

Special Report

Basel II: Refinements to the Framework

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■ Summary

The proposed New Basel Capital Accord (the New Accord, or Basel II) has significantly changed and evolved since the Basel Committee on Banking Supervision's (the Committee) publication of the second consultative document (2nd CP) in January 2001. The revisions to the proposed New Accord are contained in the technical guidance document, which was released in October 2002 to support a final data-gathering exercise, called the third quantitative impact study (QIS 3). This report analyzes and provides Fitch Ratings' views on the key changes between January 2001 and October 2002 to the approaches for assigning regulatory capital to cover credit risk in the proposed New Accord. The report explores the changes to the internal ratings-based (IRB) approaches, the revised standardized approach, and the credit risk mitigation framework. (Fitch will comment separately on the revised approaches for securitization and on the framework for operational risk in upcoming Fitch Research.) Highlights of Fitch's views are listed below.

IRB Approaches

- Fitch generally supports the variable asset correlation adjustment, which has reduced the amount of required regulatory capital relative to the 2001 corporate curve. However, the correlation estimates embedded in the corporate curve may be higher in times of economic downturn, which could lead to an insufficient capital buffer in such periods.
- The firm-size adjustment for small- and medium-sized enterprises (SMEs) results in less capital for firms with assets of less than EUR 50 million through application of a correlation discount. In general, Fitch supports the capital reduction; however, Fitch thinks it would be prudent to require banks to meet a transparent test showing appropriate diversification to be eligible for the blanket capital reduction for SMEs.
- The granularity adjustment was dropped, and now the underlying assumption is that IRB banks' portfolios are diversified in terms of borrower name concentrations. Fitch believes that concentration levels (not only in terms of borrow name, but also related party borrowers, industry, and geography) can differ substantially across the universe of banks that will ultimately use the IRB approaches and that capital levels may potentially be understated for IRB banks with less diversified portfolios. While Fitch appreciates the difficulties in developing a mechanism that automatically adjusts capital levels based on granularity, Fitch thinks that a transparent method is needed to allow the market to assess concentration levels — through either a test that banks must meet or a set of disclosures. This information would help to facilitate comparison of capital adequacy across banks.
- Fitch believes that a reduction of the loss-given default (LGD) estimate in the foundation IRB approach is generally supported by averages for senior unsecured lending. However, it is important to recognize the potential for capital to be understated for foundation

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IRB banks with significant lending exposure in countries where LGD is higher than the Basel estimate or for banks with concentrated exposures to high LGD industries.

- Fitch has reservations about allowing foundation IRB banks to use the supervisor-determined LGD estimate of 45% for the project and object finance categories of specialized lending. Additionally, Fitch feels that, as additional deals are done over time, data from longer historical time frames than currently specified should be required.
- In Fitch's view, the use of separate curves for residential mortgages, other retail products, and revolving exposures will result in more finely tuned risk and capital assessments for retail exposures.
- Fitch has strong reservations about allowing future margin income (FMI) to cover a portion of banks' regulatory capital charge for credit cards and recommends that the credit card curve be recalibrated to produce less capital without the recognition of FMI.
- In view of the Committee's decision to retain the 1988 definition of regulatory capital, IRB banks will be allowed to reduce the expected loss (EL) portion of their risk-weighted assets with specific reserves and general reserves not already counted in capital. Fitch believes this adjustment will help avoid creating an incentive for banks not to set aside reserves against loans.
- Fitch recommends that, when the challenges of addressing the various risk measurement issues related to the denominator of the Basel II capital ratios have been met, the definition of capital should then be reassessed.
- In Fitch's view, the minimum capital charges under the two approaches for assessing equity risk are generally too low, particularly when compared with Fitch's requirements for equities in rating market value collateralized bond obligation/collateralized loan obligation (CBO/CLO) bonds. Additionally, Fitch finds that the market-based approach is better suited to measuring the risk inherent in equities than the probability of default (PD)/LGD-based approach.

Revised Standardized Approach

- Fitch feels that lowering the risk weight for qualifying retail exposures is appropriate and welcomes the introduction of the granularity criterion to qualify for the reduced risk weight.
- Lowering the risk weight for residential mortgages makes sound analytical sense given the historically low levels of loan losses on such secured lending. However, in Fitch's view,

renter-occupied property should not be treated as preferentially as owner-occupied property.

- Fitch is concerned that the more favorable risk weighting under the revised standardized approach, as compared to the IRB framework, for 'BB+' to 'BB-' rated securitization tranches may lead to unintended regulatory arbitrage.
- Fitch believes an 8% capital charge for equities is far too low and should at least match the minimums set forth in the simple risk-weight approach under the IRB market-based approach.
- Fitch finds the mapping process and annex 2 sections of QIS 3 helpful in more consistently mapping external ratings to risk weighting categories but would find clarification of whether default rates are average or weighted average helpful. In Fitch's view, the Committee should insist on the use of weighted averages.
- Fitch supports expansion of the use of short-term ratings and generally finds that the risk weighting buckets assigned to short-term external ratings are logical. However, Fitch is concerned about the requirement that all unrated short- and long-term claims of a particular issuer be assigned to the 150% risk weighting bucket if there is a short-term rating on the issuer that is assigned to that bucket; the overall effect of this treatment is to provide a disincentive to getting short-term claims rated.

Credit Risk Migration

- Fitch believes that the revised formula for acknowledging the risk-reducing benefits of collateral is more intuitive and agrees with taking into account the potential future exposure of the collateral protection and the underlying credit.
- Fitch agrees with reducing the holding period for qualifying repurchase agreement (repo)-style transactions and applying the regulatory capital charge on the net long or short position in each security and foreign currency with a particular counterparty when legally enforceable master netting agreements are in place. Fitch also agrees with the value-at-risk (VAR) modeling approach to reflect future price volatility associated with repo-style transactions and encourages further development of a practical back-testing framework for these transactions.

■ QIS 3

In October 2002, the Committee launched the QIS 3, requesting that banking organizations estimate the capital that would be generated for their respective organizations under the revised proposals of the New

Accord. Since the release of the January 2001 2nd CP, the Committee has worked intensively with the industry and has made a number of important changes to its proposed approaches for generating regulatory capital with respect to credit and operational risk. Although many of the proposed changes have been communicated in working papers and press releases, the QIS 3 marks the first time since January 2001 that a revised version of the comprehensive rules package has been released. Unless the bank data submissions and industry comments reveal significant calibration issues, Fitch anticipates that the final version of the New Accord will be substantially similar to the QIS 3 rules.

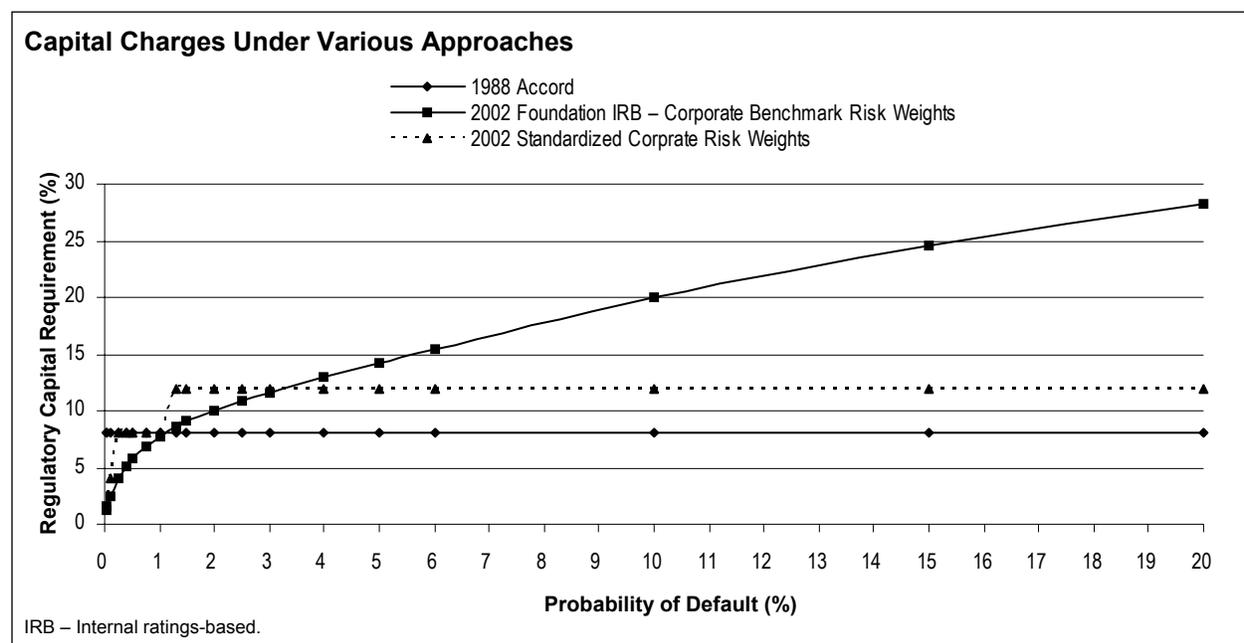
In reviewing the changes and the revised rules package as a whole, Fitch has found that the Committee has moved closer to its goal of better aligning regulatory capital with underlying economic risk. This is particularly true for credit risk, which is the main focus of this report. For example, the 1988 Basel Capital Accord (the 1988 Accord) required a flat 8% capital charge on all corporate credits irrespective of credit quality. In contrast, under the revised standardized and the two IRB approaches outlined in the proposed New Accord, capital requirements increase for corporate credits as credit quality worsens (or as the PD of obligors increases), although the revised standardized approach is less risk-sensitive than the more sophisticated IRB (foundation and advanced) approaches. For an illustration of the capital generated by the revised standardized approach and the foundation

IRB approach compared to the 1988 Accord for corporate credits, see the chart below.

While the revised version of the New Accord provides improved incentives for banks to use more precise measurement techniques and appears to result in capital requirements that are better aligned with underlying risk overall, Fitch has suggestions for certain aspects of the proposals. The remainder of this report provides more detail on Fitch's views on key changes to the proposed New Accord since the January 2001 2nd CP, including changes to the IRB approaches, the revised standardized approach, and the credit risk mitigation framework. Fitch will comment separately on the revised proposal for securitization and on the framework for operational risk in upcoming Fitch Research.

■ IRB Approaches

As a major innovation in the regulatory capital treatment of credit risk, the IRB approaches have undergone a number of significant changes since the release of the January 2001 2nd CP. These changes appear to have been motivated by a few key policy goals, including better alignment of capital requirements with underlying risk and tangible incentives for banks to adopt more advanced approaches to capital measurement. Accomplishing these goals has required the Committee to seek to reduce the level of capital generated by the foundation IRB approach, as proposed in the January 2001 CP, and to ensure that there is a modest capital benefit for banks for investing in more advanced risk



measurement systems. The second quantitative impact study (QIS 2), which provided a field test of the proposals outlined in the January 2001 2nd CP, indicated that such steps were necessary; the results showed that, compared to the 1988 Accord, minimum capital requirements for credit risk for large internationally active banks under the January 2001 2nd CP proposals were, on average, approximately 6% higher under the revised standardized approach, 14% higher under the foundation IRB approach, and 5% lower under the advanced IRB approach.

Another policy goal was to reduce the potential pro-cyclical effects of the New Accord. A macroprudential concern that has been widely commented on is that the New Accord could unintentionally increase the amplitude of the business cycle. Essentially, a decrease in capital requirements in good economic times could fuel a boom, and increased capital requirements in periods of downturn could sharply constrain the supply of credit.

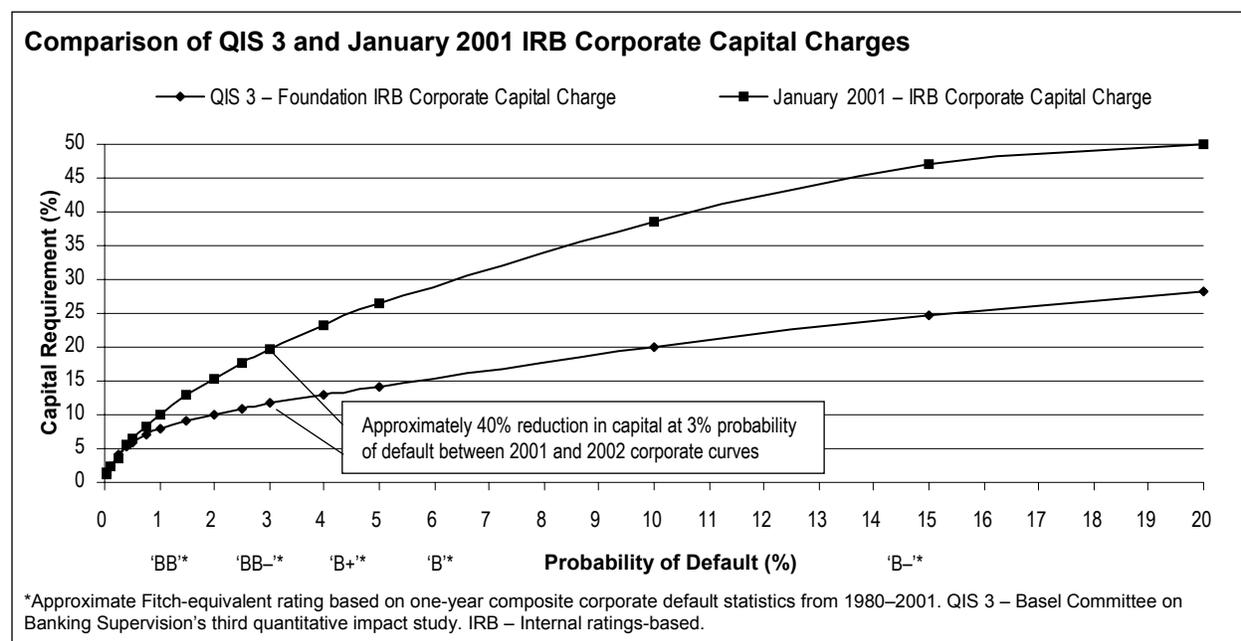
In seeking to meet these policy goals, the Committee has made a number of modifications to the IRB approaches, including lowering the capital charge for sovereign, bank, and corporate credits as PD increases, changing the correlation assumptions within various risk curves, adding new risk curves for certain subclasses of exposures, changing the LGD and maturity assumptions in the foundation IRB, and allowing the recognition of FMI and loan loss reserves as an offset to required capital.

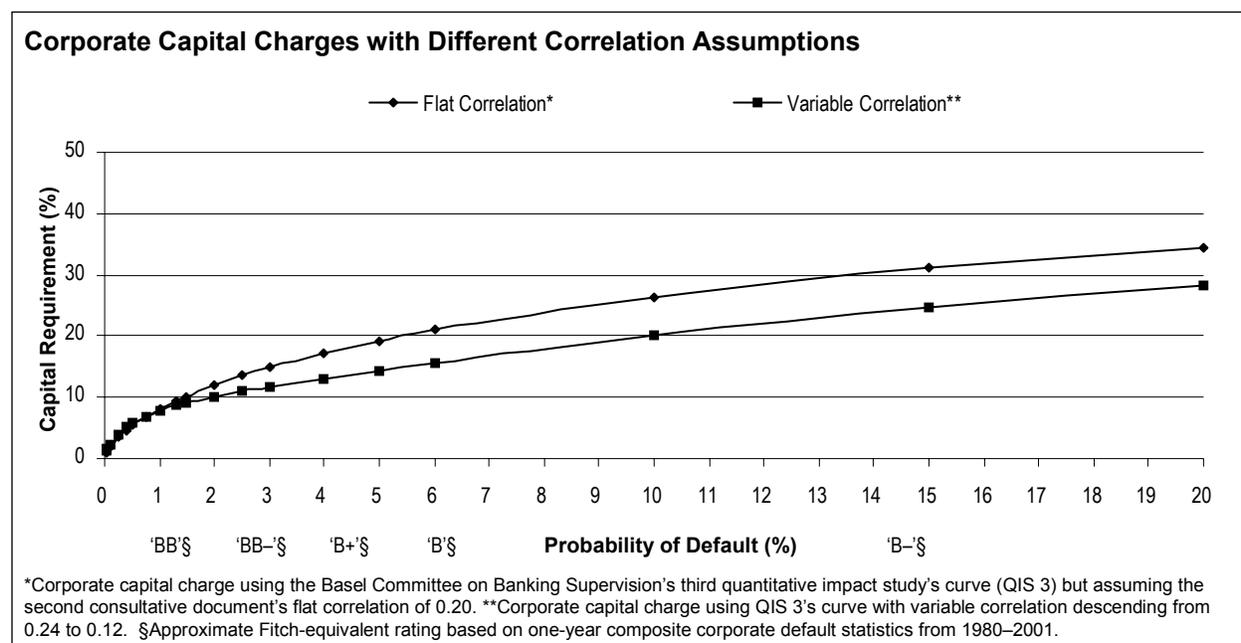
Corporate, Sovereign, and Bank Exposures

One of the overarching changes made by the Committee to the IRB approaches between January 2001 and the issuance of the QIS 3 rules has been to modify the risk weight curve for corporate, sovereign, and bank exposures (often referred to as the corporate curve). As seen in the chart below, the modified curve is much flatter than the January 2001 curve, resulting in lower capital for credits starting with one-year PDs of 0.40% (which roughly corresponds to a Fitch rating of 'BBB'/'BBB-' for the historical composite one-year default rate for global corporate issuers from 1980–2001) and below. As PD increases, the difference in required capital widens dramatically. For example, the reduction is more than 40% for credits with PDs of 3%, which corresponds roughly to a Fitch rating of approximately 'BB-'/'B+' (based on Fitch's same one-year composite default rates).

Variable Asset Correlation Assumption

While a number of steps were taken by the Committee to make the corporate curve less steep, one of the primary means through which the Committee achieved this was by modifying the assumption involving asset correlation. In contrast to the January 2001 corporate curve, which assumed flat asset correlation of 0.20 irrespective of borrower quality (expressed as PD in the New Accord), the October 2002 curve assumes that asset correlation declines as borrower quality worsens (or PD increases). Specifically, asset correlation is equal to 0.24 for the highest quality obligor (lowest PD value) and 0.12 for the lowest quality obligor (highest PD value). Using variable asset correlation, as opposed to





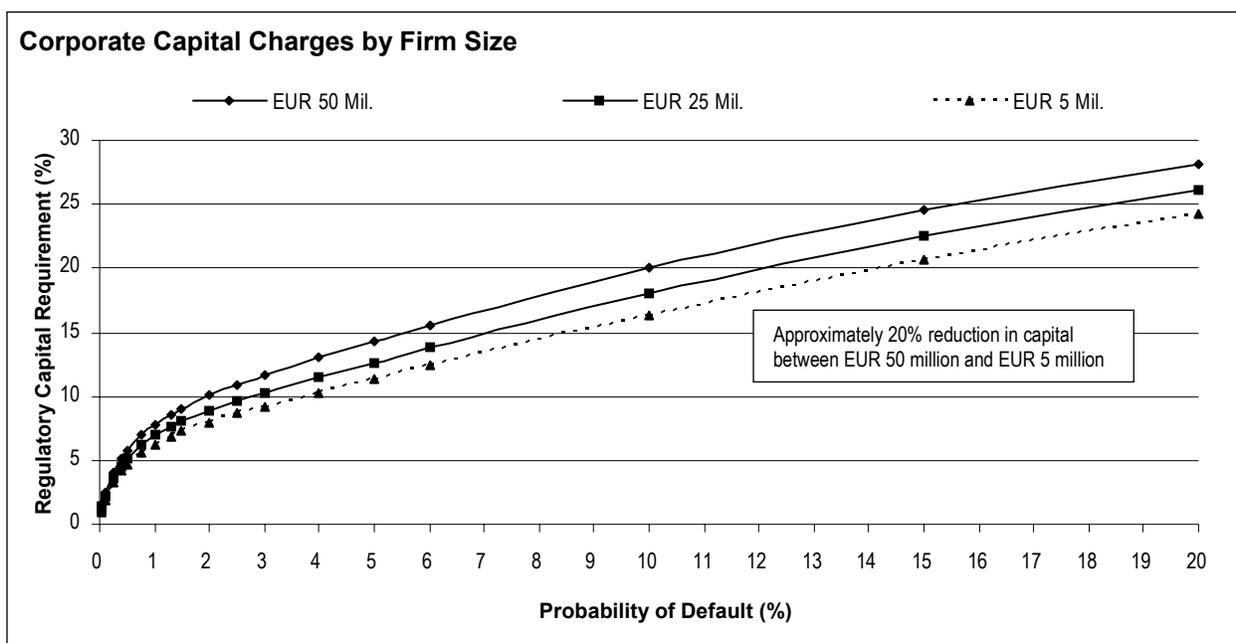
the flat correlation assumption, all else being equal, reduces the required capital foundation IRB for corporate exposures with PDs of 1% or greater. As an example, the reduction in required capital is about 3.6% for a credit with a PD of 1% (corresponding roughly to a Fitch rating of 'BB' based on Fitch's one-year composite default rates for global corporate issuers from 1980–2001) and 26% for a credit with a PD of 5% (corresponding roughly to a Fitch rating of approximately 'B+'/'B' based on the same one-year composite default rates). The effect that the different correlation assumptions have on capital requirements is illustrated in the chart above, which compares the QIS 3 curve using variable versus flat correlation.

Fitch Comment: While there is empirical research showing that asset correlation declines as the PD rises, Fitch notes that the correlation estimates embedded in the corporate curve may not be stable over time and are likely to be higher in times of economic downturn. If the level of asset correlation is underestimated during hard economic times, the minimum capital requirement delivered by the curve may be insufficient to protect against loss. As estimation of asset correlation parameters is an evolving field, Fitch encourages continued study and testing of these assumptions during and after the New Accord's implementation. In the meantime, when evaluating the Basel II IRB capital ratios of banks, Fitch believes it will be important to keep in mind the impact of the correlation estimates on the amount of capital generated and to think through whether the capitalization level is sufficient to cover times of economic downturn.

Correlation Discount for SMEs

Another major change involving correlation within the corporate curve is the introduction of a firm-size adjustment for SMEs, the net result of which is to require less capital for firms with assets of less than EUR 50 million (approximately US\$50 million), all else being equal. This is accomplished by embedding what Fitch has termed a "firm-size correlation discount factor" in the corporate curve, which assumes that SMEs are less correlated with a common risk factor than larger firms. The chart on page 6 illustrates the decrease in required capital by PD as a result of the firm-size correlation discount factor; the reduction is approximately 20% for a firm with assets of EUR 5 million versus EUR 50 million across PDs.

Fitch Comment: The Committee's inclusion of the firm-size correlation discount is supported by empirical research showing that asset correlation is lower for smaller firms than larger ones. Although Fitch finds that, on average, PD levels are generally higher for SMEs than for larger corporate firms, average asset correlation is lower for SMEs at a given PD level. Basically, this is because SMEs tend to be less correlated with the market due to a higher ratio of idiosyncratic risk relative to systematic (general market) risk than larger firms. In other words, compared to larger corporate firms, SMEs are less likely to react in a parallel manner to developments in the general economy because their fortunes are more tied to factors unique to them.



Based on Fitch’s experience in rating banks, a capital reduction for SMEs is appropriate when the bank’s portfolio is diversified. In general, large banks’ SME portfolios tend to be more fine-grained (or granular) than their large corporate lending portfolios; the bank’s exposure to the largest individual SME exposure relative to its capital block is very small compared to that of its largest corporate. As a result, Fitch believes that the risk of capital loss in a diversified portfolio posed by SMEs is lower than larger corporate firms.

However, central to Fitch’s support of conferring a capital benefit on SMEs is that the bank’s portfolio be diversified in terms of borrower name, industry, and geography and that the largest SME exposure as a percentage of capital be small relative to the largest corporate firm. For some small- and medium-sized regional banks, which may elect to use the IRB framework, lending to firms with assets of just under EUR 50 million (a qualifying SME) can comprise a sizable portion of the bank’s business, and this lending can be more geographically concentrated than that of larger banks. Therefore, the bank’s capital base may be more susceptible to loss from SMEs. Accordingly, Fitch feels that banks should meet a transparent test showing appropriate diversification before the Committee allows a blanket reduction in capital for SMEs.

Elimination of the Granularity Adjustment

The January 2001 2nd CP proposed inclusion of a granularity adjustment to measure concentrations of

single borrowers (as opposed to industry or geography concentrations) at the aggregate level of the portfolio and to either provide capital relief for a diversified portfolio or require additional capital when the a portfolio is not sufficiently granular. The Committee eliminated this adjustment in the 2002 QIS 3 rules, likely as part of its effort to reduce complexity and burden on banks — public comment letters suggest that the industry perceived this as one of the more complex elements in the January 2001 2nd CP.

Fitch Comment: Fitch appreciates the difficulties of developing a mechanism that automatically adjusts capital levels based on granularity, particularly in the absence of allowing credit risk modeling. In dropping the granularity adjustment, the central assumption of the IRB approach is now that the bank’s portfolio is appropriately diversified. Fitch believes that concentration levels (not only of borrower names but also related-party borrowers, industry, and geography) can differ substantially across the universe of banks that will ultimately use the IRB approaches. If a bank’s portfolio is more concentrated than the underlying IRB assumption, the Basel II capital ratios will understate the risk of the bank’s assets.

In Fitch’s view, this has important implications for using the Basel II measure as a common yardstick when comparing IRB banks. For IRB banks seeking to reduce the absolute amount of capital they hold

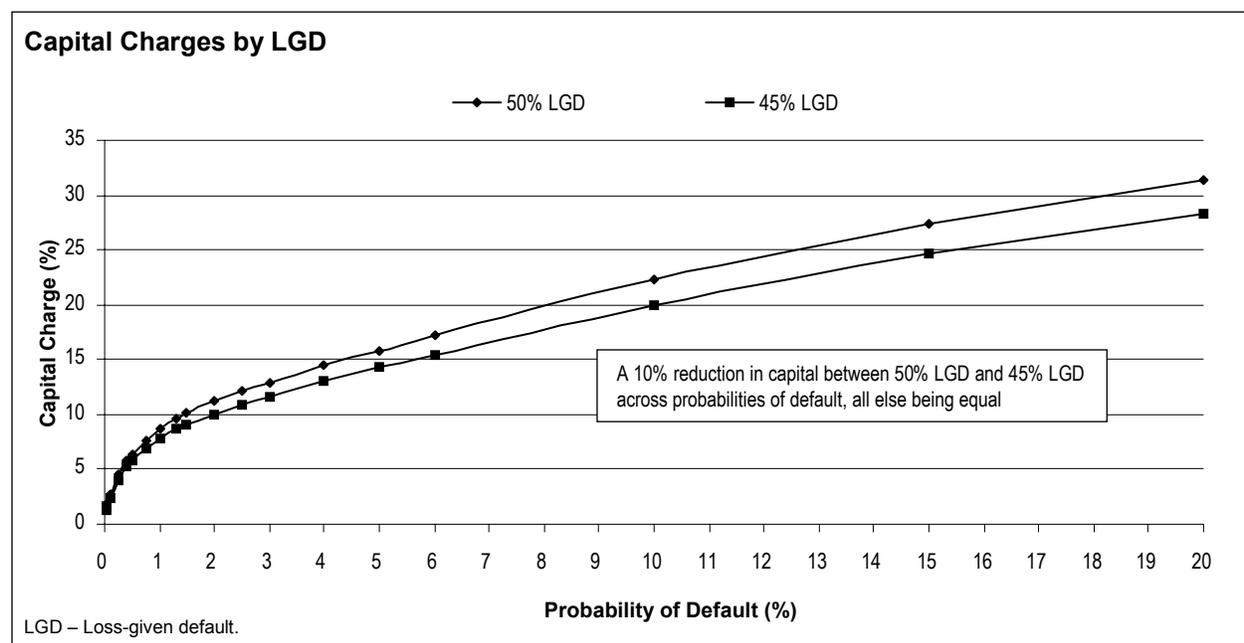
through more precise risk measurement, an important question is whether a sufficient capital cushion is in place to cover concentration risk and how to measure this risk and factor it back into banks' capital requirements in a consistent manner. Recognizing the difficulties of incorporating a mechanism that automatically adjusts for granularity in the context of the IRB capital approaches, an alternative would be to construct a test that banks must meet on an ongoing basis for use of the IRB framework, with the results disclosed as part of the Pillar III (guidelines for market discipline), or to develop a set of required disclosures that provides sufficient insight into banks' diversification levels. In Fitch's view, this would help Pillar III to shed more light on the level of diversification across banks. In addition, it may help to ensure a minimum level of consistency in the application of Pillar II (supervisory review guidelines) supervisors. Furthermore, in countries where national legislation (e.g. prompt-corrective-action standards in the U.S.) allows banks with capital ratios at specified levels over the Basel minimum ratios to engage in expansionary activities or to redeem stock without prior regulatory approval, such a test or disclosure requirements may provide an additional check for both the market and supervisors as to whether the desired action is prudent.

Reduction of Supervisory LGD Estimate in Foundation IRB

The QIS 3 lowers the LGD for senior unsecured claims under the foundation IRB approach to 45%

from 50%, which, as seen on the chart below, results in a capital decrease of approximately 10% across PDs, all else being equal. The reduction appears to have been motivated by practitioner feedback, as well as the goal of lowering the overall level of capital delivered by the foundation IRB approach.

Fitch Comment: Fitch notes that the lower LGD value of 45% is more consistent with the long-term average LGD of approximately 40% for senior unsecured loans in Fitch Risk Management's North American Loan Loss Database. However, the sample size of resolved senior unsecured defaults in the database is relatively small. This is because most bank lending is secured, and the default rate is higher for secured loans than for unsecured loans, as companies that can borrow on an unsecured basis are almost always investment grade. Furthermore, this data is primarily on U.S. loans. Fitch Risk Management is currently working on separate databases for other regions. When these are completed, the average recovery rates are expected to vary by region, potentially significantly, because LGD is strongly influenced by the legal regime in question, specifically whether the bankruptcy and insolvency laws are pro-debtor or pro-creditor (*see Fitch Research on "Regimes, Recoveries and Loan Ratings: The Importance of Insolvency Legislation," dated Oct. 11, 1999, "Different Countries, Different Structures: The Effect of Jurisdiction & Subordination on Loan and High Yield Bond Ratings," dated Jan. 31, 2000, and "Secured Loan*



Recovery Study," dated Sept. 8, 2000, all available on Fitch's web site at www.fitchratings.com).

In addition, recovery rates vary significantly between industries, although presumably this concern is mitigated by the assumption that a bank's portfolio is sufficiently diversified. However, as discussed earlier in this report (see *Elimination of the Granularity Adjustment, page 6*), this may not always be the case. Fitch, therefore, believes that a sense of LGD estimates by country is necessary when assessing the capitalization levels of banks under the foundation approach. Fitch appreciates the desire to keep the foundation approach as simple as possible and to rely on a single supervisor-based LGD estimate. However, the potential understatement of capital for banks with heavy exposure in countries where the LGD is higher than the Basel II estimate or with concentrated exposures to high LGD industries should be recognized.

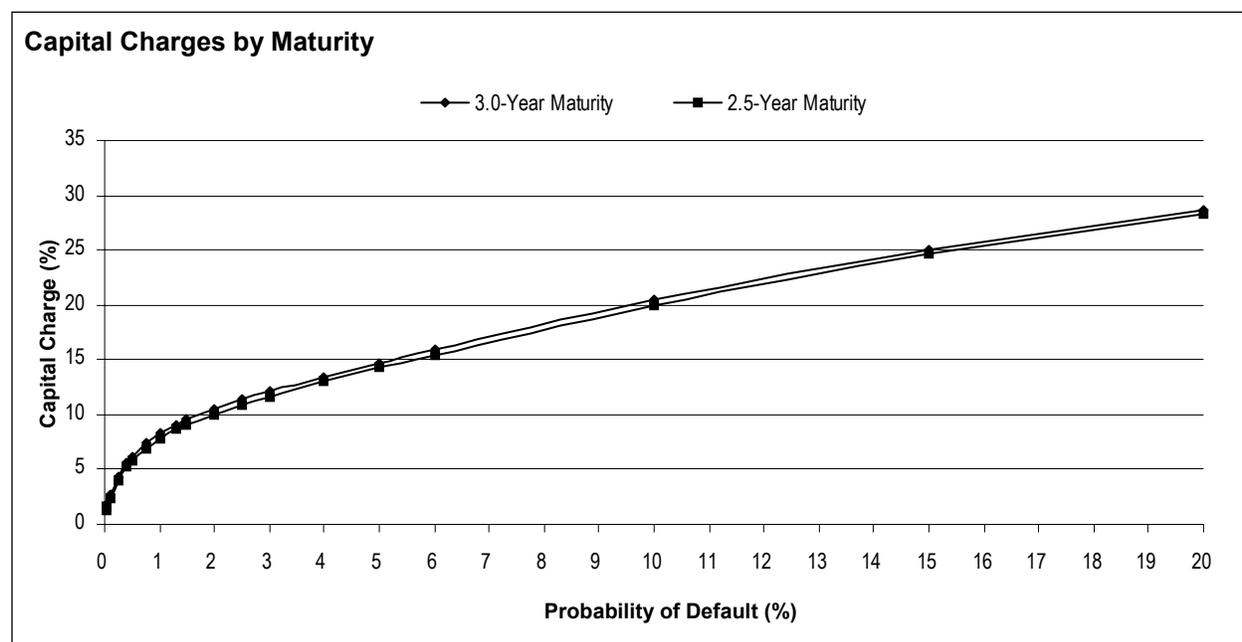
Changes to Treatment of Maturity

The QIS 3 lowers the effective maturity estimate in the corporate curve to 2.5 years from 3.0 years in the foundation approach and requires the incorporation of a maturity adjustment using a mark-to-market methodology in the advanced approach, where the maturity adjustment falls between one and five years (with limited exceptions for certain short-term exposures, such as repo transactions and securities lending). In jurisdictions where the supervisor so decides, banks using the foundation IRB can also be required to use the mark-to-market maturity methodology.

Fitch Comment: Maturity affects credit risk, and the advanced approach will more accurately incorporate this element into the assessment of capital. For the foundation approach, the 2.5-year effective maturity seems about right as an average estimate of the tenor of corporate, sovereign, and bank exposures extended by large banks, although the average tenor of corporate claims may be somewhat lower in hard economic times and higher in good economic times. Interestingly, as can be seen in the chart below, the revision of the maturity adjustment to 2.5 years from 3.0 years is estimated to have a relatively small effect on the amount of capital generated by the corporate curve.

New Approach for Specialized Lending

The QIS 3 establishes the supervisory slotting criteria approach for specialized lending exposures, wherein banks are required to map their internal risk grades to five supervisory categories and assign the corresponding supervisor-determined capital charge to the exposure. However, banks that possess sufficient data are permitted to use their own estimates within the confines of the IRB approach they are under. Therefore, a foundation IRB bank meeting the data requirements would be permitted to estimate PD and required to use the supervisor-determined LGD estimate of 45% for corporate exposures, while an advanced IRB bank meeting the data requirements would be able to estimate PD, LGD, and exposure at default. This holds for each of the subcategories of specialized lending (project finance, object finance, commodities finance, and



incoming producing real estate) except one (high volatility commercial real estate), which is required to use the supervisory slotting criteria approach under both IRB approaches.

Fitch Comment: The Committee's creation of the supervisory slotting criteria approach is likely in recognition of the difficulties in obtaining robust data for these subcategories of exposures. Fitch has found that PDs and LGDs can vary widely and depend on a number of factors (e.g. type of project, bankruptcy regime, collateral value of the project's assets, and current market conditions for resale) unique to the specific deal. In addition, accurately estimating creditworthiness for project and object finance deals tends to require a fair degree specialization, which is predominantly housed in a small number of large, internationally active banks and bulge-bracket investment banks that underwrite and syndicate the lion's share of these financings.

In view of the relatively wide variation of recovery estimates, differences in specialized lending subcategories, and the relative specialization required to assess the creditworthiness of specialized lending loans (particularly project and object finance) accurately, Fitch has reservations about certain banks using an average LGD value for specialized lending exposures or, in other words, defaulting to the 45% LGD value that has been specified for corporate exposures.

Accordingly, banks should either be required to estimate both PD and LGD for the project and object finance categories or to use the more conservative supervisory slotting criteria approach until better data is available to estimate LGD with less variation. While this approach would likely increase the amount of capital held by foundation IRB banks compared to advanced IRB banks for these activities, Fitch feels it would help to ensure a more sufficient capital buffer for banks without the data and specialized personnel necessary to estimate loss properties of these exposures in a robust manner. However, it may be possible to narrow this disparity in capital requirements through allowing foundation IRB banks to use aggregated PD and LGD data compiled from the records of the large banks with extensive experience in object and project finance lending. Fitch notes, however, that in order to aid in reliable loss estimates, there should be a sufficient number of data observations and that such data should to be segmented into categories that reflect the several asset, structural, and geographic factors that influence credit quality in object and project finance deals. In view of the wide variation in types of deals undertaken, the relatively

small populations of certain deal types, and that many projects have very long deal maturities, it may prudent, as additional deals are done over time, to require IRB banks to use data from longer historical time frames than the currently specified five years of PD data and seven years of LGD data when seeking to estimate the loss properties for these specialized lending categories.

Changes to the Treatment of Retail

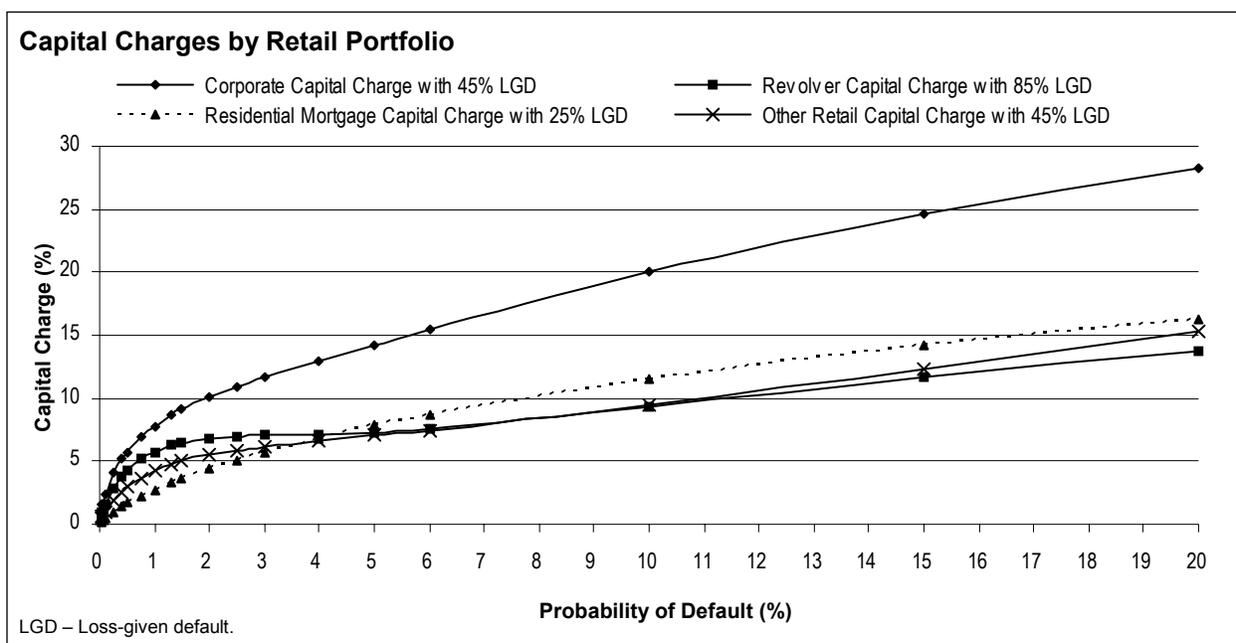
Exposures

The January 2001 2nd CP treated all retail exposures using the same risk weight curve. To better align capital charges with the risk of different retail portfolios, the QIS 3 establishes three separate retail curves — for residential mortgages, other retail, and qualifying revolving exposures (credit cards). An important feature in the treatment of retail as compared to corporate exposures is that no distinction is made between foundation and advanced IRB banks, meaning that all IRB banks are expected to provide their own estimates not only for PD, but also for LGD and exposure at default for retail exposures, which makes sense given the tendency of banks to actively mine and use their own historical data in pricing products. As with corporate exposures, the assumptions around correlation are a key driver for the amount of regulatory capital generated for retail exposures, with each curve embedding different assumptions. None of the retail curves make an explicit adjustment for maturity, although the QIS 3 notes that the effect of average maturity is subsumed in the correlation assumptions.

Residential Mortgages

Under the residential mortgage curve, asset correlation is assumed to be 15% and is the same irrespective of borrower quality. In other words, correlation does not decrease, in contrast to the corporate curve, as a function of PD or as borrower quality worsens.

Fitch Comment: This assumption is relatively conservative and would appear aimed at taking into account the long maturities of residential loans and that losses on mortgages can be correlated in times of economic distress, particularly when unemployment is high and the housing prices are falling. While this curve could deliver potentially high capital charges, the ability of banks to use their own LGD estimates, which tend to be low for residential mortgages, should generally mitigate this outcome and deliver a capital charge more consistent with the historically low risk of this type of lending. For a comparison of



the capital generated for the QIS 3 corporate and retail curves using average LGD assumptions suggested by the QIS 2 for the different retail portfolios, see the chart above.

Other Retail Products

The second curve is for other retail products, which includes products such as consumer installment loans and small business lending of less than EUR 1 million that is managed like retail (i.e. all nonresidential mortgage and nonqualifying credit card retail products). On this curve, asset correlation declines as borrower quality (PD) worsens (ranging from 0.17–0.02), likely reflecting the short maturity and relatively low cyclical of these products. In general, the LGD on these products is higher than for residential mortgages, with an estimated average suggested by the QIS 2 results of about 45%.

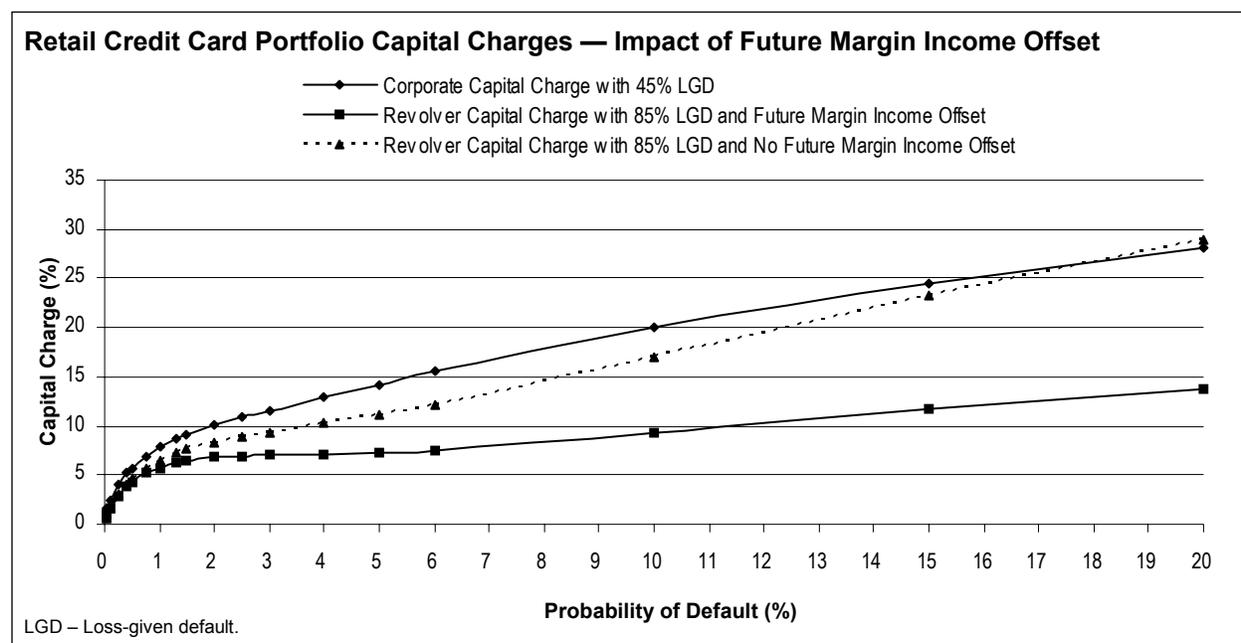
Qualifying Revolving Credits

The third curve is essentially for credit cards. Similar to the other retail and corporate curves, asset correlation in the credit card curve declines as borrower quality worsens, ranging from 0.15–0.02. The LGD associated with credit cards is generally relatively high and was estimated at about 85% in the QIS 2. The credit card curve allows banks to significantly reduce the amount of capital that would otherwise be required because banks are permitted to offset a portion of the capital charge for credit cards (up to 90% of the EL component of risk-weighted assets for revolving credits) with FMI. (FMI is defined as the amount of income anticipated to be

generated by the relevant exposures over the next 12 months that can reasonably be assumed to be available to cover potential credit losses on the exposures. Banks can use FMI to offset capital only when it is larger than EL plus two standard deviations of the annualized loss rate on the revolving portfolio.) For a comparison of the capital charge for credit cards before and after recognition of the FMI offset and an illustration of the size of the respective capital charges relative to the corporate curve, see the chart on page 11.

Fitch Comment: Fitch has strong reservations about allowing FMI, or income that is statistically estimated but not yet earned, to offset a portion of banks’ regulatory capital charge for credit cards. This is based on Fitch’s methodologies in rating financial institutions and credit card asset-backed securities.

When rating financial institutions, Fitch does not give credit to FMI as an offset to capital. Unlike a loan loss reserve that has already been earned and set aside to absorb statistically estimated future losses or already identified losses, it is important not to think of FMI as a resource that will necessarily be available to absorb expected credit card losses. In this regard, FMI can be viewed as a fungible resource — one to grow the credit portfolio, fund a market share drive, finance dividends, or make acquisitions. In addition, an estimate of FMI can be markedly different from what in fact is realized. Fierce competition, market dynamics, and stressful economic periods can sharply



reduce the amount of income actually earned at a time when losses are increasing.

When rating credit card asset-backed securities, Fitch is also very conservative with the treatment of FMI (see *Fitch Research on “Credit Card C-Piece Secrets,”* dated April 5, 2001, and *“ABCs of Credit Card ABS,”* dated April 4, 2001, available on Fitch’s web site at www.fitchratings.com). Fitch’s methodologies compress the potential yield earned on credit card receivables through applying various stress scenarios, which reduces substantially the estimate of realizable FMI that is available to cover EL. For securitization bonds rated ‘A’ and higher, Fitch does not recognize FMI as a potential buffer against loss, and for ‘BBB’ rated securities, only very limited recognition is permitted when the asset pool is of sufficient diversification and quality.

Fitch believes that it is important to treat recognition of FMI conservatively and is, therefore, opposed to allowing FMI to be recognized as an offset to bank regulatory capital. Fitch appreciates that removal of this provision likely would result in too much capital being generated relative to the risk of credit card receivables; accordingly, the basic risk weight curve should be recalibrated to produce less capital without the recognition of FMI.

Recognition of Provisions

The QIS 3 allows IRB banks to offset a portion of their capital charge with loan loss reserves. The Committee’s introduction of this feature resulted from the need to address the conceptual inconsistency between the

proposed IRB approach to measuring credit risk and the existing 1988 Accord’s definition of eligible regulatory capital (which the Committee decided early on not to change). Specifically, on the one hand, the IRB approach requires that banks include both unexpected loss (UL) and EL when determining the amount of their regulatory capital charge, while on the other hand, only a limited portion of the eligible capital block can be derived from loan loss reserves, which are generally used in the banking industry to cover EL.

In reaction to this inconsistency, the industry indicated that it would lead to a disincentive to provision adequately against loans because the new framework would, in essence, impose a double penalty on reserving. For example, if an increase in EL were to cause a bank to raise its general loan loss reserve, it could find that the additional reserve amount was not eligible for inclusion in the capital block because it hit the eligible limit (general loan loss reserves may be included in tier 2 capital up to 1.25% of total risk-weighted assets). Therefore, under the IRB approach, the bank would have to hold more regulatory capital due to the increase in EL and would not get credit for the extra reserving against the increase in EL. To remedy this, the QIS 3 rules allow banks to obtain credit for loan loss reserves by deducting the risk-weighted equivalent (determined by multiplying 12.5 or the inverse of the 8% capital charge times the qualifying reserve) of general loan loss reserves in excess of the 1.25% cap and all specific reserves from the portion of the risk-weighted assets attributable to EL for the portfolio at issue.

In light of the Committee's decision to retain the existing definition of capital, Fitch believes that the above changes make sense in that they avoid imposing a double penalty on EL. While the mechanics of using reserves to lower the regulatory capital charge are similar to allowing banks to recognize FMI when determining their capital charge for revolving credits, there is a fundamental difference in logic; loan loss reserves have already been earned and are deducted out of capital, and therefore, EL is already being covered by a form of capital. In contrast, FMI, as an estimate of future income that is susceptible to shrinkage in stress scenarios, has not yet been earned or deducted out of capital; therefore, EL has not been covered by capital but rather by anticipated income, and a double capital penalty has not been imposed on EL. Although Fitch appreciates that not recognizing FMI could penalize forms of high-EL lending that are relatively safe, this could be addressed by lowering the risk weight curve for retail products such as credit cards.

Overall, quite a bit of adjustment has been necessary to finesse the conceptual discrepancy between the existing definition of capital and the requirement that IRB capital should cover both EL and UL. Given how challenging a task it has been for the Committee to address the various risk measurement issues related to the denominator of the Basel capital ratio, it is understandable that the question of what constitutes capital, or the numerator of the regulatory ratio, has not been revisited in this process. However, once Basel II is finalized, Fitch believes that it would be helpful if the definition of capital were reassessed. In Fitch's opinion, tier 1 capital should consist of common equity and its equivalents, and clearer standards need to be established for the attributes of tier 2 capital. Some of Fitch's reservations involve loss absorption capacity and permanence derived from including in bank capital elements such as excess minimum capital of insurance companies, unrealized deferred tax receivables, and latent equity reserves.

Specific Approaches for Treating Equity Exposures

The QIS 3 sets forth two conceptually different approaches for IRB banks to assess equity risk in the banking book — a market-based approach and a PD/LGD-based approach — and fleshes out the requirements under each of these alternatives. While these approaches were identified as possibilities in the January 2001 2nd CP, the particulars of how they would work, if in fact adopted by the Committee, were not spelled out in any detail.

Fitch Comment: Fitch strongly supports differentiating the risk of equities from debt instruments in the new regulatory capital approach for the banking book. Given that equity serves as a first loss position and is more deeply subordinated than debt, Fitch is of the view that banks should not be able to incur a lower capital charge by holding the equities rather than the debt of an obligor exhibiting high PD. While both of the proposed approaches work toward this end, Fitch finds that the market-based approach is better suited to measuring the risk inherent in equities than the PD/LGD-based approach. Additionally, in Fitch's view, the minimum capital charge on equity investments is too low, particularly when compared to the capitalization level that Fitch requires for equities in rating market value CBO/CLO bonds. Fitch also has some reservations about various exclusions from the general framework for equities.

Market-Based Approach

The market-based approach encompasses two separate methods. The method used by banks should be consistent with the amount and complexity of the institution's equity holdings and commensurate with the overall size and sophistication of the institution.

The first method is the simple risk-weight method, which applies a 300% risk weight (24% capital charge) to equity holdings that are publicly traded and a 400% risk weight (32% capital charge) to all others.

Fitch Comment: While imposing blanket charges on equities, Fitch believes that this method generally will lead to a higher charge for the equity rather than the debt of an obligor, which is a positive development. However, the minimum charges of 24% and 32% are low when compared to the 50% required for equities included in market value CBO/CLOs assigned an 'A' rating (*see Fitch Research on "Market Value CBO/CLO Rating Criteria," dated June 1, 1999, available on Fitch's web site at www.fitchratings.com*).

The second method is based on internal models; it allows banks to use their internal VAR models to calculate the regulatory capital requirement to cover equity risk in the banking book. Under this method, the bank estimates the potential loss on its banking book equity holdings subject to certain regulatory parameters and converts the potential loss into risk-weighted equivalent assets by multiplying by 12.5 (the inverse of 8%). A risk weight floor is imposed under this method, with a minimum risk weight of

200% (16% capital charge) for publicly traded equities and 300% (24% capital charge) for all other banking book equities.

Fitch Comment: In principle, Fitch welcomes the use of internal models in calculating the regulatory capital required to cover potential loss for equity risk in the banking book. Fitch feels that the use of models works in this context in that market price information is generally available for equities, and such an approach would help to capture price volatility, as well as the general and specific market risk factors, resulting, when modeled appropriately, in more risk-sensitive regulatory capital measures for large and complex banks. However, the QIS 3 sets forth a very general regulatory framework for using VAR models in estimating equity risk in the banking book — namely, that they be subject to “the 99th percentile, one-tailed confidence interval of quarterly excess returns over an appropriate risk-free rate computed over a long-term sample average.” While this area of modeling is evolving, and parameters should not be hard-coded into rules that could hamper evolution, Fitch is concerned that, in the absence of additional guidance, banks and supervisors will employ varying degrees of rigor in their assumptions, which may lead to competitive playing issues and uncertainty about the level of equity risk capture in the Basel II measures. Accordingly, it would be helpful for the Committee to issue guidance that sets forth some additional minimum expectations for banks to incorporate in their modeling of equity risk and some thoughts about validation and stress-testing efforts that supervisors will be looking for banks to undertake.

PD/LGD-Based Approach

The PD/LGD-based approach was designed for countries with banks that tend to hold equities as long-term investments and not for resale for capital gains purposes. The approach is basically an extension of the IRB methodology for corporate debt. Banks would assign PD and LGD values to their individual equity holdings, just like debt, with some additional regulatory guidance. In essence, the approach centers on the idea that debt claims can be structured with varying levels of subordination, and equity claims can be incorporated into the framework by treating them as the most subordinated liability on a given obligor. The Committee incorporates a deeper subordination assumption for equities by raising the LGD estimate to 90%, up from 75% for subordinated debt in the foundation IRB approach. In addition, the long-term holding assumption is incorporated into the approach by imposing a maturity assumption of 5.0 years, up from the 2.5-

year estimate for corporate debt in the foundation IRB. An advanced PD/LGD-based equities approach is not available to banks.

Under the PD/LGD-based approach, the minimum possible risk weight can be different depending on how equity positions are managed. The lowest possible risk weight is 100% (or an 8% capital requirement) and can be accorded (if the PD and LGD estimates are consistent with such a low charge) to the following equity positions: a) public equities, where, among other things, the investment is managed as part of a long-term customer relationship, capital gains are not expected to be realized in the short-term, and future (above trend) capital gains are not anticipated in the long-term; and b) private equities, where the returns on the investment are derived from regular cash flows, as opposed to capital gains, and future (above trend) capital gains are not expected. For all other equity positions, the minimum risk weights under the PD/LGD-based approach are 200% (16% capital charge) for publicly traded equities and 300% (24% capital charge) for all others, respectively — the same as the lowest possible charges under the internal models approach.

Fitch Comment: While sensitive to the different historical roles that banks have had in certain markets in the provision of equity finance and the significant equity holdings of banks in some countries, Fitch has a number of concerns about the PD/LGD approach. First, on a conceptual level, the approach is not sensitive to relative risks involved in holding a company’s equity versus its debt; as a first loss position, the market value of an equity position can fall significantly prior to a corporate debt default being recorded for the same obligor, particularly in a stock market slump and the accompanying volatility (as with the current slump). Even as part of a long-term relationship with obligors and with the intent to hold equities long term, a significant decrease in the value of equity holdings has an impact on the valuation of the bank retaining these equities.

With respect to the regulatory parameters of the approach, Fitch views the 90% LGD estimate as fairly liberal and thinks that 100% would be more appropriate. In terms of incentive effects, Fitch believes that the structure of the minimum capital charges in the PD/LGD-based approach as compared with the market-based approach would not provide an incentive for banks to move toward more precise risk measurement. For example, in the PD/LGD-based

approach, it is possible to assign a lower minimum capital charge of 8% to a broad swath of equity exposures managed in a certain manner than under the internal models approach, which is arguably better suited to more precisely measure equity risk. In contrast, the minimum capital charge under the internal models approach is 16% for public equities and 24% for all other equities, which only serves as a floor under the PD/LGD-based approach for equities that do not qualify for the 8% floor.

Exclusions from the General Framework

Fitch Comment: Fitch has reservations about the exclusions from the IRB capital charge for equity holdings made under legislated government programs and based on the materiality threshold. Fitch views the capital relief given to equities made under government-sponsored programs as a fairly broad exemption, even though there is a requirement that these programs involve some form of government oversight and restrictions on bank holdings. These equity holdings should be factored into the IRB capital framework and, only to the extent that there is a government guarantee mitigating the potential size of loss on these investments should banks be able to reduce their capital charge. In Fitch's view, the materiality threshold levels, which allow supervisors to exclude equity exposures from IRB treatment if they comprise less than 10% of tier 1 and tier 2 capital or less than 5% when the portfolio is less than 10 individual holdings, are too generous and should be lowered.

Finally, while technically not an exclusion from the IRB framework, Fitch is concerned that equity holdings under the revised standardized approach are excluded from higher capital charges. Fitch believes that the flat 8% capital charge for equities under the revised standardized approach, when the IRB approaches seek to apply higher minimum charges, reduces the incentive to adopt more sophisticated risk

measurement and also undercharges for the risk associated with a potentially significant portion of the equity holdings retained by banks on the revised standardized approach.

Revised Standardized Approach

Overall, relatively modest changes were made to the revised standardized approach between the January 2001 2nd CP and the QIS 3. For the most part, these changes seem aimed at promoting greater consistency with the revised IRB framework, particularly the retail section, or clarifying aspects of the January 2001 2nd CP. For a summary of the proposed risk weights under the revised standardized approach, see the table below. Overall, these changes tend to result in less capital and favor banks; Fitch generally views the changes as appropriate and prudent.

Risk Weighting

Claims on Retail Portfolios

A major change in the QIS 3 is the reduction of the risk weight assigned to qualifying retail exposures to 75% from 100%, although nonperforming exposures remain at 150%. Nonqualifying exposures are also still weighted at 100%. To qualify for preferential treatment, exposures must meet the following criteria:

- Must be to an individual(s) or a small business.
- Must be in the form of revolving credit, credit line, personal term loan or lease, or small business facility or commitment (securities exposures do not qualify).
- No aggregate gross exposure to one counterparty can exceed 0.2% of the total regulatory defined retail portfolio (past due claims may not be included in the retail portfolio when calculating this granularity limit).
- Maximum exposure to an individual counterparty cannot exceed EUR 1 million.

Risk Weightings Under the Revised Standardized Approach

(%)

	'AAA' to 'AA-'	'A+' to 'A-'	'BBB+' to 'BBB-'	'BB+' to 'BB-'	'B+' to 'B-'	Below 'B-'	NR
Sovereign	0	20	50	100	100	150	100
Bank:							
Option 1	20	50	100	100	100	150	100
Option 2	20	50	50	100	100	150	50
Option 2 with Claims of Three Months or Less	20	20	20	50	50	150	20
Corporates	20	50	100	100	150	150	100
Securitization Tranches	20	50	100	350	Deducted	Deducted	Deducted

NR – Not rated. Note: To convert risk weights to a capital charge, multiply by 8%.

Fitch Comment: Although small business exposure is not clearly defined, such loans obviously have to meet the EUR 1 million exposure limit plus, presumably, the conditions attached to such exposures under the IRB method. Namely, they have to be managed and originated as if they were retail exposures (i.e. on a portfolio, not individual, basis). Fitch agrees with the treatment of qualifying small business exposures as retail loans given that the risk characteristics of such exposures are often the same as for retail loans, and this is how many institutions already manage such risks. In addition, Fitch believes that lowering the risk weight for qualifying retail and small business exposures is consistent with empirical work showing that asset correlation is lower for these exposures than for large corporate firms and that it is appropriate when the granularity criterion is met (i.e. that the exposure to a single counterparty is quite low relative to the overall retail portfolio).

Claims Secured by Residential Property

The QIS 3 lowers the risk weight on residential mortgages to 40% from 50%. In addition, once such claims are 90 days past due, the weight becomes 100%.

Fitch Comment: The lowering of the risk weight on residential mortgages makes sound analytical sense given the historically low levels of loan losses on such secured lending. Indeed, an even lower risk weight could have been justified. For the same reason, Fitch also agrees with risk weighting nonperforming residential loans more favorably than nonperforming unsecured loans, which are risk weighted at 150%.

However, Fitch is concerned that the preferential risk weight is applied not only to owner-occupied property but also to rented property. Given that the latter has proved to be more volatile and risky in previous business cycles, the equitable treatment of both types of lending seems inappropriate.

Claims Secured by Commercial Real Estate

There continues to be no change to the exception allowing a less than 100% risk weight for commercial real estate that meets strict conditions in well developed and established markets, where loss rates meet low thresholds. Countries that meet these conditions may allow their banks to apply a preferential risk weight of 50% to the first tranche of loans on qualifying commercial properties, with any exposure on the same property beyond the preset limit risk weighted at 100%.

Fitch Comment: While care has been taken to limit the applicability of this exception, Fitch continues to believe that commercial real estate should be accorded a 100% risk weight, particularly as losses on commercial real estate markets can be very low for several decades and then suddenly materialize, and commercial property lending has been a recurring cause of troubled assets in the banking industry (see *Fitch Research on "The Revised Basel Capital Accord Proposals: A Critique,"* dated Feb. 27, 1999, available on Fitch's web site at www.fitchratings.com).

Higher Risk Categories

The risk weight for banks investing in securitization bonds (or tranches) rated 'BB+' to 'BB-' has been increased significantly to 350% from 150%.

Fitch Comment: Fitch notes that there is a discrepancy between the risk weights assigned to tranches rated 'BB' and 'BB-' between the revised standardized and IRB approaches for securitization, which may cause some unintended behavioral effects. Under the IRB ratings-based approach, the risk weights for investing IRB banks rated 'BB' and 'BB-' are 425% and 650%, respectively, and would likely be higher for banks originating and retaining these exposures under the IRB supervisory formula approach. Fitch is concerned that this discrepancy could result in a new generation of regulatory arbitrage, wherein IRB banks seek to sell 'BB' and 'BB-' tranches of securitizations to revised standardized banks to lower their capital requirements. This could lead to revised standardized banks holding a disproportionate share of lower rated tranches.

To prevent this type of arbitrage, Fitch believes that the risk weight under the revised standardized approach for securitization tranches should be at least as conservative as those that are ultimately established under the IRB framework. To accomplish this, it would be necessary either to create more granular rating categories for securitization exposures in the revised standardized approach (i.e. a separate risk weighting category for each of the 'BB+', 'BB', and 'BB-' securitization tranches) or to increase the risk weights of the 'BB+' to 'BB-' category so that it is at least as conservative as the 'BB-' category risk weighting category under the IRB approach. While the former option reduces the simplicity of the revised standardized approach, the latter creates a cliff effect. However, Fitch feels that the possible distortion created by new behavioral effects should be addressed.

Other Assets

Holdings of bank or securities firms' capital instruments not deducted from regulatory capital are risk weighted at 100%.

Fitch Comment: It is unclear to Fitch when such treatment would apply given that, under the scope of the application requirements, such investments should be deducted from regulatory capital in view of the dangers of double counting. General equity investments are risk weighted at 100% under this approach, although this is not explicitly mentioned but is inferred to be the case since the New Accord is amending the 1988 Accord. As with the IRB treatment of equities (*see Specific Approaches for Treating Equity Exposures, page 12*), Fitch finds that an 8% capital charge is far too low and that, at a minimum, the capital charge should be consistent with the capital floor of 24% for publicly traded equities and 32% for other equities as set forth in the simple risk-weight approach under the IRB market-based approach.

External Credit Assessments and Implementation Considerations

Fitch Comment: A key part of revised standardized approach is reliance on external credit assessments in differentiating credit risk. Fitch believes that the eligibility criteria — objectivity, independence, international access and transparency, disclosure, resources, and credibility — are fair and appropriate, although Fitch does have some comments regarding changes involving the implementation process of how ratings are mapped to risk weights and the use of different types of external ratings.

Mapping Process and Annex 2

Fitch Comment: Within these sections of the QIS 3, the Committee has provided substantially more guidance on how supervisors should map external ratings into the available risk weight buckets. Fitch finds this helpful as a means of promoting greater consistency in mapping external ratings to risk-weighting categories, as the former may differ among rating agencies. It would be helpful, in Fitch's view, if the following points were clarified:

- When talking about average default rates, it is not clear whether the weighted average is meant or not. In Fitch's view, the Committee should insist on the use of weighted averages, as they correctly emphasize the years with a greater number of rating observations. This is how

Fitch's and other rating agencies' default statistics are calculated.

- Similarly, default rates are discussed in terms of "issues" rather than "issuers." Given that it is rating agency convention to calculate default rates and statistics on the basis of issuers (i.e. companies, not bonds), the Committee most likely meant to refer to issuers.

Issuer vs. Issues Assessments

Fitch Comment: There has been little change in this section, although an additional paragraph has been added to emphasize that the entire exposure (principal and interest) must be covered by the external rating for that assessment to be valid for assigning a risk weight. Fitch strongly agrees with this change.

Domestic vs. Foreign Currency Assessments

Fitch Comment: The Committee has added a new paragraph providing welcome clarification as to what type of actual rating should be used when implied ratings are utilized for unrated exposures. Specifically, foreign currency ratings should be used, although local currency ratings are acceptable for exposures denominated in domestic currency. Clearly, such guidance is logical.

Short vs. Long-Term Assessments

The use of short-term ratings has been expanded and clarified substantially. The use of such ratings is limited to the following conditions:

- Only to be used for issue-specific exposures.
- Not to be used for generalized short-term claims.
- Not to be used to support a risk weight of an unrated long-term transaction (previously limited to the support of a preferential risk weight).
- Only to be used for banks and corporates (i.e. not sovereign exposures).

When these conditions are met, the following risk weights apply:

- "F1/P1/A1" rated exposure, 20% risk weight.
- "F2/P2/A2" rated exposure, 50% risk weight.
- "F3/P3/A3" rated exposure, 100% risk weight.
- Other rated exposures, 150% risk weight.

Fitch Comment: Such weightings are logical, as they reflect the correlation between the short- and long-term ratings scales and the latter's proposed risk weight. However, should the Committee wish to utilize it, greater differentiation could be introduced in the "F1/A1/P1" rating category. Fitch uses an

‘F1+’ rating to distinguish very high-quality short-term paper based on established criteria, and another rating agency also differentiates very high-quality short-term paper using the plus designation.

A number of risk weights are lowered as a result of these guidelines, which Fitch believes is sensible, as clearly short-term exposures are less risky than equivalent loans made on a long-term basis. Generally, the weighting on exposures to corporates and banks (under option 1) rated ‘A+’ to ‘A-’ is lowered to 20% from 50%, with the weighting for those rated ‘BBB+’ lowered to 50% from 100%.

There are two other additional rules. First, if a short-term rated facility is weighted at 50%, all unrated short-term claims for that obligor are weighted a minimum of 100%. This is logical, as it maps to the weights implied by the long-term rating. Second, if an issuer has a short-term facility with a rating falling into the 150% weighting bucket, then all of the unrated claims on that issuer, whether they are long- or short-term claims, must be risk weighted at 150%. Fitch believes that this rule provides a disincentive to getting short-term claims rated, since unrated bank and corporate claims are guaranteed a maximum risk weight of 100% when they have not been assigned a short-term rating, and all of the entity’s ratings will be accorded a 150% risk weighting if they have a short-term rating of less than “F3/A3/P3.” Fitch believes that unrated exposures continue to be treated too generously (*see Fitch Research on “The Revised Basel Capital Accord Proposals: A Critique,” dated Feb. 27, 1999, available on Fitch’s web site at www.fitchratings.com*).

■ Credit Risk Mitigation

The purpose of the credit risk mitigation framework (CRM) is to acknowledge that obtaining collateral and guarantees/credit derivative protection can reduce banks’ credit risk and to allow an appropriate capital benefit for these forms of mitigation through measuring the reduction of risk. The New Accord sets forth a number of methods, ranging from simple to sophisticated, for achieving this.

For example, the simple credit risk mitigation approach for collateral (intended for noncomplex banks using the revised standardized approach) allows greater collateral recognition than the 1988 Accord but is substantially based on substituting the collateral for the underlying exposure subject to conservative rules and generally to a risk weight floor of 20%. In contrast, the more advanced approaches

on collateral (which are contained in the comprehensive credit risk mitigation approach) allow for greater measurement precision and therefore the possibility of greater capital relief. These approaches effectively reduce the counterparty exposure amount by the value ascribed to the collateral, a value which takes into account the volatility of both the collateral (through a haircut) and the underlying exposure (through grossing up the exposure). In determining the size of haircuts on collateral and the volatility gross-up of the underlying exposure, revised standardized and foundation IRB banks have the option of using standard supervisory estimates or own-estimates, subject to meeting regulatory standards, which include qualitative and quantitative criteria, such as a 99th percentile, one-tailed confidence interval and a prescribed holding period based on the type of transaction. A new feature in the QIS 3 rules is to allow special treatment of certain repo-style (repurchase/reverse repurchase and securities lending/borrowing) transactions, including the use by revised standardized and IRB banks of internal VAR models (subject to meeting regulatory standards) in generating the capital charge for these transactions (*see IRB Banks below*).

Fitch Comment: While the sheer number of approaches adds complexity to the credit risk mitigation framework, Fitch thinks that they are necessary in order for banks of varying sophistication to be able to use an approach that is suitable for their respective sizes, activities and risk measurement systems. Overall, the credit risk mitigation framework, particularly the more advanced approaches for recognizing collateral, has evolved since the January 2001 2nd CP, with the most significant changes discussed in the following sections.

IRB Banks

Foundation internal ratings-based (IRB) banks are subject to what is known as the comprehensive credit risk mitigation framework. Advanced IRB banks meeting the regulatory requirements generally have more latitude in how they estimate the risk-reducing effects of collateral, guarantees, and credit derivative protection. One exception is that advanced IRB banks are required to use the comprehensive credit risk mitigation methodology for estimating the effects of master netting agreements on repurchase agreement-style transactions for capital purposes.

Collateralized Transactions Formula

The collateralized transactions formula, restated slightly from the one presented in the Basel Committee on Banking Supervision's third quantitative impact study, is as follows:

$$E^* = \max \{0, [(E-C) + (E \times H_e) + (C \times H_c) + (C \times H_{fx})]\}$$

E* – Exposure value after risk mitigation. E – Current value of the exposure. C – Current value of the collateral received. H_e – Haircut appropriate to the exposure. H_c – Haircut appropriate to the collateral. H_{fx} – Haircut appropriate for currency mismatch between the collateral and the exposure.

Simplified Formula for Collateralized Transactions

An important change in the QIS 3 is the simplification of the proposed formula for collateralized transactions. Essentially, the formula (*see Collateralized Transactions Formula above*) calculates the amount of a bank's credit exposure to a counterparty, reducing the exposure by the current value of the collateral protection and increasing the exposure by an add-on to cover the potential exposure over the liquidation holding period during which the value of the underlying exposure may increase and/or the value of the collateral may decrease.

Fitch Comment: It is important to measure potential future exposure of both sides, and this will help to ensure an appropriately conservative capital reduction and provide additional incentives to take higher quality and more collateral. In addition, Fitch believes that the revised formula makes the credit risk mitigation framework more intuitive and easier to use.

Repo-Style Transactions

The QIS 3 rules allow for greater risk sensitivity when determining the capital charge of qualifying repo-style transactions. This appears to be the result of industry feedback and agreement that repo-style transactions contain certain characteristics that lower their risk relative to other secured transactions. These characteristics include: robust and well tested legal documentation; legal enforceability; daily revaluation of collateral (marking to market); swift remarking of collateral in the event of an undercollateralized exposure; and prompt liquidation of collateral in an event of default (e.g. failure of a counterparty to provide additional margin). The QIS 3 rules seem to acknowledge these risk-reducing characteristics by allowing banks to distinguish qualifying repo-style

transactions from other secured transactions, as discussed in the following three sections.

Reduced Holding Period

The QIS 3 rules allow banks to use a holding period of five days when calculating the haircut on the collateral for repo-style transactions that remarkined on a daily basis. This compares to holding periods of 10 and 20 days for other capital market transactions that are remarkined on a daily basis and secured lending activities that are revalued daily, respectively. The reduced holding period may be used whether the bank is using standard supervisory estimates or its own estimates in determining the applicable haircuts on the collateral. It may also be used under the VAR modeling approach for banking book repo-style transactions (discussed below).

Fitch Comment: Given the legal enforceability, short liquidation periods, and daily remarkining requirements, Fitch feels that the reduction in the holding period is appropriate for repo-style transactions.

Fitch questions whether the 20-day holding period for secured lending is long enough and has reservations about whether banks would be able to realize the value on the collateral this quickly. Banks can exercise a certain amount of forbearance on certain types of secured lending before deciding to close out the transaction, and bankruptcy regimes can present challenges to liquidating collateral so quickly.

Recognition of Master Netting Agreements

The January 2001 2nd CP applied capital charges on a transaction-by-transaction basis for collateralized transactions but did not address a scenario where a portfolio of collateralized transactions exists with a single counterparty that is subject to a legally enforceable master netting agreement — where the bank and the counterparty can legally settle multiple transactions with one net obligation by offsetting amounts owed and due. An important protection provided by these agreements is that in the event of the counterparty's failure, what is legally owed is the net amount. Instead of requiring that a capital charge be assessed on each individual collateralized transaction within a portfolio of collateralized transactions to a single counterparty, the QIS 3 has introduced a new formula that acknowledges the risk-reducing effects of legally binding master netting agreements for repo-style transactions. Essentially, when subject to a legally binding master netting agreement, the QIS 3 rules apply the capital charge

on the net long or short position that the bank has in each security and each foreign currency within the portfolio of repo-style transactions, rather than to the full value of each individual collateralized transaction. This approach applies whether the standard supervisory estimates or the bank's own internal estimates are used in determining haircuts.

Fitch Comment: Recognition of master netting agreements is appropriate, in Fitch's view, and the resulting capital charge is still quite conservative given that the formula does not recognize correlation effects between the securities.

VAR Modeling for Repo-Style Transactions

As an alternative to the use of standard or own-estimate haircuts, banks meeting regulatory requirements are permitted to use a VAR modeling approach to reflect the potential future price volatility of the exposure and the collateral for their repo-style transactions that are subject to master netting agreements on a counterparty-by-counterparty basis. Basically, the bank calculates the current exposure to a particular counterparty (i.e. current value of the underlying exposure minus the value of the collateral received) and uses the VAR model to generate the add-on for the potential future exposure over the liquidation holding period. To use the VAR approach, the bank must meet qualitative and quantitative regulatory requirements, including using a 99th percentile, one-tailed confidence interval and five-day holding period and comparing ex-ante model results to actual outcomes through a back-testing framework (which is still in the process of being developed). If the model produces too many exceptions, the VAR measure is subject to a

multiplier (i.e. the capital charge on the potential future exposure is increased).

An important aspect of the VAR approach is that it allows banks to take into account correlation effects between security positions. Therefore, if the regulatory parameters are calibrated correctly, it has the possibility of being the most risk-reflective of the three approaches and allowing the greatest amount of capital relief for these transactions.

Fitch Comment: Fitch finds that allowing the use of VAR models subject to the regulatory parameters for repo-style transactions is appropriate. While the Committee has not allowed the use of bank internal modeling in estimating correlation in the other revisions to the credit risk proposals, modeling the potential future risk for this particular set of transactions is akin to the type of modeling already allowed in the trading book, particularly given the daily mark-to-market requirement and the widespread data availability for these transactions. However, Fitch suggests that the Committee further develop a practical back-testing framework to require banks to test the accuracy of their modeled outputs on banking book repo-style transactions.

Residual Risk — W Factor Dropped

The charge on residual risk, called the "w" factor, which imposed a flat 15% floor on most collateralized transaction, some guarantees, and all credit derivative protection, has been eliminated in the QIS 3.

Fitch Comment: Fitch believes that the removal of the w factor helps to enhance the risk-sensitivity of credit risk mitigation framework.

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