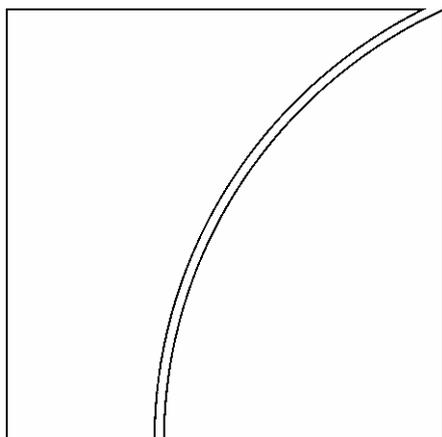


Basel Committee on Banking Supervision



Changes to the Securitisation Framework

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BANK FOR INTERNATIONAL SETTLEMENTS

Table of contents

Introduction	1
1. Treatment of unrated positions.....	1
(a) Introduction of an Internal Assessment Approach	2
(b) Simplification of the Supervisory Formula	2
(c) Revisions to the top-down approach for calculating K_{IRB}	3
2. Consistency within the securitisation framework.....	4
(a) Consistency between SF and RBA	4
(b) Consistency between the treatment of originating and investing banks	4
3. Treatment of rated positions.....	5
4. Implications of calibrating risk weights to UL only	7
5. Additional considerations	8
Annex A: Draft Operational Requirements for the Internal Assessment Approach to Securitisation Exposures	9
Annex B: Derivation of the Simplified Supervisory Formula (Simplified SF).....	12

Changes to the Securitisation Framework

Introduction

In response to public comments on the third consultative paper (CP3) of the New Basel Accord, the Basel Committee on Banking Supervision announced in October 2003 plans to revise the internal ratings-based (IRB) approach to securitisation exposures.

At its January 2004 meeting, the Committee specified changes that address industry concerns related to the complexity of the securitisation proposal and the operational burden related to its implementation. Additionally, the Committee focused on industry comments regarding the need for greater internal consistency among the proposals comprising the securitisation framework.

This note provides an overview of the Committee's current thinking on how the securitisation framework for banks that adopt the internal ratings-based (IRB) approach to credit risk will be re-structured. The Committee is simplifying the securitisation framework and promoting greater consistency among the available approaches in the following manner:

- First, the Committee is planning to adopt a treatment for certain low-risk unrated positions that more closely reflects leading banks' current risk management practices. To this end, the Committee is introducing an Internal Assessment Approach (IAA) for banks' exposures to Asset-Backed Commercial Paper (ABCP) conduits, based on methodologies that banks in some jurisdictions currently use for internal purposes.
- Second, the Committee will make available simpler alternatives to the Supervisory Formula (SF) presented in CP3 for the treatment of unrated positions, which some respondents considered to be unnecessarily complex and computationally burdensome.
- Third, the Committee is considering ways to add flexibility to the top-down approach to calculating capital charges on purchased receivables so as to facilitate the calculation of K_{IRB} , where K_{IRB} is the capital charge that would have been applied to the underlying exposures had they not been securitised.
- Fourth, all externally rated positions will be treated under the Ratings-Based Approach (RBA), regardless of whether the bank is an originator or an investor and whether the position falls above or below the " K_{IRB} " threshold.
- Finally, the lowest set of risk weights under the RBA (found in the left-most column of the RBA risk weight tables in CP3) will be applied to "senior" positions rather than to those that are "thick" positions as defined in CP3. Some changes to the risk weights are also proposed.

This note also discusses the implications of calibrating risk weights to unexpected losses (UL) only. It should be noted that the Committee's discussions are still on-going and that the approaches presented here are thus still subject to review.

1. Treatment of unrated positions

The SF described in CP3 was developed to address unrated exposures, including those to ABCP conduits. Initial industry reactions to the SF focused on its complexity and associated

computational burden. Furthermore, industry participants questioned the consistency of the SF with banks' current risk management practices. After evaluating these comments and conducting additional analysis of its own, the Committee is introducing the following alternatives in lieu of the SF approach contained in CP3. It is likewise making modifications to the calculation of K_{IRB} .

(a) Introduction of an Internal Assessment Approach

The Committee is introducing an internal assessment approach (IAA) for determining capital charges for liquidity facilities and credit enhancements that banks (including third-party banks) extend to ABCP conduits. The IAA would be applicable only to exposures to ABCP conduits that have an internal rating equivalent of investment-grade at inception. It would not be available beyond this limited scope.

The IAA is intended to simplify the treatment of banks' exposures to ABCP conduits by aligning the determination of regulatory capital requirements more closely to banks' internal risk management practices for such exposures. Subject to a set of operational standards, banks would derive their internal assessments of such exposures based on rating agency criteria for the asset type purchased by the conduit, including those criteria pertaining to the amount of seller-provided credit enhancement needed to achieve a given rating equivalent. Those operational requirements for the IAA that are currently under consideration are outlined in Annex A. The notional amount of the exposure would then be assigned the risk weight corresponding to the position's seniority (and granularity) and external rating equivalent under the RBA.

Many banks in a number of jurisdictions have indicated that they already rate internally their exposures to ABCP conduits in a manner consistent with credit rating agencies' methodologies as part of their internal risk management and economic capital practices. Consequently, they believe that they would likely be able to comply with one of the principles of the New Accord that banks should already be using advanced methodologies for risk management practices before they are permitted for regulatory capital purposes (the "use test" specified in the New Accord). In addition, since one jurisdiction has implemented a similar treatment in its current risk-based capital requirements, the methodology is familiar to a number of leading banks. Some industry representatives also suggest that they would support the use of an internal assessments approach in the New Basel Accord.

(b) Simplification of the Supervisory Formula

The Committee is proposing to simplify the SF presented in CP3. This Simplified SF would be made available to all unrated exposures including liquidity facilities and credit enhancements extended to ABCP conduits. The new formula is based on four bank-supplied inputs: (1) the capital charge that would be applied had the assets not been securitised, or K_{IRB} ¹; (2) the degree of credit enhancement supporting a given position (L); (3) the thickness of the exposure in question (T); and (4) the effective number of exposures in the securitised pool (N).

¹ As in CP3, K_{IRB} will continue to be defined as the sum of expected losses (EL) and unexpected losses (UL). This topic is addressed further in this note's discussion of the implications of calibrating risk weights to UL only (section 4).

In contrast to the SF discussed in CP3, the simplified version would not result in different capital requirements in cases where two pools may have the same K_{IRB} , but different exposure-weighted average LGDs. Accordingly, this eliminates that average as an input to the Simplified SF. Moreover, the Simplified SF would be computationally less complex than the formula provided in CP3. The formula would be expressed in a single algebraic equation as follows:

$$\text{Risk Weight} = \frac{1}{I+1} \times \sum_{i=0}^I \left(\frac{12.5 \times K_{irb}}{L + T \times \frac{i}{I}} \times \left(\frac{1 - L - T \times \frac{i}{I}}{1 - K_{irb}} \right)^{2\sqrt{N}} \right)$$

Where **I+1** is the number of reference points (“I” represents the number of subdivisions of the tranche in question and “i” represents the individual reference points) and **I** and **i** are integers with $I \geq 1$ and $i \geq 0$.

The Committee is currently considering whether to assign a “cap” to the maximum value for N, as discussed below. The derivation of the Simplified SF is explained in Annex B to this note.

The Committee intends for the Simplified SF to approximate the SF formula presented in CP3, subject to the Committee’s plans to modify the “tau” parameter in the original SF from 1,000 to a value of approximately 75, as discussed in section 2(a) below. The Committee’s preliminary studies of the Simplified SF suggest that the resulting risk weights are likely to be generally equivalent to, or somewhat higher than, those generated by the SF outlined in CP3 using the revised value for tau. The Committee is concerned that for very large numbers of N, the Simplified SF could generate much lower capital charges than the CP3 version for mezzanine positions lying just above K_{IRB} . At the same time, the Committee would like to avoid creating unreasonably high capital charges. The Committee is evaluating whether this issue is material for actual transactions and whether a cap on the maximum value of N would be the best way to alleviate these concerns.

With regard to finding a replacement for the original SF, the Committee is aware that, after the publication of its press release in October 2003, some industry participants have stated that they believe that the model underlying the SF specified in CP3 is conceptually sound. Consequently, some institutions have indicated that they would prefer to retain the original SF if the alternative would result in a less risk sensitive and more conservative treatment. The Committee is exploring how widespread this view is and whether the original SF proposed in CP3 (subject to certain modifications discussed below) would be preferable to the Simplified SF described in this note.

(c) Revisions to the top-down approach for calculating K_{IRB}

Market participants raised concerns about their ability to calculate K_{IRB} , an input to all variants of the SF, especially for exposures subject to the “top-down” IRB approach outlined in CP3. Banks have indicated that applying the SF to such exposures is onerous and that the risk weights applicable under CP3 tend to be overly conservative. In part, these shortcomings reflect the inability of many banks to meet the operational standards set out in CP3 for decomposing their expected loss estimates into reliable PD and LGD components. As a result, they would be required under CP3 to assign an LGD of 100% to such exposures.

In response to those comments, the Committee is planning to develop less restrictive operational criteria for allowing banks to rely on their own LGD estimates when applying the top-down approach to determine K_{IRB} for securitisation exposures, particularly for exposures to ABCP conduits. The operational criteria that are being developed are intended to ensure reliable and prudent outcomes and are intended to be broadly consistent with those for the IAA where appropriate.

Banks have also presented arguments and supporting evidence that the capital charges for dilution risk proposed in CP3 are excessive. The Committee intends to address these concerns through additional measures.

First, the New Accord will be revised to recognise that the same loss cannot be attributed to dilution and to default risk simultaneously. The Committee will seek to prevent the double-counting of capital charges. Second, the Committee is considering ways to address findings provided by banks indicating that, in the context of dilution risk, CP3's proposal to apply a 100% LGD and the corporate asset correlation assumptions produced capital charges that are too high. Third, the Committee will clarify that a refundable purchased discount is a fully funded guarantee on a first loss tranche.

2. Consistency within the securitisation framework

The Committee has sought to address public concerns expressed about the need for greater consistency within the securitisation framework. Some suggested that the results of the various approaches should be made more consistent to avoid favouring one approach over another. Other respondents asked the Committee to eliminate the difference in treatments available to originating versus investing banks.

(a) Consistency between SF and RBA

Supervisors and some banks noted during consultations the need to ensure more consistent results in the risk weights applied to similar securitisation exposures regardless of the approach that is used. As noted above, the Committee recognises the interest of some market participants to retain the original SF. If the original formula were retained, it would require modifications similar to those incorporated into the simplified SF to ensure consistency. One such change could involve reductions in the so-called tau parameter found in the formula presented in CP3.

The SF presented in CP3 is based on a single risk factor model while the RBA risk weights were validated using a two-factor model. From subsequent research carried out by member agencies, it has become clear that this difference could be addressed by adjusting the level of tau. Rather than using a tau level of 1,000 as in CP3, a tau level in the vicinity of 75 is likely to make the risk weights generated by the SF more consistent with that under the two-factor model used for the calibration of the RBA. Thus, if the Committee decides to revert to the use of the SF as in CP3, it is likely to set tau at a value near 75 and not at 1,000.

(b) Consistency between the treatment of originating and investing banks

Additionally, the Committee decided to enhance consistency within the IRB securitisation framework by eliminating differences in the treatment of securitisation exposures held by originators and investors. In CP3, originating banks were required to deduct all positions (whether externally rated or unrated) that fell below K_{IRB} . Under the change adopted by the

Committee, originators would be permitted to apply the RBA risk weights to all rated positions even if they fall below the K_{IRB} boundary. This treatment may also be referred to as an “external rating override.” The cap on an originating bank’s maximum capital requirement will remain in place.

The change described above responds to comments made by the industry that the risk associated with a given position is not dependent upon the holder of such a position. In making this change, the Committee reaffirms the importance of external ratings as a market signal of the inherent risk of a given securitisation exposure when a position is externally rated (whether rated explicitly or whether the rating can be inferred) or when it is subject to the IAA. The Committee views the change as an important simplification to the IRB securitisation framework.

To avoid inconsistency in the New Accord’s approaches to securitised versus unsecuritised assets, the Committee reaffirms the importance of a significant credit risk transfer as outlined in relevant sections of CP3 for an originating bank to be allowed to use the securitisation framework in any form to determine its capital requirements.

3. Treatment of rated positions

In response to industry views, the Committee agreed on changes to the RBA to better align those risk weights with the level of risk inherent in securitisation exposures. As noted in CP3, the RBA applies to externally rated positions as well as to those positions for which an inferred rating would apply. The RBA would also be used for mapping internal assessments under the IAA to capital charges.

(a) Greater focus on seniority

The first revision will change the focus of the exposures eligible for the lowest set of risk weights (found in the left-most column of the RBA risk weight tables in CP3) from the concept of “thickness” toward “seniority.” This modification reflects suggestions from the industry that the RBA framework could be simplified, with little or no loss of risk sensitivity, by changing the eligibility for the preferential risk weights to senior tranches, as there would be no need to calculate a position’s relative seniority (the Q parameter). Analyses conducted by the Committee confirm this result.

The Committee recognises that this change may disqualify some of the thick and granular tranches from the use of the most preferential risk weights compared to the criteria proposed in CP3. The Committee is currently evaluating the implications of this change on various securitisation exposures, including super-senior positions arising from synthetic structures.

(b) Enhance sensitivity to risk of highly-rated exposures

In addition to expanding the eligibility for preferential risk weights, the Committee will further differentiate between the most preferential risk weights.

As illustrated in the table below, separate risk weights would be specified for (1) senior, granular tranches; (2) non-senior, granular tranches (the “Base Case”); and (3) tranches backed by non-granular pools. Except where indicated by text within double-lined boxes, the risk weights under the alternative RBA risk weight scheme would be the same as those proposed in CP3.

Alternative RBA Risk Weights

Rating Grade (Illustrative)	CP3 Risk Weights (%)			Alternative Risk Weights (%)		
	Highly-granular pools, thick tranches ²	Base Case	Non-granular Pool	Senior Tranches and eligible senior IAA	Base Case	Non-granular Pool
Aaa	7	12	20	7	12	20
Aa	10	15	25	8	15	25
A1	20		35	10	18	35
A2				12	20	
A3				20	35	
Baa1	50			35	50	
Baa2	75			60	75	
Baa3	100			100		
Ba1	250			250		
Ba2	425			425		
Ba3	650			650		
Below-Ba3	Deduction			Deduction		

For purposes of the RBA, a securitisation exposure will be treated as a senior tranche if it is effectively backed or secured by a first claim on the entire amount of the assets in the underlying securitised pool. While this generally will include only the most senior position within a securitisation transaction, in some instances there may be some other claim that, in a technical sense, may be more senior in the waterfall (e.g., a swap claim) but will be disregarded for the purpose of determining which positions are subject to the “senior tranches” column.

Examples:

- (a) In a typical synthetic securitisation, the “super-senior” tranche would be treated as a senior tranche, provided that all of the conditions for inferring a rating from a lower tranche are fulfilled.
- (b) In a traditional securitisation where all tranches above the first-loss piece are rated, the most highly rated position would be treated as a senior tranche. However, when there are several tranches that share the same rating, only the most senior one in the waterfall would be treated as senior.
- (c) Usually a liquidity facility (LF) supporting an ABCP program would not be the most senior position within the program; the commercial paper, which benefits from the liquidity support, typically would be the most senior position.

However, if the liquidity facility is sized to cover all of the outstanding commercial paper, it is conservative to view the most senior LF as covering all losses on the

² See paragraph 585 of CP3 for the definition of this category.

underlying receivables pool that exceed the amount of overcollateralisation/reserves provided by the seller. (This is conservative because in most cases the LF is not obliged to cover losses arising from receivables that default prior to the LF being drawn upon.) In this context, it is conservative to treat the LF as if it represents a senior position in a hypothetical securitisation of the underlying receivables pool, with the LF's credit enhancement level equal to the seller-provided overcollateralisation/reserves and its exposure measured as the amount of commercial paper outstanding. Thus, use of the left-most RBA risk weights is reasonable for such positions.

On the other hand, if a liquidity or credit enhancement facility constituted a mezzanine position in economic substance rather than a senior position in the underlying pool, then the "Base Case" risk weights would be applicable for positions treated under the IAA.

Under the alternative Base Case, the risk weights for the new A1, A2 and A3 bands would be 18%, 20% and 35%, respectively, resulting in somewhat higher capital charges on average than under CP3. For senior tranches, risk weights over the A and Baa grades would be about half those for the Base Case.

The Basel Committee intends to retain the floor of a 7% risk weight (or, in other words, a 56 basis point capital charge), since subsequent research has provided no persuasive evidence that any different floor is appropriate.

The Committee has furthermore considered, but rejected, suggestions from some industry representatives to differentiate RBA risk weights by asset type. In particular, some respondents to CP3 asked that RBA risk weights should be distinguished for corporate, residential mortgage-backed securities, and retail exposures. In arriving at this decision, the Committee has concluded that, for a given rating category, available evidence does not provide an adequate basis for assigning different capital charges to securitisation exposures based solely on the composition of the underlying asset pool. Consequently, the Committee does not believe that creating additional risk weight tables based on asset type would improve materially the RBA's overall sensitivity to risk.

4. Implications of calibrating risk weights to UL only

The Committee has considered the implications for the securitisation framework of calibrating the overall regulatory risk weight framework to UL only. Among the different possibilities, the Committee has sought to propose the simplest way to distinguish between UL and EL in securitisation exposures to minimise the computational burden. Consistent with the analytical framework underpinning the SF, the K_{IRB} input will continue to be measured as the sum of the UL and EL portions of credit risk associated with the underlying exposures had they not been securitised. Since a calculation of EL is still required for on-balance sheet credit exposures under the UL-only framework, the Committee believes that this interpretation will not increase operational burdens on banks.

Simulations suggest that the proportion of the EL portion of the capital charges in more senior securitisation tranches tend to be very small relative to UL. Consequently, the Committee does not think that the added complexity of decomposing the risk weights into the EL and UL portions would increase risk sensitivity. Thus, for positions rated no lower than Ba3 or higher, and for unrated positions above K_{IRB} , the Committee proposes to treat the capital requirements as fully representing capital against UL.

For positions treated under the RBA that are below Ba3, and for other positions that fall below K_{IRB} , the Committee suggests maintaining the proposed treatment of deduction. In addition, deduction of the whole amount of K_{IRB} from capital should be considered the maximum capital requirement regardless of whether the position is below or above K_{IRB} and regardless of whether it is rated or unrated. The Committee is reviewing the treatment of credit-enhancing interest-only strips (I/Os) to determine whether all of these should be deducted from capital and to what degree such deductions should be subject to the maximum capital charge of K_{IRB} .

When there is a requirement to deduct a position related to a securitisation exposure, this deduction should be carried out first and before the calculation of the overall excess/shortfall of provisions. Only specific provisions set aside against securitisation exposures, if any, can be used to offset this deduction amount. Banks would not be permitted to use additional specific provisions set aside against securitisation exposures in excess of the deduction amount when computing the overall excess/shortfall of provisions.

5. Additional considerations

The Committee recognises that, by its very nature, securitisation relates to the transfer of risks associated with the credit exposures of a bank to other parties. In this respect, securitisation is important in helping to provide better risk diversification and to enhance financial stability. The securitisation framework and its capital impact for originating banks are premised on the expectation that securitisation is used to transfer significant levels of credit risk. Supervisors are considering ways to monitor securitisation transactions to ensure this is the case. As noted in CP3, supervisors will evaluate transactions based on their economic substance as part of their review process to ensure that the capital requirements for securitisation transactions reflect risk appropriately.

Annex A

Draft Operational Requirements for the Internal Assessment Approach to Securitisation Exposures

I. Operational Requirements for use of the Asset-Backed Commercial Paper Program Internal Assessment Approach (IAA)

1. An asset-backed commercial paper (ABCP) program is a program that issues commercial paper with an original maturity of one year or less that is backed by assets or other exposures held in a bankruptcy-remote, special purpose entity. A bank that provides liquidity facilities and/or credit enhancements to an ABCP program may use its internal assessments of its exposures to the program to determine their IRB capital requirements. Such exposures typically are of high credit quality. A bank's internal assessment process must meet the following operational requirements in order to use internal assessments in determining the IRB capital requirement arising from liquidity facilities, credit enhancements, or other exposures extended to an ABCP program, with the exception of the commercial paper itself. The ABCP must be externally rated for the unrated exposure to qualify for the IAA. These ABCPs themselves would be subject to the Ratings-Based Approach (RBA). In addition, banks must adhere to any other applicable supervisory guidance related to ABCP programs.

- (a) The internal assessment of a liquidity facility or credit enhancement's credit quality must be based on an external credit assessment institution's (ECAI) criteria for the asset type purchased and must be the equivalent of at least investment grade when initially assigned to an exposure. In addition, the internal assessment must be used in the bank's internal risk management processes, including management information and economic capital systems, and generally must meet all the relevant requirements in order to be eligible for use under the IRB framework.
- (b) In order for banks to use the IAA, their supervisors must be satisfied (1) that the ECAI meets the ECAI eligibility outlined in the New Basel Capital Accord and (2) with the ECAI rating methodologies used in the process. In addition, banks have the responsibility to demonstrate to the satisfaction of their supervisors how these internal assessments correspond with the ECAI standards used as the framework for use of this internal assessment approach.

For instance, when calculating the credit enhancement level in the context of the IAA, supervisors may, if warranted, disallow on a full or partial basis any seller-provided recourse guarantees or excess spread, or any other first loss credit enhancements that provide limited protection to the bank.

- (c) The bank's internal assessment process must identify gradations of risk. Internal assessments must correspond to the external ratings of ECAs so that supervisors can determine which internal assessment corresponds to each external rating category of the ECAs.
- (d) The bank's internal assessment process, particularly the stress factors for determining credit enhancement requirements, must be at least as conservative as major ECAs' published rating criteria for the asset type being purchased by the ABCP program.

- In the case where different ECAIs' benchmark stress factors require different levels of credit enhancement to achieve the same external rating equivalent, the bank must apply the ECAI stress factor that would require the most conservative or highest level of credit protection. For example, if one ECAI required 2.5 to 3.5 times historical losses for an asset type to obtain a single A rating equivalent and another required 2 to 3 times historical losses, the bank must use the higher range of stress factors in determining the appropriate level of seller-provided credit enhancement.
 - A bank cannot utilise an ECAI's rating methodology to derive an internal assessment if the ECAI's process or rating criteria is not publicly available.
- (e) Internal or external auditors, or an ECAI, must perform regular reviews of the internal assessment process and the validity of the internal assessments of the credit quality of the bank's exposures to an ABCP program.
- (f) The bank must track the performance of its internal ratings over time to evaluate the performance of the assigned internal assessments and make adjustments, as necessary, to its assessment process when the performance of the exposures routinely diverges from the assigned internal assessments on those exposures.
- (g) The ABCP program must establish credit and investment guidelines, i.e., underwriting standards, for the ABCP program. In the consideration of an asset purchase, the ABCP program (i.e., the program administrator) should develop an outline of the structure of the purchase transaction. Factors that should be discussed include the type of asset being purchased; type and monetary value of the exposures arising from the provision of liquidity facilities and credit enhancements; loss waterfall; and legal and economic isolation of the transferred assets from the entity selling the assets.
- (h) A credit analysis of the asset seller's risk profile must be performed and should consider, for example, past and expected future financial performance; current market position; expected future competitiveness; leverage, cash flow, and interest coverage; and debt rating. In addition, a review of the seller's underwriting standards, servicing capabilities, and collection processes should be performed.
- (i) The ABCP program's underwriting policy must establish minimum asset eligibility criteria that, among other things,
- excludes the purchase of assets that are significantly past due or defaulted;
 - limits excess concentration to individual obligor or geographic area; and
 - limits the tenor of the assets to be purchased.
- (j) The ABCP program should have collections processes established that considers the operational capability and credit quality of the servicer. The program should mitigate to the extent possible seller/servicer risk through various methods, such as triggers based on current credit quality that would preclude co-mingling of funds and impose lockbox arrangements that would help ensure the continuity of payments to the ABCP program.
- (k) The aggregated estimate of loss on an asset pool that the ABCP program is considering purchasing must consider all sources of potential risk, such as credit and dilution risk. If the seller-provided credit enhancement is sized based on only credit-related losses, then a separate reserve should be established for dilution risk,

if dilution risk is material for the particular exposure pool. In addition, in sizing the required enhancement level, the program should review several years of historical information, including losses, delinquencies, dilutions, and the turnover rate of the receivables. Furthermore, the ABCP program should evaluate the characteristics of the underlying asset pool, e.g., weighted average credit score, identify any concentrations to an individual obligor or geographic region, and the granularity of the asset pool.

- (l) The ABCP program must incorporate structural features into the purchase of assets in order to mitigate potential credit deterioration of the underlying portfolio. Such features may include stop-issuance triggers that immediately cease the issuance of commercial paper to the market or wind down triggers.
- (m) The notional amount of the liquidity facility or credit enhancement must be assigned to the risk weight in the RBA appropriate to the credit rating equivalent assigned to the sponsoring bank's exposure.
- (n) If a bank's internal assessment process is no longer considered adequate, the bank's supervisor may preclude the bank from applying the internal assessment approach to its ABCP exposures, both existing and new originated, for determining the appropriate capital treatment until the bank has remedied the deficiencies. In this instance, the bank must revert to the Simplified SF or, if not available, to the fallback option described in CP3.

Description of the Calculation of the Capital Requirement

//. ABCP programme exposures

1. A bank is able to use its internal assessments of the credit quality of the exposures the bank extends to ABCP programmes, i.e., liquidity facilities and credit enhancements, if the bank's internal assessment process meets the operational requirements in Section / above. Internal assessments of exposures provided to ABCP programs must be mapped to equivalent external ratings of an ECAI. Those rating equivalents are to be used to determine the appropriate risk weights under the RBA for purposes of assigning the notional amounts of the exposures.

Annex B

Derivation of the Simplified Supervisory Formula (“Simplified SF”)

To incorporate risk sensitivity, the derivation of the Simplified SF relies first on slicing securitisation exposures into infinitesimally thin tranches (“ITTs”) and then continues to use a basic mathematic tool for simplicity.

First, set a unique risk weight for each ITT.

$$\text{Risk factor}(L) (= \text{Risk weight for each ITT given } K_{IRB}) = \frac{12.5 \times K_{irb}}{L}$$

This implies that the risk weight for each ITT declines as the credit enhancement level (L) increases or as K_{IRB} decreases.

The risk-weight can also be considered ‘conservative’ because it represents the maximum risk-weight for an ITT, i.e. it reflects the amount of credit risk inherent in the underlying assets if they had been distributed on a pro rata basis. Otherwise, the risk-weight of an ITT should be lower.

Using *Risk factor* (L) alone may be unrealistically conservative: for example, a risk weight at the most senior ITT is still equal to $12.5 \times K_{irb}$, which represents the average risk-weight of underlying assets. However, the most senior ITT will default only if all of the underlying assets default simultaneously with $LGD = 100\%$, which is very unlikely to happen. This outcome becomes even less probable as the number of assets in the underlying pool (N) increases.

To reduce the conservatism and make it more realistic, one could introduce a discount factor for each ITT ($= \text{Discount factor}(L, N)$), which is done below using two parameters, L and N , that have impact on *Risk factor* (L).

$$\text{Discount factor}(L, N) = \left(\frac{1-L}{1-K_{irb}} \right)^{2\sqrt{N}}$$

In the equation above, N represents the effective number of exposures in the underlying pool³.

Using this *Discount factor* (L, N), the risk-weight of ITT (above K_{IRB}) is

$$\frac{12.5 \times K_{irb}}{L} \times \text{Discount factor}(L, N) = \frac{12.5 \times K_{irb}}{L} \times \left(\frac{1-L}{1-K_{irb}} \right)^{2\sqrt{N}}$$

³ N can be conservatively approximated by $1/A$ (where A is the share of the largest exposure in the pool).

Then, the risk-weight of a tranche [L, L+T] can be approximately derived by averaging the risk-weights. For example, calculating the average at the boundaries would result in the following:

$$\frac{1}{2} \left(\frac{12.5 \times K_{irb}}{L} \right) \left(\frac{1-L}{1-K_{irb}} \right)^{2\sqrt{N}} + \frac{1}{2} \left(\frac{12.5 \times K_{irb}}{L+T} \right) \left(\frac{1-L-T}{1-K_{irb}} \right)^{2\sqrt{N}}$$

Banks could be given the option to make calculations of the risk weights for as many ITTs as they consider appropriate, subject to supervisory approval. If a bank is permitted to rely on multiple reference points, the risk weight function would appear as follows:

$$\text{Risk Weight} = \frac{1}{I+1} \times \sum_{i=0}^I \left(\frac{12.5 \times K_{irb}}{L+T \times \frac{i}{I}} \times \left(\frac{1-L-T \times \frac{i}{I}}{1-K_{irb}} \right)^{2\sqrt{N}} \right)$$

where

I +1 is the number of reference points (“I” represents the number of subdivisions of the tranche in question and “i” represents the individual reference points)

and

I and **i** are integers with **I** ≥ 1 and **i** ≥ 0.

The Committee is considering whether N should be subject to a cap on its maximum value. The Committee is concerned that for very large numbers of N, the Simplified SF could generate much lower capital charges than the CP3 version for mezzanine positions lying just above K_{IRB} . At the same time, the Committee would like to avoid creating unreasonably high capital charges. The Committee is evaluating whether this issue is material for actual transactions and whether a cap on the maximum value of N would be the best way to alleviate these concerns.