	1.00	2.01	3.01	3.51	4.01	5.01	6.02	7.02
2.00%	1.56	3.13	4.69	5.47	6.25	7.82	9.38	10.94
5.00%	2.64	5.27	7.91	9.22	10.54	13.18	15.81	18.45

Assumed $100 exposure. EL adjustments are not depicted; shaded cell represents dollar-weighted average capital requirement reported by QIS-4 participants.

Table 4: Qualifying Revolving Exposures UL Capital Requirement

	Loss Given Default							
PD	60%	65%	70%	75%	80%	85%	90%	95%
0.75%	1.47	1.59	1.72	1.84	1.96	2.09	2.21	2.33
1.25%	2.18	2.36	2.54	2.72	2.90	3.08	3.26	3.45
2.00%	3.09	3.34	3.60	3.86	4.11	4.37	4.63	4.88
2.75%	3.88	4.20	4.53	4.85	5.17	5.49	5.82	6.14
3.25%	4.36	4.72	5.09	5.45	5.82	6.18	6.54	6.91
4.00%	5.03	5.45	5.87	6.29	6.71	7.13	7.55	7.96
5.00%	5.84	6.33	6.81	7.30	7.79	8.27	8.76	9.25
10.00%	8.95	9.69	10.44	11.19	11.93	12.68	13.42	14.17

Assumed $100 exposure. EL adjustments are not depicted; shaded cell represents dollar-weighted average capital requirement reported by QIS-4 participants.

Table 5: Other Retail UL Capital Requirement

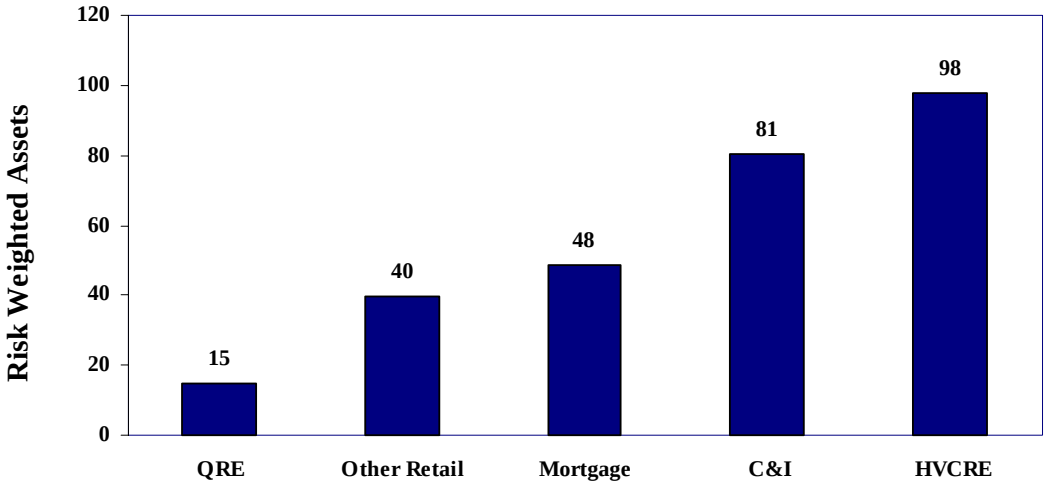
	Loss Given Default							
PD	20%	30%	40%	45%	50%	60%	70%	80%
0.25%	0.75	1.13	1.50	1.69	1.88	2.26	2.63	3.01
0.50%	1.15	1.73	2.30	2.59	2.88	3.45	4.03	4.60
0.75%	1.43	2.14	2.85	3.21	3.56	4.28	4.99	5.70
1.50%	1.90	2.85	3.80	4.27	4.74	5.69	6.64	7.59
2.00%	2.06	3.09	4.12	4.64	5.15	6.19	7.22	8.25
2.50%	2.17	3.25	4.33	4.87	5.41	6.50	7.58	8.66
3.00%	2.23	3.35	4.47	5.02	5.58	6.70	7.81	8.93
5.00%	2.36	3.54	4.72	5.31	5.90	7.08	8.26	9.45

Assumed $100 exposure. EL adjustments are not depicted; shaded cell represents dollar-weighted average capital requirement reported by QIS-4 participants.

Chart 3 shows that the exposure type itself is an important determinant of capital requirements. If we fix the PD, LGD and maturity for an exposure[5], the capital requirement will depend greatly on how the exposure is classified. For the PD and LGD pair that is held fixed for purposes of Chart 3, high volatility commercial real estate requires the most capital, followed in descending order by wholesale lending, residential mortgages, other retail and qualifying revolving credit.

[5] In practice PD and LGD are not likely to be constant across exposure types. LGDs will tend to be high for credit cards; PDs and LGDs may tend to be low for mortgages. For credit cards in particular, how the banks implement the NPR capital requirement for undrawn balances may overwhelm all other factors in importance, and this effect appears to mean that credit card capital requirements would increase significantly under the NPR proposals.

Chart 3: Exposure Type Can Have a Material Effect on RWA Calculations



Assumes $100 EAD, 0.95% PD, 40% LGD, and also a 2.5 yr M for C&I and HVCRE
Note: Higher PD/LGD associated with most QRE loans will result in much higher RWA than depicted

Understanding how the NPR proposals generate the capital requirements reflected in these tables and the ranking reflected in Chart 3 charts requires some discussion of how defaults are assumed to be correlated. The mathematics of the A-IRB formulas assumes banks have many tiny credit exposures. If defaults on these exposures were uncorrelated—that is, if the number of defaults could be likened to the results of millions of independent coin tosses—then a statistical law of large numbers would imply that annual credit losses would be clustered very tightly around an expected value. This would mean that at least according to the A-IRB model, capital would be unnecessary, since the loan loss reserve would cover the expected losses. Conversely, if the defaults were highly correlated (for example to some index of economic conditions), then there might be years when defaults greatly exceeded their long run average. For such highly correlated types of credit exposures, the A-IRB capital requirements might be fairly high.

Each A-IRB supervisory function makes different assumptions about the correlations of defaults for the relevant type of exposure. These assumed asset value correlations, or AVCs, determine how much capital A-IRB will require for any given bank-assigned risk inputs. The AVC assigned to a given portfolio of exposures is an

estimate of the degree to which any unanticipated changes in the financial conditions of the underlying obligors of the exposures are correlated (that is, would likely move up and down together). High correlation of exposures in a period of economic downturn conditions is an area of supervisory concern. For a portfolio of exposures having the same risk parameters, a larger AVC implies less diversification within the portfolio, greater overall systematic risk, and, hence, a higher risk-based capital requirement.[6] For example, a 15 percent AVC for a portfolio of residential mortgage exposures would result in a lower risk-based capital requirement than a 20 percent AVC and a higher risk-based capital requirement than a 10 percent AVC.

Chart 3 illustrates potential practical implications of the correlation assumptions. For example, the framework provides powerful capital incentives for large banks to structure their small business lending as retail (that is, loans under a size threshold managed on a pool basis and hence eligible for the "other retail" capital treatment rather than the "wholesale" capital treatment). The chart also illustrates the stakes underlying the question that has been asked from time to time whether home equity loans could be eligible for the revolving credit capital treatment, rather than the mortgage capital treatment (the NPR requires the mortgage capital treatment).

Nature of the benefits associated with the use of the NPR's approaches to credit risk. As indicated at the outset, there are benefits associated with the use of the NPR approaches to credit risk. In the staff's view these benefits are primarily related to the risk management processes they encourage banks to adopt. We caution the Board, however, that the supervisory formulas should not be viewed as divining rods for determining a correct level of capital to achieve a solvency standard.

If all the assumptions built into those formulas were correct and banks supplied correct values of PD, LGD and EAD as inputs, then there would be less than a 0.1

[6] See Explanatory Note.

percent probability that credit losses at the bank in any year would exceed the A-IRB risk-based capital requirement.[7]

In fact, the AVCs alluded to earlier were developed with knowledge of their effect on required capital for each value of the risk inputs. Choosing the AVCs thus amounted to choosing the capital requirements, and many factors were considered in this process. Staff views the AVCs as having been chosen in part based on research into actual default correlations, in part based on a desire for the supervisory formulas to produce capital requirements that corresponded to the internal economic capital estimates of banks, trade associations and proprietary credit risk models, and in part to meet supervisory objectives. More pragmatically, the AVCs were also shaped in part by a long multi-country negotiating process.

In short, there is not a strong conceptual basis for believing the output of the supervisory formulas is an objectively supportable measure of the absolute level of capital required to meet a defined solvency standard, even if banks supplied key risk inputs of PD, LGD and EAD that were in some sense correct. As discussed in a subsequent section of this memorandum, these theoretical considerations are reinforced by the results of the QIS-4 survey.

Operational Risk. The Proposed Rule also provides for the use of the advanced measurement approach (AMA) for determining risk-based capital requirements for operational risk. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events. This definition also includes legal risk – which is the risk of loss (including litigation costs, settlements, and regulatory fines) resulting from the failure of the bank to comply with laws, regulations, prudent ethical standards, and contractual obligations in any aspect of the bank's business – but excludes strategic and reputational risks.

[7] Banks' internal economic capital models typically focus on measures of equity capital, whereas the total regulatory capital measure underlying this proposal includes not only equity capital, but also certain debt and hybrid instruments, such as subordinated debt. Thus, the 99.9 percent nominal confidence level embodied in the IRB framework is not directly comparable to the nominal solvency standards underpinning banks' economic capital models.

Under the AMA, a bank would use its internal operational risk management systems and processes to assess its exposure to operational risk. Given the complexities involved in measuring operational risk, the AMA provides banks with substantial flexibility and, therefore, does not require a bank to use specific methodologies or distributional assumptions. Nevertheless, a bank using the AMA must demonstrate to the satisfaction of its primary Federal supervisor that its systems for managing and measuring operational risk meet established standards, including producing an estimate of operational risk exposure that meets a one-year, 99.9^{th} percentile confidence interval. A bank's estimate of operational risk exposure includes both expected operational loss (EOL) and unexpected operational loss (UOL) and forms the basis of the bank's risk-based capital requirement for operational risk.

The AMA allows a bank to base its risk-based capital requirement for operational risk on UOL alone if the bank can demonstrate to the satisfaction of its primary Federal supervisor that the bank has eligible operational risk offsets, such as certain operational risk reserves, that equal or exceed the bank's EOL. To the extent that eligible operational risk offsets are less than EOL, the bank's risk-based capital requirement for operational risk must incorporate the shortfall.

The NPR also includes options for the calculation of operational risk capital that are intended to balance two critical competing objectives associated with implementing the AMA. The first objective is that the capital held by an FDIC-insured bank should be adequate for the risk profile of that bank, consistent with the ultimate accountability of the management and directors of the bank for governing the institution in a safe-and-sound manner. The second objective is to avoid the excessive costs that would arise for banking organizations if a stand-alone AMA were required at each and every insured bank. These two objectives are competing: a single centralized risk calculation that is allocated to individual banks may not meet the first objective, while an elaborate and customized calculation tailored to each bank may not meet the second objective.

The NPR offers the option to IDIs of developing an alternative approach to calculating its operational risk capital requirement. Such alternative approaches are not defined but could include, for example, calculation of an AMA for a pool of insured institution subsidiaries, or use of a simpler approach to the operational risk capital calculation involving percentages of income, such as Basel II makes available to banks outside the United States.

Market Risk**.** A separate NPR changing certain aspects of the agencies' market risk capital rules is also proposed to be published today.

Total Capital Requirement**.** The total capital requirement for a bank subject to this NPR includes the amount of capital determined by the application of the IRB framework and the amount determined for operational risk under the AMA formulas (and, for banks subject to the market risk capital standards, a market risk capital charge).

The formulas derive an actual dollar amount for a capital requirement. Accordingly, in order to fit within the PCA framework and render capital ratios for regulatory purposes, the advanced approaches transform this direct capital requirement into a risk weighted assets equivalent. This is done by multiplying the dollar amount of the calculated capital charge by a 12.5 conversion factor – the reciprocal of the 8 percent minimum capital requirement.

C. Pillar 2: Supervision

The second pillar of the New Capital Accord, supervisory review, outlines several principles highlighting the need for banks to assess their capital adequacy positions relative to risk, and the need for supervisors to review and take appropriate actions in response to those assessments such as requiring additional buffer capital given the risk profile of the institution. While the Proposed Rule primarily focuses on the first pillar,

minimum capital requirements, there are significant provisions within the rule which require supervisory review.

Banks adopting the advanced approaches must possess the highest level and quality of internal risk measurement and management systems. Not only must these banks develop and maintain qualifying loss and default data for portfolios subject to the IRB framework, but those measurement systems must be subject to strict internal control processes, stress testing and validation programs, independent review and oversight, and other qualitative standards.

Similar standards are required for the measurement and management of operational risk. Clearly, a capital standard is not the sole or complete solution to address operational risks. As described in the Proposed Rule, the advanced measurement approach for determining a capital charge for operational risk will depend heavily upon supervisory judgment. Active federal supervision, independent auditors, effective internal controls and strong bank management are obvious key components. The AMA is as much about promoting these objectives as it is about computing explicit capital charges.

D. Pillar 3: Disclosures

Market discipline is a key component of the New Capital Accord. Under the third pillar, disclosure requirements are established to allow market participants to assess key information about an institution's risk profile and its associated level of capital, provide for comparability of risk elements, and at the same time allow bank management adequate flexibility. Increased disclosures, especially regarding a bank's use of the A-IRB approach for credit risk and the AMA for operational risk are intended to allow an institution's private sector stakeholders to more fully evaluate the institution's financial condition, including its capital adequacy. This greater transparency is critical in order to foster the development of a significant amount of market discipline.

The Proposed Rule would require the top-tier legal entity – either the top-tier banking holding company or depository institution, if not under a holding company structure — to make certain mandatory disclosures on a quarterly basis. All disclosures must me certified by the chief financial officer of the reporting entity.

In addition to disclosing risk-based capital ratios and their components, the reporting entity must also report other information that is designed to enable market participants to better evaluate the banks' capital structure, risk exposure, risk management performance, and capital adequacy. To further enhance transparency, the reporting entity is encouraged to place all disclosures made over the last three years in a single location on the bank's public website.

Finally, the Proposed Rule requires each reporting entity to have a formal disclosure policy that is approved by the board of directors. This policy must provide for effective internal controls and disclosure controls and procedures to ensure that appropriate verification of the disclosure takes place.

The agencies also are proposing to require IDIs and holding companies to report certain supporting details of their risk-based capital calculations on their quarterly reports of financial condition and income filed with the federal banking agencies. Finally, the agencies are proposing to collect on a confidential basis, from each IDI and holding company adopting the new framework, more detailed data supporting the capital calculations for each type of exposure. Such information would be shared among the agencies and used for purposes of benchmarking, analyzing trends and promoting consistency in the implementation of these proposals. Details are provided in the Agencies' joint initial Paperwork Reduction Act Federal Register notices, published separately today.

E. Domestic Implementation and Timeline

The NPR identifies three types of U.S. banking organization: institutions subject to the Proposed Rule on a mandatory basis (core banks); institutions not subject to the Proposed Rule on a mandatory basis, but that choose to voluntarily apply those approaches (opt-in banks); and institutions that are not subject to and do not apply the Proposed Rule (general banks). In general a core bank is defined as a depository institution with consolidated total assets of $250 billion or more, with consolidated on-balance sheet foreign exposure of $10 billion or more, or a subsidiary of a bank or bank holding company that applies the Proposed Rule.

Both core and opt-in banks would be required to comply with all qualification standards concerning the internal ratings systems used to measure credit and operational risk exposures and would be subject to supervisory requirements for risk management before being able to apply the Proposed Rule for regulatory capital calculation purposes. Also, under the Proposed Rules, all U.S. institutions would continue to calculate the numerator of the regulatory risk-based capital ratios in a manner substantially similar to the way it is currently calculated. Thus, the elements of capital would be unchanged under the Proposed Rule.

In addition, notwithstanding the presumptive requirement that all IDI subsidiaries adopt Basel II if their holding company is adopting Basel II, any such IDI may request an exemption from its primary federal supervisor from the requirement to adopt Basel II. The primary supervisor may grant such a request based on factors such as the size, complexity or risk profile of the IDI. It is anticipated any such requests would be carefully considered to ensure that banking organizations are not "cherry picking" the framework by requesting exemptions for the purpose of selectively applying capital regimes across IDIs in order to minimize regulatory capital requirements.

The Agencies are also considering possible modifications to the general risk-based capital rules. These possible revisions, referred to as Basel IA, are intended to

introduce enhanced risk sensitivity into the general risk-based capital framework and to reduce competitive inequities between those banks that apply Basel II and non-Basel II banks. In October 2005, the Agencies published the Basel IA ANPR in the Federal Register for a 90-day public comment period that ended in mid-January 2006. The Agencies are currently analyzing the comments received and considering alternatives for a more fully developed proposal that can be published in NPR form later in 2006. The Agencies have committed to publishing the Basel IA NPR soon after the publication of the Basel II NPR so that there will be a meaningful overlap in their comment periods.

It is important to note that all insured banks would continue to comply with the existing leverage ratio requirements under existing Prompt Corrective Action (PCA) legislation and implementing regulations. Specifically, to be considered well-capitalized under PCA, a bank must have at least a 10 percent total risk-based capital ratio, a 6 percent tier 1 risk-based capital ratio, and a 5 percent leverage ratio. The leverage ratio is the ratio of Tier 1 capital to average total assets. These and other PCA categories will not change.

Under the Proposed Rule, all banks would need to submit an implementation plan for approval to their primary supervisors and complete a parallel run of at least four consecutive quarters before they would be allowed to apply the Proposed Rule for purposes of determining minimum regulatory capital requirements. The earliest date that a bank may begin a parallel run would be January 1, 2008. During parallel run, the bank would remain subject to the general risk-based capital runs, but would also be required to calculate its capital ratios using the advanced approaches included in the Proposed Rule.

The bank's primary federal regulator would have responsibility for determining its readiness to apply an advanced approach and is ultimately responsible, after consultation with other relevant supervisors, for determining whether the institution satisfies the qualifying criteria for the A-IRB and AMA. The Agencies recognize that interagency consistency in implementing the advanced approaches will be important to

ultimate success of any final standards to be implemented and they are developing a uniform set of validation standards and procedures that would ensure consistency.

The bank's primary federal regulator would notify the bank of the date that it may begin using the advanced approaches for determining risk-based capital requirements. However, the Proposed Rule imposes three transitional floor periods which limit the amount by which capital may decline under the advanced approaches of the Proposed Rule relative to the general risk-based capital rules. The bank's primary federal regulator will inform the bank when it may move from one transitional floor period to the next, and, when a bank is operating under the final floor period, when it may exit the transitional floor requirement.

Table 6

Transitional Floor Period	Transitional Floor Percentage
First Floor Period	95 Percent
Second Floor Period	90 Percent
Third Floor Period	85 Percent

During the transitional floor periods, the bank would be required to calculate its risk-weighted assets under the general risk-based capital rules and multiply by the appropriate transitional floor percentage provided in Table 6. The resulting "floor-adjusted" risk-weighted assets would then be used as the denominator for purposes of determining risk-based capital ratios using the general risk-based capital rules. The resulting capital ratios would be compared against the capital ratios determined under the Proposed Rule; with the lower of the ratios binding for risk-based capital and PCA purposes.

For core banks, and banks that opt in to the Proposed Rule at the earliest possible date, the transitional floors will be determined using the general risk-based capital rules without consideration to any modifications that may be enacted by Basel IA. Banks that opt in to the Proposed Rule at a later date may calculate transitional floors using the general risk-based capital rules as modified by Basel IA.

III. Potential Regulatory Concerns

Staff believes there are three issues that could have a bearing on the ultimate desirability of implementing the Proposed Rule: (1) the impact of adopting the advanced approaches on capital levels at individual U.S. institutions and the domestic banking industry as a whole; (2) competitive implications of a bifurcated capital framework; and (3) the potential under this framework for there to be wide variations in required capital for similar risk exposures held at different Basel II banks.

A. Capital Adequacy

After the Basel Committee published the New Capital Accord, the agencies conducted the additional quantitative impact study referenced earlier, QIS-4, in the fall and winter of 2004-2005, to better understand the potential impact of the proposed framework on the risk-based capital requirements for individual U.S. banks and U.S. banks as a whole. The results showed a substantial dollar-weighted average decline and variation in risk-based capital requirements across the 26 participating U.S. banks and their portfolios.[8] In an April 2005 press release,[9] the agencies expressed their concern about the magnitude of the drop in QIS-4 risk-based capital requirements and the dispersion of those requirements and decided to undertake further analysis.

As indicated in Table 7, QIS-4 participants reported a dollar-weighted average reduction of 15.5 percent in risk-based capital requirements at participating banks when

[8] Since neither an NPR and associated supervisory guidance nor final regulations implementing a Basel II-based framework had been issued in the United States at the time of data collection, all QIS-4 results relating to the U.S. implementation of Basel II are based on the description of the framework contained in the QIS-4 instructions. These instructions differed from the framework issued by the BCBS in June 2004 in several respects. For example, the QIS-4 articulation of the Basel II framework does not include the 1.06 scaling factor. The QIS-4 instructions are available at http://www.ffiec.gov/qis4.

[9] See "Banking Agencies to Perform Additional Analysis Before Issuing Notice of Proposed Rulemaking Related to Basel II," Apr. 29, 2005.

moving from the current Basel I-based framework to a Basel II-based framework.[10] The median decline in capital requirements was 26 percent. The dollar-weighted average decline in tier 1 capital requirements was 22 percent, and the median decline in tier 1 capital requirements was more than 31 percent.

Table 7

QIS-4 Estimates Show Large Reductions in Risk-Based Capital Requirements

Percentage Change in:	Weighted Average	Median
Total Capital Requirement	-15.5%	-26.3%
Tier 1 Capital Requirement	-21.8%	-30.8%

QIS-4 participants reported significantly lower capital requirements for all exposure categories except revolving retail credit (credit cards), equities and OTC derivatives. Table 8 provides a numerical summary of the QIS-4 results, in total and by portfolio, aggregated across all QIS-4 participants.[11] The first column shows changes in dollar-weighted average minimum required capital (MRC) both by portfolio and overall, as well as in dollar-weighted average overall effective MRC. Column 2 shows the relative contribution of each portfolio to the overall dollar-weighted average decline of 12.5 percent in MRC, representing both the increase/decrease and relative size of each portfolio. The table also shows (column 3) that risk-based capital requirements declined by more than 26 percent in half the banks in the study. Most portfolios showed double-digit declines in risk-based capital requirements for over half the banks, with the exception of credit cards. It should be noted that column 3 gives every participating bank

[10] The Basel II framework on which QIS-4 is based uses a UL-only approach (even though EL requirements were included in QIS-4). But the current Basel I risk-based capital requirements use a UL+EL approach. Therefore, in order to compare the Basel II results from QIS-4 with the current Basel I requirements, the EL requirements from QIS-4 had to be added to the UL capital requirements from QIS-4.
[11] In the table, "Minimum required capital" (MRC) refers to the total risk-based capital requirement before incorporating the impact of reserves. "Effective MRC" is equal to MRC adjusted for the impact of reserves. As noted above, under the Basel II framework, a shortfall in reserves generally increases the total risk-based capital requirement and a surplus in reserves generally reduces the total risk-based capital requirement, though not with equal impact.

equal weight. Column 4 shows the analogous weighted median change, using total exposures as weights.

Table 8

QIS-4 Results: Changes in Minimum Required Capital

Portfolio	Column 1: % Change in Portfolio MRC	Column 2: % Point Contrib. to MRC Change	Column 3: Median % Change in Port. MRC	Column 4: Weighted Median % Chg in Port. MRC	Column 5: Share of Basel I MRC	Column 6: Share of Basel II MRC*
Wholesale Credit	**(24.6%)**	**(10.9%)**	**(24.5%)**	**(21.6%)**	**44.3%**	**38.2%**
Corporate, Bank, Sovereign	(21.9%)	(7.4%)	(29.7%)	(13.5%)	33.9%	30.3%
Small Business	(26.6%)	(1.2%)	(27.1%)	(24.8%)	4.6%	3.9%
High Volatility CRE	(33.4%)	(0.6%)	(23.2%)	(42.4%)	1.8%	1.3%
Income Producing RE	(41.4%)	(1.7%)	(52.5%)	(52.4%)	4.0%	2.7%
Retail Credit	**(25.6%)**	**(7.8%)**	**(49.8%)**	**(28.7%)**	**30.6%**	**26.0%**
Home Equity (HELOC)	(74.3%)	(4.6%)	(78.6%)	(76.8%)	6.1%	1.8%
Residential Mortgage	(61.4%)	(6.8%)	(72.7%)	(64.4%)	11.1%	4.9%
Credit Card (QRE)	66.0%	4.0%	62.8%	72.2%	6.1%	11.6%
Other Consumer	(6.5%)	(0.4%)	(35.2%)	(18.3%)	6.0%	6.4%
Retail Business Exposures	(5.8%)	(0.1%)	(29.2%)	11.6%	1.2%	1.3%
Equity	6.6%	0.1%	(24.4%)	9.6%	1.3%	1.6%
Other assets	(11.7%)	(1.2%)	(3.2%)	(11.6%)	10.0%	10.1%
Securitization	(17.9%)	(1.4%)	(39.7%)	(45.8%)	8.1%	7.6%
Operational Risk		**9.2%**			**0.0%**	**10.5%**
Trading Book	0.0%	0.0%	0.0%		5.2%	5.9%
Change in MRC	**(12.5%)**	**(12.5%)**	**(23.8%)**	**(17.1%)**	**100.0%**	**100.0%**
Change in Effective MRC	**(15.5%)**		**(26.3%)**	**(21.7%)**		

* QIS-4 interpretation of Basel II framework as articulated in QIS-4 instructions

Notes to the table: The first two columns of the table show the *dollar-weighted* average percentage change in MRC by portfolio and the percentage point contribution of each portfolio to the overall average percentage change (of 12.5%). The third column shows the *unweighted* median percentage change in MRC by portfolio. The fourth column shows the *weighted* median percentage change in MRC by portfolio, weighting by total exposures at the portfolio level. The next two columns show the share each portfolio contributes to MRC, under the current framework (column 5) and the QIS-4 interpretation of Basel II as defined in the QIS-4 instructions (column 6). Entries in parentheses denote negative numbers. There are no percentage change numbers for operational risk because it is not separated out as a specific risk-based capital requirement under Basel I.

QIS-4 participants reported that capital requirements for off-balance sheet exposures showed an aggregate reduction of about 19 percent compared to the current risk-based capital requirements. This might seem surprising given the emphasis that has

been placed on the role of Basel II in closing gaps in off-balance sheet capital requirements under the current rules. The explanation, however, is that the additional capital that results from closing gaps in the current rules (for example short term commercial loan commitments and undrawn retail lines of credit) is far more than offset by the effect of the lower risk weights on the off-balance sheet exposures for which the current rules do require capital.

Table 9 provides some perspective on the levels of tier 1 capital that the QIS-4 results, taken at face value, indicate would be permissible under the new framework. Table 9 displays the distribution of the QIS-4 minimum tier 1 capital requirement for each of the 26 organizations as a percentage of their balance sheet assets. Table 9 highlights that minimum capital requirements reported under QIS-4 were, for almost all the participants, far less than what is required under current leverage requirements for banks and holding companies.[12]

Table 9

QIS-4 Capital Requirements Were Well Below Leverage Based Requirements

(Minimum Tier 1 Requirements as a Percentage of On-Balance Sheet Assets)

Ratio	Number of companies in range
< 2 percent	10
2 -3 percent	10
3-4 percent	4
4-5 percent	0
> 5 percent	2
Total QIS-4 banks:	26

Taken at face value, the QIS-4 results suggest that the unconstrained adoption of the NPR framework (for example, post-2011 if no changes are made in the interim) would present the agencies with a choice: either substantially weaken existing numerical capital standards by eliminating or reducing the leverage requirements, or require banks

[12] Most of the holding companies reporting in QIS-4 are subject to a Federal Reserve regulation requiring a minimum tier 1 capital to adjusted balance sheets assets ratio of four percent. The requirement can be reduced to three percent for bank holding companies that are strongly rated.

to implement Basel II without being able to put the resulting Basel II overall capital requirements into effect. Supervisors from all federal banking agencies have indicated that allowing banks to operate at the capital levels reported by a number of the QIS-4 participants would be unacceptable.

B. Competitive Issues

Table 8 above provided summary indicators of the risk weights reported in QIS-4 for various loan types. Those summary indicators do not provide a complete picture of the potential differences in capital requirements that may exist between Basel II banks and those using the general rules.

Charts 4 and 5 below illustrate the distribution of risk-weights for wholesale and residential mortgage exposures reported by the QIS-4 participants. For example, Chart 4 indicates that approximately 46 percent of the dollar value of all wholesale exposures held by the 26 participating organizations was assigned a risk weight of less than 20 percent. In total, approximately 70 percent of wholesale exposures were assigned a risk weight of 50 percent or less. The Basel 1A ANPR indicated that the agencies are considering assigning a 100 percent risk weight to unrated commercial loans (and asked whether and how a 75 percent risk weight bucket could be defined for high quality small business loans).

Chart 4

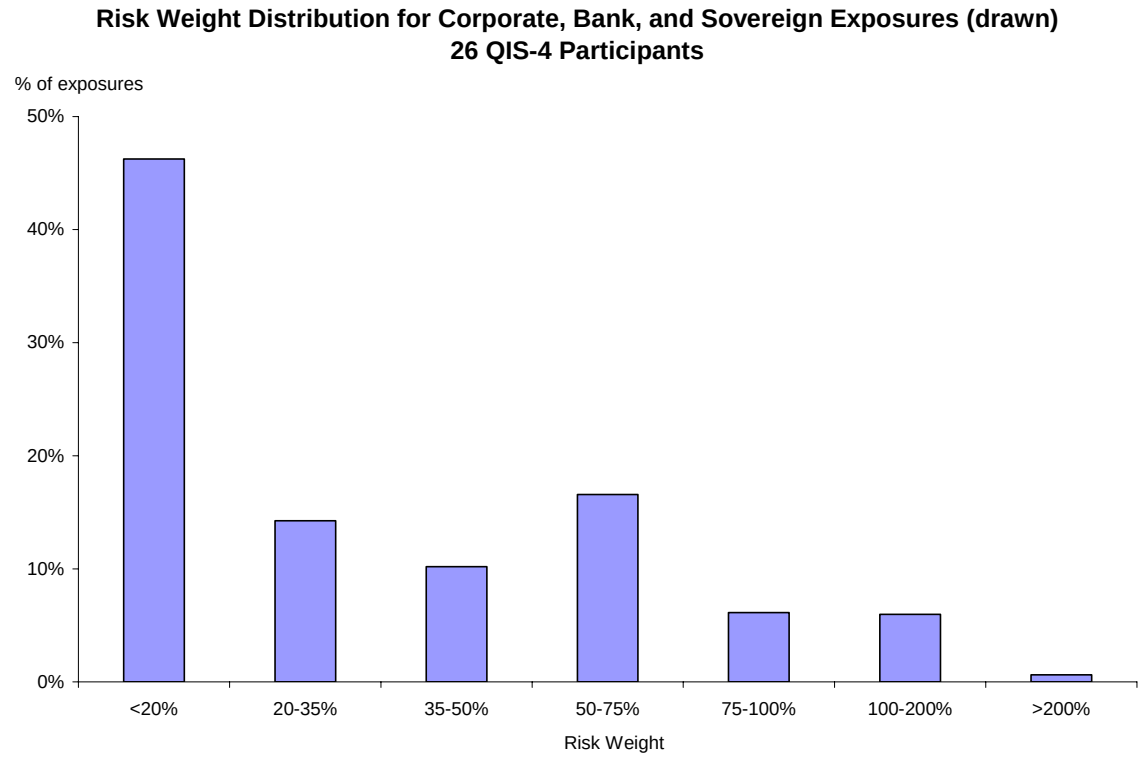
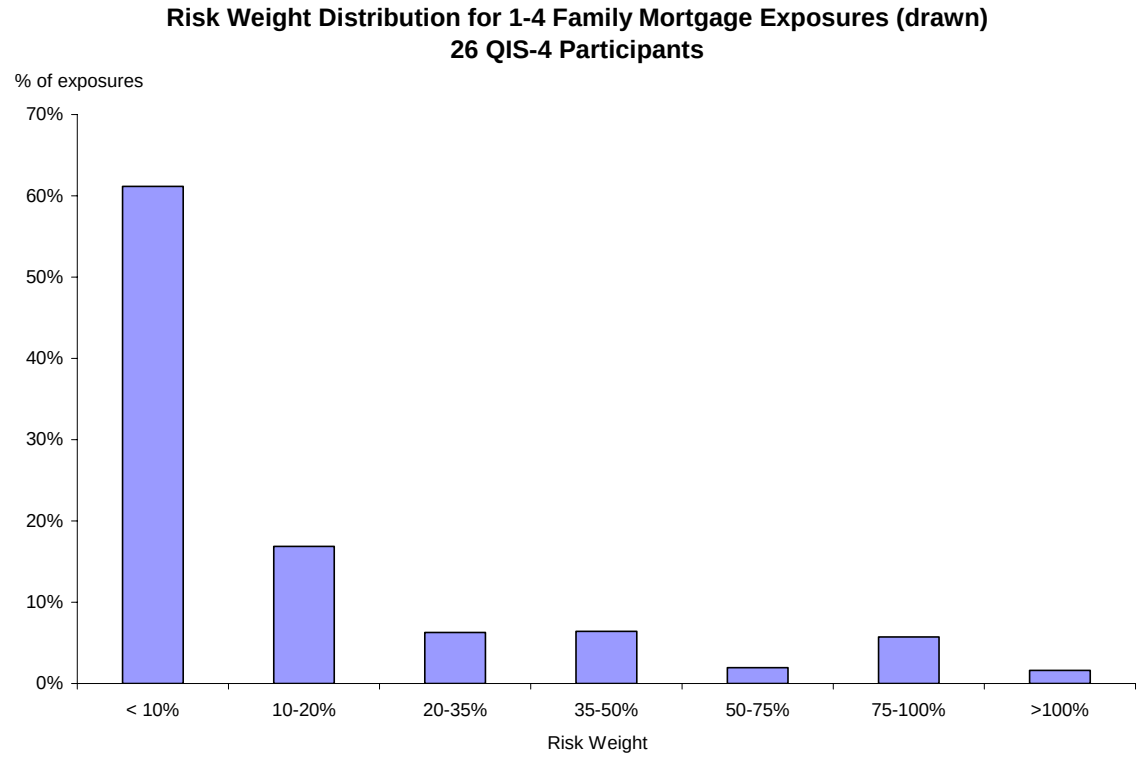


Chart 5 indicates that approximately 61 percent of the dollar value of all residential mortgage exposures held by the 26 participating organizations was assigned a risk weight of less than 10 percent. In total, approximately 84 percent of residential mortgage exposures were assigned a risk weight of less than 35 percent. The Basel 1A ANPR indicated that the agencies were considering a schedule of risk weights for residential mortgages that ranged from 20 percent to 100 percent depending on the LTV and whether the mortgage was a first or second lien.

Chart 5



Similar large differences in risk weights exist for high-volatility commercial real estate loans and other retail loans, with the QIS-4 reporting much lower risk weights than the ANPR indicated that the agencies are considering. For revolving retail loans, notably credit cards, the overall picture is reversed with the QIS-4 participants reporting higher capital charges on these exposures than the current rules require, and higher than the approaches discussed in the ANPR likely would require.

If the distribution of risk weights reported in the QIS-4 is representative of experience under the framework going forward, then adopting banks will face much lower risk-based capital requirements than banks operating under the general capital rules. Whether this would translate into a pricing advantage for Basel adopters, or whether newly liberated excess capital would become a currency for substantial new acquisitions, remains to be seen.

There is some possibility that the substantial reductions in capital requirements, and attendant potential competitive issues just described, might not materialize. In this view, some of the QIS-4 results can be explained by non-compliance with requirements of the new framework. This includes most notably the lack of a meaningful incorporation of the effects of downturn conditions, or of economic losses such as workout expenses, allocated overhead, or the time value of money, into many institutions' reported LGDs. Once banks adequately address these requirements, it is said, risk weights and capital requirements will be higher than depicted in the above tables.

On the other hand, analysis conducted at the FDIC has shown that the expected annualized credit loss rates reported by the QIS-4 participants were more than double the net charge-off rates those institutions experienced over the preceding ten years, and exceeded by about 30 percent their annualized net charge-off rates over a twenty year period that included most of the 1980s banking crisis. This suggests that in aggregate QIS banks may have been entering more pessimistic loss assumptions than the framework might actually require, and that the elimination of this pessimistic bias in the future would cause capital requirements to be, in aggregate, lower than reported in QIS-4. Similarly, the agencies have reported that the substantial reductions in capital requirements observed in QIS-4 included virtually no recognition of the capital benefits the framework would allow for banks' existing hedges, collateral, guarantees, or the changes in derivatives capital requirements using Expected Positive Exposure. Future recognition of those benefits would also tend to drive capital requirements down more than the QIS-4 indicated.

The agencies recognized all these countervailing pressures on future capital requirements and concluded it was not possible to determine whether such capital requirements would be higher, or lower, than reported under the QIS-4. Thus the safety and soundness concerns and competitive issues associated with the capital requirements

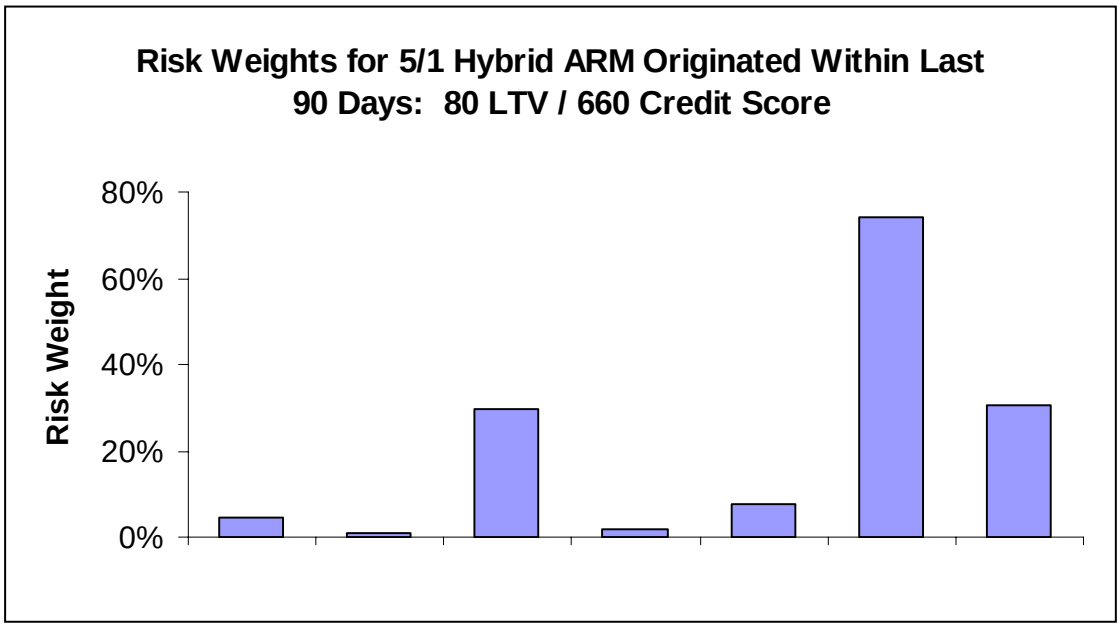
generated by this framework could be either less acute or more acute than the QIS-4 might indicate.

C. Variations in capital requirements for similar risk exposures

The agencies' QIS-4 analysis conducted during the summer of 2005 attempted to determine whether similar risk exposures received similar capital requirements across the participating banks. In those areas where detailed analysis was conducted the findings indicated substantial differences in capital requirements for similar exposures. This section describes those results and the tradeoffs involved with narrowing such differences in the future.

For seven participating banks, the agencies compared the risk weights assigned to similar residential mortgage portfolios. Those portfolios were similar in average FICO score, average LTV and underwriting characteristics. The average risk weights assigned by these seven banks to these portfolios ranged from less than one percent to 74 percent (Chart 6). Differences can be attributed to different methodologies for estimating PDs and ELGDs and different approaches to estimating the effects of downturn conditions on LGD (in most but not all cases there was no allowance for the effect of downturn conditions). Some of these different methodologies reflected differences permissible within the framework and others reflected approaches that were not in compliance with the framework.

Chart 6



For six participating banks, the agencies also compared risk weights that were assigned to exposures that were part of the shared national credit program (SNCs). SNCs are participated among institutions and thus the agency analysis compared risk weights for exposures that were in fact identical. As compared with a reference bank, risk weights assigned by the other five banks on average ranged from 30 percent lower than assigned by the reference bank to 190 percent higher than those assigned by the reference bank.

The NPR allows banks significant flexibility in how they estimate PDs, LGDs and EADs. This flexibility is consistent in spirit with the premise of Basel II which is to use the information banks generate themselves to set their capital requirements. Not allowing banks to use their own estimation methodologies would go against this philosophy. The agencies continue to emphasize to the industry that flexibility in parameter estimation methodologies remains intact.

The price of such flexibility in estimation techniques appears to be acceptance of large differences in risk weights for similar exposures. Eliminating or substantially

narrowing such differences, conversely, would necessarily seem to mean that the agencies would have to introduce significantly more prescriptiveness to the selection of risk inputs than the agencies has hitherto been envisioned.

The differences in capital requirements displayed above suggest that at the present time, the risk-sensitivity of the NPR framework may exist largely within a bank and relative to its own methodologies for quantifying risk. There can be less confidence in the absolute level of capital implied by the framework or the ability to compare risk across banks when different banks are coming to very different estimates of those risks.

For example, with regard to the PDs different banks may assign to their credit exposures, a recent publication of the BCBS says, "…the default probability assigned to each obligor rating grade…strongly depend on the type of rating methodology and quantification techniques employed."[13] Since the NPR allows for flexibility in both the rating methodology and the quantification technique, it follows there is considerable flexibility in the PD different banks may assign to the same exposure. Similarly, "A major obstacle to the backtesting of PDs is the scarcity of data, caused by the infrequency of default events and the impact of default correlation. Even if the final minimum requirements of the revised Framework for the length of time series for PDs (five years) are met, the explanatory power of statistical tests will still be limited."[14] Finally, "For the validation of PDs, we differentiate between…the discriminatory power of the rating system and validation of the accuracy of the PD quantification (calibration) … Compared with the validation of the discriminatory power, methods for validating calibration are at a much earlier stage."[15] The import of these statements is that there may frequently be situations where there is little basis for choosing a correct PD from among a number of different PDs that have materially different implications for capital.

[13] BCBS, Studies on the Validation of Internal Ratings Systems, July 2005, p. 2.
[14] Ibid, p. 5.
[15] Ibid, p. 3.

Similar comments apply to the estimation of LGDs and EADs. With regard to LGD, a recent BCBS publication said, "…data limitations pose an important challenge to the estimation of LGD parameters in general, and of LGD parameters consistent with economic downturn conditions in particular."[16] Similarly, "The studies find that a qualitative assessment of the bank's LGD estimation process may be a more meaningful validation method than the use of quantitative methods."[17] These statements about LGD estimation again suggest that in practice, regulators will either have to tolerate considerable variation in assigned LGDs for similar exposures across banks, or make somewhat arbitrary decisions about acceptable LGDs.

Finally, with regard to EAD, the same BCBS publication says, "Literature on the estimation and validation of EADs is virtually non-existent and data constraints are even more severe than for LGDs, where at least one can draw some inferences from publicly available bond data."[18] The challenges and issues involved in EAD estimation equal or exceed the challenges associated with PDs and LGDs.

These observations should not be taken to detract from the quality of banks' internal rating systems. In those rating systems, credit exposures are assigned a grade, and there might be anywhere from half a dozen to fifteen or twenty "pass grades," in additional to the classifications such as substandard, doubtful or loss. The grades rank the bank's own perception of relative risks across credits and the supervisors have generally been very satisfied with the quality of these systems at large banks.

The new element brought by Basel II is the requirement for banks to quantify their existing rating systems by assigning PDs, LGDs and EADs based on historical and forward-looking information. The information in this section suggests that the quantification process is presently difficult and non-comparable across banks. This reinforces the theoretical cautions introduced in the discussion of the IRB credit risk

[16] BCBS, Guidance on Paragraph 468 of the Framework Document, July 2005, p. 1.
[17] BCBS, Studies on the Validation of Internal Rating Systems, July 2005, p. 3-4.
[18] Ibid, p. 4.

models. Specifically, IRB capital requirements should not be viewed as absolute measures of risk.

IV. Safeguards and Statement of Overall Capital Objectives

The material presented in section III suggests that basing regulatory capital requirements on the A-IRB approach could ultimately prove to raise significant concerns and that further work with the framework may be necessary. Experience in practice may mitigate the issues that arose in the QIS-4, but the fact remains the Board is being asked today to propose a rule basing risk-based capital regulation on the same framework that produced the QIS-4 results. All of the agencies have agreed these results were unacceptable and that future use of this framework would be, in effect, on a trial basis with refinements likely based on experience.

On account of the concerns raised by the QIS-4 results and its subsequent analysis, the agencies have agreed to include various safeguards in the NPR that are designed to allow additional time for future changes to ensure overall capital objectives and other objectives are met. Those safeguards are:

- The delay of date that a bank may begin parallel run of the Proposed Rule by one year – from January 1, 2007 to January 1, 2008.
- The imposition of transitional floors on the amount by which a bank's risk-based capital requirements may decline relative to the general risk-based capital rules over a period of at least three years.
- An agreement by the agencies to view a 10 percent or greater decline in aggregate minimum required risk-based capital (without reference to the effects of the transitional floors), compared to minimum required risk-based capital as determined under the existing rules, as a material reduction warranting modifications to the supervisory risk functions or other aspects of this framework.

- A reiteration by the agencies of the intent to retain the tier 1 leverage ratio and other prudential safeguards as they currently exist (for example, PCA) as needed solvency standards to complement the new framework.

Staff views the NPR's discussion of the agencies' overall capital objectives as sufficiently important to reproduce in its entirety in this memorandum. The statement is as follows.[19]

> Overall capital objectives. The ANPR stated: "The Agencies do not expect the implementation of the New Accord to result in a significant decrease in aggregate capital requirements for the U.S. banking system. Individual banking organizations may, however, face increases or decreases in their minimum risk-based capital requirements because the New Accord is more risk sensitive than the 1988 Accord and the Agencies' existing risk-based capital rules (general risk-based capital rules)."[20] The ANPR was in this respect consistent with statements made by the Basel Committee in its series of Basel II consultative papers and its final text of the New Accord, in which the Basel Committee stated as an objective broad maintenance of the overall level of risk-based capital requirements while allowing some incentives for banks to adopt the advanced approaches.
>
> The agencies remain committed to these objectives. Were the QIS-4 results just described produced under an up-and-running risk-based capital regime, the risk-based capital requirements generated under the framework would not meet the objectives described in the ANPR, and thus would be considered unacceptable.
>
> When considering QIS-4 results and their implications, it is important to recognize that banking organizations participated in QIS-4 on a best-efforts basis. The agencies had not qualified any of the participants to use the Basel II framework and had not conducted any formal supervisory review of their progress toward meeting the Basel II qualification requirements. In addition, the risk measurement and management systems of the QIS-4 participants, as indicated by the QIS-4 exercise, did not yet meet the Basel II qualification requirements outlined in this proposed rule.
>
> As banks work with their supervisors to refine their risk measurement and management systems, it will become easier to determine the actual quantitative impact of the advanced approaches. The agencies have

[19] NPR preamble I.E.2., p. 34.
[20] 68 FR 45900, 45902 (Aug. 4, 2003).

decided, therefore, not to recalibrate the framework at the present time based on QIS-4 results, but to await further experience with more fully developed bank risk measurement and management systems.

If there is a material reduction in aggregate minimum regulatory capital requirements upon implementation of Basel II-based rules, the agencies will propose regulatory changes or adjustments during the transitional floor periods. In this context, materiality will depend on a number of factors, including the size, source, and nature of any reduction; the risk profiles of banks authorized to use Basel II-based rules; and other considerations relevant to the maintenance of a safe and sound banking system. In any event, the agencies will view a 10 percent or greater decline in aggregate minimum required risk-based capital (without reference to the effects of the transitional floors described in a later section of this preamble), compared to minimum required risk-based capital as determined under the existing rules, as a material reduction warranting modifications to the supervisory risk functions or other aspects of this framework.

The agencies are, in short, identifying a numerical benchmark for evaluating and responding to capital outcomes during the parallel run and transitional floor periods that do not comport with the overall capital objectives outlined in the ANPR. At the end of the transitional floor periods, the agencies would re-evaluate the consistency of the framework, as (possibly) revised during the transitional floor periods, with the capital goals outlined in the ANPR and with the maintenance of broad competitive parity between banks adopting the framework and other banks, and would be prepared to make further changes to the framework if warranted.

The agencies also noted above that tier 1 capital requirements reported in QIS-4 declined substantially more than did total capital requirements. The agencies have long placed special emphasis on the importance of tier 1 capital in maintaining bank safety and soundness because of its ability to absorb losses on a going concern basis. The agencies will continue to monitor the trend in tier 1 capital requirements during the parallel run and transitional floor periods and will take appropriate action if reductions in tier 1 capital requirements are inconsistent with the agencies' overall capital goals.

Similar to the attention the agencies will give to overall risk-based capital requirements for the U.S. banking system, the agencies will carefully consider during the transitional floor periods whether dispersion in risk-based capital results across banks and portfolios appropriately reflects differences in risk. A conclusion by the agencies that dispersion in risk-based capital requirements does not appropriately reflect differences in

risk could be another possible basis for proposing regulatory adjustments or refinements during the transitional floor periods.

It should also be noted that given the bifurcated regulatory capital framework that would result from the adoption of this rule, issues related to overall capital may be inextricably linked to the competitive issues discussed elsewhere in this document. The agencies indicated in the ANPR that if the competitive effects of differential capital requirements were deemed significant, "the Agencies would need to consider potential ways to address those effects while continuing to seek the objectives of the current proposal. Alternatives could potentially include modifications to the proposed approaches, as well as fundamentally different approaches."[21] In this regard, the agencies view the parallel run and transitional floor periods as a trial of the new framework under controlled conditions. While the agencies hope and expect that regulatory changes proposed during those years would be in the nature of adjustments made within the framework described in this proposed rule, more fundamental changes cannot be ruled out if warranted based on future experience or comments received on this proposal.

The agencies reiterate that, especially in light of the QIS-4 results, retention of the tier 1 leverage ratio and other existing prudential safeguards (for example, PCA) is critical for the preservation of a safe and sound regulatory capital framework. In particular, the leverage ratio is a straightforward and tangible measure of solvency and serves as a needed complement to the risk-sensitive Basel II framework based on internal bank inputs.

Given that the NPR framework produced unacceptable results in its most recent quantitative test, results that if put into effect would be at variance with the agencies' expressed overall capital goals, the staff regards these safeguards and commitments as appropriate.

V. Industry Concerns and Requests for Options

Bankers and other industry representatives have voiced concerns about the NPR to representatives of the federal banking agencies on a number of occasions since the Board of Governors of the Federal Reserve System approved the document in March, 2006. In summary, some industry representatives have said that the NPR is not risk-

[21] 68 FR 45900, 45905 (August 4, 2003).

sensitive, is costly and burdensome, and places undue constraints on potential reductions in regulatory capital requirements.

A number of core banks, industry trade associations, regulators and other commentators have recently requested that the agencies provide core banks with the option of using the standardized approach, described in the 2004 BCBS text, to compute their risk-based capital requirements. Requests include a joint letter from Citigroup, JP Morgan Chase, Wachovia and Washington Mutual; a letter from the Conference of State Bank Supervisors; a letter from the American Bankers Association; a letter from America's Community Bankers; a letter from the Financial Services Roundtable; and a letter from Diana Taylor, Superintendent of Banks for the state of New York.

While similar to the current rules to the extent it applies a standardized set of risk weights to different asset types, the standardized approach includes more risk buckets to provide enhanced risk sensitivity, allows the use of external agency ratings to help assign risk weights, expands the recognition of collateral and assesses a capital charge for operational risk. The standardized approach includes new capital charges for short term wholesale lending commitments and for liquidity facilities. The standardized approach permits qualifying banks to estimate their exposures to counterparty credit risk using an internal models estimate of expected positive exposure (EPE). The standardized approach also provides for a capital charge against potential early amortizations of securitized revolving credit exposures, an issue of importance to the FDIC.

With the exception of the operational risk capital charge and the EPE method for estimating exposures, all of these elements are either contained in the agencies' existing rules or in contemplated revisions to general domestic capital requirements, the so-called Basel 1A effort. Basel 1A and the standardized approach do, however, differ in some of the risk weights assigned to specific loan categories.

An analysis of the standardized approach conducted in 2003 by Katherine Wyatt of the New York State Banking Department suggested that on balance, the standardized

approach, including its required operational risk charges but not including EPE, would result in a single digit percentage increase in capital requirements. Banks surveyed in the U.S. QIS-3, and the Basel Committee's QIS-5, reported similar small increases in capital requirements under the standardized approach.

Internal FDIC analysis of individual core banks suggests moderate reductions in capital requirements would be possible under the standardized approach. Including an operational risk charge, aggregate reductions in capital requirements for the core banks appear likely to be less than ten percent. It should be emphasized that this is a soft estimate involving many specific assumptions, and does not include any estimations of the effect of EPE for counterparty credit risk charges.

Staff believes that additional consideration of these requests for core banks to be allowed to use a standardized approach to compute their risk-based capital requirements has merit. Staff views the standardized approach as simpler and less costly for banks to implement, and significantly more conservative and predictable in terms of its overall capital impact than the A-IRB. The use of a standardized approach would not open up large differences in risk-based capital requirements for similar exposures, as would the advanced approach, thus alleviating competitive equity concerns between large and small banks. Finally, capital requirements under the standardized approach would not vary pro-cyclically to nearly the same extent as would the advanced approach. Research conducted by core banks, the Basel Committee, and the FDIC in a 2003 FYI, collectively suggest capital requirements under the advanced approaches could vary by as much as 20-40 percent through the business cycle, with the requirements falling during expansions and rising during recessions. Staff believes significant pro-cyclicality of capital requirements is undesirable because it may serve to amplify swings in the banking business and the business cycle.

For all these reasons, staff favors further consideration of an option that would allow core banks to use a standardized approach to calculate their risk-based capital requirements. This NPR does not contain a proposal for U.S. implementation of the

standardized approach, and does propose to require core banks to implement the advanced approaches. The NPR does, however, contain a question about the desirability of allowing core banks such an option.

VI. Conclusion

Publication of the NPR would elicit substantial comment to assist the Agencies in evaluating the issues described in this memorandum. The staff will continue to work closely on an interagency basis to evaluate the costs and benefits of the proposals described in the NPR.

Attachments