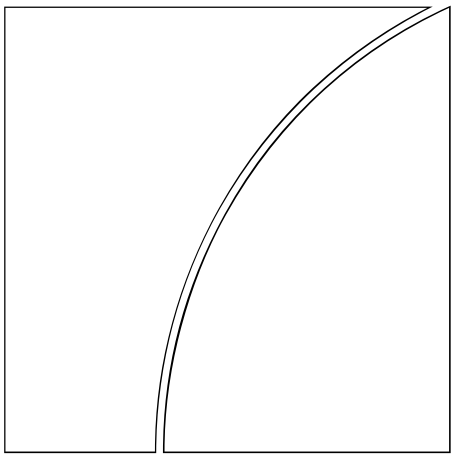
Basel Committee
on Banking Supervision



Working Paper on the Treatment of Asset Securitisations

October 2001

BANK FOR INTERNATIONAL SETTLEMENTS

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Working Paper on the Treatment of Asset Securitisations

I. Introduction

The purpose of this paper prepared by the Securitisation Group of the Basel Committee is to discuss two sets of proposals that were initially outlined in the January 2001 consultative package. The first proposal is for an IRB treatment of securitisations, and the second is a general approach to synthetic securitisations. By design, these proposals are based on other elements of the New Basel Capital Accord. For example, the IRB treatment of traditional and synthetic securitisations relies on the IRB risk weight functions for credit risk. Similarly, the treatment of synthetic securitisations incorporates elements of the credit risk mitigation framework. Therefore, as the Committee's work on these other aspects of the New Basel Capital Accord evolves, so too will elements of the securitisation proposals discussed herein.

This paper is being issued to further the Committee's dialogue with the industry on the development of a minimum capital requirement for securitisations. Interested parties are invited to comment on the issues outlined in this paper. Comments should be submitted to relevant national supervisory authorities and central banks and may also be sent to the Secretariat of the Basel Committee on Banking Supervision at the Bank for International Settlements, CH-4002 Basel, Switzerland, by 15 November 2001. Comments may be submitted via e-mail: BCBS.capital@bis.org[1] or by fax: +41 61 280 9100. Comments on working papers will not be posted to the BIS website.

II. Securitisation Proposals in January 2001 Consultative Package

Many thoughtful comments have been received on the asset securitisation proposals contained in the January 2001 consultative package. The Securitisation Group is currently considering the feedback received, as well as continuing to consult with industry participants and to conduct subsequent work of its own. The objective is to develop a comprehensive framework for securitisation that is risk sensitive and provides banks with the proper incentives to move from the standardised to the IRB approach. Accordingly, the Group intends to consider any revisions to the standardised treatment of securitisations, as well as those pertaining to the treatment of implicit and residual risks in light of its work on the proposals outlined in this working paper.

III. The IRB Treatment of Traditional & Synthetic Securitisations

This section outlines the Securitisation Group's proposal for an internal ratings-based (IRB) treatment of traditional and synthetic securitisations. While the proposed IRB approach is similar to the securitisation treatment indicated in the January 2001 consultative package, the proposal has been substantially refined. For instance, the supervisory parameter of loss given default (LGD) is not assumed to be 100%.

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[1] Please use this e-mail address only for submitting comments and not for correspondence.

The proposed IRB treatment is based on the following guiding principles.

- In recognition of asset securitisation as an important source of funding and mechanism for credit risk transference, the IRB approach should be neutral with regard to the capital requirements it produces in order not to create incentives or disincentives for banks to engage in securitisations.

- The IRB treatment of securitisations should reflect the relative credit risk inherent in the various tranches within a securitisation transaction. That is, IRB banks would be required to hold more capital against retained or purchased subordinate tranches as compared to that required for senior positions within a given securitisation. Whereas the standardised approach to securitisation is based on the application of a small range of risk weights corresponding to external ratings, IRB banks will be required to consider the availability of external ratings and information about the securitised assets in determining the minimum capital requirement.

- The approach should adequately capture credit risk exposures of securitisations through a combination of minimum capital and operational requirements.

The proposed IRB and standardised treatments of securitisation are based on similar tenets. As is the case in the standardised approach, originating IRB banks will be required to satisfy clean break criteria. Where these conditions are not met, banks will be required to treat the securitised assets as if they were on-balance sheet exposures and hold commensurate regulatory capital. Similarly, IRB banks will be required to deduct from regulatory capital credit enhancements retained in the case of originating banks and those purchased by other banks.

In developing an IRB treatment for securitisation, the Group has ruled out the possibility of basing the capital requirement on banks' internal assessments of the credit risk of individual securitisation tranches. The reason being that this would require banks to employ credit risk modelling for assessing the correlation effects within the underlying asset pool. The Basel Committee determined in 1999 after extensive study that it is not appropriate at this time for banks to rely on credit risk models in setting regulatory capital. The Group has thus developed an alternative proposal contained in this working paper. As mentioned, it is intended to provide banks with the proper incentives to move from the standardised to the IRB approach. Another equally important objective is to avoid creating incentives for banks to securitise their assets solely to reduce regulatory capital requirements.

To be eligible for the IRB treatment of securitisations, banks must satisfy all of the conditions outlined by the Committee for entry and on-going use of the internal ratings-based approach for credit risk, as well as the minimum requirements outlined in Section III.B. Further, if a bank were permitted to rely on the IRB framework for setting minimum capital requirements for an exposure class, it also would be expected to recognise the IRB treatment proposed herein for securitisations involving that asset type.

Summary of the IRB treatment

As depicted in the following chart, the availability of external ratings and the amount of information the bank has about the securitised asset pool are primary determinants of the IRB treatment for the securitisation tranches. When an external rating is available and/or the bank does not have the necessary information to calculate the IRB capital requirement (K_{IRB}) for the underlying assets, it must use the risk weights outlined in Section III.A.1, "ABS Risk Weights". The proposed risk weights are linked to those for similarly rated Foundation IRB corporate exposures with similar default probabilities. Banks would be required to deduct

unrated positions and those with an external rating of below Ba3. Section III.A.1 also discusses the use of qualified "inferred" ratings for unrated tranches in externally rated structures and the treatment of unrated securitisations.

Section III.A.2 "The Supervisory Formula: Retained or Purchased Unrated Exposures" discusses the supervisory formula, which has been developed for banks (originating, sponsoring or investing) with the necessary information to calculate K_{IRB} for the securitised assets. Banks would be required to deduct unrated retained or purchased risk positions that fall between zero and K_{IRB}. The supervisory formula is proposed for determining the capital requirement for all unrated exposures beyond K_{IRB}. As stated above, all banks would be required to make use of external ratings when available for treating such positions in accordance with Section III.A.1. Investing banks but not originating banks would also be permitted to rely on external ratings when treating positions that fall within K_{IRB}. This section also discusses the limited application of qualified inferred ratings.

A different treatment is under consideration for originating banks of revolving securitisations. Some banks have indicated that for revolving securitisations of credit cards and commercial loan obligations that usually contain early amortisation provisions which are triggered when the credit quality of the underlying assets deteriorates to a certain point, they maintain roughly the same amount of economic capital before and after the securitisation. Thus the Group is proposing to identify and, if appropriate, develop a regulatory capital treatment for revolving securitisations that is consistent with market practice provided it is adequately risk sensitive. Section III.A.3 outlines the proposed treatment of revolving securitisations. Section III.A.4 discusses the treatment of liquidity facilities. The Group is very interested in receiving feedback from the industry on existing practice for treating these types of exposures.

A number of questions are raised through this section of the working paper. Interested parties are invited to comment on all aspects of the proposed IRB treatment of securitisation with particular emphasis on the following points:

- The appropriateness of the proposed ABS scaling factors to be used in calculating the risk weights for tranches that are externally rated or have qualified inferred ratings (Section III.A.1);

- Evidence for determining whether the capital requirement on tranches retained by originating banks should be capped in an amount equal to K_{IRB} for the underlying assets (Section III.A.2);

- Calibration of the supervisory formula for distributing capital across unrated tranches for banks that are able to calculate the IRB capital requirement for the underlying assets (Section III.A.2);

- Discussion of methods for assigning economic capital to revolving securitisations. In particular, information concerning whether the economic capital decision reflects the inclusion of early amortisation features or if there are other characteristics motivating the treatment (Section III.A.3);

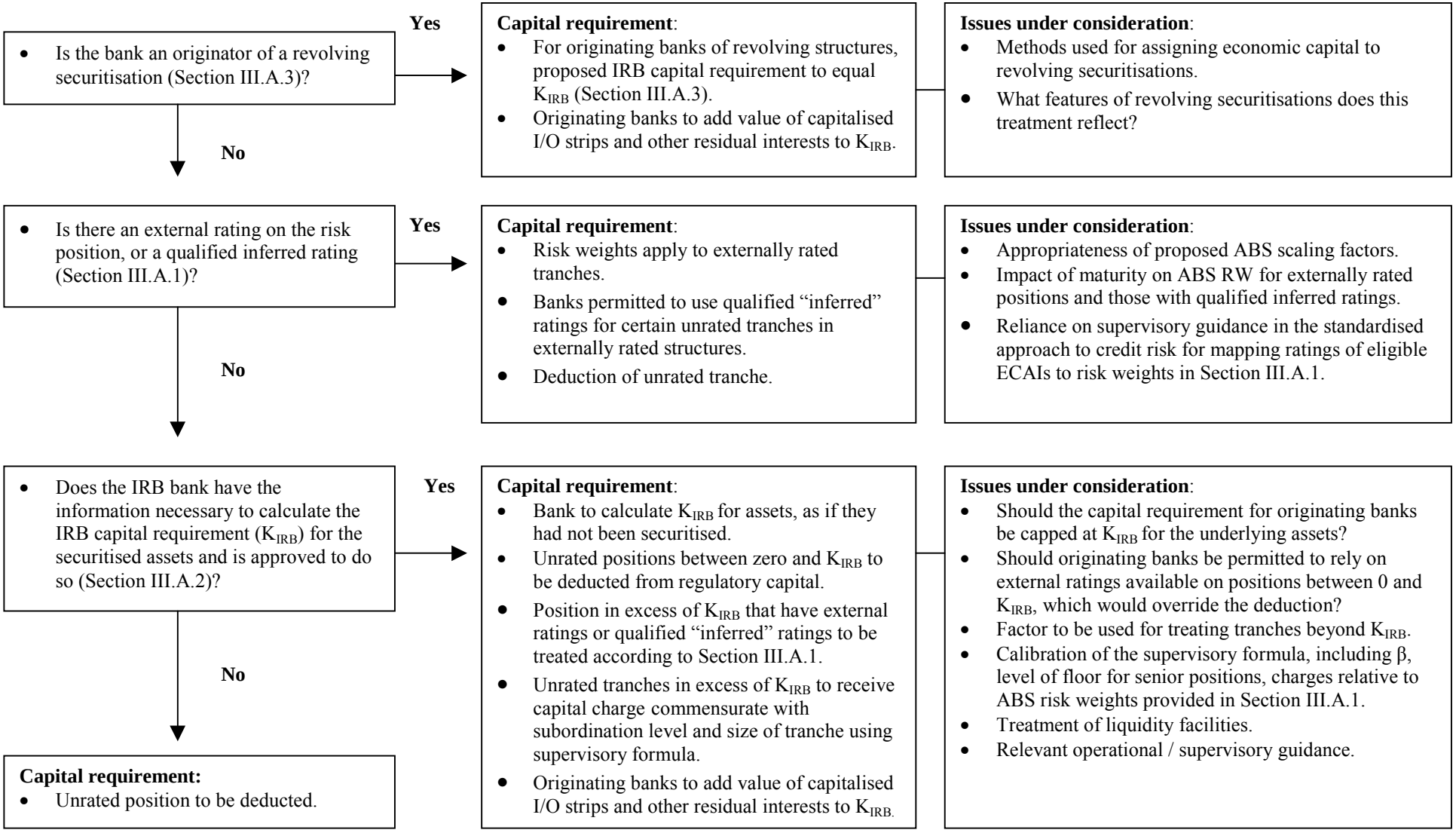
- Possible incorporation of a maturity adjustment (Sections III.A.1 and III.A.2);

- Development of a risk sensitive treatment of liquidity facilities (Sections III.A.4); and

- Whether there are any exposures arising from securitisations where the capital treatment remains unclear, or may be inadequate.

A discussion of the mechanics of the IRB treatment of securitisations is provided in Annex 2. This annex employs a number of examples for illustrating how to apply the IRB proposal. As mentioned, the IRB approach to securitisations is dependent upon several factors, namely the internal ratings-based methodologies under development for treating corporate, retail and other exposures, and how the reference capital level (K_{IRB}) relates to market estimates of the risk in these structures. Accordingly, the examples should be regarded as purely illustrative. The examples show how the proposed approach would be implemented when K_{IRB} and the credit enhancements have broadly similar levels, as well as when the credit enhancement is less than or greater than K_{IRB}.

Chart 1: Proposed IRB Approach to Traditional and Synthetic Securitisations



A. Capital Requirements

1. ABS Risk Weights

The treatment proposed in this section is for banks that do not have the information necessary to calculate the IRB capital requirement for the securitised assets. It is envisioned that this approach would primarily be used by investing banks, but would also apply to banks that qualify for the supervisory formula approach (Section III.A.2) when external ratings and qualified inferred ratings are available for positions beyond K_{IRB}. That is, the bank would be required to rely on an external rating or qualified inferred rating to override the supervisory formula approach for treating positions in excess of K_{IRB}.

Calculation of ABS risk weight

The supervisory risk weights for externally rated ABS positions are summarised in Table 1. For a particular rating category (column 1), there is an assumed one-year probability of default or PD (column 2). The benchmark risk weight assigned to an ABS tranche (column 5) is calculated as the product of (a) the risk weight applicable to a corporate exposure having the same PD, the same effective maturity, and an LGD equal to 50% (column 3), and (b) a multiplicative scaling factor (column 4).

As a cautionary note, the proposed ABS risk weights provided in column 5 should not be viewed as final. They are based on the IRB risk weight function for corporate exposures discussed in the January 2001 consultative package, which the Basel Committee is in the process of refining in light of significant industry comment and data gathered from the Quantitative Impact Study (or QIS). Consistent with the Committee's press release of June 2001, this work is expected to result in lower risk weights for corporate exposures, particularly for those rated below investment grade. It therefore follows that a reduction in the Foundation IRB risk weights will result in lower ABS risk weights, as the two sets are linked by the ABS scaling factor.

ABS scaling factors

As illustrated in Table 1, the ABS scaling factor equals unity for broad rating grades of single-A or better, but increases progressively beyond unity as credit ratings deteriorate to lower levels. Thus, a 3-year tranche rated the equivalent of Ba1 (PD=0.7%) would have an ABS scaling factor of 2.0 and thus receive a risk weight of 200%. Consistent with the standardised approach to securitisations, unrated tranches and those rated below the equivalent of Ba3 would be deducted from regulatory capital. A set of supervisory requirements is under development for mapping external ratings by qualifying external credit assessment institutions (ECAIs) to the idealised rating categories in column 1 of Table 1.

Table 1

Proposed ABS Scaling Factors for Tranches in Traditional and Synthetic Securitisations

Moody's Rating Category	Assumed 1 year PD (%)	IRB risk weights for corporate exposures provided in January 2001 CP (LGD of 50%)*	**ABS Scaling Factor**	ABS RWs (based on the IRB risk weights for corporate exposures provided in January 2001 CP)
Aaa	0.03	14%	**1.0**	14%
Aa	0.03	14%	**1.0**	14%
A	0.05	19%	**1.0**	19%
Baa1	0.15	37.7%	**1.2**	45%
Baa2	0.25	52%	**1.4**	73%
Baa3	0.40	70%	**1.7**	119%
Ba1	0.70	100%	**2.0**	200%
Ba2	1.00	125%	**2.5**	313%
Ba3	1.70	174%	**3.0**	522%
Unrated positions and those rated below Ba3 to be deducted from regulatory capital				

*The corporate exposures are assumed to have a remaining maturity of 3 years.

The imposition of larger risk weights for lower-rated ABS tranches, compared with corporate loans having the same rating grade, is broadly consistent with methods used by rating agencies when determining credit enhancements for pools of ABS securities and reflects two key considerations.

First, rating agencies make an assessment of the benefits of diversification when determining the level of credit enhancement required to achieve a particular tranche structure. They consider that a well-diversified portfolio of ABS tranches (each backed by a diversified pools of, say, corporate loans) can be expected to exhibit higher default correlations among the underlying tranches than a well-diversified portfolio of similarly-rated corporate loans. This reflects the fact that much of the credit risk inherent in a single corporate loan is idiosyncratic risk that can be diversified away within a larger portfolio. The IRB risk weight formula for corporate exposures developed by the Basel Committee assumes that bank portfolios are well-diversified and, hence, presumes substantial risk reductions through diversification when individual corporate loans are combined within a bank's portfolio. In contrast, the automatic pooling of loans within a securitisation implies that an ABS tranche already is purged of much of the idiosyncratic risks of the underlying assets, and this is reflected in the level of credit enhancement required for that structure. As a result, the ability to reduce overall portfolio credit risk further through diversification is expected to be less for pools of ABS tranches than for similarly rated loans. Consistent with this view, when evaluating the credit risk of a well-diversified pool of rated CLO tranches, major rating agencies tend to employ average default correlation assumptions that are significantly greater than those assumed for well-diversified pools of similarly rated corporate bonds.

A second consideration motivating the larger risk weights for ABS tranches is the likelihood that in the event of default lower-rated tranches will tend to experience substantially higher loss severity than higher-rated (typically more senior) tranches. Indeed, within a typical senior-subordinated securitisation structure, junior tranches must incur a total loss before

more senior tranches incur any loss whatsoever. In contrast to the assumption of a 50% loss severity (or LGD) for non-subordinated corporate loans within the IRB approach, when evaluating securitisations of CLO/CDO[2] tranches major rating agencies appear to use assumptions ranging from generally as low as 20% for tranches rated triple-A, to as high as 80% for tranches rated double-B.[3] The lower expected LGDs[4] associated with very high investment-grade tranches (AAA, AA, A) are assumed to roughly offset the higher default correlation effect discussed above, resulting in a scaling factor of unity. For lower rated tranches, the LGD effect is assumed to be neutral or to reinforce the correlation effect discussed above, resulting in larger scaling factors as the rating deteriorates. Finally, the structure of the ABS scaling factors in Table 1 for tranches rated below single-A mitigates what would otherwise be a much larger "cliff effect" as ABS ratings transition to single-B and below, whereupon positions are deducted from regulatory capital. As a general matter, cliff effects within regulatory capital requirements seldom can be justified on the basis of underlying economic fundamentals. Moreover, in the past they tended to unduly influence and distort the incentives and economic decisions of market participants.

By virtue of its linking risk weights for ABS tranches to those for corporate exposures with the same PD and maturity, implicitly the proposed IRB risk weights for ABS tranches automatically incorporate whatever approach to maturity adjustments is ultimately adopted for corporate exposures. For example, under the Foundation IRB approach set forth within the January 2001 consultative package, all corporate exposures are assumed to have a remaining maturity of three years, so no explicit maturity adjustment would be required. Under the Advanced IRB approach set forth in the consultative package, the risk weights for corporate exposures would depend on bank supplied estimates of the exposure's PD, LGD, and effective remaining maturity.

Some concern has been expressed about the level of conservatism that would be built into the ABS risk weights through the application of the proposed scaling factor. An alternative proposal under consideration would be for banks to rely on the Foundation IRB corporate risk weights rather that apply the ABS scaling factor. To drop them would result in the same risk weights for similarly rated ABS and corporate exposures. Such an approach would be consistent with the views expressed by industry participants that similarly rated exposures should involve the same amount of credit risk. Another alternative would be to modify the scaling factors provided in Table 1 without eliminating them entirely. Consultation with the industry and evaluation of the quantitative information requested will be important as the Group continues its work to calibrate the IRB treatment of securitisations.

Table 1 shows only the proposed treatment of long-term external ratings. A corresponding mapping of short-term ratings to ABS risk weights will also have to be determined to cover situations where short-term instruments are issued, for example, through asset-backed commercial paper conduits.

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[2] Collateralised loan obligations and collateralised debt obligations.

[3] These figures assume that tranches rated below single-A are mezzanine positions accounting for less than 10% of the overall size of the asset pool. In practice, ABS tranches rated below-investment grade are often relatively "thin" mezzanine positions which, in the event of default, would likely incur even larger loss severities – thus, reinforcing the motivation for a higher scaling factor for low-rated ABS tranches. (To illustrate, note that for a tranche that was extremely thin relative to the size of the underlying asset pool, the tranche's LGD would almost certainly be close to 100%, since in the event pool losses were to wipe out all more subordinated ABS positions, the probability of pool losses topping out somewhere within the *interior* of the tranche would be very small.)

[4] The assumed loss given default estimates by rating category used to derive the ABS scaling factors are as follows: Baa1: 30%; Baa2: 40%; Baa3: 50%; Ba1: 60%; Ba2: 75%, and Ba3: 80%.

- Are the proposed ABS scaling factors appropriate? How should the ABS risk weights compare to those assigned to similarly rated corporates?

- Interested parties are asked to provide empirical support for any recommendations that they may have. Additionally, industry participants are invited to provide empirical evidence for use in calibrating the IRB risk weights provided in Table 1, and also for the calibration of risk weights based on short-term external ratings.

- In theory, the LGD assumption should be dependent upon the size of an individual tranche relative to that of the overall securitisation. The proposed ABS scaling factors in Table 1 presume that the tranches below investment grade are relatively thin. Does the industry think that the proposed ABS risk weights should explicitly take into consideration the thickness of the securitisation tranche, as well as its external rating? If so, please elaborate on how this might be accomplished.

- Interested parties are asked to provide their views on the treatment of maturity in the IRB approach to securitisation.

- Industry feedback is also sought on the appropriateness of incorporating the mapping of ECAI ratings developed for use in the standardised approach to credit risk into the IRB treatment of securitisations.

Unrated investments in externally rated securitisations

Generally, banks investing in unrated tranches in externally rated transactions must deduct them from regulatory capital. However, banks may rely on an "inferred" rating[5] provided there is an externally rated position that is subordinate in all respects to the unrated tranche. Further, the remaining maturity of the subordinated, rated position must be equal to or longer than that of the unrated senior position. These and other minimum requirements pertaining to the use of inferred ratings are provided in Section III.B.

When the minimum operational requirements for use of inferred ratings have been satisfied, the bank would be permitted to assign the risk weight appropriate for the externally rated subordinated tranche to the unrated senior position. For example, if a bank invests in an unrated position that is senior in all respects to a mezzanine position rated Baa2 and the position has a maturity less than or equal to the externally rated subordinate tranche, then it may risk weight the unrated tranche as if its rating was also Baa2.

The inferred rating assigned to the unrated position would be affected by changes in the credit quality of the externally rated subordinate position. That is, if the external rating assigned to the subordinate position deteriorates, the bank must adjust the inferred rating and risk weight assigned to the senior position accordingly. For example, if the external rating on the mezzanine position referenced above declines from Baa2 to Baa3, the risk weight assigned to the unrated senior position would also have to reflect the Baa3 credit quality.

[5] An "inferred" rating is an assessment of a tranche's credit quality based on its seniority to a subordinated tranche, as well as the external rating assigned to that subordinated tranche.

If there is not an externally rated subordinate tranche, then the bank's investment in the unrated tranche must be treated like a first loss position and deducted from regulatory capital.

Investments in unrated structures

If banks invest in unrated structures and do not have the necessary information to calculate the IRB capital charge on the securitised assets, they will be required to deduct all tranches from regulatory capital. Deduction is appropriate given the absence of market information about these risk positions. For IRB banks that do have the necessary information to calculate the IRB capital requirement for the securitised assets and have IRB approval for that portfolio, the treatment outlined in Section III.A.2 would apply.

2. The Supervisory Formula: Treatment of Retained and Purchased Unrated Exposures

Overview

A supervisory formula has been developed for treating retained or purchased exposures in traditional and synthetic securitisations where an external or qualified inferred rating is not available. The applicability of the supervisory formula approach will depend primarily on the requirements for calculating the IRB capital charge for the underlying asset type.

It is proposed that the supervisory formula approach be applied to non-revolving securitisation structures, such as mortgage-backed securities[6] and collateralised debt obligations pending additional consultation with the industry. To use this approach, banks (originators, sponsors, investors, providers of credit enhancements, etc.) would at least have to qualify for the IRB approach for the underlying exposures. The rationale being that the supervisory formula approach relies on the IRB capital requirement for the securitised assets as a primary input. If the bank does not have sufficient information or approval to calculate the IRB capital charge for the securitised assets, then it would have to apply the treatment outlined in Section III.A.1.

The mechanics of the supervisory formula approach would be as follows. All unrated positions that absorb credit losses between zero and the IRB capital requirement on the securitised assets would be deducted from regulatory capital. For unrated tranches that exceed the IRB capital requirement, a formula is specified that produces a continuous set of risk weights based on the subordination level of the tranche and its relative size to the overall structure (see Annex 1 for a detailed discussion of the supervisory formula). When available, banks must rely on external ratings and qualified inferred ratings to override the supervisory formula when treating tranches beyond K_{IRB}. That is, the bank would have to look to the external rating or qualified inferred rating when risk weighting the tranche in accordance with the steps outlined in Section III.A.1.

Calculation of the reference capital level

To determine the capital requirement for an unrated tranche, the bank would first calculate the IRB charge on the underlying securitised assets. The IRB capital requirement is referred

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[6] It is recognised that some mortgage securitisations may be revolving and would, therefore, be treated according to Section III.A.3.

to as the "reference capital level" or K_{IRB}. Banks would be expected to recalculate K_{IRB} whenever the portfolio of securitised assets changes, for example, through replenishment provisions.

The reference capital level is dependent upon assumptions regarding the confidence level, loss given default and other parameters as set forth in the IRB framework. Accordingly, the Committee's on-going work to refine the internal ratings-based approach to credit risk has a direct impact on the IRB treatment of securitisations.

Treatment of capitalised future margin income and other capitalised credit enhancements

Calculation of the reference capital level would also be affected by capitalised excess spread and other forms of capitalised credit enhancements. This would include, for example, interest-only (I/O) strip receivables, spread accounts, cash collateral accounts, and similar assets that function as credit enhancements.

For clarification, an I/O represents interest in future excess cash flows. When the value of the I/O is capitalised it reflects the gain on sale of the securitised assets and increases the transferring bank's current period income and regulatory capital base. In other words, as a result of the securitisation, the originating institution's Tier 1 capital increases while its credit exposure effectively may remain constant through retained first loss positions.

In order to negate the artificial increase in capital, the Group is proposing that any capitalised future margin income or other capitalised credit enhancements associated with securitised assets be added to the underlying pool's reference capital level or K_{IRB}. Additionally, the bank would be required to treat the capitalised credit enhancement as a first loss position or falling within the revised K_{IRB} when applying the supervisory formula.

Application of the supervisory formula

After determining the IRB capital requirement on the securitised assets, the bank would order the various securitisation exposures for a given structure from most risky (e.g. subordinated) to the least risky (e.g. senior), which should be readily apparent from the transaction's structure and legal documentation. For example, as indicated above, banks would be required to treat capitalised future margin income as a first loss position. The reference capital level (K_{IRB}), the size of the bank's exposure and its relative subordination are entered into the supervisory formula provided in Annex 1 to obtain the amount of capital appropriate for the risk position. However, as indicated below, when a bank holds a position that is externally rated or is eligible for an inferred rating, the ABS risk weights discussed in Section III.A.1 would be applied.

Positions between zero and K_{IRB}

To minimise the potential for capital arbitrage vis-à-vis the IRB treatment of whole loans, originating banks would be required to deduct all positions, including the most subordinated tranches, or portions of such enhancements, that absorb credit losses between zero and K_{IRB}. For example, if the reference capital level is 3% on a $100 pool of assets, then securitised risk positions that absorb any of the first $3 of loss would be deducted from regulatory capital. This deduction treatment is consistent with the internal economic capital practices currently employed by many larger banks surveyed.

However, investing banks that have purchased risk positions between zero and K_{IRB} would be required to rely on external ratings when available for determining the capital requirement. This treatment for investing banks was thought to be appropriate given that they would not be involved in decisions pertaining to the size or external rating of credit enhancements. The

Group considered whether such an approach could be extended to originating banks, and concluded that it would be difficult to do so without potentially distorting bank behaviour as it pertains to credit enhancements.

- Should investing banks be permitted to rely on external ratings to override the deduction of positions that absorb losses between zero and K_{IRB}?
- Interested parties are asked to provide empirical evidence in support of any positions that may put forth for expanding such treatment beyond investing banks.

Positions in excess of K_{IRB}

Originating banks might retain and other banks may purchase positions that straddle the reference capital level. Such banks would be required to rely on the supervisory formula for determining the capital requirement on senior, unrated positions that lie beyond K_{IRB}. The supervisory formula would be calibrated to ensure that the capital requirement does not fall precipitously against the riskier tranches just beyond the reference capital level, so as to avoid cliff effects that could distort banks' behaviour.

Embedded in the supervisory formula is a premium factor of 0.2, which results in a capital charge equal to 20% of K_{IRB} against any unrated tranches exceeding the reference capital threshold. The following discussion illustrates the impact of the supervisory formula from the originating bank's perspective. Assume that the reference capital level is $3 on a $100 securitised asset pool and that the originating bank retains a $3.50 risk position. The bank would be required to hold a total of $3.34 on its $3.50 position. This is because the first $3 would be deducted from regulatory capital and $0.34 would be required on the $0.50 that exceeds the reference capital level when the supervisory formula is applied. Since the premium factor has a significant effect on the capital requirements generated by the supervisory formula, the Group is continuing to assess what level would be most appropriate.

In additional to the premium factor, a capital floor is also proposed for inclusion in the "supervisory formula" approach. The floor is meant to ensure that banks hold regulatory capital against exposures of the highest quality as they do involve some credit risk. Absent such a mechanism, the supervisory formula would produce a capital requirement of effectively zero, which would be inconsistent with the IRB treatment of other highly rated exposures. The Group intends to calibrate the floor following its consultation with the industry on the contents of this working paper.

Capital requirement for originating banks

The Group is seeking industry input on the amount of capital originating banks should be required to hold on retained positions. There are two reasons why a positive premium may be warranted for positions in excess of K_{IRB} held by originating banks. First, in the absence of any premium, retained positions exceeding K_{IRB} would incur, in effect, a zero capital requirement at the margin. Even if such positions are investment grade quality, they clearly involve some risk and some positive capital charge for these positions is warranted. Thus, in the above example a positive premium factor ensures that an originating bank providing $3.50 of first loss protection would incur at least some marginal capital requirement on the $0.50 of credit enhancement in excess of K_{IRB}.

Second, a positive premium factor would address concerns that in some circumstances the reference capital level associated with an underlying asset pool may be inadequate in light of factors not considered explicitly within the IRB approach for that asset type. For example, a pool of securitised loans could exhibit much higher default correlations or LGDs than is

assumed under the IRB approach. Broadly speaking, for a given pool, K_{IRB} is intended to approximate the credit enhancement that would be needed to achieve roughly a BBB rating on a senior ABS backed by those assets. In practice, since originators generally sell to investors all tranches that would qualify for an investment-grade rating, a retained position in excess of K_{IRB} could be interpreted as a market-based signal that K_{IRB} was underestimated. A positive premium factor could provide a method for recognising such market-based signals within the IRB treatment for ABS tranches. Specifically, a positive premium reduces the likelihood of capital arbitrage on asset pools where the reference capital levels may be too low. This could result in an originator creating very risky tranches (to be retained or sold to other banks) that, at the margin, would otherwise be subject to a zero or very low effective capital charge.

Alternatively, consideration is being given to limiting the amount of capital required of originating banks to K_{IRB}. This would require taking the position that the credit risk associated with the underlying assets does not increase from the originating bank's perspective as a result of the securitisation. Placing a cap on the amount of capital held by originating IRB banks would be consistent with the standardised proposal outlined in the January 2001 consultative package. Some industry participants have expressed the view that the IRB capital charge on retained risk positions should be capped at the reference capital level appropriate for the underlying asset pool. Therefore, they are not in favour of applying a capital premium to positions in excess of K_{IRB}.

- Please provide empirical evidence for requiring banks to hold capital in excess of K_{IRB}, or alternatively for capping the requirement at K_{IRB}.
- Interested parties are invited to provide quantitative data on existing securitisations for determining whether the required level of credit enhancements tends to exceed or be equivalent to K_{IRB} for the securitised assets.
- Given that the IRB approach to credit risk requires a minimum amount of capital for a risk position, interested parties are asked to provide their views on an appropriate level of the floor for the supervisory approach.
- Industry views are sought on the level of the premium factor (or β).
- The derivation of the supervisory formula presumes that the securitised pool of assets is highly granular. If the underlying pool of assets is not sufficiently granular, in the extreme, the resulting capital requirement may be much too low for risk positions beyond K_{IRB}. What might be an appropriate way of handling relative few underlying assets or pools of assets that are not granular?

Unrated exposures in externally rated securitisations

In a manner similar to that proposed for externally rated tranches, IRB banks would be required to apply a qualified inferred rating for treating unrated positions in excess of K_{IRB}. Where the bank satisfies the minimum operational requirements for relying on an inferred rating (see Section III.B), it would assign to the risk position the appropriate ABS risk weight outlined in Section III.A.1.

Otherwise, the bank would be required to apply the supervisory formula to the unrated position. This treatment differs from that of unrated tranches banks may purchase as investments when the banks do not have the necessary information to calculate K_{IRB}. In that case, absent a qualified inferred rating, the bank would be required to deduct the exposure. For banks that do qualify for the supervisory formula approach, the Group believes it is

appropriate to allow them to first calculate the IRB capital requirement for the underlying securitised assets, and then apply the supervisory formula for determining the regulatory capital charge on the retained unrated position. As noted, the level of the proposed floor will be an important consideration in determining the capital required under the supervisory approach.

Unrated securitisation structures

Banks, other than originators, with the necessary information to calculate the IRB capital requirement for the securitised assets would also be permitted to rely on the supervisory formula approach for unrated securitisation structures, where they have approval for the type of securitised portfolio concerned. Consistent with the method outlined above, purchased positions equal to or less than K_{IRB} would be deducted from regulatory capital. The capital requirement for ABS positions in excess of the reference capital level would be determined by the supervisory formula in the absence of an external rating or qualified inferred rating.

3. Treatment of Revolving Securitisations

Another important aspect of the proposal is the treatment of revolving securitisations, which usually contain early amortisation provisions that are triggered when the credit quality of the underlying assets deteriorate to a certain point. Discussions with internationally-active banks suggest that some maintain roughly the same amount of economic capital that would have been required had the assets, such as credit cards and commercial loan obligations, not been securitised. Thus, the Group is proposing to identify and, where appropriate, develop a treatment that is consistent with market practice provided it is risk sensitive. That is, an originating bank securitising assets in revolving transactions might be required to hold regulatory capital in an amount equal to K_{IRB} for the underlying asset pool under the assumption that this is an appropriate and well-accepted market practice.

- Interested parties are invited to comment on market practice related to the allocation of economic capital for revolving securitisations.
- Specifically, comments are encouraged regarding whether it is bank practice to hold the same amount of economic capital before and after assets are securitised in a revolving structure, and, if not, what level they do hold.
- Please discuss whether the economic capital treatment reflects the inclusion of early amortisation features or are there other characteristics motivating this treatment.

4. Liquidity Facilities Extended to Asset-Backed Commercial Paper Conduits

This section discusses the treatment of liquidity facilities extended to asset-backed commercial paper (ABCP) conduits. Liquidity facilities are not easily addressed within the context of the proposals for treating individual ABS tranches. This section begins with a discussion of the interplay between credit and liquidity enhancements in the context of an ABCP conduit, and is followed by a discussion of the capital treatment of liquidity facilities.

Interplay between credit and liquidity enhancements

The Group is considering the following attributes of liquidity facilities in developing a risk sensitive IRB capital treatment for them. ABCP programs are effectively funding vehicles set up by banks to provide their customers (entities that originate the assets) with a means of

accessing the capital markets. ABCP conduits issue commercial paper and use the proceeds to purchase assets (often short-term trade receivables) from customers of the bank sponsoring the program. To obtain high investment grade ratings on the issued commercial paper, an ABCP conduit is protected by several layers of credit and liquidity enhancements. It is only after the pool-specific credit and liquidity enhancements have been exhausted that the program-wide enhancements would come into play. As is the case at the pool level, a program-wide credit enhancement would be subordinate to a program-wide liquidity facility.

With regard to credit risk, the banks' customers usually provide the first loss protection for the underlying pool. This may be done by establishing a cash reserve; providing over collateralisation; or direct recourse back to the seller. The sponsoring bank sizes the seller provided credit enhancement so that its exposure arising from the pool-specific liquidity facilities is usually investment grade. As such, the credit enhancement is usually structured to cover a multiple of expected losses on the asset pool. Program-level credit enhancements are provided directly to the conduit, and are designed to repay the commercial paper by covering losses on all of the conduit's asset pools.

Liquidity facilities are an important structural feature in ABCP conduits because they ensure investors of timely payments on the issued asset-backed securities. This is done by smoothing differences in the timing of interest and principal payments on the pooled assets, and by ensuring that payments are made in the event of market disruptions. A pool specific liquidity facility is usually provided by the sponsoring bank to cover approximately 80 to 90 percent of the conduit's liquidity. This type of facility is not fungible and may not be used to provide liquidity support to other asset pools. Additionally, it is in an economic second loss position after the seller provided credit enhancements, since the conduit will most likely require the liquidity bank to purchase the asset pool if there has been unsatisfactory pool performance.

While the liquidity bank is exposed to the credit risk of the underlying asset pool, the risk is mitigated by the seller-provided credit enhancement and the "asset quality test", which generally precludes the purchase of defaulted or severely past due assets. At the time that the asset pool is put to the liquidity bank, the facility's "exposure at default" or EAD is effectively 100 percent because the liquidity bank will purchase the entire amount of the pool that qualifies under the asset quality test. Program-wide liquidity facilities differ in that they typically provide an additional layer of protection senior to that of pool-specific facilities in an amount sufficient to support 100 percent of the face amount of all the commercial paper issued by the conduit.

Capital treatment of liquidity facilities

In order to ensure that liquidity facilities have been established purely for liquidity purposes, IRB banks will be expected to satisfy the minimum requirements outlined in paragraph 534 of the New Basel Capital Accord. Where these conditions are met, the IRB bank may recognise the liquidity facility for regulatory capital purposes.

The Group is working to incorporate into the IRB treatment of securitisations a mechanism for assessing regulatory capital against liquidity facilities in a reasonably risk-sensitive manner. Although liquidity facilities do not tend to be externally rated, anecdotal evidence suggests that the market may be moving in this direction. If external ratings do become widely available, then it would be possible to rely on them as a basis for determining the capital requirement on liquidity facilities.

In the immediate term, one approach under consideration by the Group is to treat liquidity facilities using the supervisory formula approach developed for individual tranches, as outlined in Section III.A.2. This would require the bank to calculate the equivalent of a

reference capital level or K_{IRB} for the liquidity facility. Provided this can be done, it would follow that positions between zero and K_{IRB} could be deducted from regulatory capital, after giving credit for any amount of first loss protection provided by the seller of the assets. The supervisory formula could be applied to any portion of the liquidity facility that exceeded the reference capital level. The Group envisions that this treatment would be most applicable to pool specific liquidity facilities that are in an economic second loss position, as described in the previous section. Another option under consideration would be to treat liquidity facilities as commitments. This would require an assessment of a supervisory EAD measure, and a means of allocating the position to the supervisory risk weights (Section III.A.1) or using the supervisory formula (Section III.A.2).

The Group is also considering whether banks, subject to supervisory approval, could be allowed to assign an internal rating to second loss, pool-specific liquidity facilities in excess of K_{IRB}. If this option were pursued, the Group would need to establish minimum sound practice standards to ensure the robustness of banks' rating processes. Any criteria that supervisors develop for this approach should be at least as conservative as those used by the rating agencies. Supervisory validation would then focus on evidence to support a bank's claim that its internal rating process was at least as conservative as the criteria implicit in the external rating categories to which it maps its internal grades. Accordingly, banks providing the liquidity facilities would be expected to be able to explain how they assessed and validated the inherent risk in the underlying pools of assets and their risk position.

The Group will continue to explore these and other potential ways of treating liquidity facilities. Additional questions relating to ABCP programs that the Group intends to pursue include how to treat program-wide liquidity facilities and credit enhancements, which are senior to the pool-specific facility. Specifically, how should capital be assigned to these enhancements under the IRB approach to securitisation? In addition, how might internal ratings for program-wide liquidity facilities be recognised?

- Banks are invited to comment on potential ways of treating liquidity facilities in a risk sensitive manner under the IRB framework for securitisations. It would also be helpful to understand how banks are currently treating liquidity facilities for economic capital purposes.

5. IRB Treatment of Synthetic Securitisations

The IRB treatment of synthetic securitisations is outlined in Section IV.C. Consistent with the IRB approach proposed for traditional securitisations, it is proposed that eligible sponsoring banks will be required to rely on the supervisory formula when they have the information necessary to calculate the IRB capital requirement for the underlying assets. When this is not the case or when there is an external or qualified inferred rating on a position in excess of K_{IRB}, the supervisory risk weights outlined in Section III.A.2 must be applied.

6. Credit risk mitigation techniques

Banks will be permitted to apply to externally rated positions the methodology being developed for recognising credit risk mitigation techniques in the Foundation IRB approach. The same is true for tranches that are assigned a qualified inferred rating, and for those treated under the supervisory formula approach. Some of the questions the Securitisation Group is continuing to consider include how to recognise a credit risk mitigation technique absent a PD or LGD for an individual securitisation tranche. Additionally, the Group is exploring the extent to which a bank should be permitted to minimise its regulatory capital charge by relying on a recognised credit risk mitigant.

- From a risk perspective, would it make sense for an originating bank to recognise a credit derivative on a position that otherwise would be deducted absent such protection?

- Industry participants are invited to comment on how credit risk mitigants could be reasonably recognised within the proposed IRB securitisation framework.

7. Calibration of the IRB Treatment of Securitisations

In addition to the other questions in this working paper including those concerning the appropriateness of the ABS risk weights, and the capital requirement for originating banks, interested parties are invited to comment on the calibration of the IRB treatment of securitisations. The Group will continue its work aimed at setting the premium or β factor for use in the supervisory formula and the level of the floor for senior positions. Additionally, it will consider the incentives associated with calibrating the ABS risk weights relative to those for corporate exposures, as well as to the capital requirements produced under the supervisory formula approach. For example, one of the questions being considered is whether the capital requirements should provide banks with an incentive to obtain an external rating, or result in neutral capital charges across the IRB approaches outlined.

B. Operational Requirements

This section outlines operational requirements to be further developed in consultation with the industry for the IRB treatment of securitisations. All banks must satisfy the eligibility criteria, as well the requirements pertaining to the relevant types of securitisations.

Eligibility criteria

To be eligible for the IRB treatment of securitisations, banks must satisfy all of the conditions outlined by the Committee for entry and on-going use of the internal ratings-based approach for credit risk, as well as the minimum requirements outlined in Section III.B. Further, if a bank were permitted to rely on the IRB framework for setting minimum capital requirements for an exposure class, it would also be expected to employ the proposed IRB treatment for securitisations involving that asset type.

Traditional securitisations

The minimum operational requirements for achieving a “clean break” in the standardised approach to securitisations will also apply to the IRB treatment of traditional securitisations. As mentioned in Section II of this working paper, the Group is further considering the clean break criteria in light of the comments received from the industry on the January 2001 consultative package.

Synthetic securitisations

The Group is recommending that IRB banks must satisfy a set of minimum operational requirements for recognising any regulatory capital benefit from synthetic securitisations. Where these conditions are not met, the bank may not recognise the transaction for regulatory capital purposes. The operational requirements outlined in Section IV of this

working paper for synthetic securitisations are aimed at ensuring an effective transfer of risk has taken place, and that such structures are subject to the proper degree of market discipline. They differ from the "clean break" criteria to be applied to traditional securitisations, given that in a synthetic securitisation the assets remain on the sponsoring bank's balance sheet and risk transference is achieved through the use of credit derivatives.

Operational requirements for inferred ratings

IRB banks may rely on inferred ratings provided all of the following conditions are met. Where these conditions are met, IRB banks purchasing securitisation exposures would look to the inferred rating as a proxy for an external rating and apply the appropriate ABS scaling factor and risk weight. Otherwise, the investing bank would be required to deduct the unrated position from regulatory capital. The Group is also proposing to allow IRB banks that qualify for the supervisory formula approach to rely on inferred ratings for treating positions in excess of K_{IRB}.

(a) Banks may only rely on an inferred rating if the unrated tranche is part of a transaction that contains externally rated tranches.

(b) The securitisation transaction must be subject to market discipline through the issuance of a significant amount of externally rated exposures to the capital markets, which are subordinate in all respects to the unrated position in question. That is, the credit risk associated with the externally rated positions must be transferred to more than one counterparty.

(c) The exposures issued to the market must be rated by a minimum of two eligible ECAIs.

(d) As referenced in (b), there must be a significant externally rated position subordinate in all respects to the unrated tranche.

(e) The maturity of the subordinate, externally rated position must be equal to or longer than that of the unrated senior position.

(f) The inferred rating assigned to unrated tranches in accordance with conditions (a) through (e) above are to reflect changes in the credit quality of the externally rated subordinated position. That is, if the external rating assigned to the subordinated position deteriorates, the bank must adjust the inferred rating and risk weight assigned to the senior position accordingly.

Treatment of liquidity facilities

In order to ensure that liquidity facilities have been established purely for liquidity purposes, IRB banks are expected to satisfy the minimum requirements found in paragraph 534 of the New Basel Capital Accord of the January 2001 consultative package. As stated, the Securitisation Group is continuing to explore alternatives for treating liquidity facilities. Depending on the outcome of this work, the Group may look to develop additional operational requirements for these exposures.

Disclosure requirements

Banks would be expected to satisfy the disclosure requirements pertaining to asset securitisations. See the September 2001 Working Paper on Pillar 3 - Market Discipline for a discussion of the proposed disclosure requirements for securitisations.

IV. Treatment of Synthetic Securitisations

A. Background

A supervisory concern with synthetic securitisations is the relative ease with which they permit banks to transfer the credit risk associated with higher quality assets while remaining exposed to those of higher risk. Banks have been able to structure synthetics in a shorter amount of time and in a less costly manner than traditional securitisations. The Group has considered these factors in developing the proposal outlined below. In the context of this working paper, the term "sponsoring bank" refers to the bank in a synthetic securitisation that retains the assets on its balance sheet and transfers the credit risk associated with the specific pool to third parties.

In a synthetic securitisation[7], the bank retains the underlying assets on its balance sheet but uses credit derivatives to transfer part of the credit risk associated with the specific pool of assets to third parties. As in traditional securitisations, the resulting credit exposures have different levels of seniority. In the most commonly issued structures to date, those that are partially funded, the sponsoring bank retains the subordinated securitisation piece. The mezzanine tranches are sold to third party investors, and the bank retains the most senior tranche, which is typically unrated. Alternatively, the bank may sell the senior most position in an unfunded form to a third party. In an unfunded transaction, the credit risk associated with the mezzanine tranche would be transferred to third parties through credit derivatives. The standardised treatment of synthetic securitisations is described next, followed by a description of the IRB treatment.

B. Standardised Treatment of Synthetic Securitisations

The standardised treatment described below is meant to be consistent with the Basel Committee's objective of providing banks with capital incentives to move from the standardised to the IRB approaches. The sponsoring bank would be required to fully deduct the retained subordinated tranche from regulatory capital, as is required for other types of credit enhancements. To minimise regulatory capital on the underlying assets, the bank may look to recognise the funds received from the sale of the mezzanine tranches as collateral. For example, the sponsoring bank may invest the proceeds in high-quality government securities and, in turn, look to recognise these securities as collateral. Alternatively, it may simply look to the cash proceeds from the sale of the credit linked notes as collateral for the

[7] The following definition is proposed for distinguishing synthetic securitisations from traditional structures and from credit derivatives. *Synthetic securitisation refers to structured transactions in which banks use credit derivatives to tranche the credit risk of a specified pool of assets and subsequently transfer it to third parties. The transfer may be either funded or unfunded. The pool of assets is not removed from either the sponsoring bank's balance sheet or its recorded banking book exposures.*

assets retained on balance sheet. The Group is considering the provisions a bank would have to satisfy in order to recognise the collateral for regulatory capital purposes.

A key question for consideration is how the sponsoring bank should treat the retained unrated senior position, as seen in synthetic securitisations issued to date. The Group concluded that in order to obtain capital relief on the unrated senior retained piece, banks must be able to demonstrate that they have credible internal processes for evaluating the effect of synthetic securitisations on their overall credit risk exposure. In the New Basel Capital Accord, the definition of a credible internal process for evaluating banks' risk exposures is embodied in the minimum operational and disclosure requirements of the Foundation IRB approach. With this in mind, the Group believes that only foundation IRB banks should be permitted to assess the credit quality of these unrated senior pieces without having to purchase additional credit protection. In other words, foundation IRB banks will be able to rely on an inferred rating provided certain conditions are met for evaluating the credit quality of this retained position, as outlined in Section IV.C.

Standardised banks, on the other hand, would be precluded from looking to an inferred rating for determining the capital charge on the retained unrated senior piece, and as a result would have to purchase a credit derivative in order to obtain any capital relief. The remainder of this section focuses on the treatment of synthetic securitisation under the standardised approach. Key elements of this approach include that the bank would be required to deduct from capital first loss positions, as well as buy external protection on any retained senior pieces that are not externally rated. Minimum operational requirements are also provided.

1. Standardised Capital Treatment

The Group is proposing to require standardised banks to satisfy the operational requirements outlined in Section IV.B.2. Where these criteria are met, the following treatment would apply. Where these conditions are not met, banks would be required to treat the underlying assets as if they were not subject to a synthetic securitisation.

Subordinated positions

Banks that hold the most subordinated positions in a synthetic securitisation will be required to deduct them from regulatory capital. This is consistent with the standardised treatment outlined in the January 2001 consultative package for both unrated and subordinated positions held in traditional securitisations.

Mezzanine positions

To ensure that there is sufficient market discipline, banks will be required to issue materially all of the mezzanine positions to more than one industry participant, and the mezzanine positions must be rated by a minimum of two eligible ECAIs. Where these conditions are met, sponsoring banks may recognise eligible collateral held against mezzanine tranches issued to investors.

Eligible collateral would include proceeds from the sale of the mezzanine tranches that banks may invest in highly rated government securities. Sponsoring banks may also look to the cash proceeds from the sale of the credit linked notes as collateral held against the underlying assets retained on balance sheet. In recognising eligible collateral, banks would be required to apply the credit risk mitigation framework under development by the Basel Committee's Capital Group. That said, the Group is proposing to exempt from the proposed haircut requirement collateral in the form of highly-rated government securities denominated

in the same currency as the securitisation exposure. The Group reasons that requiring the application of haircuts to these collateral types may introduce undue complexity relative to the prudential benefit gained.

Banks will be required to treat mezzanine positions not covered by eligible credit risk mitigation techniques as if they were uncovered exposures. Positions that are not externally rated would be treated accordingly. That is, banks would be required to deduct them from regulatory capital.

Unrated senior retained positions

Sponsoring banks would be allowed to retain the most senior unrated position in a synthetic securitisation. As previously mentioned, banks may only reduce their regulatory capital requirements if such exposures are covered by eligible credit risk mitigation techniques. For example, the bank could reduce its regulatory capital requirement by purchasing a credit derivative.

2. Operational Requirements

In evaluating the attributes of synthetic securitisations, the Group is of the view that the following operational and disclosure criteria should be satisfied in order for a standardised bank to engage in synthetic securitisations. The operational requirements are aimed at ensuring that such securitisations result in an effective transfer of risk, and are subject to the proper degree of market discipline.

(a) The transaction shall comply with the requirements set forth in paragraphs 117 through 127 of the New Basel Capital Accord of the January 2001 consultative package. These requirements include robust risk management, direct, explicit, unconditional and irrevocable protection, and other requirements specific to credit derivatives.

(b) The synthetic securitisation must be subject to market discipline through the issuance of a significant amount of externally rated exposures to the capital markets, meaning that the credit risk must be transferred to more than one counterparty.

(c) The exposures issued to the market must be rated by a minimum of two eligible ECAIs.

(d) Retained senior unrated tranches will not benefit from capital relief unless external protection is obtained either from a recognised protection provider as defined in paragraph 129 of the New Basel Capital Accord, or is in the form of recognised collateral (see paragraphs 68 through 79 of the New Basel Capital Accord). As mentioned, the Group will continue to consider how best to recognise credit risk mitigation techniques within the securitisation framework.

(e) Where the transaction is conducted with credit linked notes, the Group is considering the minimum requirements for recognising the risk transference.

(f) The remaining maturity of the subordinated position must be equal to longer than that of the unrated senior position.

(g) The treatment of maturity mismatch is another area where the Group is continuing its work.

(h) Sponsoring banks must not reassume any credit risk associated with positions issued to the market from the investors through the issuance of another credit derivative or any other means;

(i) The structure should not contain terms or conditions that would limit the credit protection provided against the underlying assets, such as:

- Credit performance contingent clauses, e.g. early amortisation features, that would minimise the amount of explicit credit enhancements provided;
- Clauses to remove assets from the reference portfolio in order to improve the credit quality of the pool, including substitution due to re-negotiation of the terms of the original contract;
- An increase in the retained first loss in reference portfolio, which would increase the size of the first loss position after inception of the transaction; and
- Any other terms in the contract that would lead to a reduction in the degree of credit protection provided by investors in the synthetic securitisation.

(j) A legal opinion is required to ensure that the synthetic securitisation structure transfers the risk for consideration by the banking supervisor and market participants.

(k) With respect to disclosure, banks would be expected to satisfy the requirements pertaining to asset securitisation. See the September 2001 Working Paper on Pillar 3 – Market Discipline for a discussion of the disclosure requirements proposed for asset securitisations.

C. IRB Treatment of Synthetic Securitisations

The IRB treatment outlined in Section III also applies to synthetic securitisations. It is proposed that external ratings and qualified inferred ratings will be used where possible for determining the IRB capital requirement, as discussed in Section III.A.1. In line with the treatment for traditional securitisations, it is proposed that originating banks would be required to deduct all positions, regardless of whether they are rated, that fall within K_{IRB}. Where there are no external or qualified inferred ratings and the bank has the necessary information to calculate K_{IRB}, as well as approval to do so for the underlying portfolio of securitised assets, the supervisory formula may be used; otherwise the unrated risk positions would be deducted from regulatory capital.

1. IRB Capital Treatment

Investments in synthetic securitisations

For investments in synthetic securitisations, IRB banks would look to the external rating on purchased tranches for determining the appropriate capital requirement. Such banks may also look to a qualified inferred rating on a purchased unrated position in an externally rated structure, provided the conditions outlined in Section III.B are satisfied. When all of the minimum requirements for an inferred rating have been satisfied, the bank would be permitted to assign the risk weight appropriate for the externally rated subordinated tranche to the unrated position; otherwise purchased unrated positions in synthetic securitisation structures would be deducted from regulatory capital.

Banks that have purchased an unrated position in an unrated synthetic securitisation may also look to the supervisory formula, provided they have the necessary information to calculate the IRB capital requirement for the securitised assets, and the approval to do so for the type of securitised portfolio concerned. Consistent with the supervisory formula approach outlined in Section III.A.2, purchased positions equal to or less than K_{IRB} would be deducted from regulatory capital. The capital requirement for ABS positions in excess of the reference capital level (or K_{IRB}) would be determined by the supervisory formula in the absence of an external rating or qualified inferred rating.

Retained positions in synthetic securitisations

As outlined in Section III.A.2, sponsoring banks with the necessary information to calculate the reference capital level for the underlying assets would deduct retained risk positions that fall between zero and K_{IRB}. For unrated positions beyond the reference capital level, banks would be permitted to rely on the supervisory formula, provided an external or qualified inferred rating is not available.

Based on the synthetic structures issued to date, this treatment would most likely apply to the most senior position, which tends to be unrated and retained by the sponsoring bank. Where the bank satisfies the conditions for relying on an inferred rating, it would assign to the associated risk position the ABS risk weight outlined in Section III.A.1.

As mentioned previously, the Group is continuing to consider how best to recognise credit risk mitigation techniques in the context of synthetic securitisations. This would apply, for example, when the risk is transferred through an unfunded credit derivative. In the IRB approach for corporate exposures, banks would seek to adjust the PD to account for the credit derivative as specified in the January 2001 consultative paper. For collateral, an adjustment would be made to the LGD for a given borrower's exposure. As banks will not be permitted to estimate these risk components for individual securitisation tranches, an alternative treatment is being developed.

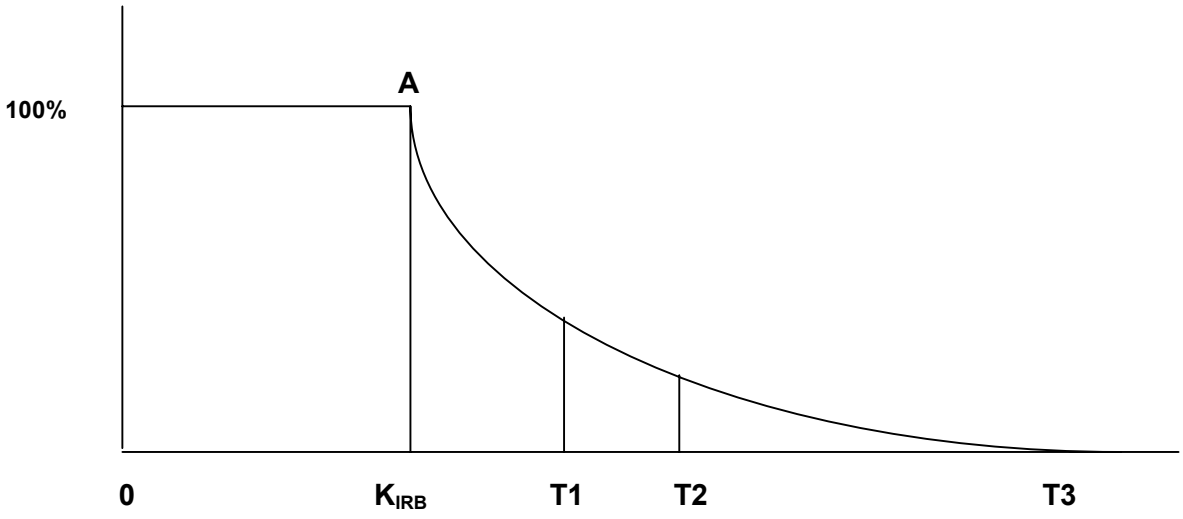
2. Operational Requirements

The Group is proposing that IRB banks satisfy the minimum operational requirements specified for standardised banks in Section IV.B.2, with one exception. As discussed, IRB banks will not be required to purchase credit protection on retained unrated positions to avoid having to deduct the exposure from regulatory capital. Rather they will be permitted to rely on a qualified inferred rating or the supervisory approach where applicable, as discussed in previous sections of this working paper.

Annex 1

The Supervisory Formula

The supervisory formula is based on a curvilinear function for deriving the capital requirement on risk positions that exceed the "reference capital" level (or K_{IRB}) on the securitised asset pool. As noted, the supervisory formula is only available to banks that are able to calculate the IRB capital on the securitised asset pool, as if it the assets had not been securitised, in accordance with the requirements set forth in the January 2001 consultative paper.



Subordination Level of the Securitised Tranches

This diagram depicts the marginal capital requirement produced by the supervisory formula for a securitisation tranche of $1 with a specified subordination level. The area under the curve denoted as (0, K_{IRB}, 100%, A) represents the reference capital level calculated for the securitised asset pool. Beyond the reference capital level, T_N identifies the borders of the securitised tranches in order of subordination, with tranche (K_{IRB}, T_1) subordinate to tranche (T_1, T_2).

Banks would be required to deduct from regulatory capital all first loss positions and/or credit enhancements equal to the reference capital level. For more senior tranches (those assumed to be of higher credit quality), the capital requirement declines. To avoid cliff effects, the supervisory formula produces a continuous set of capital requirements based on K_{IRB} for the securitised assets, the size of the securitised tranche, its relative subordination, and a premium factor. The following equation is proposed for setting the required capital levels.

(1) Required Capital beyond K_{IRB} = $(1/\delta [e^{(Kirb - T1)\delta} - e^{(Kirb - T2)\delta}]$

where:

T1 = lower bound of the securitised tranche;
T2 = upper bound of the securitised tranche;
K_{IRB} = reference capital level on the underlying pool;
β = premium factor; and
δ is set so that $1/\delta [1 - e^{(Kirb - 1)\delta}] = \beta K_{IRB}$.[8]

The value of δ ensures that the total capital charge allocated across all tranches equals 1+ β times the reference capital level (or K_{IRB}), where β is the assumed premium. An important question under consideration concerns the appropriate size of the premium to be used in determining the capital requirement on securitisation tranches.

The following is an example of how capital requirements are assigned to securitisation tranches assumed by originating or certain third party providers of credit enhancements. Consider the following transaction[9] involving a $150 million multi-class residential mortgage-backed securitisation.

Tranche	External credit rating	Size ($ millions)	Enhancement %[10]
A	AAA	139.1	7.25
B	AA	5.3	3.75
C	A	2.6	2.00
D	BBB	1.2	1.20
E	BB	0.7	0.75
F	B	0.4	0.50
G	Unrated	0.7	0.00

For illustrative purposes, we assume that the IRB capital charge (or K_{IRB}) against the underlying securitised mortgage pool is 0.75 percent, or $1.1 million, a figure broadly consistent with the IRB approach's implicit 0.5 percent bank insolvency standard, which corresponds to roughly a BBB- credit rating. In using the supervisory formula to calculate the capital requirement on tranche E, the tranche is assumed to be unrated and:

β = 0.05

K_{IRB} = 0.0075

T1 = 0.0075 (lower bound or credit enhancement level for tranche E)

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[8] In the above formula, T1, T2, K_{IRB}, and the required capital for a securitisation tranche are measured relative to the pool size as decimals. For example, K_{IRB} would be measured as 0.05 or a 5 percent capital requirement. The lower (T1) and upper (T2) bounds of a securitisation tranche represent the percentage of credit enhancement levels bounding the risk position being evaluated, and are expressed as percentages.

[9] The size and structure of the transaction reflect that of Chase Mortgage Finance Trust, Series 1999-AS2, which was described by FITCH IBCA on June 14, 1999. That said, assumptions concerning the IRB capital requirement, the premium factor, and the capital charge resulting from the supervisory formula should in no way be viewed as actual, but rather were derived by the Securitisation Group for illustrative purposes only.

[10] The enhancement percentages do not correspond exactly with the size of the tranches due to rounding error.

T2 = 0.012 (upper bound or credit enhancement level for tranche D)

δ = 2666.669 (implicit derivation)

Capital per tranche per dollar of pool size:

= $(1/2666.669)\ [e^{(0.0075 - 0.0075)2666.669} - e^{(0.0075 - 0.012)2666.669}]$

= $0.000375[e^{0} - e^{-12.0000105}]$

= 0.000375[1 - 0.000006144]

= 0.000375

The capital per tranche per dollar of the pool size is 0.000375. To translate this figure into a risk weight, it should be multiplied by 100 and then divided by the difference of the upper bound and the lower bound, as illustrated below. This amount represents the capital per dollar of tranche size and should be divided by 0.08 to obtain the risk weight as a percentage.

Supervisory RW = [0.000375 * 100 / (0.012 – 0.0075)]

= 8.3333 / 0.08

= 104.17%

After applying the supervisory risk weight to the tranche size of $700,000, the resulting capital requirement is approximately $58,300 for the BB rated tranche E. The percentage of capital required on the tranche is derived by dividing the dollar amount of capital required for the given securitisation tranche by its size. In the previous example, the capital requirement for the BB rated tranche is approximately $58,300. Divided by the size of the tranche ($700,000), this yields a capital requirement of approximately 8.33%, which corresponds to a risk weight of approximately 104 percent.

The amount of required capital increases with larger values of β. For instance, if β were increased to 0.1, then the capital assessment would rise to approximately $116,300 with an implied risk weight of 208%. Table 1 below summarises the implied capital charge for the BB rated tranche for values of β between 0.05 and 0.2. It assumes that risk positions in an amount equal to K_{IRB} will be deducted from regulatory capital. Use of the supervisory formula presents a number of implementation considerations, including how to address situations where a portion of a retained tranche exceeds K_{IRB}.

Table 1[11]

Securitisation of residential mortgages

(K_{IRB} on securitised pool estimated at $1.1 million)

In the following example, the originating bank retains the unrated tranche, as well as the tranche F. As the sum of the two tranches is equal to reference capital level for the securitised assets, the bank would be required to deduct these positions. As discussed in Section III.A.2, the Group is proposing to incorporate a capital floor in the supervisory formula approach. It would apply to highly rated securitisation positions, so as to be consistent with the IRB treatment of other high quality exposures.

Securitisation		**β = 0.05**		**β = 0.08**		**β = 0.1**		**β = 0.2**	
Tranche	**Size (millions)**	**Effective RW (%)**	**Capital ($)**	**Effective RW (%)**	**Capital ($)**	**Effective RW (%)**	**Capital ($)**	**Effective RW (%)**	**Capital ($)**
A	139.1	Negligible	-	Negligible	-	Negligible	-	Negligible	-
B	5.3	Negligible	-	Negligible	-	Negligible	-	Negligible	-
C	2.6	Negligible	-	Negligible	-	Negligible	-	0.026%	$54
D	1.2	**Negligible**	-	**0.0519%**	$49.78	**0.029%**	$279	**11.61%**	$11,148
E	0.7	**104%**	$58,333	**167%**	$93,282	**208%**	$116,377	**396%**	$221,716
F[12]	0.4	**Deduct**	$400,000	**Deduct**	$400,000	**Deduct**	$400,000	**Deduct**	$400,000
G	0.7	**Deduct**	$700,000	**Deduct**	$700,000	**Deduct**	$700,000	**Deduct**	$700,000

[11] When Beta increases, the required IRB capital requirement does not increase proportionally. Instead, the capital requirement for the more senior tail tranches increases at a greater rate than the charge for the tranches just beyond the asset pool's IRB capital requirement because the capital charge assessed against these less senior tranches are closer to 100 percent.

[12] If the reference capital level had been less than $1.1 million, the originating bank would have applied risk weights produced by the supervisory formula.

Annex 2

Mechanics of the IRB Treatment of Securitisations

This annex employs a number of examples for illustrating the mechanics of the IRB treatment of securitisations. The IRB approach to securitisation is dependent upon several factors, namely the internal ratings-based methodologies under development for treating corporate, retail and other exposures, and how the reference capital level (K_{IRB}) relates to market estimates of the risk in these structures. Accordingly, the examples should be regarded as purely illustrative. The examples show how the proposed approach would be implemented when K_{IRB} and the credit enhancements have broadly similar levels, as well as when the credit enhancement is less than or greater than K_{IRB}.

The mechanics of the IRB treatment are primarily discussed in the context of two residential mortgage-backed securitisations. The attributes of the structure referenced in scenarios 1 through 3 examples are provided below. For this hypothetical transaction, the IRB capital charge on the underlying securitised mortgage pool is assumed to be $1.1 million or 0.75% of the notional amount of the securitisation. The Securitisation Group cautions that the proposed amount of K_{IRB} and ABS risk weights referenced throughout the following examples should not be viewed as final. As discussed, these elements are dependent upon additional work underway by the Basel Committee to refine the IRB risk weight functions for different types of exposures.

Characteristics of the Mortgage-Backed Securitisation (Scenarios 1 to 3)

Tranche	External credit rating	Size ($ millions)	Enhancement (% of structure)
A	Aaa	139.1	7.25%
B	Aa2	5.3	3.75%
C	A2	2.6	2.00%
D	Baa2	1.2	1.20%
E	Ba2	0.7	0.75%
F	Unrated	1.1	0.00%

In the first scenario, all of the tranches purchased by investing banks are externally rated. Another assumption is that the originating bank retains the first loss position and is the only entity with the information necessary to calculate K_{IRB} for the securitised assets. In the second scenario, the assumptions are altered such that both the originating bank and a third party investor are able to calculate K_{IRB}. Additionally, tranche E is assumed to be unrated. The third scenario is based on the assumption that the originating bank retains risk positions E&F, which exceed the IRB capital requirement on the underlying assets.

Scenarios 4 and 5 are also based on a hypothetical residential mortgage-backed securitisation. This time K_{IRB} has been estimated on the basis of an assumed expected loss (EL) of 24 basis points and a loss given default (LGD) of 30%. Based on these parameters, the IRB charge (or K_{IRB}) for the underlying securitised mortgage pool is estimated at 2.705 percent, or $37.28 million. This capital requirement was calculated using the risk weight formula provided in the January 2001 consultative package.

Characteristics of the Mortgage-Backed Securitisation (Scenarios 4 & 5)			
Tranche	**External credit rating**	**Size ($ millions)**	**Enhancement (% of structure)**
A	AAA	1,248.0	9.43%
B	AA	47.2	6.00%
C	BBB	64.8	1.30%
D	Unrated	18.0	0.00%

Scenario 6 compares the capital requirements resulting from application of the ABS risk weights and the supervisory formula approach based on a number of limiting assumptions. The final scenario, scenario 7, illustrates the IRB treatment of a revolving securitisation containing an early amortisation provision. In this case, the originating bank has capitalised future margin income, which, in accordance with Section III.A.2, would be added to regulatory capital requirement for the revolving asset pool.

Scenario 1: Tranches Held by Investors are Externally Rated

For illustrative purposes only, assume that the originating bank retains the first loss position (tranche F) and tranches A through E are separately owned by different third-party banks. The unrated tranche retained by the originating bank, which equals the reference capital level, is deducted from capital. For the externally rated positions, the ABS risk weights outlined in Section III.A.1 are applied.

Table 2

			1988 Accord		**Revised Standardised Approach**		**IRB Treatment for Securitisation**	
	Tranche (Rating)	**Size of Tranche**	**Risk Weight**	**Capital Charge**	**Risk Weight**	**Capital Charge**	**ABS RW**	**Capital Charge**
Originating Bank	F (Unrated)	$1.1mm	Deduct	$1,100,000	Deduct	$1,100,000	Deduct	$1,100,000
Investing Banks	E (Ba2)	0.70	100%	56,000	150%	84,000	313%	175,280
	D (Baa2)	1.2	100%	96,000	100%	96,000	73%	70,080
	C (A2)	2.6	100%	208,000	50%	104,000	19%	39,520
	B (Aa2)	5.3	100%	424,000	20%	84,800	14%	59,360
	A (Aaa)	139.1	100%[13]	11,128,000	20%	2,225,600	14%	1,557,920
Systemic Capital Charge				$13,012,000		$3,694,400		$3,002,160
Capital Charge for the Non-securitised Asset Pool				$6,000,000		$6,000,000		$1,100,000

[13] Currently, in the US, a "look-through" approach would permit banks to assign to the most senior tranche the 50% risk weight appropriate to the underlying residential mortgage pool. Accordingly, under the 1988 Accord, tranche A would have a capital charge of $5,564,000 and the systemic capital charge would be $7,448,000.

Scenario 2: Application of the Supervisory Formula to Unrated Tranches

In this scenario, tranche E is considered to be an unrated position held by a third party bank. To be able to rely on the supervisory formula, it is assumed that the third party bank has the information necessary to calculate the IRB capital requirement on the securitised assets, and is relying on the IRB approach for determining the capital requirements for the asset type. As discussed in Section III.A.2, the supervisory formula would calculate a factor that when multiplied by the pool size of $150 million gives the dollar amount of capital necessary for tranche E, i.e. $213,752 in capital.[14] The $213,750 of capital maintained against the $700,000 tranche E is approximately a 30.5 percent capital charge (213,752 / 700,000 = 0.305), which when divided by 8% yields a risk weight of approximately 381 percent.

Table 3

			1988 Accord		Revised Standardised		IRB Treatment	
	Tranche	**Size of Tranche**	**RW**	**Capital Charge**	**RW**	**Capital Charge**	**ABS RW**	**Capital Charge**
Originating Bank	F (unrated)	$1.1 mm	Deduct	$1,100,000	Deduct	$1,100,000	Deduct	$1,100,000
Third-party Bank with necessary information to calculate K_{IRB}	E (Unrated)	0.70	100%	56,000	Deduct	700,000	381% (derived – supervisory formula)	213,752
Investing banks								
	D (Baa2)	1.2	100%	96,000	100%	96,000	73%	70,080
	C (A2)	2.6	100%	208,000	50%	104,000	19%	39,520
	B (Aa2)	5.3	100%	424,000	20%	84,800	14%	59,360
	A (Aaa)	139.1	100%[15]	11,128,000	20%	2,225,600	14%	1,557,920
Systemic Capital Requirement				$13,012,000		$4,310,400		$3,040,632
On-Balance Sheet Capital Requirement				$6,000,000		$6,000,000		$1,100,000

A premium factor of 0.2 is assumed for the supervisory formula used in these examples. Since the level of the premium factor has a significant effect on the capital requirements generated by the supervisory formula, its size will need to be further considered. For instance, in the example above, if the premium factor were 0.15 instead of 0.2, the implied risk weight for tranche E would decline to 295.7 percent with an associated capital charge of $165,600.

[14] The factor that is calculated represents the fractional amount of capital for the specific tranche per dollar of the asset pool. In other words, the factor in this case is 0.001425, which means that 0.1425 percent of each dollar of the $150 million in securitised assets represents tranche E's capital requirement, when aggregated.

[15] As noted in footnote 13, currently, in the U.S., a "look-through" approach would permit banks to assign to the most senior tranche the 50% risk weight appropriate to the underlying residential mortgage pool. Accordingly, under the 1988 Accord, tranche A would have a capital charge of $5,564,000 and the systemic capital charge would be $7,448,000.

Scenario 3: Supervisory Formula Applies to Originator's Positions in Excess of K_{IRB}

In this scenario, the assumption is made that the originating bank retains tranches F and E, and that both are unrated. Additionally, this example assumes that the capital requirement for the originating bank is not capped at K_{IRB}. The bank would deduct the first loss position in an amount equal to the IRB capital requirement on the underlying pool ($1.1 million), which is equivalent to tranche F. The supervisory formula would be used in determining the capital requirement on tranche E because it exceeds the reference capital level, and does not qualify for an inferred rating.

Table 4

			Revised Standardised		IRB Treatment	
	Tranche	**Size**	**Risk Weight**	**Capital Requirement**	**ABS RW**	**Capital Requirement**
Originating Bank	F (Unrated)	$1,100,000	Deduct	$1,100,000	Deduct	$1,100,000
	E (Unrated)	$700,000	Deduct	700,000	381% (derived – supervisory formula)	213,752
Total Capital Charge				$1,800,000		$1,313,752

Scenario 4: Tranches Held by Investors are Externally Rated

This scenario is based on the second residential mortgage securitisation outlined at the beginning of this annex. As with the first scenario, assume that the originating bank retains the first loss position (tranche D) and tranches A through C are separately owned by different banks. The unrated tranche retained by the originating bank ($18 million) is less than the reference capital level of $37.28 million. Therefore, in this case, the originating bank must deduct less than K_{IRB}.[16] The banks investing in externally rated positions are to apply the ABS risk weights outlined in Section III.A.1.

Table 5

			1988 Accord		Revised Standardised Approach		IRB Treatment for Securitisation	
	Tranche (Rating)	**Size of Tranche ($mm)**	**Risk Weight**	**Capital Charge ($mm)**	**Risk Weight**	**Capital Charge ($mm)**	**ABS RW**	**Capital Charge ($mm)**
Originating Bank	D (unrated)	18.00	Deduct	18.00	Deduct	18.00	Deduct	18.00
Investing Banks	C (BBB)	64.80	100%	5.18	100%	5.18	73%	3.78
	B (AA)	47.20	100%	3.78	20%	0.76	14%	0.53
	A (AAA)	1248.00	100%	99.84	20%	19.97	14%	13.98
Systemic Capital Charge				126.80		43.91		36.29
Non-securitised Asset Pool Capital Charge				55.12		55.12		37.28

[16] The Group is still developing an approach for considering how to ensure that capital deductions are maintained in the banking system where the first loss position is transferred to another bank using credit risk mitigation techniques.

Scenario 5: Application of the Supervisory Formula to Unrated Tranches

In this scenario, tranche C is no longer assumed to be BBB rated. Instead, it is an unrated position retained by the originator. Additionally, in this example, the originator's capital requirement is not capped at K_{IRB}. Given that a portion of tranche C ($64.80 million) straddles K_{IRB} ($37.28 million), the first $19.28 million is deducted from capital while the remaining $45.52 million is subject to the supervisory formula. A premium factor of 0.2 is assumed. As the structure does not contain an externally rated tranche subordinate to tranche C, a rating cannot be inferred for this risk position.

Had the bank been able to satisfy the minimum requirements for assigning an inferred rating, it would have been required to calculate an ABS risk weight for the $45.52 million portion of tranche C in a manner consistent with that outlined in Section III.A.1. As noted, the Group is still considering the treatment of positions between first loss and K_{IRB} that are held by third-party banks with the information necessary to calculate the reference capital level for the underlying assets.

Table 6

			1988 Accord		Revised Standardised		IRB Treatment	
	Tranche (rating)	**Size of Tranche ($mm)**	**RW**	**Capital Charge ($mm)**	**RW**	**Capital Charge ($mm)**	**ABS RW**	**Capital Charge ($mm)**
Originating Bank	D (unrated)	18.00	Deduct	18.00	Deduct	18.00	Deduct	18.00
	C (unrated)	64.80	Deduct	64.80	Deduct	64.80	Deduct	19.28
							204%	7.43
Investing banks	B (AA)	47.20	100%	3.78	20%	0.76	14%	0.53
	A (AAA)	1248.00	100%	99.84	20%	19.97	14%	13.98
Systemic Capital Requirement				186.42		103.53		59.22
On-Balance Sheet Capital				55.12		55.12		37.28

Scenario 6: Comparison of the ABS Risk Weights and the Supervisory Formula

A slight modification to the structure employed in scenarios 4 and 5 is considered in scenario 6. The structure is assumed to be a synthetic securitisation. The original $1,248 million tranche A has been divided into two tranches, a super senior position of $832 million and an AAA-rated component (tranche A) of $416 million. It is assumed the super senior tranche would qualify for an inferred rating of AAA, and, therefore, would attract a capital charge based on the appropriate ABS risk-weight of 14% (see Section III.A.1). The reference capital level on the underlying pool is $37.28 million as before. This means that tranche C, assumed to be unrated, straddles K_{IRB}, with $19.28 million falling below the reference capital level when the tranches are arranged in increasing order of seniority. Therefore, it would be deducted.

Tranche	External credit rating	Size ($ millions)	Enhancement (% of structure)
Super Senior	(inferred rating: AAA)	832.00	39.62
A	AAA	416.00	9.43
B	AA	47.20	6.00
C	Unrated	64.80	1.31
D	Unrated	18.00	0.00

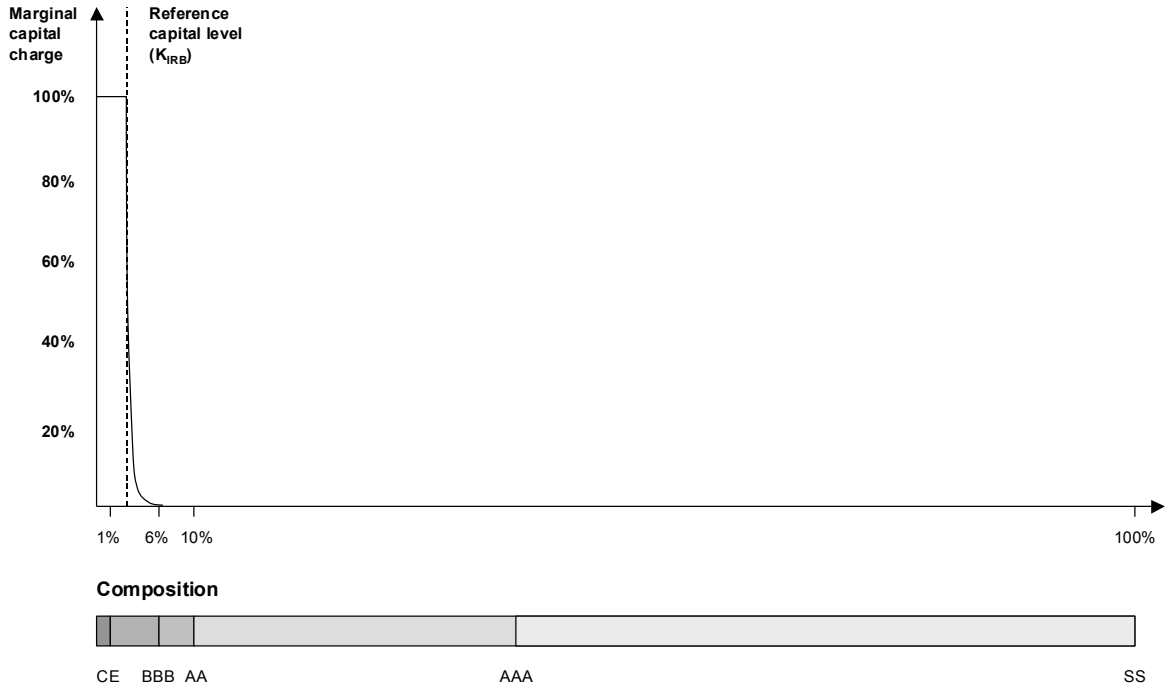
Assume that the bank retains the assets on balance sheet and transfers the credit risk to third parties. It is also assumed to retain the first loss position (tranche D), with third-party investing banks holding the super senior tranche through tranche C. For comparison purposes, also assume that the investing banks have sufficient information to calculate the reference capital level and are therefore able to use the supervisory formula. As discussed, the treatment of positions between first loss and K_{IRB} held by third party banks remains under discussion.

Beyond K_{IRB}, investing banks would apply the ABS risk weights outlined in Section III.A.1 to positions that are externally rated or whenever a rating could be inferred. However, in this scenario, because there is not an externally rated risk position subordinate to tranche C, it would have to be deducted assuming that this example strictly represents application of the ABS risk weights. The resulting capital requirements are listed in the first column (ABS risk weights). If a rating could not be inferred, the supervisory formula would be adopted, producing the per tranche capital charges in the second column (Supervisory formula). The final column lists the capital requirement based on the supervisory formula for a portion of tranche C ($45.52) and the ABS risk weights for those external rated tranches or positions that qualify for an inferred rating.

Table 7

			ABS risk weights (illustrative)		Supervisory formula (illustrative)		IRB Treatment	
	Tranche (rating)	Size of Tranche ($mm)	RW	Capital Charge ($mm)	RW	Capital Charge ($mm)	ABS RW	Capital Charge ($mm)
Originating Bank	D (unrated)	18.00	Deduct	18.00	Deduct	18.00	Deduct	18.00
Third-party Bank with necessary information to calculate K_{IRB}	C (unrated)	19.28	Deduct	19.28	Deduct	19.28	Deduct	19.28
	C (unrated)	45.52	Deduct	45.52	204%	7.43	204%	7.43
	B (AA)	47.20	14%	0.53	<1%	0.02	14%	0.53
	A (AAA)	416.00	14%	4.66	Negligible	0.00	14%	4.66
	Super Senior (inferred AAA)	832.00	14%	9.32	Negligible	0.00	14%	9.32
Systemic Capital Requirement				97.31		44.73		59.22
On-Balance Sheet Capital (K_{IRB})				37.28		37.28		37.28

As discussed in Annex 1, If the supervisory formula is applied, the capital requirement across all tranches in excess of K_{IRB} is equal to (1+β) times the reference capital level. However, the distribution is such that a very small amount of capital is spread over the most senior tranches, as illustrated below. For this reason, the Group is proposing a capital floor for inclusion in the supervisory formula approach to ensure that banks hold regulatory capital against exposures of the highest quality, as they do involve some credit risk.



Use of qualified inferred ratings also addresses this problem by ensuring the capital requirement for highly rated securitised tranches is consistent with the IRB treatment of similar rated exposures. For example, the supervisory formula implies a capital charge of just $16,618 on tranche B, while the AA rating ensures the actual capital requirement is $530,619. However, the Group is still considering the treatment of mezzanine positions where it is not possible to infer a rating.

Scenario 7: Capital Requirement for Revolving Securitisations

This scenario discusses the possible treatment of revolving securitisations, which typically include early amortisation features, as outlined in Section III.A.3. An originating bank securitising assets through such a structure might be required to hold regulatory capital equal to K_{IRB} for the underlying asset pool, under the assumption that this is an appropriate and well-accepted market practice. With this in mind, the scenario is based on a revolving securitisation where $20 billion of credit card receivables are held in a master trust. The originating bank has a 20% beneficial interest in the trust (seller's interest) and investors holds the remaining 80% (investor's interest). That is, the originating bank effectively owns $4 billion of credit card receivables, which is carried on its balance sheet and assessed a capital requirement. The remaining $16 billion of receivables was securitised and removed from the originating bank's balance sheet. The bank has recorded an asset (e.g. an interest-only strip receivable) representing the net present value of excess margin income equal to

1% of the amount of the off-balance sheet credit card receivables, or $160,000,000. In addition, assume that the IRB capital charge on the $20 billion of credit card receivables is 3.0%, or $600,000,000. The IRB capital charge reflects both the on-balance sheet drawn amount and the off-balance sheet commitments.[17]

Table 8 (thousands)

			1988 Accord		Revised Standardised		IRB Treatment	
	Position Held	**Dollar Amount**	**RW**	**Capital Charge**	**RW**	**Capital Charge**	**ABS RW**	**Capital Charge**
Originating Bank	On-balance sheet credit cards	$4,000,000	100%	$320,000	100%	$320,000		$600,000
	Booked excess margin income	$160,000	N/A	N/A	Deduct	160,000		160,000
	Off-balance sheet securitised cards	$16,000,000	N/A	N/A	Convert at 10%, RW of 100%	128,000		
Capital Charge				$320,000		$608,000		$760,000
Investing Banks	Tranche B (Baa2)	$1,500,000	100%	120,000	100%	120,000	73%	87,600
	Tranche A (Aaa)	$14,500,000	100%	1,160,000	20%	232,000	14%	162,400
Systemic Capital Requirement				$1,600,000		$960,000		$1,010,00[18]
On-Balance Sheet Capital Charge				$1,600,000		$1,600,000		$600,000

[17] This is consistent with the treatment of off-balance sheet commitments specified in the IRB approach.

[18] In comparing this amount to the capital charge if no transaction had been undertaken, it should be noted that the bank's capital base has been increased by the amount of booked excess margin income. The net difference between the two situations is thus overstated by $160,000,000.