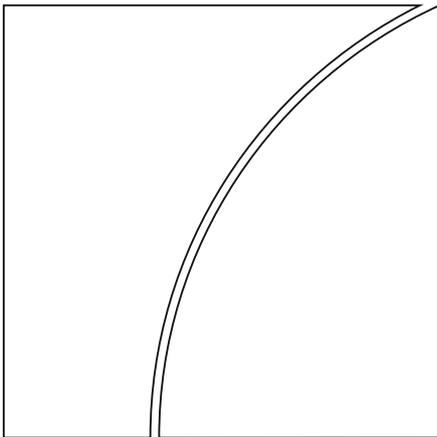# Basel Committee on Banking Supervision

Basel III Document

Revisions to the securitisation framework

11 December 2014

BANK FOR INTERNATIONAL SETTLEMENTS

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Introduction

The Basel Committee is publishing the revised securitisation framework, which aims to address a number of shortcomings in the Basel II securitisation framework and to strengthen the capital standards for securitisation exposures held in the banking book.[1] This framework, which will come into effect in January 2018, forms part of the Committee's broader Basel III agenda to reform regulatory standards for banks in response to the global financial crisis and thus contributes to a more resilient banking sector.

In developing the final standards for capitalising securitisation exposures, the Committee has carefully taken into account the comments received on the two consultative documents,[2] as well as the results of the quantitative impact studies (QIS) undertaken during the consultations. Furthermore, revisions have also been guided by the Committee's determination to strike an appropriate balance between risk sensitivity, simplicity and comparability.

Further work is being conducted jointly by the Basel Committee and the International Organization of Securities Commissions (IOSCO) to review securitisation markets and to identify factors that may be hindering the development of sustainable securitisation markets. The Committee and IOSCO have issued a consultative document[3] with proposed criteria that could help – and to assist the financial industry's development of – simple, transparent and comparable securitisation. In 2015, the Committee will consider how to incorporate such criteria into the securitisation capital framework.

Shortcomings in the Basel II securitisation framework

The crisis highlighted several weaknesses in the Basel II securitisation framework, including concerns that it could generate insufficient capital for certain exposures. This led the Committee to decide that the securitisation framework needed to be reviewed. The Committee identified a number of shortcomings relating to the calibration of risk weights and a lack of incentives for good risk management, namely:

(i)   Mechanistic reliance on external ratings;

(ii)   Excessively low risk weights for highly-rated securitisation exposures;

(iii)   Excessively high risk weights for low-rated senior securitisation exposures;

(iv)   Cliff effects; and

(v)   Insufficient risk sensitivity of the framework.

The above shortcomings translate into specific objectives that the revisions to the framework seek to achieve: reduce mechanistic reliance on external ratings; increase risk weights for highly-rated securitisation exposures; reduce risk weights for low-rated senior securitisation exposures; reduce cliff effects; and enhance the risk sensitivity of the framework.

The objectives and principles that have guided the Committee are that: the revised securitisation framework should be more risk sensitive; more prudent in terms of its calibration, broadly consistent with the underlying framework for credit risk, and be as simple as possible. In addition, it should give incentives to improve risk management by assigning capital charges using the best and most diverse information available to banks. Finally, it should be transparent and enable comparability

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[1]   Securitisation exposures held in the trading book will be subject to the revised framework for the trading book, currently under review.

[2]   Available at www.bis.org/publ/bcbs236.htm (first consultation), and www.bis.org/publ/bcbs269.htm (second consultation).

[3]   Available at www.bis.org/bcbs/publ/d304.pdf.

across banks and jurisdictions. This framework aims to achieve the right balance between these objectives.

Major elements of the revised securitisation framework

The major changes in this document relative to the Basel II securitisation framework and the last consultative paper are described below.

(1)   Hierarchy

Basel II securitisation framework

The Basel II framework consists of two hierarchies, depending on the approach to credit risk used for the type of underlying exposures securitised: one for the Standardised Approach (SA), used by banks that apply the SA credit risk framework for the asset class which comprises the underlying pool of securitised exposures; and one for the Internal Ratings-Based (IRB) approach, used by banks that apply an IRB approach to credit risk for the asset class which comprises the underlying pool of securitised exposures.

The SA securitisation framework is aimed at less sophisticated banks. The treatment of the exposure depends upon whether the bank is acting as investor, originator or providing a third party facility (eg a liquidity facility to guarantee timely payments of principal and interest to investors where there might be timing differences in the receipt of principal and interest amounts from the pool of assets that was securitised).

The IRB approach is aimed at more sophisticated banks and allows for a more granular assessment of the relevant risks associated with the securitisation exposures concerned.

Overall, the Basel II framework includes four Ratings-Based Approach (RBA) look-up tables (two under the IRB securitisation framework and two others under the SA securitisation framework), two internal approaches for non-rated exposures (Supervisory Formula Approach (SFA) and Internal Assessment Approach (IAA)), and several exceptional treatments.

Basel III securitisation framework

The Committee has revised the hierarchy to reduce the reliance on external ratings as well as to simplify it and limit the number of approaches.

The revised hierarchy of approaches in the revised framework for securitisation exposures is:

<div align="center">

"*Securitisation Internal Ratings-Based Approach*"
(SEC-IRBA)

⬇

"*Securitisation External Ratings-Based Approach*"
(SEC-ERBA)
(if permitted in jurisdiction)

⬇

"*Securitisation Standardised Approach*"
(SEC-SA)

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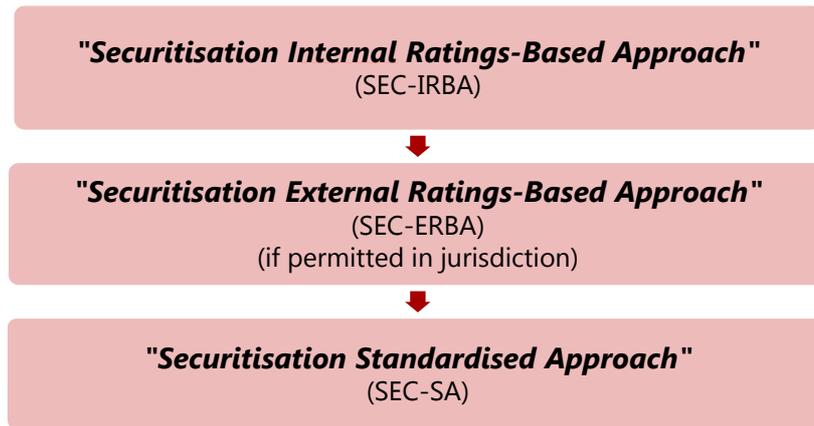
NB1: For resecuritisation exposures: only SEC-SA, with adjustments.
NB2: Subject to certain limitations, banks located in jurisdictions that permit use of the SEC-ERBA may use an internal assessment approach (IAA) to calculate capital requirements in respect of unrated exposures to ABCP programmes.

The SEC-IRBA is at the top of the revised hierarchy. The underlying model is the Simplified Supervisory Formula Approach (SSFA) and it uses K_{IRB} information as a key input. K_{IRB} is the capital charge for the underlying exposures using the IRB framework (either the advanced or foundation approaches).[4] In order to use the SEC-IRBA, the bank should have the same information as under the Basel II SFA: (i) a supervisory-approved IRB model for the type of underlying exposures in the securitisation pool; and (ii) sufficient information to estimate K_{IRB}.[5] [6]

A bank that cannot calculate K_{IRB} for a given securitisation exposure would have to use the SEC-ERBA, provided that this method is implemented by the national regulator. A bank that cannot use the SEC-IRBA or the SEC-ERBA (either because the tranche is unrated or because its jurisdiction does not permit the use of ratings for regulatory purposes) would use the SEC-SA, with a generally more conservative calibration and using K_{SA} as input.[7] K_{SA} is the capital charge for the underlying exposures using the Standardised Approach for credit risk. A slightly modified (and more conservative) version of the SEC-SA would be the only approach available for resecuritisation exposures. In general, a bank that cannot use SEC-IRBA, SEC-ERBA, or SEC-SA for a given securitisation exposure would assign the exposure a risk weight of 1,250%.

No significant changes were made to the hierarchy of approaches relative to the hierarchy proposed in the second consultative document.

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[4] Including the expected loss (EL) charge not counted through risk-weighted assets but through adjustments to regulatory capital.

[5] There is, however, a change with respect to the application of IRB methods to reduce arbitrage opportunities. Under the Basel II securitisation framework, if the bank is using the IRB approach for some exposures and the SA for other exposures in the underlying pool, it should generally use the approach corresponding to the predominant share of exposures within the pool. The Basel II framework provides no guidance about determining predominance for so-called "mixed pools." In the revised framework, if the bank can calculate K_{IRB} for at least 95% but less than 100% of the underlying exposure amounts of a securitisation, it must use a pro rata approach, applying SA risk weights for exposures for which it cannot calculate K_{IRB} and IRB risk weights for exposures for which it can calculate K_{IRB}.

[6] To increase the applicability of SEC-IRBA, the Committee has clarified that the IRB top-down approach can be used..

[7] To limit the number of options available to banks, if a bank did not apply SEC-IRBA or SEC-ERBA, it would have to apply the SEC-SA with K_{SA} input for *all* the underlying exposures (even for those for which the bank could calculate K_{IRB}).

(2)   Approaches

The Basel II securitisation framework does not include an explicit maturity adjustment in either the SFA or the RBA. The Committee has identified this as a flaw of the Basel II approaches. In terms of risk drivers used, the SEC-IRBA and SEC-ERBA can be compared, respectively, to the Basel II SFA and RBA as follows.

SEC-IRBA

One of the major shortcomings of the SFA identified by the Committee is the sharp cliff effects in marginal capital charges. This is driven in part due to the lack of an adequate incorporation of maturity. Under the SFA, the maturity of assets in the underlying pool is only partially considered –through K_{IRB}- when calculating capital requirements.

The Basel II SFA is based on a 1-year default mode model, and therefore does not (in contrast to the wholesale IRB framework[8]) fully reflect the possibility of losses to tranche exposures resulting from potential future credit deterioration in the underlying pool. The SFA looks only at the risk of default over a 1-year horizon, ignoring the risk of a potential deterioration afterwards; it implicitly assumes that a given tranche will not incur any market value loss until the values for all more-junior tranches have been reduced to zero. Reasonable economic risk models would be unlikely to make this assumption when tranche maturity is greater than 1 year.

As the relevant effects of maturity are, however, not fully captured through K_{IRB} alone, the SEC-IRBA incorporates tranche maturity as an additional risk driver. All other inputs (ie K_{IRB}, attachment and detachment points, number of exposures in the pool and the pool loss-given default) are used under the SFA.

Notwithstanding, to address concerns raised by commenters to the second consultative document that the use of legal maturity is overly conservative and does not reflect the real maturity of the tranche, the Committee has agreed to apply a haircut in order to smooth the impact of maturity on capital charges when legal maturity is used.

SEC-ERBA

The Basel II RBA assigns risk weights according to the external rating of the exposure, the seniority and the granularity of the underlying pool.

The Committee has revised the extent to which external ratings reflect some other relevant risk characteristics and has determined that it is necessary to consider additional risk drivers relative to the Basel II RBA, namely:

- Tranche thickness of non-senior tranches (ie the size of the tranche relative to the entire securitisation transaction). Under the Basel II RBA, tranche thickness is not fully taken into account. While credit rating agencies consider tranche thickness, analysis performed by the Committee suggests that capital requirements for a given rating of a mezzanine tranche should differ significantly based on tranche thickness.

- Tranche maturity: A rating agency typically targets a given level of expected loss per rating, while the capital charge reflects its expected loss rate conditional on the assumed stress event

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[8]   The IRB approach for wholesale exposures includes an explicit maturity adjustment such that capital requirements for loans with longer maturities, other things equal, will be higher than for loans with shorter maturities. From a modelling perspective, the IRB maturity adjustment incorporates into capital requirements the potential for downward migrations/changes in credit quality short of default. In general, given two exposures to a particular obligor, one with a maturity of 1 year and the other with a maturity of five years, we would expect that the 5-year maturity exposure would be more likely to be downgraded or to default before its maturity than the 1-year maturity exposure, as there is more time for negative events to occur before the 5-year exposure fully pays back.

occurring (unexpected loss). As such, a tranche's unstressed expected loss rate (as reflected in the credit rating) is not a sufficient statistic for determining its stressed expected loss rate (ie its unexpected loss rate). The mapping between expected and unexpected loss rates depends in part on tranche maturity.

Notwithstanding, to address concerns about potentially overstating maturity effects, the Committee has reduced the risk weights for longer-maturity tranches assigned under the SEC-ERBA relative to those proposed in the second consultative document.

Finally, the Committee has found that credit rating agencies already take granularity into account when assigning a rating to a tranche. In particular, in order to achieve a certain rating, credit rating agencies require different levels of credit enhancement depending on the pool's granularity (the less granular is the pool, the more credit enhancement is required). Consequently, the Committee has decided not to include a granularity adjustment when ratings are used.

Improvements in the securitisation framework

The revised Basel III securitisation framework represents a significant improvement to the Basel II framework in terms of reducing complexity of the hierarchy and the number of approaches. Under the revisions there would be only three primary approaches, as opposed to the multiple approaches and exceptional treatments allowed in the Basel II framework.

Further, the application of the hierarchy no longer depends on the role that the bank plays in the securitisation – investor or originator; or on the credit risk approach that the bank applies to the type of underlying exposures. Rather, the revised hierarchy of approaches relies on the information that is available to the bank and on the type of analysis and estimations that it can perform on a specific transaction.

The mechanistic reliance on external ratings has been reduced; not only because the RBA is no longer at the top of the hierarchy, but also because other relevant risk drivers have been incorporated into the SEC-ERBA (ie maturity and tranche thickness for non-senior exposures).

In terms of risk sensitivity and prudence, the revised framework also represents a step forward relative to the Basel II framework. The capital requirements have been significantly increased, commensurate with the risk of securitisation exposures. Still, capital requirements of senior securitisation exposures backed by good quality pools will be subject to risk weights as low as 15%. Moreover, the presence of caps to risk weights of senior tranches and limitations on maximum capital requirements aim to promote consistency with the underlying IRB framework and not to disincentivise securitisations of low credit risk exposures.

Standards text

I.   Credit risk — securitisation framework[9]

NB: These paragraphs replace the Basel II securitisation framework, namely paragraphs [538 to 643 and Annex 7] of Basel II;[10] as well as revisions related to securitisation included in Basel 2.5.[11]

References to paragraphs in the revised securitisation framework contained in this document are shown [in brackets]. References to other parts of the Basel framework are shown without brackets.

A.   Scope and definitions of transactions covered under the securitisation framework

1.   Banks must apply the securitisation framework for determining regulatory capital requirements on exposures arising from traditional and synthetic securitisations or similar structures that contain features common to both. Since securitisations may be structured in many different ways, the capital treatment of a securitisation exposure must be determined on the basis of its economic substance rather than its legal form. Similarly, supervisors will look to the economic substance of a transaction to determine whether it should be subject to the securitisation framework for purposes of determining regulatory capital. Banks are encouraged to consult with their national supervisors when there is uncertainty about whether a given transaction should be considered a securitisation. For example, transactions involving cash flows from real estate (eg rents) may be considered specialised lending exposures, if warranted.

2.   A *traditional securitisation* is a structure where the cash flow from an underlying pool of exposures is used to service at least two different stratified risk positions or tranches reflecting different degrees of credit risk. Payments to the investors depend upon the performance of the specified underlying exposures, as opposed to being derived from an obligation of the entity originating those exposures. The stratified/tranched structures that characterise securitisations differ from ordinary senior/subordinated debt instruments in that junior securitisation tranches can absorb losses without interrupting contractual payments to more senior tranches, whereas subordination in a senior/subordinated debt structure is a matter of priority of rights to the proceeds of liquidation.

3.   A *synthetic securitisation* is a structure with at least two different stratified risk positions or tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of funded (eg credit-linked notes) or unfunded (eg credit default swaps) credit derivatives or guarantees that serve to hedge the credit risk of the portfolio. Accordingly, the investors' potential risk is dependent upon the performance of the underlying pool.

4.   Banks' exposures to a securitisation are hereafter referred to as "securitisation exposures". Securitisation exposures can include but are not restricted to the following: asset-backed securities, mortgage-backed securities, credit enhancements, liquidity facilities, interest rate or currency swaps, credit derivatives and tranched cover as described in paragraph 199 of the Basel II framework. Reserve

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[9]   Given the amount of changes, no tracked changes are shown in this section relative to the previous framework.

[10]   Basel II – *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version*, available at www.bis.org/publ/bcbs128.htm.

[11]   Basel 2.5 – *Enhancements to the Basel II framework, July 2009*, available at www.bis.org/publ/bcbs157.pdf.

accounts, such as cash collateral accounts, recorded as an asset by the originating bank must also be treated as securitisation exposures.

5.   A resecuritisation exposure is a securitisation exposure in which the risk associated with an underlying pool of exposures is tranched and at least one of the underlying exposures is a securitisation exposure. In addition, an exposure to one or more resecuritisation exposures is a resecuritisation exposure. An exposure resulting from retranching of a securitisation exposure is not a resecuritisation exposure if the bank is able to demonstrate that the cash flows to and from the bank could be replicated in all circumstances and conditions by an exposure to the securitisation of a pool of assets that contains no securitisation exposures.

6.   Underlying instruments in the pool being securitised may include but are not restricted to the following: loans, commitments, asset-backed and mortgage-backed securities, corporate bonds, equity securities, and private equity investments. The underlying pool may include one or more exposures.

B.   Definitions and general terminology

Originating bank

7.   For risk-based capital purposes, a bank is considered to be an originator with regard to a certain securitisation if it meets either of the following conditions:

(a)   the bank originates directly or indirectly underlying exposures included in the securitisation; or

(b)   the bank serves as a sponsor of an asset-backed commercial paper conduit or similar programme that acquires exposures from third-party entities. In the context of such programmes, a bank would generally be considered a sponsor and, in turn, an originator if it, in fact or in substance, manages or advises the programme, places securities into the market, or provides liquidity and/or credit enhancements.

Asset-backed commercial paper (ABCP) programme

8.   An ABCP programme predominantly issues commercial paper to third-party investors with an original maturity of one year or less and is backed by assets or other exposures held in a bankruptcy-remote, special purpose entity.

Clean-up call

9.   A clean-up call is an option that permits the securitisation exposures (eg asset-backed securities) to be called before all of the underlying exposures or securitisation exposures have been repaid. In the case of traditional securitisations, this is generally accomplished by repurchasing the remaining securitisation exposures once the pool balance or outstanding securities have fallen below some specified level. In the case of a synthetic transaction, the clean-up call may take the form of a clause that extinguishes the credit protection.

Credit enhancement

10.   A credit enhancement is a contractual arrangement in which the bank or other entity retains or assumes a securitisation exposure and, in substance, provides some degree of added protection to other parties to the transaction.

Credit-enhancing interest-only strip

11.   A credit-enhancing interest-only strip (I/O) is an on-balance sheet asset that (i) represents a valuation of cash flows related to future margin income, and (ii) is subordinated.

Early amortisation

12. An early amortisation provision is a mechanism that, once triggered, accelerates the reduction of the investor's interest in underlying exposures of a securitisation of revolving credit facilities and allows investors to be paid out prior to the originally stated maturity of the securities issued. A securitisation of revolving credit facilities is a securitisation in which one or more underlying exposures represent, directly or indirectly, current or future draws on a revolving credit facility. Examples of revolving credit facilities include but are not limited to credit card exposures, home equity lines of credit, commercial lines of credit, and other lines of credit.

Excess spread

13. Excess spread (or future margin income) is defined as gross finance charge collections and other income received by the trust or special purpose entity (SPE, as defined below) minus certificate interest, servicing fees, charge-offs, and other senior trust or SPE expenses.

Implicit support

14. Implicit support arises when a bank provides support to a securitisation in excess of its predetermined contractual obligation.

Internal Ratings-Based (IRB) pool

15. For risk-based capital purposes, an IRB pool means a securitisation pool for which a bank is able to use an IRB approach to calculate capital requirements for all underlying exposures given that it has approval to apply IRB for the type of underlying exposures and it has sufficient information to calculate IRB capital requirements for these exposures. Supervisors should expect that a bank with supervisory approval to calculate capital requirements for the underlying pool of exposures be able to obtain sufficient information to estimate capital requirements for the underlying pool of exposures using an IRB approach. A bank that cannot estimate capital requirements for all underlying exposures using an IRB approach for a given securitisation exposure for which it has a supervisory-approved IRB approach would be expected to demonstrate to its supervisor why it cannot calculate capital requirements for the entire underlying pool of exposures using an IRB approach. However, a supervisor may prohibit a bank from treating an IRB pool as such in the case of particular structures or transactions, including transactions with highly complex loss allocations, tranches whose credit enhancement could be eroded for reasons other than portfolio losses, and tranches of portfolios with high internal correlations (such as portfolios with high exposure to single sectors or with high geographical concentration).

Mixed pool

16. For risk-based capital purposes, a mixed pool means a securitisation pool for which a bank is able to calculate IRB parameters for some, but not all, underlying exposures in a securitisation.

Standardised Approach (SA) pool

17. For risk-based capital purposes, an SA pool means a securitisation pool for which a bank does not have approval to calculate IRB parameters for any underlying exposures; or for which, while the bank has approval to calculate IRB parameters for some or all of the types of underlying exposures, it is unable to calculate IRB parameters for any underlying exposures because of lack of relevant data, or is prohibited by its supervisor from treating the pool as an IRB pool pursuant to paragraph [15].

Senior securitisation exposure (tranche)

18. A securitisation exposure (tranche) is considered to be a senior exposure (tranche) if it is effectively backed or secured by a first claim on the entire amount of the assets in the underlying

securitised pool.[12] While this generally includes only the most senior position within a securitisation transaction, in some instances there may be other claims that, in a technical sense, may be more senior in the waterfall (eg a swap claim) but may be disregarded for the purpose of determining which positions are treated as senior. Different maturities of several senior tranches that share pro rata loss allocation shall have no effect on the seniority of these tranches, since they benefit from the same level of credit enhancement. The material effects of differing tranche maturities are captured by maturity adjustments on the risk weights to be assigned to the securitisation exposures.

Examples:

(a)   In a typical synthetic securitisation, an unrated tranche would be treated as a senior tranche, provided that all of the conditions for inferring a rating from a lower tranche that meets the definition of a senior 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. When there are several tranches that share the same rating, only the most senior tranche in the cash flow waterfall would be treated as senior (unless the only difference among them is the effective maturity). Also, when the different ratings of several senior tranches only result from a difference in maturity, all of these tranches should be treated as a senior tranche.

(c)   Usually, a liquidity facility supporting an ABCP programme would not be the most senior position within the programme; the commercial paper, which benefits from the liquidity support, typically would be the most senior position. However, a liquidity facility may be viewed as covering all losses on the underlying receivables pool that exceed the amount of overcollateralisation/reserves provided by the seller and as being most senior if it is sized to cover all of the outstanding commercial paper and other senior debt supported by the pool, so that no cash flows from the underlying pool could be transferred to the other creditors until any liquidity draws were repaid in full. In such a case, the liquidity facility can be treated as a senior exposure. Otherwise, if these conditions are not satisfied, or if for other reasons the liquidity facility constitutes a mezzanine position in economic substance rather than a senior position in the underlying pool, the liquidity facility should be treated as a non-senior exposure.

Securitisation exposure amount

19.   For risk-based capital purposes, the exposure amount of a securitisation exposure is the sum of the on-balance sheet amount of the exposure, or carrying value – which takes into account purchase discounts and writedowns/specific provisions the bank took on this securitisation exposure – and the off-balance sheet exposure amount, where applicable.

20.   A bank must measure the exposure amount of its off-balance sheet securitisation exposures as follows:

•   for credit risk mitigants sold or purchased by the bank, use the treatment set out in paragraphs [99 to 105];

•   for facilities that are not credit risk mitigants, use a credit conversion factor (CCF) of 100%. If contractually provided for, servicers may advance cash to ensure an uninterrupted flow of payments to investors so long as the servicer is entitled to full reimbursement and this right is senior to other claims on cash flows from the underlying pool of exposures. At national discretion, the undrawn portion of servicer cash advances or facilities that are unconditionally cancellable without prior notice may receive the CCF for unconditionally cancellable commitments under the standardised approach for credit risk. For this purpose, a national

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[12]   If a senior tranche is retranched or partially hedged (ie not on a pro rata basis), only the new senior part would be treated as senior for capital purposes.

supervisor that uses this discretion must develop an appropriately conservative method for measuring the amount of the undrawn portion; and

- for derivatives contracts other than credit risk derivatives contracts, such as interest rate or currency swaps sold or purchased by the bank, use the measurement approach that the bank would use under the counterparty credit risk framework.

Special purpose entity (SPE)

21. An SPE is a corporation, trust or other entity organised for a specific purpose, the activities of which are limited to those appropriate to accomplish the purpose of the SPE, and the structure of which is intended to isolate the SPE from the credit risk of an originator or seller of exposures. SPEs, normally a trust or similar entity, are commonly used as financing vehicles in which exposures are sold to the SPE in exchange for cash or other assets funded by debt issued by the trust.

Tranche maturity

22. For risk-based capital purposes, tranche maturity (M_T) is the tranche's remaining effective maturity in years and can be measured at the bank's discretion in either of the following manners:

(a) As the euro[13] weighted-average maturity of the contractual cash flows of the tranche:

$$M_T = \sum_t t \cdot CF_t \Big/ \sum_t CF_t,$$

where CF_t denotes the cash flows (principal, interest payments and fees) contractually payable by the borrower in period t.

The contractual payments must be unconditional and must not be dependent on the actual performance of the securitised assets. If such unconditional contractual payment dates are not available, the final legal maturity shall be used.

(b) On the basis of final legal maturity of the tranche, as:

$$M_T = 1 + (M_L - 1) * 80\%,$$

where M_L is the final legal maturity of the tranche.

In all cases, M_T will have a floor of one year and a cap of five years.

23. When determining the maturity of a securitisation exposure, banks should take into account the maximum period of time they are exposed to potential losses from the securitised assets. In cases where a bank provides a commitment, the bank should calculate the maturity of the securitisation exposure resulting from this commitment as the sum of the contractual maturity of the commitment and the longest maturity of the asset(s) to which the bank would be exposed after a draw has occurred. If those assets are revolving, the longest contractually possible remaining maturity of the asset that might be added during the revolving period would apply, rather than the (longest) maturity of the assets currently in the pool.

The same treatment applies to all other instruments where the risk of the commitment/protection provider is not limited to losses realised until the maturity of that instrument (eg total return swaps).

For credit protection instruments that are only exposed to losses that occur up to the maturity of that instrument, a bank would be allowed to apply the contractual maturity of the instrument and would not have to look through to the protected position.

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[13] The euro designation is used for illustrative purposes only.

C. Operational requirements for the recognition of risk transference

1. Operational requirements for traditional securitisations

24. An originating bank may exclude underlying exposures from the calculation of risk-weighted assets only if all of the following conditions have been met. Banks meeting these conditions must still hold regulatory capital against any securitisation exposures they retain.

(a) Significant credit risk associated with the underlying exposures has been transferred to third parties.

(b) The transferor does not maintain effective or indirect control over the transferred exposures. The exposures are legally isolated from the transferor in such a way (eg through the sale of assets or through subparticipation) that the exposures are put beyond the reach of the transferor and its creditors, even in bankruptcy or receivership. Banks should obtain legal opinion[14] that confirms true sale.

The transferor is deemed to have maintained effective control over the transferred credit risk exposures if it: (i) is able to repurchase from the transferee the previously transferred exposures in order to realise their benefits; or (ii) is obligated to retain the risk of the transferred exposures. The transferor's retention of servicing rights to the exposures will not necessarily constitute indirect control of the exposures.

(c) The securities issued are not obligations of the transferor. Thus, investors who purchase the securities only have claim to the underlying exposures.

(d) The transferee is an SPE and the holders of the beneficial interests in that entity have the right to pledge or exchange them without restriction.

(e) Clean-up calls must satisfy the conditions set out in paragraph [28].

(f) The securitisation does not contain clauses that (i) require the originating bank to alter the underlying exposures such that the pool's credit quality is improved unless this is achieved by selling exposures to independent and unaffiliated third parties at market prices; (ii) allow for increases in a retained first-loss position or credit enhancement provided by the originating bank after the transaction's inception; or (iii) increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the underlying pool.

(g) There must be no termination options/triggers except eligible clean-up calls, termination for specific changes in tax and regulation or early amortisation provisions which according to paragraph [26] result in the securitisation transaction failing the operational requirements set out in paragraph [24 or 25].

2. Operational requirements for synthetic securitisations

25. For synthetic securitisations, the use of credit risk mitigation (CRM) techniques (ie collateral, guarantees and credit derivatives) for hedging the underlying exposure may be recognised for risk-based capital purposes only if the conditions outlined below are satisfied:

(a) Credit risk mitigants must comply with the requirements set out in Section II.D of the Basel II framework.

(b) Eligible collateral is limited to that specified in paragraphs 145 and 146 of the Basel II framework. Eligible collateral pledged by SPEs may be recognised.

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[14] Legal opinion is not limited to legal advice from qualified legal counsel, but allows written advice from in-house lawyers.

(c)   Eligible guarantors are defined in paragraph 195 of the Basel II framework. Banks may not recognise SPEs as eligible guarantors in the securitisation framework.

(d)   Banks must transfer significant credit risk associated with the underlying exposures to third parties.

(e)   The instruments used to transfer credit risk may not contain terms or conditions that limit the amount of credit risk transferred, such as those provided below:

- clauses that materially limit the credit protection or credit risk transference (eg an early amortisation provision in a securitisation of revolving credit facilities that effectively subordinates the bank's interest; significant materiality thresholds below which credit protection is deemed not to be triggered even if a credit event occurs; or clauses that allow for the termination of the protection due to deterioration in the credit quality of the underlying exposures);

- clauses that require the originating bank to alter the underlying exposures to improve the pool's average credit quality;

- clauses that increase the banks' cost of credit protection in response to deterioration in the pool's quality;

- clauses that increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the reference pool; and

- clauses that provide for increases in a retained first-loss position or credit enhancement provided by the originating bank after the transaction's inception.

(f)   A bank should obtain legal opinion that confirms the enforceability of the contract.

(g)   Clean-up calls must satisfy the conditions set out in paragraph [28].

3.   Operational requirements for securitisations containing early amortisation provisions

26.   A securitisation transaction is deemed to fail the operational requirements set out in paragraphs [24 or 25] if the bank (i) originates/sponsors a securitisation transaction that includes one or more revolving credit facilities, and (ii) the securitisation transaction incorporates an early amortisation or similar provision that, if triggered, would (a) subordinate the bank's senior or pari passu interest in the underlying revolving credit facilities to the interest of other investors; (b) subordinate the bank's subordinated interest to an even greater degree relative to the interests of other parties; or (c) in other ways increases the bank's exposure to losses associated with the underlying revolving credit facilities.

27.   If a securitisation transaction contains one of the following examples of an early amortisation provision and meets the operational requirements set forth in paragraphs [24 and 25], an originating bank may exclude the underlying exposures associated with such a transaction from the calculation of risk-weighted assets, but must still hold regulatory capital against any securitisation exposures they retain in connection with the transaction:

(a)   replenishment structures where the underlying exposures do not revolve and the early amortisation ends the ability of the bank to add new exposures;

(b)   transactions of revolving credit facilities containing early amortisation features that mimic term structures (ie where the risk on the underlying revolving credit facilities does not return to the originating bank) and where the early amortisation provision in a securitisation of revolving credit facilities does not effectively result in subordination of the originator's interest;

(c)   structures where a bank securitises one or more revolving credit facilities and where investors remain fully exposed to future drawdowns by borrowers even after an early amortisation event has occurred; or

(d)   the early amortisation provision is solely triggered by events not related to the performance of the underlying assets or the selling bank, such as material changes in tax laws or regulations.

4.   Operational requirements and treatment of clean-up calls

28.   For securitisation transactions that include a clean-up call, no capital will be required due to the presence of a clean-up call if the following conditions are met: (i) the exercise of the clean-up call must not be mandatory, in form or in substance, but rather must be at the discretion of the originating bank; (ii) the clean-up call must not be structured to avoid allocating losses to credit enhancements or positions held by investors or otherwise structured to provide credit enhancement; and (iii) the clean-up call must only be exercisable when 10% or less of the original underlying portfolio or securities issued remains, or, for synthetic securitisations, when 10% or less of the original reference portfolio value remains.

29.   Securitisation transactions that include a clean-up call that does not meet all of the criteria stated in paragraph [28] result in a capital requirement for the originating bank. For a traditional securitisation, the underlying exposures must be treated as if they were not securitised. Additionally, banks must not recognise in regulatory capital any gain on sale, in accordance with paragraph [36]. For synthetic securitisations, the bank purchasing protection must hold capital against the entire amount of the securitised exposures as if they did not benefit from any credit protection. If a synthetic securitisation incorporates a call (other than a clean-up call) that effectively terminates the transaction and the purchased credit protection on a specific date, the bank must treat the transaction in accordance with paragraph [108].

30.   If a clean-up call, when exercised, is found to serve as a credit enhancement, the exercise of the clean-up call must be considered a form of implicit support provided by the bank and must be treated in accordance with the supervisory guidance pertaining to securitisation transactions.

D.   Due diligence requirements

31.   For a bank to use the risk weight approaches of the securitisation framework, it must have the information specified in paragraphs [32 to 34]. Otherwise, the bank must assign a 1,250% risk weight to any securitisation exposure for which it cannot perform the required level of due diligence.

32.   As a general rule, a bank must, on an ongoing basis, have a comprehensive understanding of the risk characteristics of its individual securitisation exposures, whether on- or off-balance sheet, as well as the risk characteristics of the pools underlying its securitisation exposures.

33.   Banks must be able to access performance information on the underlying pools on an ongoing basis in a timely manner. Such information may include, as appropriate: exposure type; percentage of loans 30, 60 and 90 days past due; default rates; prepayment rates; loans in foreclosure; property type; occupancy; average credit score or other measures of creditworthiness; average loan-to-value ratio; and industry and geographical diversification. For resecuritisations, banks should have information not only on the underlying securitisation tranches, such as the issuer name and credit quality, but also on the characteristics and performance of the pools underlying the securitisation tranches.

34.   A bank must have a thorough understanding of all structural features of a securitisation transaction that would materially impact the performance of the bank's exposures to the transaction, such as the contractual waterfall and waterfall-related triggers, credit enhancements, liquidity enhancements, market value triggers, and deal-specific definitions of default.

E.   Treatment of securitisation exposures

1.   Calculation of capital requirements and risk-weighted assets

35.   Regulatory capital is required for banks' securitisation exposures, including those arising from the provision of credit risk mitigants to a securitisation transaction, investments in asset-backed securities, retention of a subordinated tranche, and extension of a liquidity facility or credit enhancement, as set forth in the following sections. Repurchased securitisation exposures must be treated as retained securitisation exposures.

36.   Banks must deduct from Common Equity Tier 1 any increase in equity capital resulting from a securitisation transaction, such as that associated with expected future margin income resulting in a gain on sale that is recognised in regulatory capital.[15]

37.   For the purposes of the expected loss (EL) provision calculation set out in Section III.G of the Basel framework, securitisation exposures do not contribute to the EL amount. Similarly, neither general nor specific provisions against securitisation exposures or underlying assets still held on the balance sheet of the originator are to be included in the measurement of eligible provisions. However, originator banks can offset 1,250% risk-weighted securitisation exposures by reducing the securitisation exposure amount by the amount of their specific provisions on underlying assets of that transaction and non-refundable purchase price discounts on such underlying assets. Specific provisions on securitisation exposures will be taken into account in the calculation of the exposure amount, as defined in paragraphs [19 and 20]. General provisions on underlying securitised exposures are not to be taken into account in any calculation.

38.   The risk-weighted asset amount of a securitisation exposure is computed by multiplying the exposure amount, as defined in paragraphs [19 and 20], by the appropriate risk weight determined in accordance with the hierarchy of approaches in paragraphs [42 to 47]. Risk weight caps for senior exposures in accordance with paragraphs [88 and 89] or overall caps in accordance with paragraphs [90 to 93] may apply. Overlapping exposures will be risk-weighted as defined in paragraphs [39 and 41].

Treatment of overlapping exposures

39.   For the purposes of calculating capital requirements, a bank's exposure A overlaps another exposure B if in all circumstances the bank will preclude any loss for the bank on exposure B by fulfilling its obligations with respect to exposure A. For example, if a bank provides full credit support to some notes and holds a portion of these notes, its full credit support obligation precludes any loss from its exposure to the notes. If a bank can verify that fulfilling its obligations with respect to exposure A will preclude a loss from its exposure to B under any circumstance, the bank does not need to calculate risk-weighted assets for its exposure B.

40.   To arrive at an overlap, a bank may, for the purposes of calculating capital requirements, split or expand[16] its exposures. For example, a liquidity facility may not be contractually required to cover defaulted assets or may not fund an ABCP programme in certain circumstances. For capital purposes, such a situation would not be regarded as an overlap to the notes issued by that ABCP conduit. However, the bank may calculate risk-weighted assets for the liquidity facility as if it were expanded (either in order to cover defaulted assets or in terms of trigger events) to preclude all losses on the notes. In such a case, the bank would only need to calculate capital requirements on the liquidity facility.

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[15]   As discussed in paragraph 74 of *Basel III: A global regulatory framework for more resilient banks and banking systems*.

[16]   That is, *splitting* exposures into portions that overlap with another exposure held by the bank and other portions that do not overlap; and *expanding* exposures by assuming for capital purposes that obligations with respect to one of the overlapping exposures are larger than those established contractually. The latter could be done, for instance, by expanding either the trigger events to exercise the facility and/or the extent of the obligation.

41.   Overlap could also be recognised between relevant capital charges for exposures in the trading book and capital charges for exposures in the banking book, provided that the bank is able to calculate and compare the capital charges for the relevant exposures.

2.   Hierarchy of approaches

42.   Securitisation exposures will be treated differently depending on the type of underlying exposures and/or on the type of information available to the bank, as described below. Securitisation exposures to which none of the approaches laid out in paragraphs [43 to 47] can be applied must be assigned a 1,250% risk weight.

(i)   Securitisation exposures of IRB pools

43.   A bank must use the Securitisation Internal Ratings-Based Approach (SEC-IRBA) as described in paragraphs [48 to 64] for a securitisation exposure of an IRB pool as defined in paragraph [15], unless otherwise determined by the supervisor.

(ii)   Securitisation exposures of SA pools

44.   If a bank cannot use the SEC-IRBA, it must use the Securitisation External Ratings-Based Approach (SEC-ERBA) as described in paragraphs [65 to 70] for a securitisation exposure to an SA pool as defined in paragraph [17] provided that (i) the bank is located in a jurisdiction that permits use of the SEC-ERBA and (ii) the exposure has an external credit assessment that meets the operational requirements for an external credit assessment in paragraph [71], or there is an inferred rating that meets the operational requirements for inferred ratings in paragraphs [72 and 73].

45.   A bank that is located in a jurisdiction that permits use of the SEC-ERBA may use an Internal Assessment Approach (IAA) as described in paragraphs [74 to 77] for an unrated securitisation exposure (eg liquidity facilities and credit enhancements) to an SA pool within an ABCP programme. In order to use an IAA, a bank must have supervisory approval to use the IRB approach. A bank should consult with its national supervisor on whether and when it can apply the IAA to its securitisation exposures, especially where the bank can apply the IRB for some, but not all, underlying exposures. To ensure appropriate capital levels, there may be instances where the supervisor requires a treatment other than this general rule.

46.   A bank that cannot use the SEC-ERBA or an IAA for its exposure to an SA pool may use the Standardised Approach (SEC-SA) as described in paragraphs [78 to 87].

(iii)   Securitisation exposures of mixed pools

47.   Where a bank can calculate K_{IRB} on at least 95% of the underlying exposure amounts of a securitisation, the bank must apply the SEC-IRBA calculating the capital charge for the underlying pool as:

$$d*K_{IRB} + (1–d)*K_{SA},$$

where

- d is the percentage of the exposure amount of underlying exposures for which the bank can calculate K_{IRB} over the exposure amount of all underlying exposures; and

- K_{IRB} and K_{SA} are as defined in paragraphs [49] and [79], respectively.

Where the bank cannot calculate K_{IRB} on at least 95% of the underlying exposures, the bank must use the hierarchy for securitisation exposures of SA pools as set out in paragraphs [44 to 46].

3. Approaches

(i) Internal Ratings-Based Approach (SEC-IRBA)

48. To calculate capital requirements for a securitisation exposure to an IRB pool, a bank must use the SEC-IRBA and the following bank-supplied inputs: the IRB capital charge had the underlying exposures not been securitised (K_{IRB}), the tranche attachment point (A), the tranche detachment point (D) and the supervisory parameter p, as defined below. Where the only difference between exposures to a transaction is related to maturity, A and D will be the same.

Definition of K_{IRB}

49. K_{IRB} is the ratio of (a) the IRB capital requirement (including the expected loss portion and, where applicable, dilution risk as discussed in paragraph [52]) for the underlying exposures in the pool to (b) the exposure amount of the pool (eg the sum of drawn amounts related to securitised exposures plus the exposure-at-default associated with undrawn commitments related to securitised exposures).[17,18] K_{IRB} is expressed in decimal form (eg a capital charge equal to 15% of the pool would be expressed as 0.15).

Notwithstanding the clarification in paragraph [47] for mixed pools, quantity (a) above must be calculated in accordance with applicable minimum IRB standards as set forth in Section III of the Basel framework as if the exposures in the pool were held directly by the bank. This calculation should reflect the effects of any credit risk mitigant that is applied on the underlying exposures (either individually or to the entire pool), and hence benefits all of the securitisation exposures.

For structures involving an SPE, all of the SPE's exposures related to the securitisation are to be treated as exposures in the pool. Exposures related to the securitisation that should be treated as exposures in the pool could include assets in which the SPE may have invested a reserve account, such as a cash collateral account or claims against counterparties resulting from interest swaps or currency swaps.[19] Notwithstanding, the bank can exclude the SPE's exposures from the pool for capital calculation purposes if the bank can demonstrate to its national supervisor that the risk of the SPE's exposures is immaterial (for example, because it has been mitigated[20]) or that it does not affect the bank's securitisation exposure.

In the case of funded synthetic securitisations, any proceeds of the issuances of credit-linked notes or other funded obligations of the SPE that serve as collateral for the repayment of the

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[17] K_{IRB} must also include the unexpected loss and the expected loss associated with defaulted exposures in the underlying pool.

[18] The scaling factor of 1.06 referenced in paragraph 44 of the Basel II framework is applied to the unexpected loss portion of the calculation of K_{IRB}. The calculation of K_{IRB} as described in this paragraph and the calculation of caps as determined in paragraphs 78 to 82 [of this consultative document] are the only occurrence of use of the scaling factor in the securitisation framework, ie the risk-weighted assets resulting from the different approaches (Internal Ratings-Based Approach, External Ratings-Based Approach or Standardised Approach) are not subject to the scaling factor.

[19] In particular, in the case of swaps other than credit derivatives, the numerator of K_{IRB} must include the positive current market value times the risk weight of the swap provider times 8%. In contrast, the denominator should not take into account such a swap, as such a swap would not provide a credit enhancement to any tranche.

[20] Certain best market practices can eliminate or at least significantly reduce the potential risk from a default of a swap provider. Examples of such features could be:

- cash collateralisation of the market value in combination with an agreement of prompt additional payments in case of an increase of the market value of the swap; and

- minimum credit quality of the swap provider with the obligation to post collateral or present an alternative swap provider without any costs for the SPE in the event of a credit deterioration on the part of the original swap provider.

If national supervisors are satisfied with these risk mitigants and accept that the contribution of these exposures to the risk of the holder of a securitisation exposure is insignificant, supervisors may allow the bank to exclude these exposures from the K_{IRB} calculation.

securitisation exposure in question and for which the bank cannot demonstrate to its national supervisor that it is immaterial must be included in the calculation of K_{IRB} if the default risk of the collateral is subject to the tranched loss allocation.[21]

50. To calculate K_{IRB}, the treatment for eligible purchased receivables described in paragraphs 239–243, 363–368, 485, 487 and 491–499 may be used -with the particularities specified in paragraphs [50(a)-50(c)] below- if, according to IRB minimum requirements:

(i)   for non-retail assets, it would be an undue burden on a bank to assess the default risk of individual obligors; and

(ii)   for retail assets, a bank is unable to primarily rely on internal data.

All other IRB minimum requirements must be met by the bank.

50(a)   Paragraph [50] applies to any securitised exposure, not just purchased receivables. For this purpose, "eligible purchased receivables" should be understood as referring to any securitised exposure for which the conditions of paragraph [50] are met, and "eligible purchased corporate receivables" should be understood as referring to any securitised non-retail exposure.

50(b)   Supervisors may deny the use of a top-down approach for eligible purchased receivables for securitised exposures depending on the bank's compliance with minimum requirements.

50(c)   The requirements to use a top-down approach for the eligible purchased receivables are generally unchanged when applied to securitisations except in the following cases:

(i)   the requirement in paragraph 242 for the bank to have a claim on all proceeds from the pool of receivables or a pro-rata interest in the proceeds does not apply. Instead, the bank must have a claim on all proceeds from the pool of securitised exposures that have been allocated to the bank's exposure in the securitisation in accordance with the terms of the related securitisation documentation;

(ii)   in paragraph 492, the purchasing bank should be interpreted as the bank calculating K_{IRB};

(iii)   in paragraphs 494–499 "a bank" should be read as "the bank estimating PD, LGD or EL for the securitised exposures"; and

(iv)   if the bank calculating K_{IRB} cannot itself meet the requirements in paragraphs 494–498, it must instead ensure that it meets these requirements through a party to the securitisation acting for and in the interest of the investors in the securitisation, in accordance with the terms of the related securitisation documents. Specifically, requirements for effective control and ownership must be met for all proceeds from the pool of securitised exposures that have been allocated to the bank's exposure to the securitisation. Further, in the first bullet point of paragraph 496, the relevant eligibility criteria and advancing policies are those of the securitisation, not those of the bank calculating K_{IRB}.

51. In cases where a bank has set aside a specific provision or has a non-refundable purchase price discount on an exposure in the pool, both quantity (a) and quantity (b) as defined in paragraph [49] must be calculated using the gross amount of the exposure without the specific provision and/or non-refundable purchase price discount.

52. Dilution risk in a securitisation must be recognised if it is not immaterial, as demonstrated by the bank to its national supervisor (see paragraph 369), whereby the provisions of paragraph [49] and all its subparts shall apply.

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[21]   As in the case of swaps other than credit derivatives, the numerator of K_{IRB} (ie quantity (a)) must include the exposure amount of the collateral times its risk weight times 8%, but the denominator should be calculated without recognition of the collateral.

52(a)   Where default and dilution risk are treated in an aggregate manner (eg an identical reserve or overcollateralisation is available to cover losses for both risks), in order to calculate capital requirements for the securitisation exposure, a bank must determine K_{IRB} for dilution risk and default risk, respectively, and combine them into a single K_{IRB} prior to applying the SEC-IRBA. Annex [1] provides an illustration of such a calculation.

52(b)   In certain circumstances, pool level credit enhancement will not be available to cover losses from either credit risk or dilution risk. In the case of separate waterfalls for credit risk and dilution risk, a bank should consult with its national supervisor as to how the capital calculation should be performed. To guide banks and supervisors, Annex [1] includes an example of how such calculations could be made in a prudent manner.

Definition of attachment point (A) and detachment point (D)

53.   The input A represents the threshold at which losses within the underlying pool would first be allocated to the securitisation exposure. This input, which is a decimal value between zero and one, equals the greater of (a) zero and (b) the ratio of (i) the outstanding balance of all underlying assets in the securitisation minus the outstanding balance of all tranches that rank senior or pari passu to the tranche that contains the securitisation exposure of the bank (including the exposure itself) to (ii) the outstanding balance of all underlying assets in the securitisation.

54.   The input D represents the threshold at which losses within the underlying pool result in a total loss of principal for the tranche in which a securitisation exposure resides. This input, which is a decimal value between zero and one, equals the greater of (a) zero and (b) the ratio of (i) the outstanding balance of all underlying assets in the securitisation minus the outstanding balance of all tranches that rank senior to the tranche that contains the securitisation exposure of the bank to (ii) the outstanding balance of all underlying assets in the securitisation.

55.   For the calculation of A and D: (i) overcollateralisation and funded reserve accounts must be recognised as tranches; and (ii) the assets forming these reserve accounts must be recognised as underlying assets. Only the loss-absorbing part of the funded reserve accounts that provide credit enhancement can be recognised as tranches and underlying assets. Unfunded reserve accounts, such as those to be funded from future receipts from the underlying exposures (eg unrealised excess spread) and assets that do not provide credit enhancement like pure liquidity support, currency or interest-rate swaps, or cash collateral accounts related to these instruments must not be included in the above calculation of A and D. Banks should take into consideration the economic substance of the transaction and apply these definitions conservatively in the light of the structure.

Formulation of supervisory parameter (p)

56.   The supervisory parameter p in the context of the SEC-IRBA is as follows:

$$p = \max [0.3; (A + B*(1/N) + C*K_{IRB} + D*LGD + E*M_T)],$$

where:

- 0.3 denotes the p-parameter floor;

- N is the effective number of loans in the underlying pool, calculated as described in paragraph [59];

- K_{IRB} is the capital charge of the underlying pool (as defined in paragraph [49]);

- LGD is the exposure-weighted average loss-given-default of the underlying pool, calculated as described in paragraph [60]);

- M_T is the maturity of the tranche calculated according to paragraphs [22 and 23]; and

- the parameters *A, B, C, D, and E* are determined according to the following look-up table:

		A	**B**	**C**	**D**	**E**
Wholesale	**Senior**, granular (N ≥ 25)	0	3.56	−1.85	0.55	0.07
	Senior, non-granular (N < 25)	0.11	2.61	−2.91	0.68	0.07
	Non-senior, granular (N ≥ 25)	0.16	2.87	−1.03	0.21	0.07
	Non-senior, non-granular (N < 25)	0.22	2.35	−2.46	0.48	0.07
Retail	**Senior**	0	0	−7.48	0.71	0.24
	Non-senior	0	0	−5.78	0.55	0.27

57. If the underlying IRB pool consists of both retail and wholesale exposures, the pool should be divided into one retail and one wholesale subpool and, for each subpool, a separate p-parameter (and the corresponding input parameters N, K_{IRB} and LGD) should be estimated. Subsequently, a weighted average p-parameter for the transaction should be calculated on the basis of the p-parameters of each subpool and the nominal size of the exposures in each subpool.

58. If a bank applies the SEC-IRBA to a mixed pool as described in paragraph [47], the calculation of the p-parameter should be based on the IRB underlying assets only. The SA underlying assets should not be considered for this purpose.

Calculation of effective number of exposures (N)

59. The effective number of exposures is calculated as:

$$N = \frac{(\sum_i EAD_i)^2}{\sum_i EAD_i^2},$$

where EAD_i represents the exposure-at-default associated with the ith instrument in the pool.

Multiple exposures to the same obligor must be consolidated (ie treated as a single instrument).

Calculation of exposure-weighted average LGD

60. The exposure-weighted average LGD is calculated as follows:

$$LGD = \frac{\sum_i LGD_i \cdot EAD_i}{\sum_i EAD_i},$$

where LGD_i represents the average LGD associated with all exposures to the ith obligor. When default and dilution risks for purchased receivables are treated in an aggregate manner (eg a single reserve or overcollateralisation is available to cover losses from either source) within a securitisation, the LGD input must be constructed as a weighted average of the LGD for default risk and the 100% LGD for dilution risk. The weights are the stand-alone IRB capital charges for default risk and dilution risk, respectively.

Simplified method for computing N and LGD

61. Under the conditions outlined below, banks may employ a simplified method for calculating the effective number of exposures and the exposure-weighted average LGD. Let C_m in the simplified calculation denote the share of the pool corresponding to the sum of the largest m exposures (eg a 15% share corresponds to a value of 0.15). The level of m is set by each bank.

- If the portfolio share associated with the largest exposure, C_1, is no more than 0.03 (or 3% of the underlying pool), then for purposes of the SEC-IRBA the bank may set LGD as 0.50 and N equal to the following amount:

$$N = \left(C_1 \cdot C_m + \left(\frac{C_m - C_1}{m - 1} \right) \cdot \max\{1 - m \cdot C_1, 0\} \right)^{-1}$$

- Alternatively, if only C_1 is available and this amount is no more than 0.03, then the bank may set LGD as 0.50 and N as $1/C_1$.

Calculation of risk weight

62. The formulation of the SEC-IRBA is as follows:

$$K_{SSFA(K_{IRB})} = \frac{e^{a \cdot u} - e^{a \cdot l}}{a(u - l)}$$

The capital requirement per unit of securitisation exposure under the SEC-IRBA is a function of three variables, labelled a, u and l. The constant e is the base of the natural logarithms (which equals 2.71828). The variables a, u and l are defined as follows:

a = –(1 / (p * K_{IRB}))

u = D – K_{IRB}

l = max (A - K_{IRB}; 0)

63. The risk weight assigned to a securitisation exposure when applying the SEC-IRBA is calculated as follows:

- When D for a securitisation exposure is less than or equal to K_{IRB}, the exposure must be assigned a risk weight of 1,250%.

- When A for a securitisation exposure is greater than or equal to K_{IRB}, the risk weight of the exposure, expressed as a percentage, would equal $K_{SSFA(K_{IRB})}$ times 12.5.

- When A is less than K_{IRB} and D is greater than K_{IRB}, the applicable risk weight is a weighted average of 1,250% and 12.5 times $K_{SSFA(K_{IRB})}$ according to the following formula:

$$RW = \left[\left(\frac{K_{IRB} - A}{D - A} \right) \cdot 12.5 \right] + \left[\left(\frac{D - K_{IRB}}{D - A} \right) \cdot 12.5 \cdot K_{SSFA(K_{IRB})} \right]$$

The risk weight for market risk hedges such as currency or interest rate swaps will be inferred from a securitisation exposure that is pari passu to the swaps or, if such an exposure does not exist, from the next subordinated tranche.

64. The resulting risk weight is subject to a floor risk weight of 15%.

(ii) External Ratings-Based Approach (SEC-ERBA)

65. For securitisation exposures that are externally rated, or for which an inferred rating is available, risk-weighted assets under the SEC-ERBA will be determined by multiplying securitisation exposure amounts (as defined in paragraph [19]) by the appropriate risk weights as determined by paragraphs [66 to 70], provided that the operational criteria in paragraphs [71 to 73] are met.[22]

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[22] The rating designations used in Tables 1 and 2 are for illustrative purposes only and do not indicate any preference for, or endorsement of, any particular external assessment system.

Short-term ratings

66.   For exposures with short-term ratings, or when an inferred rating based on a short-term rating is available, the following risk weights will apply:

Table 1: ERBA risk weights for short-term ratings

External credit assessment	A–1/P–1	A–2/P–2	A–3/P–3	All other ratings
Risk weight	15%	50%	100%	1,250%

Long-term ratings

67.   For exposures with long-term ratings, or when an inferred rating based on a long-term rating is available, the risk weights depend on (i) the external rating grade or an available inferred rating; (ii) the seniority of the position; (iii) the tranche maturity; and (iv) in the case of non-senior tranches, the tranche thickness.

68.   Specifically, for exposures with long-term ratings, risk weights will be determined according to Table 2 and will be adjusted for tranche maturity (calculated according to paragraphs [22 and 23]), and tranche thickness for non-senior tranches according to paragraph [69].

Table 2: ERBA risk weights for long-term ratings

Rating	Senior tranche		Non-senior (thin) tranche	
	Tranche maturity (M_T)		Tranche maturity (M_T)	
	1 year	5 years	1 year	5 years
AAA	15%	20%	15%	70%
AA+	15%	30%	15%	90%
AA	25%	40%	30%	120%
AA–	30%	45%	40%	140%
A+	40%	50%	60%	160%
A	50%	65%	80%	180%
A–	60%	70%	120%	210%
BBB+	75%	90%	170%	260%
BBB	90%	105%	220%	310%
BBB–	120%	140%	330%	420%
BB+	140%	160%	470%	580%
BB	160%	180%	620%	760%
BB–	200%	225%	750%	860%
B+	250%	280%	900%	950%
B	310%	340%	1050%	1050%
B–	380%	420%	1130%	1130%
CCC+/CCC/CCC–	460%	505%	1,250%	1,250%
Below CCC–	1,250%	1,250%	1,250%	1,250%

69.   The risk weight assigned to a securitisation exposure when applying the SEC-ERBA is calculated as follows:

•   To account for tranche maturity, banks shall use linear interpolation between the risk weights for one and five years.

•   To account for tranche thickness, banks shall calculate the risk weight for non-senior tranches as follows:

*Risk weight = [risk weight from table after adjusting for maturity] * [1 – min(T; 50%)],*

where T equals tranche thickness, and is measured as D minus A, as defined, respectively, in paragraphs [54 and 53].

In the case of market risk hedges such as currency or interest rate swaps, the risk weight will be inferred from a securitisation exposure that is pari passu to the swaps or, if such an exposure does not exist, from the next subordinated tranche.

70. The resulting risk weight is subject to a floor risk weight of 15%. In addition, the resulting risk weight should never be lower than the risk weight corresponding to a senior tranche of the same securitisation with the same rating and maturity.

Operational requirements for use of external credit assessments

71. The following operational criteria concerning the use of external credit assessments apply in the securitisation framework:

(a) To be eligible for risk-weighting purposes, the external credit assessment must take into account and reflect the entire amount of credit risk exposure the bank has with regard to all payments owed to it. For example, if a bank is owed both principal and interest, the assessment must fully take into account and reflect the credit risk associated with timely repayment of both principal and interest.

(b) The external credit assessments must be from an eligible external credit assessment institution (ECAI) as recognised by the bank's national supervisor in accordance with paragraphs 90 to 108 of the Basel II framework with the following exception. In contrast with the third bullet point of paragraph 91 of the Basel II framework, an eligible credit assessment, procedures, methodologies, assumptions and the key elements underlying the assessments must be publicly available, on a non-selective basis and free of charge.[23] In other words, a rating must be published in an accessible form and included in the ECAI's transition matrix. Also, loss and cash flow analysis as well as sensitivity of ratings to changes in the underlying rating assumptions should be publicly available. Consequently, ratings that are made available only to the parties to a transaction do not satisfy this requirement.

(c) Eligible ECAIs must have a demonstrated expertise in assessing securitisations, which may be evidenced by strong market acceptance.

(d) Where two or more eligible ECAIs can be used and these assess the credit risk of the same securitisation exposure differently, paragraphs 96 to 98 of the Basel II framework will apply.

(e) Where CRM is provided to specific underlying exposures or the entire pool by an eligible guarantor as defined in paragraph 195 of the Basel II framework and is reflected in the external credit assessment assigned to a securitisation exposure(s), the risk weight associated with that external credit assessment should be used. In order to avoid any double-counting, no additional capital recognition is permitted. If the CRM provider is not recognised as an eligible guarantor under paragraph 195 of the Basel II framework, the covered securitisation exposures should be treated as unrated.

(f) In the situation where a credit risk mitigant solely protects a specific securitisation exposure within a given structure (eg asset-backed security tranche) and this protection is reflected in the external credit assessment, the bank must treat the exposure as if it is unrated and then apply the CRM treatment outlined in Section II.D of the Basel II framework or in the foundation IRB approach of Section III of the Basel II framework, to recognise the hedge.

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[23] Where the eligible credit assessment is not publicly available free of charge, the ECAI should provide an adequate justification, within its own publicly available code of conduct, in accordance with the "comply or explain" nature of the International Organization of Securities Commissions' Code of Conduct Fundamentals for Credit Rating Agencies.

(g)   A bank is not permitted to use any external credit assessment for risk-weighting purposes where the assessment is at least partly based on unfunded support provided by the bank. For example, if a bank buys ABCP where it provides an unfunded securitisation exposure extended to the ABCP programme (eg liquidity facility or credit enhancement), and that exposure plays a role in determining the credit assessment on the ABCP, the bank must treat the ABCP as if it were not rated. The bank must continue to hold capital against the other securitisation exposures it provides (eg against the liquidity facility and/or credit enhancement).

Operational requirements for inferred ratings

72.   In accordance with the hierarchy of approaches determined in paragraphs [42 to 47], a bank must infer a rating for an unrated position and use the SEC-ERBA provided that the requirements set out in paragraph [73] are met. These requirements are intended to ensure that the unrated position is senior in all respects to an externally-rated securitisation exposure termed the "reference securitisation exposure".

73.   The following operational requirements must be satisfied to recognise inferred ratings:

(a)   The reference securitisation exposure (eg asset-backed security) must rank pari passu or be subordinate in all respects to the unrated securitisation exposure. Credit enhancements, if any, must be taken into account when assessing the relative subordination of the unrated exposure and the reference securitisation exposure. For example, if the reference securitisation exposure benefits from any third-party guarantees or other credit enhancements that are not available to the unrated exposure, then the latter may not be assigned an inferred rating based on the reference securitisation exposure.

(b)   The maturity of the reference securitisation exposure must be equal to or longer than that of the unrated exposure.

(c)   On an ongoing basis, any inferred rating must be updated continuously to reflect any subordination of the unrated position or changes in the external rating of the reference securitisation exposure.

(d)   The external rating of the reference securitisation exposure must satisfy the general requirements for recognition of external ratings as delineated in paragraph [71].

(iii)   *Internal Assessment Approach (IAA)*

74.   Subject to supervisory approval, a bank may use its internal assessments of the credit quality of its securitisation exposures extended to ABCP programmes (eg liquidity facilities and credit enhancements) provided that the bank has at least one approved IRB model (which does not need to be applicable to the securitised exposures) and if the bank's internal assessment process meets the operational requirements set out below. Internal assessments of exposures provided to ABCP programmes must be mapped to equivalent external ratings of an ECAI. Those rating equivalents are used to determine the appropriate risk weights under the SEC-ERBA for the exposures.

75.   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 programme:

(a)   For the unrated exposure to qualify for the IAA, the ABCP must be externally rated. The ABCP itself is subject to the SEC-ERBA.

(b)   The internal assessment of the credit quality of a securitisation exposure to the ABCP programme must be based on 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 of the IRB framework.

(c)   In order for banks to use the IAA, their supervisors must be satisfied (i) that the ECAI meets the ECAI eligibility criteria outlined in paragraphs 90 to 108 and (ii) 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 to the relevant ECAI's standards.

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.

(d)   The bank's internal assessment process must identify gradations of risk. Internal assessments must correspond to the external ratings of ECAIs so that supervisors can determine which internal assessment corresponds to each external rating category of the ECAIs.

(e)   The bank's internal assessment process, particularly the stress factors for determining credit enhancement requirements, must be at least as conservative as the publicly available rating criteria of the major ECAIs that are externally rating the ABCP programme's commercial paper for the asset type being purchased by the programme. However, banks should consider, to some extent, all publicly available ECAI rating methodologies in developing their internal assessments.

- In the case where (i) the commercial paper issued by an ABCP programme is externally rated by two or more ECAIs and (ii) the 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 requires the most conservative or highest level of credit protection. For example, if one ECAI required enhancement of 2.5 to 3.5 times historical losses for an asset type to obtain a single A rating equivalent and another required two to three times historical losses, the bank must use the higher range of stress factors in determining the appropriate level of seller-provided credit enhancement.

- When selecting ECAIs to externally rate an ABCP, a bank must not choose only those ECAIs that generally have relatively less restrictive rating methodologies. In addition, if there are changes in the methodology of one of the selected ECAIs, including the stress factors, that adversely affect the external rating of the programme's commercial paper, then the revised rating methodology must be considered in evaluating whether the internal assessments assigned to ABCP programme exposures are in need of revision.

- A bank cannot utilise an ECAI's rating methodology to derive an internal assessment if the ECAI's process or rating criteria are not publicly available. However, banks should consider the non-publicly available methodology – to the extent that they have access to such information – in developing their internal assessments, particularly if it is more conservative than the publicly available criteria.

- In general, if the ECAI rating methodologies for an asset or exposure are not publicly available, then the IAA may not be used. However, in certain instances – for example, for new or uniquely structured transactions, which are not currently addressed by the rating criteria of an ECAI rating the programme's commercial paper – a bank may discuss the specific transaction with its supervisor to determine whether the IAA may be applied to the related exposures.

(f)   Internal or external auditors, an ECAI, or the bank's internal credit review or risk management function must perform regular reviews of the internal assessment process and assess the

validity of those internal assessments. If the bank's internal audit, credit review or risk management functions perform the reviews of the internal assessment process, then these functions must be independent of the ABCP programme business line, as well as the underlying customer relationships.

(g) The bank must track the performance of its internal assessments 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.

(h) The ABCP programme must have credit and investment guidelines, ie underwriting standards, for the ABCP programme. In the consideration of an asset purchase, the ABCP programme (ie the programme 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.

(i) 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.

(j) The ABCP programme's underwriting policy must establish minimum asset eligibility criteria that, among other things:

- exclude the purchase of assets that are significantly past due or defaulted;

- limit excess concentration to individual obligor or geographical area; and

- limit the tenor of the assets to be purchased.

(k) The ABCP programme should have collection processes established that consider the operational capability and credit quality of the servicer. The programme 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 programme.

(l) The aggregate estimate of loss on an asset pool that the ABCP programme 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 bank should review several years of historical information, including losses, delinquencies, dilutions and the turnover rate of the receivables. Furthermore, the bank should evaluate the characteristics of the underlying asset pool (eg weighted-average credit score) and should identify any concentrations to an individual obligor or geographical region and the granularity of the asset pool.

(m) The ABCP programme must incorporate structural features into the purchase of assets in order to mitigate potential credit deterioration of the underlying portfolio. Such features may include wind-down triggers specific to a pool of exposures.

76. The exposure amount of the securitisation exposure to the ABCP programme must be assigned to the risk weight in the SEC-ERBA appropriate to the credit rating equivalent assigned to the bank's exposure.

77. If a bank's internal assessment process is no longer considered adequate, the bank's supervisor may preclude the bank from applying the IAA to its ABCP exposures, both existing and newly originated, for determining the appropriate capital treatment until the bank has remedied the deficiencies. In this instance, the bank must revert to the SEC-SA described in paragraphs [78 to 87].

(iv) Standardised Approach (SEC-SA)

78. To calculate capital requirements for a securitisation exposure to an SA pool using the SEC-SA, a bank would use a supervisory formula and the following bank-supplied inputs: the SA capital charge had the underlying exposures not been securitised (K_{SA}); the ratio of delinquent underlying exposures to total underlying exposures in the securitisation pool (W); the tranche attachment point (A); and the tranche detachment point (D). The inputs A and D are defined above in paragraphs [53 and 54], respectively. Where the only difference between exposures to a transaction is related to maturity, A and D will be the same. K_{SA} and W are defined below in paragraphs [79 and 81].

79. K_{SA} is defined as the weighted-average capital charge of the entire portfolio of underlying exposures, calculated using the risk-weighted asset amounts in the SA in Section II of the Basel framework in relation to the sum of the exposure amounts of underlying exposures, multiplied by 8%. This calculation should reflect the effects of any credit risk mitigant that is applied to the underlying exposures (either individually or to the entire pool), and hence benefits all of the securitisation exposures. K_{SA} is expressed as a decimal between zero and one (that is, a weighted-average risk weight of 100% means that K_{SA} would equal 0.08).

For structures involving an SPE, all of the SPE's exposures related to the securitisation are to be treated as exposures in the pool. Exposures related to the securitisation that should be treated as exposures in the pool include assets in which the SPE may have invested, comprising reserve accounts, cash collateral accounts and claims against counterparties resulting from interest swaps or currency swaps.[24] Notwithstanding, the bank can exclude the SPE's exposures from the pool for capital calculation purposes if the bank can demonstrate to its national supervisor that the risk does not affect its particular securitisation exposure or that the risk is immaterial – for example, because it has been mitigated.[25]

In the case of funded synthetic securitisations, any proceeds of the issuances of credit-linked notes or other funded obligations of the SPE that serve as collateral for the repayment of the securitisation exposure in question, and for which the bank cannot demonstrate to its national supervisor that they are immaterial, have to be included in the calculation of K_{SA} if the default risk of the collateral is subject to the tranched loss allocation.[26]

80. In cases where a bank has set aside a specific provision or has a non-refundable purchase price discount on an exposure in the pool, K_{SA} must be calculated using the gross amount of the exposure without the specific provision and/or non-refundable purchase price discount.

81. The variable W equals the ratio of the sum of the nominal amount of delinquent underlying exposures (as defined in paragraph [82]) to the nominal amount of underlying exposures.

82. Delinquent underlying exposures are underlying exposures that are 90 days or more past due, subject to bankruptcy or insolvency proceedings, in the process of foreclosure, held as real estate owned, or in default, where default is defined within the securitisation deal documents.

83. The inputs K_{SA} and W are used as inputs to calculate K_A, as follows:

$$K_A = (1 - W) \cdot K_{SA} + W \cdot 0.5$$

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[24] See footnote 19.

[25] See footnote 20.

[26] See footnote 21.

In case a bank does not know the delinquency status, as defined above, for no more than 5% of underlying exposures in the pool, the bank may still use the SEC-SA by adjusting its calculation of K_A as follows:

$$K_A = \left(\frac{\text{EAD}_{\text{Subpool 1 where W known}}}{\text{EAD Total}} \times K_A^{\text{Subpool 1 where w known}} \right) + \frac{\text{EAD}_{\text{Subpool 2 where W unknown}}}{\text{EAD Total}}$$

If the bank does not know the delinquency status for more than 5%, the securitisation exposure must be risk weighted at 1,250%.

84.   Capital requirements are calculated under the SEC-SA as follows:

$$K_{\text{SSFA}(K_A)} = \frac{e^{a \cdot u} - e^{a \cdot l}}{a(u - l)}$$

where $K_{\text{SSFA}(KA)}$ is the capital requirement per unit of the securitisation exposure and the variables a, u, and l are defined as follows:

a = −(1 / (p * K_A))

u = D − K_A

l = max (A − K_A; 0)

85.   The supervisory parameter p in the context of the SEC-SA is set equal to 1 for a securitisation exposure that is not a resecuritisation exposure.

86.   The risk weight assigned to a securitisation exposure when applying the SEC-SA would be calculated as follows:

- When D for a securitisation exposure is less than or equal to K_A, the exposure must be assigned a risk weight of 1,250%.

- When A for a securitisation exposure is greater than or equal to K_A, the risk weight of the exposure, expressed as a percentage, would equal $K_{SSFA(K_A)}$ times 12.5.

- When A is less than K_A and D is greater than K_A, the applicable risk weight is a weighted average of 1,250% and 12.5 times $K_{SSFA(K_A)}$ according to the following formula:

$$RW = \left[\left(\frac{K_A - A}{D - A} \right) \cdot 12.5 \right] + \left[\left(\frac{D - K_A}{D - A} \right) \cdot 12.5 \cdot K_{\text{SSFA}(K_A)} \right]$$

The risk weight for market risk hedges such as currency or interest rate swaps will be inferred from a securitisation exposure that is pari passu to the swaps or, if such an exposure does not exist, from the next subordinated tranche.

87.   The resulting risk weight is subject to a floor risk weight of 15%.

4.   Caps for securitisation exposures

(i)   Maximum risk weight for senior exposures

88.   Banks may apply a "look-through" approach to senior securitisation exposures, whereby the senior securitisation exposure could receive a maximum risk weight equal to the exposure weighted-average risk weight applicable to the underlying exposures, provided that the bank has knowledge of the composition of the underlying exposures at all times. The applicable risk weight under the IRB framework would be calculated taking into account the application of the 1.06 scaling factor pursuant to paragraph 44 of the IRB credit risk framework, and would also be inclusive of the expected loss portion multiplied by 12.5. In particular:

- In the case of pools where the bank uses exclusively the SA or the IRB approach, the risk weight cap for senior exposures would equal the exposure weighted-average risk weight that would apply to the underlying exposures under the SA or IRB framework, respectively.

- In the case of mixed pools, when applying the SEC-IRBA, the SA part of the underlying pool would receive the corresponding SA risk weight, while the IRB portion would receive IRB risk weights. When applying the SEC-SA or the SEC-ERBA, the risk weight cap for senior exposures would be based on the SA exposure weighted-average risk weight of the underlying assets, whether or not they are originally IRB.

89. Where the risk weight cap results in a lower risk weight than the floor risk weight of 15%, the risk weight resulting from the cap should be used.

(ii) Maximum capital requirements

90. A bank (originator, sponsor or investors) using the SEC-IRBA for a securitisation exposure may apply a maximum capital requirement for the securitisation exposures it holds equal to the IRB capital requirement (including the expected loss portion and the scaling factor of 1.06 for the unexpected loss portion) that would have been assessed against the underlying exposures had they not been securitised and treated under the appropriate sections of the IRB framework including Section III.G of the Basel II framework.

In the case of mixed pools, the overall cap should be calculated by adding up the capital before securitisation; that is, by adding up the capital required under the general credit risk framework for the IRB and for the SA part of the underlying pool.

91. An originating or sponsor bank using the SEC-ERBA or SEC-SA for a securitisation exposure may apply a maximum capital requirement for the securitisation exposures it holds equal to the capital requirement that would have been assessed against the underlying exposures had they not been securitised.

In the case of mixed pools, the overall cap should also be calculated by adding up the capital before securitisation; that is, by adding up the capital required under the general credit risk framework for the IRB and the SA part of the underlying pool, respectively. The IRB part of the capital requirement includes the expected loss portion and the scaling factor of 1.06 for the unexpected loss portion.

92. In order to apply a maximum capital charge to a bank's securitisation exposure, a bank will need the following inputs:

- The largest proportion of interest that the bank holds for each tranche of a given pool (P). In particular:

  – For a bank that has one or more securitisation exposure(s) that reside in a single tranche of a given pool, P equals the proportion (expressed as a percentage) of securitisation exposure(s) that the bank holds in that given tranche (calculated as the total nominal amount of the bank's securitisation exposure(s) in the tranche) divided by the nominal amount of the tranche.

  – For a bank that has securitisation exposures that reside in different tranches of a given securitisation, P equals the maximum proportion of interest across tranches, where the proportion of interest for each of the different tranches should be calculated as described above.

- Capital charge for underlying pool (K_P):

  – For an IRB pool, K_P equals K_{IRB} as defined in paragraphs [49 to 52].

  – For an SA pool, K_P equals K_{SA} as defined in paragraph [79 and 80].

  – For a mixed pool, K_P equals the exposure-weighted average capital charge of the underlying pool using K_{SA} for the proportion of the underlying pool for which the bank

cannot calculate K_{IRB}, and K_{IRB} for the proportion of the underlying pool for which a bank can calculate K_{IRB}.

The maximum aggregated capital requirement for a bank's securitisation exposures in the same transaction will be equal to $K_P * P$.

93. In applying the capital charge cap, the entire amount of any gain on sale and credit-enhancing interest-only strips arising from the securitisation transaction must be deducted in accordance with paragraph [36].

F. Treatment of resecuritisation exposures

94. For resecuritisation exposures, banks must apply the SEC-SA specified in paragraphs [78 to 87], with the following adjustments:

- the capital requirement of the underlying securitisation exposures is calculated using the securitisation framework;

- delinquencies (W) are set to zero for any exposure to a securitisation tranche in the underlying pool; and

- the supervisory parameter p is set equal to 1.5, rather than 1 as for securitisation exposures.

95. If the underlying portfolio of a resecuritisation consists in a pool of exposures to securitisation tranches and to other assets, one should separate the exposures to securitisation tranches from exposures to assets that are not securitisations. The K_A parameter should be calculated for each subset individually, applying separate W parameters; these calculated in accordance with paragraphs [81 to 82] in the subsets where the exposures are to assets that are not securitisation tranches, and set to zero where the exposures are to securitisation tranches. The K_A for the resecuritisation exposure is then obtained as the nominal exposure weighted-average of the K_A's for each subset considered.

96. The resulting risk weight is subject to a floor risk weight of 100%.

97. The caps described in paragraphs [88 to 93] cannot be applied to resecuritisation exposures.

G. Implicit support

98. When a bank provides implicit support to a securitisation, it must, at a minimum, hold capital against all of the underlying exposures associated with the securitisation transaction as if they had not been securitised. Additionally, banks would not be permitted to recognise in regulatory capital any gain on sale, in accordance with paragraph [36]. Furthermore, the bank is required to disclose publicly that (a) it has provided non-contractual support and (b) the capital impact of doing so.

H. Treatment of credit risk mitigation for securitisation exposures

Eligible credit risk mitigation techniques for protection buyers

99. A bank may recognise credit protection purchased on a securitisation exposure when calculating capital requirements subject to the following:

- collateral recognition is limited to that permitted under the credit risk mitigation framework – in particular, paragraphs 145 and 146 of the Basel II framework when the bank applies the SEC-ERBA or SEC-SA, and paragraph 289 of the Basel II framework when the bank applies the SEC-IRBA. Collateral pledged by SPEs may be recognised;

- credit protection provided by the entities listed in paragraph 195 of the Basel II framework may be recognised. SPEs cannot be recognised as eligible guarantors; and

- where guarantees or credit derivatives fulfil the minimum operational conditions as specified in paragraphs 189 to 194 of the Basel II framework, banks can take account of such credit protection in calculating capital requirements for securitisation exposures.

Full or proportional cover

100. When a bank provides full (or pro rata) credit protection to a securitisation exposure, the bank must calculate its capital requirements as if it directly holds the portion of the securitisation exposure on which it has provided credit protection (in accordance with the definition of tranche maturity given in paragraphs [22 and 23]).

101. Provided that the conditions set out in paragraph [99] are met, the bank buying full (or pro rata) credit protection may recognise the credit risk mitigation on the securitisation exposure in accordance with the CRM framework.

Tranched protection

102. In the case of tranched credit protection, the original securitisation tranche will be decomposed into protected and unprotected sub-tranches:[27]

- The protection provider must calculate its capital requirement as if directly exposed to the particular sub-tranche of the securitisation exposure on which it is providing protection, and as determined by the hierarchy of approaches for securitisation exposures and according to paragraphs [103 to 105].

- Provided that the conditions set out in paragraph [99] are met, the protection buyer may recognise tranched protection on the securitisation exposure. In doing so, it must calculate capital requirements for each sub-tranche separately and as follows:

  – For the resulting unprotected exposure(s), capital requirements will be calculated as determined by the hierarchy of approaches for securitisation exposures and according to paragraphs [103 to 105].

  – For the guaranteed/protected portion, capital requirements will be calculated according to the applicable CRM framework (in accordance with the definition of tranche maturity given in paragraphs [22 and 23]).

103. If, according to the hierarchy of approaches determined by paragraphs [42 to 47], the bank must use the SEC-IRBA or SEC-SA, the parameters A and D should be calculated separately for each of the sub-tranches as if the latter would have been directly issued as separate tranches at the inception of the transaction. The value for K_{IRB} (respectively K_{SA}) will be computed on the underlying portfolio of the original transaction.

104. If, according to the hierarchy of approaches determined by paragraphs [42 to 47], the bank must use the SEC-ERBA for the original securitisation exposure, the relevant risk weights for the different sub-tranches will be calculated subject to the following:

- For the sub-tranche of highest priority,[28] the bank will use the risk weight of the original securitisation exposure.

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[27] The envisioned decomposition is theoretical and it should not be viewed as a new securitisation transaction. The resulting sub-tranches should not be considered resecuritisations solely due to the presence of the credit protection.

- For a sub-tranche of lower priority:

  − Banks must infer a rating from one of the subordinated tranches in the original transaction. The risk weight of the sub-tranche of lower priority will be then determined by applying the inferred rating to the SEC-ERBA. Thickness input T will be computed for the sub-tranche of lower priority only.

  − Should it not be possible to infer a rating the risk weight for the sub-tranche of lower priority will be computed using the SEC-SA applying the adjustments to the determination of A and D described in paragraph [103]. The risk weight for this sub-tranche will be obtained as the greater of a) the risk weight determined through the application of the SEC-SA with the adjusted A, D points and b) the SEC-ERBA risk weight of the original securitisation exposure prior to recognition of protection

105. Under all approaches, a lower-priority sub-tranche must be treated as a non-senior securitisation exposure even if the original securitisation exposure prior to protection qualifies as senior as defined in paragraph [18].

Maturity mismatches

106. A maturity mismatch exists when the residual maturity of a hedge is less than that of the underlying exposure.

107. When protection is bought on a securitisation exposure(s), for the purpose of setting regulatory capital against a maturity mismatch, the capital requirement will be determined in accordance with paragraphs 202 to 205 of the Basel II framework. When the exposures being hedged have different maturities, the longest maturity must be used.

108. When protection is bought on the securitised assets, maturity mismatches may arise in the context of synthetic securitisations (when, for example, a bank uses credit derivatives to transfer part or all of the credit risk of a specific pool of assets to third parties). When the credit derivatives unwind, the transaction will terminate. This implies that the effective maturity of *all* the tranches of the synthetic securitisation may differ from that of the underlying exposures. Banks that synthetically securitise exposures held on their balance sheet by purchasing tranched credit protection must treat such maturity mismatches in the following manner: For securitisation exposures that are assigned a risk weight of 1,250%, maturity mismatches are not taken into account. For all other securitisation exposures, the bank must apply the maturity mismatch treatment set forth in paragraphs 202 to 205 of the Basel II framework. When the exposures being hedged have different maturities, the longest maturity must be used.

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[28] 'Sub-tranche of highest priority' only describes the relative priority of the decomposed tranche. The calculation of the risk weight of each sub-tranche is independent from the question if this sub-tranche is protected (ie risk is taken by the protection provider) or is unprotected (ie risk is taken by the protection buyer).

II. Other non-securitisation sections

NB: Amendments to sections other than the securitisation framework in the Basel II framework are shown in tracked changes. References to paragraphs in the revised securitisation framework contained in this document are shown [in brackets]. References to other parts of the Basel framework are shown without brackets.

(A) Components of capital (as revised by Basel III)

"Limits and minima

43. Banks using ~~the IRB approach for securitisation exposures or~~the PD/LGD approach for equity exposures must first deduct the EL amounts subject to the corresponding conditions set out in paragraphs 563 and 386, respectively. Banks using the IRB approach for other asset classes must compare (i) the amount of total eligible provisions, as defined in paragraph 380, with (ii) the total expected loss amount as calculated within the IRB approach and defined in paragraph 375. Where the total expected loss amount exceeds total eligible provisions, banks must deduct the difference. **Securitisation exposures will be subject to paragraph [37] and will contribute to neither the total expected loss amount nor the total eligible provisions.**

(B) Credit risk – the Standardised Approach[29]

1. Individual claims

"Higher-risk categories

79. The following claims will be risk-weighted at 150% or higher:

- Claims on sovereigns, PSEs, banks, and securities firms rated below B–.

- Claims on corporates rated below BB–.

- Past due loans as set out in paragraph 75.

- ~~Securitisation tranches that are rated between BB+ and BB– will be risk-weighted at 350% as set out in paragraph 567.~~"

2. Credit risk mitigation

"First-to-default credit derivatives

208. With regard to the bank providing credit protection through such an instrument, ~~if the product has an external credit assessment from an eligible credit assessment institution, the risk weight in paragraph 567 applied to securitisation tranches will be applied. If the product is not rated by an eligible external credit assessment institution,~~ the risk weights of the assets included in the basket will be aggregated up to a maximum of 1,250% and multiplied by the nominal amount of the protection provided by the credit derivative to obtain the risk-weighted asset amount."

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[29] For changes to the Standardised Approach in relation to securitisation exposures, see the Committee's forthcoming consultative document on revisions to the standardised approach on credit risk. This will include changes to the credit risk mitigation framework, and in particular to the current treatment of nth-to-default derivatives.

(C)   Credit risk – the Internal Ratings-Based approach

1.   The mechanics of the IRB approach

"*Categorisation of exposures*

217.   For a discussion of the ~~IRB~~ treatment of securitisation exposures, see Section IV."

2.   Rules for corporate, sovereign and bank exposures

"*Exposure measurement for off-balance sheet items (with the exception of FX and interest rate, equity and commodity-related derivatives)*

310.   For off-balance sheet items, exposure is calculated as the committed but undrawn amount multiplied by a CCF. There are two approaches for the estimation of CCFs: a foundation approach and an advanced approach. **When only the drawn balances of revolving facilities have been securitised, banks must ensure that they continue to hold required capital against the undrawn balances associated with the securitised exposures.**"

3.   Rules for retail exposures

"*Exposure at default (EAD)*

337.   When only the drawn balances of **revolving** retail facilities have been securitised, banks must ensure that they continue to hold required capital against **the undrawn balances associated with the securitised exposures using the IRB approach to credit risk for commitments.** ~~their share (ie seller's interest) of undrawn balances related to the securitised exposures using the IRB approach to credit risk. This means that for such facilities, banks must reflect the impact of CCFs in their EAD estimates rather than in the LGD estimates. For determining the EAD associated with the seller's interest in the undrawn lines, the undrawn balances of securitised exposures would be allocated between the seller's and investors' interests on a pro rata basis, based on the proportions of the seller's and investors' shares of the securitised drawn balances. The investors' share of undrawn balances related to the securitised exposures is subject to the treatment in paragraph 6.~~"

        (*This revision would replace paragraph 337 of the Basel II framework and would require that, if banks are able to securitise revolving retail credits using an amortising structure, 100% of the undrawn lines multiplied by the appropriate EAD would be included in the IRB retail capital calculation.*)

4.   Rules for purchased receivables

"*Treatment of purchase price discounts for receivables*

371.   In many cases, the purchase price of receivables will reflect a discount (not to be confused with the discount concept defined in paragraphs 308 and 334 [of the Basel II framework]) that provides first-loss protection for default losses, dilution losses or both. ~~To the extent a portion of such a purchase price discount will be refunded to the seller, this refundable amount may be treated as first-loss protection under the IRB securitisation framework.~~ **To the extent that a portion of such a purchase price discount may be refunded to the seller based on the performance of the receivables, the purchaser may recognise this refundable amount as first-loss protection and hence treat this exposure under the securitisation framework, while the seller providing such a refundable purchase price discount must treat the refundable amount as a first-loss position under the securitisation framework.** Non-refundable purchase price discounts for receivables do not affect either

the EL provision calculation in Section III.G [of the Basel II framework] or the calculation of risk-weighted assets.

372. When collateral or partial guarantees obtained on receivables provide first-loss protection (collectively referred to as mitigants in this paragraph), and these mitigants cover default losses, dilution losses or both, they may also be treated as first-loss protection under the ~~IRB~~ securitisation framework (see **paragraph [51]**). When the same mitigant covers both default and dilution risk, banks using the ~~Supervisory Formula~~ **SEC-IRBA** that are able to calculate an exposure-weighted LGD must do so as defined in **paragraph [60]**."

(D)   The second pillar – supervisory review process for securitisation

(Revise paragraphs 801–807 so as to maintain consistency with the new treatment to these structures as follows. In particular, delete paragraphs 805 and 807 and references to early amortisation Pillar 1 capital requirements in paragraphs 801 and 804.)

"801.   Supervisors should review how banks internally measure, monitor and manage risks associated with securitisations of revolving credit facilities, including an assessment of the risk and likelihood of early amortisation of such transactions. At a minimum, supervisors should ensure that banks have implemented reasonable methods for allocating economic capital against the economic substance of the credit risk arising from revolving securitisations and should expect banks to have adequate capital and liquidity contingency plans that evaluate the probability of an early amortisation occurring and address the implications of both scheduled and early amortisation. ~~In addition, the capital adequacy plan should address the possibility that the bank will face higher levels of required capital under the early amortisation Pillar 1 capital requirement.~~

802.   Because most early amortisation triggers are tied to excess spread levels, the factors affecting these levels should be well understood, monitored and managed to the extent possible (see paragraphs 790 to 794 on implicit support) by the originating bank. For example, the following factors affecting excess spread should generally be considered:

- Interest payments made by borrowers on the underlying receivable balances.

- Other fees and charges to be paid by the underlying obligors (eg late-payment fees, cash advance fees, over-limit fees).

- Gross charge-offs.

- Principal payments.

- Recoveries on charged-off loans.

- Interchange income.

- Interest paid on investors' certificates.

- Macroeconomic factors such as bankruptcy rates, interest rate movements and unemployment rates.

803.   Banks should consider the effects that changes in portfolio management or business strategies may have on the levels of excess spread and on the likelihood of an early amortisation event. For example, marketing strategies or underwriting changes that result in lower finance charges or higher charge-offs might also lower excess spread levels and increase the likelihood of an early amortisation event.

804.   Banks should use techniques such as static pool cash collection analyses and stress tests to better understand pool performance. These techniques can highlight adverse trends or potential adverse impacts. Banks should have policies in place to respond promptly to adverse or unanticipated changes.

Supervisors will take appropriate action where they do not consider these policies adequate. Such action may include, but is not limited to, directing a bank to obtain a dedicated liquidity line or ~~raising the early amortisation credit conversion factor, thus,~~ increasing the bank's capital requirements.

~~805. While the early amortisation capital charge described in Pillar 1 is meant to address potential supervisory concerns associated with an early amortisation event, such as the inability of excess spread to cover potential losses, the policies and monitoring described in this section recognise that a given level of excess spread is not, by itself, a perfect proxy for credit performance of the underlying pool of exposures. In some circumstances, for example, excess spread levels may decline so rapidly as to not provide a timely indicator of underlying credit deterioration. Further, excess spread levels may reside far above trigger levels, but still exhibit a high degree of volatility which could warrant supervisory attention. In addition, excess spread levels can fluctuate for reasons unrelated to underlying credit risk, such as a mismatch in the rate at which finance charges reprice relative to investor certificate rates. Routine fluctuations of excess spread might not generate supervisory concerns, even when they result in different capital requirements. This is particularly the case as a bank moves in or out of the first step of the early amortisation credit conversion factors. On the other hand, existing excess spread levels may be maintained by adding (or designating) an increasing number of new accounts to the master trust, an action that would tend to mask potential deterioration in a portfolio. For all of these reasons, supervisors will place particular emphasis on internal management, controls, and risk monitoring activities with respect to securitisations with early amortisation features.~~

806. Supervisors expect that the sophistication of a bank's system in monitoring the likelihood and risks of an early amortisation event will be commensurate with the size and complexity of the bank's securitisation activities that involve early amortisation provisions.

~~807. For controlled amortisations specifically, supervisors may also review the process by which a bank determines the minimum amortisation period required to pay down 90% of the outstanding balance at the point of early amortisation. Where a supervisor does not consider this adequate it will take appropriate action, such as increasing the conversion factor associated with a particular transaction or class of transactions.~~ "

Annex 1

Illustrative examples for recognition of dilution risk when applying the SEC-IRBA to securitisation exposures

The following examples are provided to illustrate the recognition of dilution risk according to paragraphs [52(a) and 52(b)].

A. Common waterfall for default and dilution losses

In this example, it is assumed that losses resulting from either defaults or dilution within the securitised pool will be subject to a common waterfall, ie the loss allocation process does not distinguish between different sources of losses within the pool.

Pool description:[30]

- Pool of €1,000,000 of corporate receivables

- $N = 100$

- $M = 2.5$ years[31]

- $PD_{Dilution} = 0.55\%$

- $LGD_{Dilution} = 100\%$

- $PD_{Default} = 0.95\%$

- $LGD_{Default} = 45\%$

Capital structure:

- Tranche A = senior note of €700,000

- Tranche B = second-loss guarantee of €250,000

- Tranche C = purchase discount of €50,000

- Final legal maturity of transaction/all tranches = 2.875 years; ie $M_T = 2.5$ years[32]

RWA calculation:

Step 1: Calculate $K_{IRB,Dilution}$ and $K_{IRB,Default}$ for the underlying portfolio:

- $K_{IRB,Dilution}$ = €1,000,000 x (161.44% x 8% x 1.06 + 0.55% x 100%) / €1,000,000 = 14.24%

- $K_{IRB,Default}$ = (€1,000,000 − €136,900)[33] x (90.62% x 8% x 1.06 + 0.95% x 45%) / €1,000,000 = 7%

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[30] For the sake of simplicity, it is assumed that all exposures have the same size, same PD, same LGD and same maturity.

[31] For the sake of simplicity, the possibility described in paragraph 369 to set $M_{Dilution} = 1$ is not used in this example.

[32] The rounding of the maturity calculation is shown for example purposes.

Step 2: Calculate $K_{IRB,Pool}$

- $K_{IRB,Pool} = K_{IRB,Dilution} + K_{IRB,Default} = 14.24\% + 7\% = 21.24\%$

Step 3: Apply the SEC-IRBA to the three tranches

Pool parameters

- $N = 100$

- $LGD_{Pool} = (LGD_{Default} \times K_{IRB,Default} + LGD_{Dilution} \times K_{IRB,Dilution}) / K_{IRB,Pool}$
  $= (45\% \times 7\% + 100\% \times 14.24\%) / 21.24\% = 81.87\%$

Tranche parameters

- $M_T = 2.5$ years

- Attachment and detachment points

	Attachment point	Detachment point
Tranche A	30%	100%
Tranche B	5%	30%
Tranche C	0%	5%

Resulting risk-weighted exposure amounts

	SEC-IRBA risk weight	RWA
Tranche A	28.78%	€201,460
Tranche B	1,056.94%	€2,642,350
Tranche C	1,250%	€625,000

B.   Non-common waterfall for default and dilution losses

In this example, it is assumed that the securitisation transaction does not have one common waterfall for losses due to defaults and dilutions, ie for the determination of the risk of a specific tranche it is not only relevant what losses might be realised within the pool but also if those losses are resulting from default or a dilution event.

As the SEC-IRBA assumes that there is one common waterfall, it cannot be applied without adjustments. The following example illustrates one possible scenario and a possible adjustment specific to this scenario.

While this example is meant as a guideline, a bank should nevertheless consult with its national supervisor as to how the capital calculation should be performed (see paragraph 52(b)).

Pool description:

- See example A.

Capital structure:

- Tranche A = senior note of €950,000

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[33]   As described in paragraph 366, when calculating the default risk of exposures with non-immaterial dilution risk "EAD will be calculated as the outstanding amount minus the capital charge for dilution prior to credit risk mitigation".

- Tranche C = purchase discount of €50,000

- Tranches A and C will cover both default and dilution losses.

- In addition, the structure also contains a second-loss guarantee of €250,000 (Tranche B)[34] that covers <u>only dilution losses</u> exceeding a threshold of €50,000 up to maximum aggregated amount of €300,000, which leads to the following two waterfalls:

    (i) Default waterfall
    Tranche A = senior note of €950,000
    Tranche C = purchase discount of €50,000[35]

    (ii) Dilution waterfall
    Tranche A = senior note of €700,000
    Tranche B = second-loss guarantee of €250,000
    Tranche C = purchase discount of €50,000[36]

- M_T of all three tranches = 2.5 years

Treatment of Tranche C

Tranche C is treated as described in Example A.

Treatment of Tranche B

Tranche B (second-loss guarantee) is exposed only to dilution risk, but not to default risk. Therefore, K_{IRB}, for the purpose of calculating a capital requirement for Tranche B, can be limited to $K_{IRB,Dilution}$. However, as the holder of Tranche B cannot be sure that Tranche C will still be available to cover the first dilution losses when they are realised – because the credit enhancement might already be depleted due to earlier default losses – to ensure a prudent treatment, it cannot recognise the purchase discount as credit enhancement for dilution risk. In the capital calculation, the bank providing Tranche B should assume that €50,000 of the securitised assets have already been defaulted and hence Tranche C is no longer available as credit enhancement and the exposure of the underlying assets has been reduced to €950,000. When calculating K_{IRB} for Tranche B, the bank can assume that K_{IRB} is not affected by the reduced portfolio size.

RWA calculation for Tranche B:

Step 1: Calculate $K_{IRB,Pool}$

- $K_{IRB,Pool} = K_{IRB,Dilution} = 14.24\%$

Step 2: Apply the SEC-IRBA

Pool parameters

- N=100

- $LGD_{Pool} = LGD_{Dilution} = 100\%$

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[34]   For the sake of simplicity, it is assumed that the second loss guarantee is cash-collateralised.

[35]   Subject to the condition that it is not already being used for realised dilution losses.

[36]   Subject to the condition that it is not already being used for realised default losses.

Tranche parameters

- M_T = 2.5 years

- Attachment point = 0%

- Detachment point = €250,000 / €950,000 = 26.32%

Resulting risk-weighted exposure amounts

	SEC-IRBA risk weight	RWA
Tranche B	925.47%	€2,313,675

Treatment of Tranche A

The holder of Tranche A (senior note) will take all default losses not covered by the purchase discount and all dilution losses not covered by the purchase discount or the second-loss guarantee. A possible treatment for Tranche A would be to add $K_{IRB,Default}$ and $K_{IRB,Dilution}$ (as in Example A), but not to recognise the second-loss guarantee as credit enhancement at all because it is covering only dilution risk.

Although this is a simple approach, it is also fairly conservative. Therefore the following alternative <u>for the senior tranche</u> could be considered:

(i)   Calculate the RWA amount for Tranche A under the assumption that it is only exposed to losses resulting from defaults. This assumption implies that Tranche A is benefiting from a credit enhancement of €50,000.

(ii)   Calculate the RWA amounts for Tranche C and (hypothetical) Tranche A* under the assumption that they are only exposed to dilution losses. Tranche A* should be assumed to absorb losses above €300,000 up to €1,000,000.

With respect to dilution losses, this approach would recognise that the senior tranche investor cannot be sure if the purchase price discount will still be available to cover those losses when needed as it might have already been used for defaults. Consequently, from the perspective of the senior investor, the purchase price discount could only be recognised for the calculation of the capital requirement for default or dilution risk but not for both.[37, 38]

(iii)   Sum up the RWA amounts under (i) and (ii) to determine the final RWA amount for the senior note investor.

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[37]   In this example, the purchase price discount was recognised in the default risk calculation, but banks could also choose to use it for the dilution risk calculation.

[38]   In this example, it is assumed that the second-loss dilution guarantee explicitly covers dilution losses above €50,000 up to €300,000. If the guarantee instead covered €250,000 dilution losses after the purchase discount has been depleted (irrespective of whether the purchase discount has been used for dilution or default losses), then the senior note holder should assume that he is exposed to dilution losses from €250,000 up to €1,000,000 (instead of €0 to €50,000 + €300,000 to €1,000,000).

RWA calculation for Tranche A:

Step 1: Calculate RWA for (i)

Pool parameters

- $K_{IRB,Pool} = K_{IRB,Default} = 7\%$

- $LGD_{Pool} = LGD_{Default} = 45\%$

Tranche parameters

- $M_T = 2.5$ years

- Attachment point = €50,000 / €1,000,000 = 5%

- Detachment point = €1,000,000 / €1,000,000 = 100%

Resulting risk-weighted exposure amounts

	SEC-IRBA risk weight	RWA
Component (i)	56.58%	€537,510

Step 2: Calculate RWA for (ii)

Pool parameters

- $K_{IRB,Pool} = K_{IRB,Dilution} = 14.24\%$

- $LGD_{Pool} = LGD_{Dilution} = 100\%$

Tranche parameters

- $M_T = 2.5$ years

- Attachment and detachment points

	Attachment point	Detachment point
Tranche A*	30%	100%
Tranche C	0%	5%

Resulting risk-weighted exposure amounts

	SEC-IRBA risk weight	RWA
Tranche A*	15%	€105,000
Tranche C	1,250%	€625,000

Step 3: Sum up the RWA of components (i) and (ii)

- Final RWA amount for investor in Tranche A = €537,510 + €105,000 + €625,000 = €1,267,510

- Implicit risk weight for Tranche A = €1,267,510 / €950,000 = 133.42%