1 Revision of the Standardised Approach for Credit Risk

Luis Filipe Barbosa, Nikolaos Kalogiannis, Friedemann Loch and Sebastian L. Sohn

1.1 Introduction

As the original Basel I rules for credit risk – being the most relevant risk type for banks – were lacking an appropriate degree of risk sensitivity, they were considered to no longer adequately meet supervisory requirements. Therefore, aiming at greater economic differentiation of the credit risk, with a better recognition of exposures characteristics and a more appropriate reflection of risk-mitigation techniques, the Basel Committee developed two different approaches for the quantification of credit risk which represented the core elements of Basel II. The so-called "Standardised Approach" (standardised approach for credit risk, hereinafter also referred to as "SA") available to all banks and also – subject to supervisory approval – an "Internal Ratings-based Approach" (hereinafter referred to as "IRB Approach"), in which for the first time banks were permitted to use internal methods to determine risk parameters (e.g. probability of default) that could be used to quantify the capital requirements of credit risk for regulatory purposes. Figure 1.1 illustrates both approaches available to quantify the capital requirements for credit risk.

Under the SA, external ratings are used as a basis for the determination of risk weights and the quantification of capital requirements for certain exposure classes. The mapping of external ratings to risk weights, as well as the extent of eligible credit risk mitigation instruments and calculation of the risk mitigation effect, are entirely specified by the regulator. In contrast, the IRB Approach offers various options for internal estimation of risk parameters (see also Chapter 2 on the IRB Approach).

The quantification of risk-weighted assets (RWAs) and capital requirements under the SA is based on a set of components displayed in Figure 1.2.

It should also be highlighted that, under the standardised approach, exposures have to be risk-weighted net of specific provisions (including partial write-offs).

Once the Basel II rules on the standardised approach were finalised and implemented in the various national legislations it soon became apparent that the intended improvements in risk sensitivity within the standardised approach of Basel II were primarily achieved for claims on central governments – and depending on the national implementation also for banks. In many jurisdictions external ratings were only available to a small number of predominantly large corporates. The vast majority of corporates did not have any external ratings and had to be classified as "unrated" which resulted in the same risk weight as under Basel I.

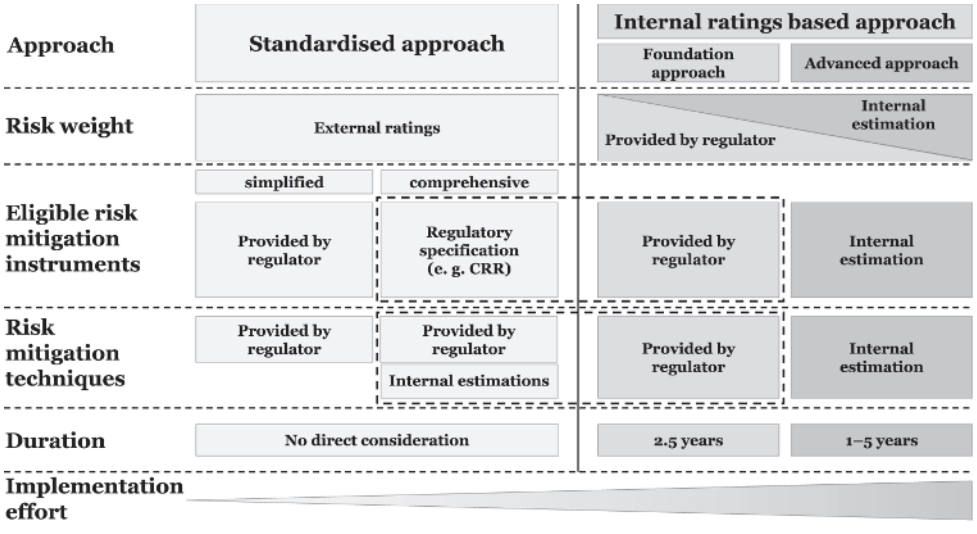


Figure 1.1: Approaches for credit risk quantification

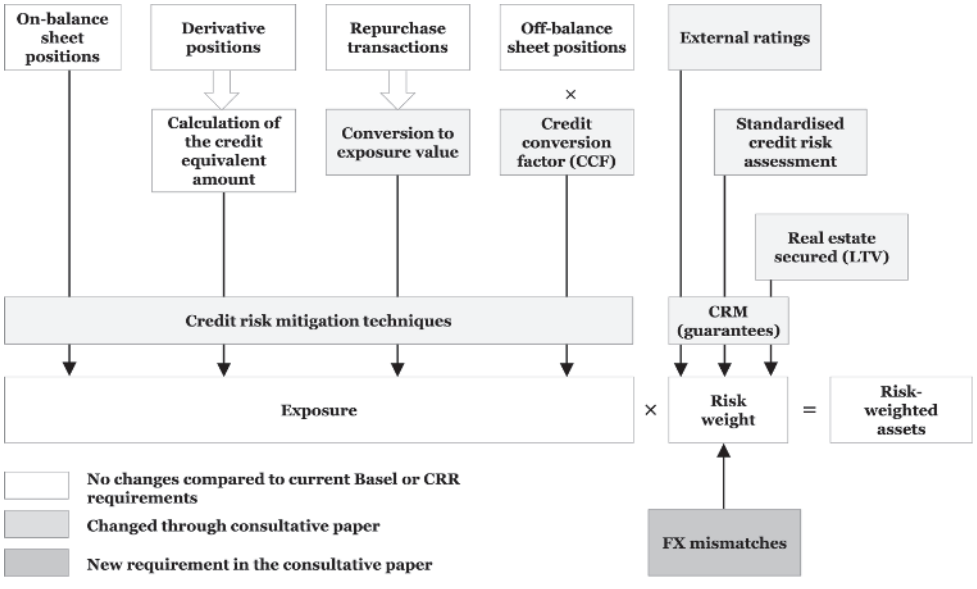


Figure 1.2: Elements to determine risk-weighted assets under the standardised approach

Over time – and especially within the financial market crisis starting in 2007 – the insufficient risk sensitivity of the standardised approach and the use of external ratings for supervisory purposes were increasingly criticised.

Within the Basel III framework the Basel Committee changed the structure and definition of regulatory capital and introduced new regulation on liquidity and leverage, but did not modify any elements of the standardised approach for credit risk.

As a response to the ongoing criticism on the standardised approach, the Basel Committee published an initial consultative paper on a revised standardised approach in December 2014, followed by a second consultative paper in December 2015. The approaches consulted in these papers were aimed at achieving a higher risk sensitivity without further increasing the complexity of the standardised approach. Another intention was to increase the comparability of capital requirements between banks by reducing differences in capital requirements between the standardised approaches and the IRB Approaches. In addition it is intended to limit national discretions in the application of the standardised approach. Moreover, the Basel Committee plans to reduce differences regarding the definition of exposure classes under the standardised approach and the IRB Approach. An additional aspect of the revision of the standardised approach is to decrease the mechanical dependence on external ratings. While the first consultative paper contained extremely wide-ranging modifications in this respect by removing the use of external ratings completely, the second consultative paper still allows the use of external ratings, the same holding true in the new Basel regulation. The use of external ratings is, however, complemented by additional requirements requesting the institution to conduct an independent credit risk assessment ("due diligence").

In contrast to the current requirements, the revised standardised approach needs also to be implemented by all IRB banks in the future, as the capital requirements under the standardised approach will serve as a floor for the capital requirements under the IRB Approach (see Chapter 9). Presently, IRB banks have the option of determining the capital floor based on the Basel I provisions ("Basel I Floor").

Securitisation exposures are addressed in the securitisation standard (Chapter 4). Credit equivalent amounts of OTC derivatives, exchange traded derivatives and long-settlement transactions that expose a bank to counterparty credit risk are to be calculated under the counterparty credit risk standards (Chapter 3). Equity investments in funds and exposures to central counterparties must be treated according to their own specific frameworks (Chapter 5).

Hereinafter the revisions based on the final Basel regulation are summarised and compared to the proposed changes of the first and second consultative papers as well as to the current requirements of the CRR.

1.2 General aspects

The Basel Committee's revision of the standardised approach for credit risk comprises all exposure classes, except for claims on sovereigns, central banks and public sector entities (PSEs) – in the latter case, only minor editorial changes have been made to remove reference to current options for banks. They are not included as the Basel Committee is considering these exposures as part of a broader and holistic review of sovereign-related risks.

While the first consultative paper replaced the use of external ratings by other risk drivers, the second consultative paper as well as the final Basel regulation still allows for the use of external ratings. However, in some countries (the USA for instance), the use of external ratings for regulatory purposes is not admitted. For these jurisdictions, and also for all exposures to unrated counterparties, a newly developed Standardised Credit Risk Assessment Approach (SCRA) will be available.

In order to avoid mechanistic reliance on external ratings, the due diligence requirements already included in the first consultative paper were further specified. Even in cases where ratings are used, due diligence is needed to assess the risk of exposures for risk management purposes and whether the risk weight applied is appropriate and prudent. This is to ensure that banks have an adequate understanding, both at origination and on a regular basis (at least, annually), of the risk profile and characteristics of their counterparties. Should the due diligence analysis reveal a higher risk compared to the risk weight based on external ratings, the higher risk weight has to be applied. However, if the due diligence analysis should reveal a very low risk compared to the external rating, it cannot result in a more favourable risk weight then determined by external ratings.

The exact extent and content of due diligence requirements is yet to be specified; the consultative paper only refers to the presently existing Pillar II-requirements of Basel II. Under Pillar II, banks are required to have methodologies that enable them to assess the credit risk involved in exposures to individual borrowers or counterparties. In this context, the importance of internal ratings as a tool to monitor credit risk on a borrower level is explicitly emphasised.

Banks need to ensure that they have an adequate understanding of the risk profile of the borrower at origination and thereafter on a regular basis (at least annually). They must take reasonable and adequate steps to assess the operating and financial performance levels and trends through internal credit analysis and/or other analytics outsourced to a third party, as appropriate for each counterparty. Banks need to be able to access information about their counterparties on a regular basis so that they can complete the due diligence analyses.

It is also necessary that banks can demonstrate to the supervisory authority that their internal policies, processes, systems and controls ensure an appropriate assignment of risk weights to counterparties.

Currently, it is expected that the majority of SA institutions in many countries will be largely compliant with the due diligence requirements due to their existing practice of applying rating procedures for bank-internal processes, even in their capacity as SA institution. It remains to be seen, however, how these requirements will be implemented at the European level.

1.2.1 Exposures to sovereigns

Exposures to sovereigns represent a very important asset class to many banks. In particular, during the financial market crisis, it became evident that the risk weighting of 0% for certain jurisdictions could not, ultimately, be fully justified. However the Basel Committee did not succeed in finding a compromise solution for a modification of the risk weighting for sovereign exposures. Consequently the treatment of sovereign exposures has been carved out from the Basel IV paper for both the standardised approach and the IRB Approach.

Separate from the work on Basel IV the Basel Committee has established a high-level Task Force on sovereign exposure to review the current treatment of sovereign exposures and develop recommendations on potential policy options. This review was completed in December 2017 and the Basel Committee has published the results of this review in a separate discussion paper.[1]

While this paper contains ideas on the possible treatment of sovereign risk the Basel Committee has pointed out that presently it has not reached a consensus to make any changes to the treatment of sovereign exposures, and has therefore decided not to consult on the ideas presented in this discussion paper.

Therefore, the treatment of sovereign risk remains unchanged from the current / the Basel II treatment which is described below:

The applicable risk weight to a sovereign exposure can either be derived by using the external rating of an external credit assessment institution (ECAI) or by using the risk score of an external credit agency (ECA). A very good external rating or ECA risk score results in a risk weight of 0%, unrated exposures receive a risk weight of 100%. The following tables in Figure 1.3 illustrate the applicable risk weighting based on the ECAI or the ECA score.

Risk weights for sovereigns and central banks						
External Rating (ECAI)	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–	Unrated
Risk weight	0%	20%	50%	100%	150%	100%

Risk weights for sovereigns and central banks					
ECA risk score	0 to 1	2	3	4 to 6	7
Base risk weight	0%	20%	50%	100%	150%

Figure 1.3: Risk weights for sovereign and central bank exposures

1 BCBS 425 The regulatory treatment of sovereign exposures (discussion paper), published 7 December 2017.

1.2.2 Exposures to public sector entities

The treatment of exposures to public sector entities remains largely the same. However, as the Basel II treatment of public sector entities had made references to the available options for the risk weighting for banks – which do not exist any more under Basel IV – some editorial changes were necessary.

The Basel Committee also allows for two options to derive the risk weight for public sector entities: either based on the external rating of the sovereign where the PSE is domiciled, or based on the individual external rating of the PSE directly.

Unlike the treatment for corporates or banks both options are based on the use of external ratings. There is no explicit reference to a different treatment in jurisdictions that do not allow the use of external ratings.

As with the current Basel II regulations, the risk weights are derived by using the tables as shown in Figure 1.4.

1.2.3 Exposures to multilateral development banks

The treatment of multilateral development banks has not changed significantly with respect to the current treatment. However, as the current treatment is partially similar to the risk weighting for banks, some changes had to be applied.

Unchanged from current treatment, the Basel Committee defines a multilateral development bank as an institution created by a group of countries, and which provides financing and professional advice for economic and social development projects. If certain quality criteria are being met, a risk weight of 0% can be applied. These qualitative requirements have not changed in substance and can be summarised as follows:

- very high-quality long-term issuer ratings;
- shareholder structure comprising a significant proportion of sovereigns with high quality external ratings;

Risk weights for public sector entities based on the external rating of the sovereign						
Rating	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–	Unrated
Base risk weight	20%	50%	100%	100%	150%	100%

Risk weights for public sector entities based on the external rating of the PSE						
Rating	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–	Unrated
Base risk weight	20%	50%	50%	100%	150%	100%

Figure 1.4: Risk weights for public sector entities

Risk weights for exposures to corporates under Basel IV based on external ratings						
Rating	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–	Unrated
Base risk weight	20%	30%	50%	100%	150%	50%

Figure 1.5: Risk weights for multilateral development banks (MDB)

- strong shareholder support;
- adequate level of capital and liquidity; and
- strict statutory lending requirements and conservative financial policies.

In jurisdictions that allow the use of external ratings, it is possible to derive the risk weight for all other multilateral development banks using the table shown in Figure 1.5.

1.2.4 Exposures to banks

Overall requirements

In this context, a bank exposure can be defined as a claim (including loans and senior debt instruments, unless considered as subordinated debt) on any financial institution that is licensed to take deposits from the public and is subject to appropriate prudential standards and level of supervision. Subordinated bank debt and equities are addressed in section 1.2.7.

Two approaches are available for calculating capital requirements of bank exposures: (i) the External Credit Risk Assessment Approach (ECRA); and (ii) the Standardised Credit Risk Assessment Approach (SCRA). These should be used hierarchically, according to the existence of the possibility, in the jurisdiction in which the bank is incorporated, of using external ratings for regulatory purposes. Additionally, SCRA should also be used for exposures regarding unrated banks, even when these are incorporated in jurisdictions that allow the use of external ratings.

Short-term claims between banks with an original maturity of less than three months, as well as on- or off-balance sheet exposures to banks that arrive from the movement of goods across national borders with an original maturity of six months or less, receive a reduced risk weight under most grades of both approaches, in an effort to avoid affecting negatively the liquidity of interbank markets.

In what concerns institutional protection schemes that allow for a 0% risk weight to exposures within these schemes, a preferential regime may be applied, with lower risk weights, subject to national supervisory option or discretion. This must not be applied to exposures giving rise to CET1, AT1 or T2 items.

1. External Credit Risk Assessment Approach (ECRA)

The ECRA shall be applied, provided that an external rating for the counterparty/exposure is available and that their use is allowed in the respective jurisdiction. Under this approach, each claim is assigned a so-called "base risk weight" based on the external rating. The resulting risk weights range from 20% to 150%. The referred ratings must not incorporate assumptions of implicit government support – in line with the objective of breaking the link between banks and their sovereigns – unless the rating refers to a public bank owned by its government. Banks based in jurisdictions that allow the use of external ratings for regulatory purposes can only apply SCRA for their unrated bank exposures.

For short-term exposures, or for those arising from the movement of goods across national borders with an original maturity of six months or less, reduced risk weights in 3 of the 5 buckets are in place.

As a second step, banks have to perform due diligence analysis to ensure that the external rating appropriately and conservatively reflects the credit risk of the exposure. As stated, if the due diligence reveals a higher risk than implied by the external rating, the risk weight shall be increased by at least one grade. If the outcome of the due diligence analysis is more favourable, the risk weight remains unchanged.

Figure 1.6 illustrates the risk weights to be used for banks based on applicable external ratings under the ECRA.

The consultative paper does not entail any changes in relation to the use of issuer and issues assessments. With the exception of the due diligence element, the proposed rules as well as the mapping of external ratings into risk weights is comparable with the current standardised approach. However, differences arise if no external rating exists for the counterparty or the exposure. Under current CRR regulation these claims receive a risk weight derived from the external rating of the borrowing bank's country of incorporation, leading to a risk weight of 20% for banks in Germany. The revised SA however will require the use of the Standard Credit Risk Assessment Approach (SCRA).

2. Standardised Credit Risk Assessment Approach (SCRA)

The SCRA is applied if no external rating is available or if the use of such external rating is not allowed in the respective jurisdiction. Under this approach the exposures are

Rating	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–
Base risk weight	20%	30%	50%	100%	150%
Risk weight for short-term exposures	20%			50%	150%

Figure 1.6: Risk weights for banks based on applicable external ratings (ECRA)

categorised into three grades (A, B, C). For each grade, the Basel Committee has specified criteria for the allocation. Main elements of these criteria are the extent to which the counterparty fulfils its financial obligations and the degree to which it complies with regulatory requirements.

- If a borrower exceeds the minimum regulatory requirements (e.g. leverage, capital ratios) and meets his financial commitments accordingly, he can be classified within Grade A, leading to a risk weight of 40%. Additionally, this risk weight can be reduced to 30% if the debtor bank meets or exceeds a CET1 ratio of 14% and a Tier 1 leverage ratio of 5% and meets criteria imposed to Grade A exposures.
- If one or more buffer requirements are not met, and the borrower is subject to substantial credit risk, a risk weight of 75% under Grade B has to be used. More concretely, Grade B refers to exposures to banks, where the counterparty bank is subject to substantial credit risk, such as repayment capacities that are dependent on stable or favourable economic or business conditions.
- Not meeting the requirements applicable to Grade B by not meeting the regulatory requirements, leads to a risk weight of 150% under Grade C. This grade refers to higher credit risk exposures to banks, where the counterparty bank has material default risks and limited margins of safety. In this context, for these counterparties, adverse business, financial, or economic conditions are very likely to lead (or have led) to an inability to meet their financial commitments. This Grade is also to be applied if the external auditor has expressed an adverse audit opinion.
- Exposures with an original maturity of three months or less, as well as exposures arising from the movement of goods across national borders with an original maturity of six months or less, receive reduced risk weight of 20%, 50% or 150%. Defaulted exposures receive a risk weight of 150%.

Also, under the SCRA, the bank has to perform the same due diligence assessment as under the ECRA and classify the exposure as Grade A, B or C, based on the result of the due diligence. If the due diligence reveals a higher level of risk, the bank has to assign the position to a more conservative grade than that which is applicable by simply using the minimum criteria. As under the ECRA, a due diligence can never result in a risk weight lower than that determined by the minimum criteria for each grade.

The Basel Committee specifies that the requirements referring to regulatory ratios include buffers, but are limited to publicly disclosed information, thus bank-specific supervisory-imposed requirements, such as Pillar 2 instruments (P2R or P2G) are not included. Moreover, when such information is nonexistent, or not publicly disclosed, such exposures must be classified as Grade B or lower.

Furthermore, under SCRA, to capture transfer, convertibility or currency risk, a risk-weight floor is applicable, based on sovereign risk of the country where the relevant counterparty is incorporated. This floor is applicable when the exposure is not expressed in the local currency of the debtor bank and must not be applied to short-term (i.e. with a maturity of less than 1 year), self-liquidating, trade-related contingent items that arise from the movement of goods.

Figure 1.7 Risk weights for banks based on the internal standardised risk assessment (SCRA)

Comparison of the new framework to the specifications of the first and second consultative papers and the current provisions

Exposures of banks with an external rating receive a risk weight ranging between 20% and 150. On the other hand, banks without external ratings may receive risk weighted between 30% (conditional on several criteria including the robustness of capital and leverage ratios) and 150%.

As the treatment for banks without external rating (thus under SCRA) will regularly result in a change in risk weights from the previous 20% to Grade A, the Basel Committee has lowered the base risk weight from 50% to 40% between the second consultation and its final form. Additionally, the risk weight of Grade B has been reduced from 100% to 75%. Alongside this, the base risk weight for Grade A may further be reduced to 30% if the debtor bank meets or exceeds a CET1 ratio of 14% and a Tier 1 leverage ratio of 5% and meets criteria imposed on Grade A exposures.

The first consultative paper aimed to remove completely the use of external ratings and proposed a derivation of risk weights based on the CET 1 ratio and the asset quality based on the Net Non-Performing-Asset-Ratio (Net-NPA-Ratio) of banks. In some circumstances, the risk weight was set at 300%. It became evident that this approach would represent a significant increase in the resulting risk weights without necessarily leading to increased risk sensitivity. Within the second consultative paper this approach was removed and the use of external ratings re-introduced. Quantitative impact studies showed that the capital requirements under the first consultative paper

Grade	Grade A	Grade B	Grade C
Base risk weight	40% / 30%*	75%	150%
Risk weight for short-term exposures	20%	50%	150%

* CET > 14% and LR >5%

Figure 1.7: shows the SCRA risk weights for banks.

would have been significantly higher than under current CRR requirements and also under the second consultative paper.

The current applicable standardised approach according to the CRR is based on external rating of the counterparty/issuance, the risk weight of the country of residence and the maturity of the exposure and represents a combination of the currently available two options under Basel II.

Furthermore, although the second consultative document included a reference to a sovereign risk-weight floor in order to reflect the macroeconomic profile of exposures, the final document does not incorporate such provision or better saying it only considers a floor when exposures are not expressed in the local currency of the debtor bank – i.e. it aims to capture transfer and convertibility risk, based on the country where the relevant counterparty is incorporated, resulting in lower risk weights for such exposures.

Short-term exposures against banks with an original maturity of less than three months are subject to a more favourable risk weight, under most grades of both approaches. If no rating is assigned, a general risk weight of 20% is applied. In practice, a risk weight of 20% is often applied as external ratings are frequently not available for short-term exposures. In the final version of the reform, in addition to short-term exposures, exposures to banks that arise from the movement of goods across national borders with an original maturity of six months or less may also be subject to the mentioned favourable regime.

With respect to the treatment of institutional protection schemes that allow for a 0% risk weight to exposures within these schemes and the preferential treatment of covered bonds, existing rules under CRR can now also be applied under the final document. In the case of institutional protection schemes, this preferential regime is subject to national supervisory option or discretion, and cannot be applied to exposures giving rise to CET1, AT1 or T2 items.

In situations where no external ratings are available, significant differences are evident. In countries where only a very small number of banks are externally rated, the resulting risk weight under SCRA will be at least 30% while these exposures currently receive a risk weight of 20%. This represents a significant increase in terms of risk weights.

Finally, the final version of the document introduces further detail on the requirements for the classification of bank exposures under the SCRA. In particular, the Basel Committee specifies that the requirements that regard supervisory-imposed ratios do include buffers but are limited to publicly disclosed information, thus not including bank-specific requirements, such as Pillar 2 instruments (P2R or P2G).

1.2.5 Exposures to corporates

Overall requirements

Comparable to exposures to banks two approaches are available for exposures to corporates.

Provided that the use of external ratings is allowed in the respective jurisdiction, these ratings can be used to derive base risk weights ranging from 20% to 150%. The mapping process between external ratings and risk weights has a slight extension with respect to Basel II. While under Basel II regulation the risk weight buckets range between 20%, 50%, 100% and 150%, Basel IV introduces an additional risk weight of 75% for exposures rated between BBB+ and BBB–. The corresponding risk weight under Basel II for these ratings is 100%.

Similarly to the treatment of exposures to banks, performance of due diligence analysis is necessary both at origination and on a periodic basis (at least annually). This analysis aims at ensuring that external ratings appropriately reflect the creditworthiness of the bank's counterparties. Since the operational impact of case-by-case periodic due diligence is expected to be significant, especially for smaller banks, the Basel Committee applies the proportionality principle. Therefore, the sophistication level of the assessment should be appropriate to the size and complexity of each bank's activities. In assessing the operating and financial performance of their counterparties, banks should perform adequate internal credit analysis and/or outsource this assessment to third parties.

Depending on the outcome of this analysis, an increase of risk weights may be required. It is noted that due diligence must not result in a lower risk weight – compared to external ratings approach – in any circumstances. Therefore, solely in case the due diligence analysis results in a higher rating, then a risk weight of at least one bucket higher must be assigned.

Since due diligence will form an integral part of risk weight assignment, a framework for governing due diligence, including internal policies, processes, systems and controls, is imperative.

Unrated exposures are subject to a risk weight of 100%, unless they refer to exposures to corporate small and medium sized entities (SMEs).

In jurisdictions that do not allow the use of external ratings, the following concept applies: A risk weight of 65% is assigned to all corporates that have – among other criteria – an adequate capacity to meet their financial commitments in a timely manner irrespective of the economic cycle and business conditions and can therefore be classified as "investment grade". All other corporate exposures receive a risk weight of 100% unless they refer to exposures to corporate SMEs.

The risk weights to be assigned to corporates are presented in detail in Figure 1.8.

Risk weights for exposures to corporates under Basel II					
Rating	AAA to AA–	A+ to A–	BBB+ to BB–	Below BB–	Unrated
Base risk weight	20%	50%	100%	150%	100%

Risk weights for exposures to corporates under Basel IV based on external ratings						
Rating	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to BB–	Below BB–	Unrated
Base risk weight	20%	50%	75%	100%	150%	100%

Risk weights for exposures to corporates under Basel IV – no application of external ratings			
Classification	General treatment	SME	Investment Grade
Base risk weight	100%	85%	65% *(jurisdictions not allowing the use of external ratings)*

Figure 1.8: Risk weights for corporates based on external ratings

Regardless of the permission to use external ratings, unrated corporate SMEs, with (group) sales of up to EUR 50 million for the most recent financial year, are assigned a risk weight of 85%, which represents a more favourable treatment than under the previous Basel II framework.

This preferential risk weight can be applied to all corporate exposures that fall under the IRB definition of SMEs given that they do not meet the criteria allowing them to be classified as "retail SMEs". Claims to SMEs of up to EUR 1 million can be categorised as "retail SMEs" according to supervisory requirements and are allocated a risk weight of 75%. In contrast to the SME-scaling factor in Art. 501 of the CRR there is no total volume connected to the preferential treatment of SMEs. Figure 1.9 illustrates the determination of preferential risk weights for SMEs.

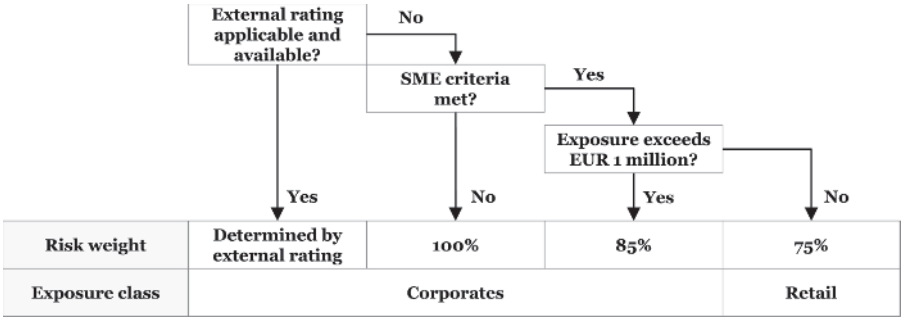


Figure 1.9: Determination of preferential risk weights for SMEs

Comparison of the new framework to the specifications of the first and second consultative papers and the current provisions

Under current CRR rules, exposures to corporates with an available external rating receive a risk weight between 20% and 150%. Unrated exposures are assigned a risk weight of 100%. If the risk weight of the country of incorporation has a higher risk weight than the corporation itself, the risk weight of the country has to be used.

The process of deriving risk weights from externally rated clients/exposures does not differ from the current CRR rules, only the additional due diligence requirements represent a new element that may lead to increased risk weights.

The new Basel regulation introduces a more favourable treatment of unrated corporate SMEs in terms of capital requirements regardless of the volume of the exposure, which is presented as an additional factor in the CRR. The introduction of a separate risk weight of 85% for SMEs represents a significant modification of the currently existing Basel rules. On a European level, however, Art. 501 CRR already contains a special factor to reduce the risk weight of exposures to SMEs ("SME factor"). A simple multiplier 0.7619 is used (for SA and IRB exposures) to requirements for SME. However, this factor is limited to a total exposure of EUR 1.5 million, whereas the SME treatment in the new Basel framework does not have an exposure limit. The draft document of the amendment of the CRR (so called "CRR II") however is proposing to modify the application of the factor as follows: Exposures up to EUR 1.5 million will receive the currently applicable factor of 0.7619 and any exceeding amount will receive a factor of 0.85. This procedure will combine "the best of the two worlds".

1.2.6 Specialised lending

In the specialised lending business, special purpose entities, created specifically for this investment and with little material assets, typically serve as borrowing entities and the primary source of repayment is the return on the investment. Furthermore, the lender is contractually entitled to a substantial degree of control over the assets and the income generated by the financed assets. For the identification of specialised lending exposures, the Basel Committee requires banks to apply this definition based on both the legal form and/or the economic substance of the financing.

The current credit risk standardised approach under Basel II does not comprise a separate exposure class for specialised lending. Specialised lending exposures are generally treated as regular corporate loans and receive a risk weight of 100% unless they have an external rating.

In order to increase risk sensitivity and to align the standardised approach with the IRB Approach, the five sub-classes of specialised lending of the IRB Approach are also included in the standardised approach: while the first consultative paper included these

five sub-classes in the specialised lending exposure class, the second consultative paper as well as the final document considers specialised lending only in terms of

- project finances (e.g. factories, infrastructure, environmental technology),
- object finances (e.g. acquisition of vessels and aircraft), and
- commodities finances (e.g. crude oil and metal).

Specialised financing in connection with real estate investments is not recognised as specialised lending (unlike under the IRB) but as a separate form of real estate collateralised loans within the real estate exposure class.[2]

Although the Basel II definition of specialised lending provides the classification criteria cited above, various blurred lines can be observed in practice, especially with respect to the consideration of both economic and legal conditions of an exposure: loans in relation to hospitals, sport and multi-purpose halls, for instance, may be treated as project finance or real estate-secured exposure, depending on further criteria. Financing of car fleets can occur in the form as object finance as well as unsecured corporate exposures. National supervisors used to provide further guidance in relation with IRB specialised lending exposures and other reporting requirements.[3]

As for exposures to corporates, specialised lending exposures with external issue-specific ratings receive a risk weight between 20% and 150% using the same look-up table that would apply to corporate exposures in general.[4]

If no external issue-specific rating is available or allowed for regulatory purposes, a general risk weight of 100% is to be applied for object and commodities finances.

For specialised lending in the form of project finances the risk weight depends on the project phase. A risk weight of 130% is to be applied during the "pre-operational phase" and 100% for the "operational phase". Project finance exposures, which fulfil strict "high quality" criteria receive a more favourable risk weight of 80%.

Figure 1.10 contains the risk weights for specialised lending.

As specialised lending is not usually subject to external ratings it can be expected that the average risk weights for specialised lending will be between 100% and 130% (the second consultative paper proposed risk weights from 100% to 150%). In addition there is the possibility of assigning an 80% risk weight to "high quality" project finance exposures if strict criteria are met. However, this preferential treatment is expected to

2 For further details, see sub-categories "land acquisition, development and construction (ADC)" and "exposures where the repayment is materially depending on cash-flows generated by the financed property" in section "Exposures secured by real estate/Real estate exposure class".

3 In the European Union, the criteria are outlined in art. 147(8) CRR, with further guidance provided by the European Banking Authority (EBA) in the form of a final draft Regulatory Technical Standards (EBA/RTS/2016/02) as well as in several clarification in the context of the The Single Rulebook.

4 While an issuer rating usually classifies the credit risk of an entity's senior-ranked debt, an issue-specific rating relates to specific debt tranches or stand-alone financing like specialised lending. To determine the risk weight of specialised lending exposures in jurisdictions that allow the use of external ratings, only issue-specific ratings are applicable.

Issue-specific rating available and applicable					
Rating	**AAA to AA–**	**A+ to A–**	**BBB+ to BBB–**	**BB+ to BB–**	**Below BB–**
Risk weight for object, project and commodities finance	**20%**	**50%**	**75%**	**100%**	**150%**

Issue-specific rating not available or not allowed		
Risk weight for object and commodities finance	**100%**	
Risk weight for project finance	**130% (pre-operational)**	**100% (operational)**
Risk weight for "high quality" project finance		**80% (operational)** *certain criteria must be met*

Figure 1.10: Risk weights for specialised lending

affect new project finance exposures rather than existing ones since, presumably, only a few existing contracts might fulfil all the criteria.

Under the current Basel II regulation, object, project, and commodities finance exposures are generally treated as regular corporate exposures and receive a risk weight of 100%. Thus, RWA increases are limited to pre-operational project finance exposures while "high quality" project finance is subject to a more favourable treatment.

1.2.7 Subordinated debt instruments, equity and other capital instruments

Equity exposures, which are not deducted from regulatory capital, receive a risk weight of 250% after a 5-year phase-in period starting at 100% and with yearly increases of 30 percentage points.[5] Speculative unlisted equity investments are to be risk weighted by 400%, also subject to a 5-year phase-in arrangement starting at 100% and increasing by 60 percentage points each year. Certain equity holdings subsidised and regulated by the government can be eligible for a preferential 100% risk weight at national discretion.

Subordinated debt and capital instruments other than those subject to the Basel Committee's equity definition and those not subject to a capital deduction are risk weighed with 150%. This treatment also includes other TLAC liabilities as long as they are not subject to a regulatory capital deduction.[6]

For the risk weighing of subordinated debt instruments, equity and other capital instruments external ratings are not taken into account.

Figure 1.11 summarises the risk weights applicable to these instruments.

The final provisions for this exposure class basically follow the spirit of the second consultative paper and offer considerable relief compared to those of the first consultative

5 The document comprises a comprehensive definition of equity instruments for regulatory purposes, which focuses in particular on the economic characteristics of an instrument (e.g. repayability, rank of a claim, or conversion into generic equity instruments).

6 Presently it is not clear to which extent this concept is also applied to positions qualifying as "Minimum Requirements for Eligible Liabilities / MREL" which is the European equivalent of TLAC.

Subordinated debt instruments, equity and other capital instruments	
Equities which are not subject to capital deduction	**250%**
Speculative unlisted equity investments	**400%**
Certain equity holdings, subsidised and regulated by the government	**Preferential treatment subject to national discretion: 100%**
Subordinated debt, and capital instruments not subject to other capital deduction or equity treatment	**150%** *for these exposures, ratings are generally not applicable for regulatory purposes*

Figure 1.11: Subordinated debt instruments, equity and other capital instruments

paper which proposed risk weights of 300% for publicly traded equity exposures and of 400% in all other cases, as long as they were not deducted or assigned a risk weight of 250% pursuant to the Basel III framework.

However, a different picture emerges in comparison to the current Basel requirements. Currently, equity exposures and subordinated debt securities receive a risk weight of 100% (unless deducted from capital or risk weighted with 250%). Only in situations where the exposure is to be classified as "higher risk category" does a risk weight of 150% apply.[7]

Apart from the exceptions listed above, capital requirements will be subject to a considerable increase. Yet this increase is not as severe as the one discussed in the first consultative paper.

1.2.8 Retail exposures

The current Basel framework established four criteria that need to be met in order to classify an exposure as regulatory retail:

1. exposure refers to an individual person or persons or to a small business,

2. exposure takes the form of revolving credit, and lines of credit, personal term loans and leases and small business facilities and commitments,

3. there is appropriate level of diversification,

4. maximum value of EUR 1 million for the aggregated individual exposure.

In cases where an exposure meets all of the above criteria, a risk weight of 75% is assigned.

These rules will be implemented on EU level with no major amendments. The main difference is that under the current EU legislation, Art. 123 of CRR defines the term "small business" as "SME".

7 In the EU Capital requirement regulation, the corresponding exposure class is called "exposures with particularly high risk".

Under the revised standardised approach, the Basel framework has been aligned with the CRR defining the term "small business" as "SME". In addition the Basel Committee sets a quantitative "granularity" criterion to ensure "appropriate level of diversification" of the regulatory retail portfolio. Based on this criterion aggregated exposure to one counterparty in order to be eligible for treatment as a retail exposure must not exceed a maximum of 0.2% of the total retail portfolio. This quantitative criterion has already been introduced in Basel II, but only as an option for the supervisor to assess diversification of the portfolio.

The other two eligibility criteria for classifying exposures as retail remain unchanged.

Similar to current regulation, claims included in the regulatory retail portfolio are assigned a risk weight of 75% which is preserved from Basel II and CRR. However, in contrast to Basel II, a risk weight of 100% is applied to any exposure which does not meet all of the eligibility criteria unless they are exposures to SMEs which are classified as corporate SMEs and are risk weighted accordingly.

As under current Basel and EU regulation, defaulted loans and exposures secured by residential real estate are excluded from the regulatory retail exposure class.

A major change to the current regulation, constitutes the introduction of a new category of obligors, namely "transactors", which is treated in a favourable manner. Under Basel Committee's definition, transactors are retail obligors that are connected with facilities used to facilitate transactions and not as a source of credit. Typical examples of such facilities are: a) credit cards and charge cards where the transactor has repaid the balance in full each month according to the repayment plan for the past 12 months and; b) overdraft accounts with no drawdowns over the same time horizon. Under the new standardised approach, a 45% risk weight is assigned to this category of exposures.

1.2.9 Exposures secured by real estate/Real estate exposure class

Introduction

The concept for the recognition of real estate collateral shows significant changes to the current existing Basel requirements.

While the existing concept of differentiation between residential and commercial real estate exposures remains in force under the revised SA-CR, a new subcategory "land acquisition, development and construction" (ADC) has been introduced. In addition to that, exposures, where the repayment of the loan materially depends on the cash flows generated by the property (in previous consultative documents referred to as "income producing real estate" / IPRE exposures), generally receive higher risk weights – also differentiated by residential and commercial real estate – than loans, where the repayment does not materially depend on the cash flows generated by the financed object. In some cases, those assigned risk weights might even exceed the risk weights of unsecured exposures.

The real estate exposure class, in particular, has been subject to intense controversies and discussions in the course of the Basel IV finalisation, driven by its strategic and economic importance for the banking industry in most countries as well as the various national provisions specifics in mortgage-related regulations and practices among the member jurisdictions.

As a result, the final compromise includes several amendments to the previously proposed treatment (first and second consultative paper), as well as several methodological options subject to national discretions, and calls for further (national) guidance. While both consultative papers focused solely on a Loan-to-Value-based (LTV) risk weight determination, the final standard allows jurisdictions for some forms of real estate financing to elect a "loan splitting approach" alternatively which leads to an incorporation of different risk weights for the secured and unsecured part of an exposure, respectively, and is *inter alia* currently in use in some European jurisdictions.

Overall requirements

As in the Basel II framework, the revised standardised approach limits the application of this exposure class to jurisdictions where credit losses stemming from real estate-secured exposures are sustainably low. Therefore, national supervisors are expected to adjust the prescribed risk weights upwards, if appropriate, hence reflecting results from the observation defaults and losses or other indicators (e.g. reflecting market price stability).

To be eligible as real estate exposures, loans have to meet the following six operational requirements:

1) Finished property:

The property has to be fully completed to qualify as a real estate collateral, with an exception for forest and agricultural land.

However, subject to national discretion, loans to individuals can still be classified as residential real estate if the unfinished property is a residential one-to-four family housing unit that will be the primary residence of the borrower and is not subject to a rather conservative treatment as land acquisition, development and construction (ADC).

Another exemption might be granted if the Sovereign or PSE as borrower has the legal powers and ability to ensure that the property under construction will be finished.

2) Legal enforceability:

The claim is legally enforceable in all relevant jurisdictions. Collateral agreements and legal conditions must enable the bank to realise the value of the property within a reasonable time frame.

3) Claims over the property:

Types of claims that entitle banks to classify loans as real estate exposures include the following constellations:

- The bank needs to have a first lien on the property or the first as well as any subordinated liens.
- In jurisdictions where junior liens entitle creditors to a legally enforceable claim and qualify as effective credit risk mitigants, junior liens – as well as a combination of liens senior and junior, respectively, to a third party's intermediate liens – can be recognised as eligible claims.

In order to recognise junior liens over a property as appropriate claims, the national legal environment for liens must fulfil the following preconditions:

- Each holder of a lien shall be entitled to initiate the sale of a property independently from other holders of a lien and
- the sale of a real estate collateral is either carried out by public auction, or holders of senior liens are obliged to take reasonable steps to obtain a fair market value or the best price possible as they carry out the sale in order to also serve junior lien holders' financial interests.

In addition to these conditions and to the existing Basel II framework, the Basel Committee incorporates an exception to take the characteristics of certain jurisdictions and house financing markets into account where loans usually are guaranteed by a highly rated 'monoline' guarantor, rather than secured by a mortgage claim, while the bank is entitled to take a mortgage on the property in the event of the guarantor's default.

In general, such loans are treated as guaranteed exposures. However, they may be classified as residential real estate exposures under certain conditions:

- The borrower does not have the right to grant any mortgage liens to a third party without consent of the bank,
- the guarantor is either a bank, or a financial institution subject to similar capital requirements, or an insurer,
- guarantees are backed by a regularly calibrated and supervised fully-funded mutual guarantee fund or equivalent protection for insurers, and
- the bank has contractually and legally the right to take a mortgage on the property if the guarantor defaults.

4) Ability of the borrower to repay the loan:

This requirement focuses on a bank's assessment of the borrower's creditworthiness as well as on the national supervision of such policies: banks shall define one or several metrics including respective thresholds as part of their underwriting policies. The Basel Committee expects national supervisors to provide further guidance, though it lists the loan's debt service coverage ratio and, for repayments depending on cash flows generated by the property, the property's occupancy rate as examples.

5) Prudent value of property:

The property needs to be prudently valued and its value must not depend materially on the borrower's performance.

The value needs to be appraised based on prudently conservative valuation criteria and has to be independent from the bank's mortgage acquisition and loan decision process. While expected price increases are not to be incorporated, a potential excess of the current market price over to the sustainable value of the property shall be prudently reflected in the valuation.

If a market value is available, the value of the property cannot be higher than that market value. If the loan is used to finance a property purchase, the collateral value is not supposed to exceed the purchase price.

The value determined at the time of origination shall remain constant. However, subject to national supervisors' discretion, banks can be required to revise property values downward. In this case, subsequent upward adjustments, if appropriate, are capped at the value at origination.

In any case, idiosyncratic events that lead to a decrease of the property value, have to be reflected in the collateral value.

A bank could as well recognise modifications of a property with an unequivocally positive impact on its value.

6) Required documentation:

The Standard requires a proper documentation of the granting and monitoring of the loan, including details on the property valuation and the borrower's creditworthiness assessment.

Calculation of the loan-to-value ratio (LTV)

The LTV is the key indicator for the determination of risk weights for residential and commercial real estate exposures, with the exception of an optional loan splitting approach at national discretion for certain real estate exposures.

The loan-to-value ratio is a fraction with the loan amount as numerator and the collateral value as denominator.

The loan amount for senior lien loans is defined as the sum of the outstanding loan amount and any undrawn committed amount, gross of any provisions, risk mitigants, and credit conversion factors. However, balances of pledged deposit accounts with the lending bank can be deducted from the loan amount under specific conditions (*inter alia* balance sheet netting and sole purpose of mortgage loan redemption).

Hereby, loans secured by the same property are to be grouped to a single exposure as long as they are in subsequential ranks without intermediate third party liens.

In jurisdictions, where junior lien loans are considered exposures secured by real estate, the loan amount must include all equally or senior ranked third party liens for LTV calculation purposes. This holds as well for the incorporation of third party liens without sufficient information on their rank.

For the calculation of the collateral value as denominator, the aforementioned conditions for the prudent valuation of the property apply.

The LTV calculation must not consider any guarantees or financial collaterals which also might include certain mortgage insurances. However, these credit risk mitigants can be considered in the course of the exposure determination following the provisions for credit risk mitigation techniques.

Finally, the actual risk weight of an exposure is based on the LTV ratio and the property type and regularly ranges from 20% up to 110%, if not overridden by counterparty-related considerations as detailed below.

For junior lien loans whose LTV exceeds the upper boundary of the lowest LTV bucket (i.e. 50% for residential and 60% for commercial real estate exposures), a multiplier of 1.25 is to be applied to the base risk weight as in the look-up table (capped at the respective risk weight for exposures not fulfilling this exposure class's criteria).

Residential real estate exposure class

The residential real estate exposure class covers exposures secured by residential property which is defined as an immovable property that can be used for residential purposes in line with all applicable laws and regulations.

The treatment of loans in this exposure class is further differentiated by the expected source of funds for the repayment of the loan:

- exposures where the repayment does not materially depend on the cash flows generated by the property,
- exposures where the repayment materially depends on the cash flow generated by the property (in previous documents referred to as "Income producing real estate" exposures).

The Basel Committee suggests that this material dependency is recognised if more than 50% of the borrower's income (as considered in the bank's debt service coverage assessment)[8] is generated by the residential property, without any restriction to specific counterparty types. However, national supervisors can provide banks with further details on how to incorporate the material dependency criterion.

8 However, it is not stated whether changes to the shares of income sources – e.g., a rental income share of 60% at inception of a loan changes to 40% after a few years due to salary increases, or a rental income share exceeds the 50% threshold after the borrower's retirement – over the lifetime of the loan may lead to its reclassification.

Additionally there are qualitative criteria which might lead to a treatment of an exposure where the repayment materially depends on the cash flow generated by the property as an exposure where the repayment does not materially depend on the cash flow generated by the property regardless whether the quantitative criterion is met:

- the property which secures the exposure is the borrower's primary residence,
- the collateral is an income producing residential housing unit and the borrower has mortgaged less than a certain number of properties (threshold to be detailed by national supervisors),
- the borrower of the real estate exposure is an association or cooperative regulated under national law which aims to grant members a primary residence in the respective property, and
- the borrower of the real estate exposure is a public housing company or a non-profit association which serves social purposes in terms of providing tenants long-term housing.

In general, residential real estate exposures where the repayment does not materially depend on cash flows generated by the property receive lower risk weights, since the Basel Committee considers losses less probable in cases where the source of debt service coverage is not the collateral which secures the exposure.

Residential real estate exposures where the repayment does not materially depend on cash flows generated by the property

For these exposures, jurisdictions are entitled to choose the applicable approach, either a LTV-based risk weight determination or a loan splitting calculation, with different risk weights for both the secured and the unsecured part of a residential real estate loan.

Figure 1.12 compares illustratively the technical application of both approaches which are further detailed in this section.

1) LTV-based approach

The LTV-based approach requires banks to calculate the exposures LTV, following the aforementioned calculation steps, and determine the risk weight based on the exposure's LTV bucket.

Therefore, the Basel Committee provides a look-up table with 5 different LTV buckets: Exposures with a LTV that does not exceed 50% receive a risk weight of 20%, while a LTV of more than 100% – i.e. the loan amount exceeds the property value – leads to an applicable risk weight of 70%.

Exposures secured by junior liens that can be treated as real estate exposures in accordance with the aforementioned overall requirements, receive the base risk weight multiplied by 1.25 for all LTV buckets except for the lowest LTV bucket (with LTV $\leq$ 50%). However, the resulting risk weight is capped at the risk weight applicable for exposures that do not fulfil the overall requirements for real estate exposures. Thus, respective

Example

Real estate financing loan to an individual, secured by a senior lien on the financed residential property (used as residence by the borrower)

Jurisdictions applying the LTV approach

1 LTV calculation

LTV formula (simplified)

$$LTV = \frac{Loan\ amount\ (incl.\ off\text{-}balance\ and\ senior\ liens)}{Property\ value}$$

LTV formula applied to this example

$$LTV = \frac{800}{1000} = 80\ \%$$

2 Risk weights (look-up table)

According to the look-up table, a risk weight of 30% is applicable:

Residential real estate				
LTV range	...	60% < LTV ≤ 80%	80% < LTV ≤ 90%	...
Risk weight	...	30%	40%	...

3 RWA calculation

$$\mathbf{RWA = 800 \times 30\% = 240}$$

In case of a loan amount of 810:
$RWA = 810 \times 40\% = 324$

Jurisdictions applying the Loan Splitting approach

1 Loan splitting

Determination of secured and unsecured partial exposures

$$Exposure_{Res.RealEstate} = MAX(55\% \times property\ val. - senior\ liens; 0)$$

$$Exposure_{CounterpartyRW} = Exposure - Exposure_{Res.RealEstate}$$

Application to this example

$$Exposure_{Res.RealEstate} = MAX(55\% \times 1000;\ 0) = 550$$

$$Exposure_{CounterpartyRW} = 800 - 550 = 250$$

2 Prescribed risk weights

According to the look-up table, a risk weight of 20% is applicable for the secured part and 75% for the unsecured part of the loan

Residential real estate – Loan splitting approach			
LTV Range	Secured part	Unsecured part	
		Individuals	...
Risk weight	20%	75%	...

3 RWA calculation

$$\mathbf{RWA = 550 \times 20\% + 250 \times 75\% = 297.5}$$

In case of a loan amount of 810:
$RWA = 550 \times 20\% + 260 \times 75\% = 305$

Figure 1.12: LTV vs Loan Splitting approach

Residential real estate – LTV-based approach							If requirements for Real Estate exposure treatment are not met:
Repayment is not materially dependent on cash flows generated by the property							
LTV Range	**LTV ≤ 50%**	**50% < LTV ≤ 60%**	**60% < LTV ≤ 80%**	**80% < LTV ≤ 90%**	**90% < LTV ≤ 100%**	**LTV > 100%**	
Base Risk weight (senior lien)	**20%**	**25%**	**30%**	**40%**	**50%**	**70%**	Risk weight as for unsecured exposures
Effective risk weight for junior lien *(if applicable)*	20%	31.25%	37.5%	50%	62.5%	87.5%	

Figure 1.13: LTV approach for residential real estate

exposures receive a risk weight between 20% and 87.5%, depending on the LTV and the type of counterparty.

Figure 1.13 shows the applicable risk weights in detail.

Exposures that do not fulfil the overall requirements of the real estate exposure class are treated like unsecured exposures.

As stated above, provisions, credit conversion factors and credit risk mitigation techniques cannot be considered for the calculation of the LTV in the course of the risk weight determination. However, their effects are to be incorporated in the exposure value which is multiplied by the determined risk weight in order to calculate the risk weighted assets.

2) Loan splitting approach

Unlike the LTV calculation, the loan splitting approach focuses on a single instrument rather than all instruments secured by the residential property. For every instrument secured by the property, the actual secured and the unsecured part of the instrument have to be determined as follows: the secured part is defined as the maximum of 55% of the property value less the value of all claims more senior than the relevant instrument and 0. If there are any liens of the same seniority ("pari passu" ranking), the collateral value shall be assigned pro rata to the pari passu ranked creditors.

First, the secured and unsecured exposure values are calculated:

$$Exposure_{Res.RealEstate} = MIN(MAX(55\% \times property\ val. - senior\ liens; 0), Exposure_{gesamt})$$

$$Exposure_{CounterpartyRW} = Exposure - Exposure_{Res.RealEstate}$$

Residential real estate – Loan splitting approach					Only applicable if requirements for real estate exposure treatment are met
Only applicable where the repayment is not materially dependent on cash flows generated by the property					
LTV range	**Secured part** (max. 55% of the property value less senior claims)	**Unsecured part**			
		Individuals	**SME**	**Other counterparties**	
Risk weight *(for senior lien, as well as junior lien if applicable)*	**20%**	**75%**	**85%**	Risk weight as for unsecured exposures	

Figure 1.14: Loan splitting approach for residential real estate

The resulting secured and unsecured exposures receive different risk weights, with 20% risk weight assigned to the secured part and a counterparty-specific risk weight for the unsecured part (Figure 1.14).[9]

The loan splitting approach does not explicitly differ between senior and junior lien claims, as long as the overall requirements for the consideration of junior liens are met and the assigned collateral value is within the prescribed limits.

The loan splitting approach is newly introduced in the revised CR-SA concept although it had not been considered in the Committee's previous consultative documents. However, it is currently in use in some European jurisdictions.[10]

Comparing both approaches, as illustrated in Figure 1.15 , the risk weight is the same for LTV < 50% under both approaches (20%) while the risk weights for higher LTV ratios increase similarly with small deviations resulting from the cascaded (LTV-based approach) versus the continuous risk weight curve. However, for LTV ratios higher than 90%, the loan splitting approach leads to significantly lower risk weights with an advantage of approximately 25 percentage points when a 100%-LTV ratio is exceeded, though the advantage decreases with increasing LTVs.

Residential real estate exposures where the repayment depends materially on cash flows generated by the property

If the repayment of the residential real estate loan materially depends on the cash flows generated from the collateral, as detailed above (in previous documents referred to as "Income Producing Real Estate" or IPRE) and the requirements for a treatment as residential real estate exposure are met, the LTV-levels and resulting risk weights differ from the previously introduced type of exposure and range from 30% to 105% and for junior lien claims (if applicable) from 30% to 131.25%.

9 Deviating from the prescribed risk weights as illustrated in Figure 1.14, regular unsecured exposures to SME fulfilling all retail criteria would receive a 75% risk weight while exposures to individuals who do not meet the retail criteria (e.g. exposure exceeds the retail threshold) would receive a risk weight of 100%. The supervisors will have to finally clarify whether the unsecured part of an exposure subject to the loan splitting approach receives the prescribed risk weights (in line with the written word of the document, as stated above) or the general risk weights for unsecured exposures to respective counterparties. This holds for the treatment of both residential and commercial real estate exposures under the loan splitting approach.

10 Art. 124 CRR

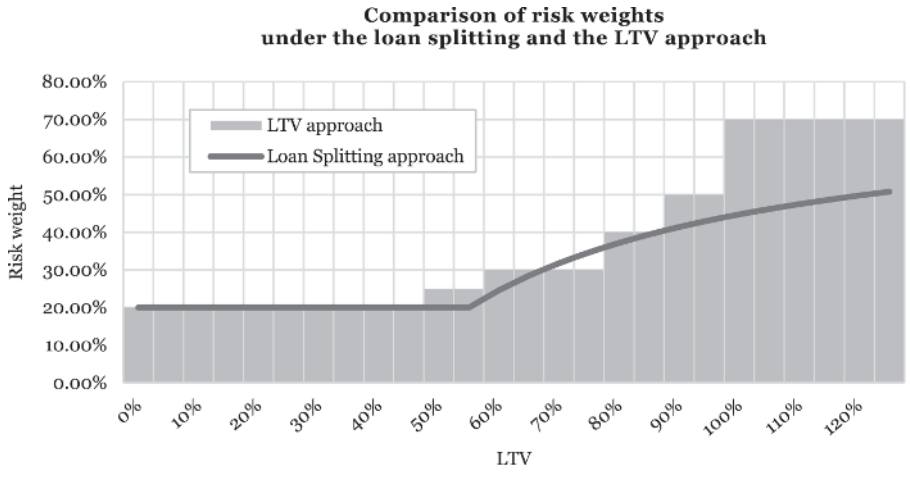


Figure 1.15: Risk weights of LTV vs loan splitting approach for residential real estate

If the overall requirements for real estate exposures are not fulfilled or only partially fulfilled, a risk weight of 150% has to be applied, leading to a risk weight which might be more conservative than for an uncollateralised loan to the same counterparty.

The applicable risk weights are summarised in Figure 1.16.

In general, the counterparty type of a borrower does not affect the possible treatment of a loan as a residential real estate exposure where the repayment depends materially on cash flows generated by the property. However, the abovementioned exemptions and qualitative criteria, *inter alia* for individuals and public housing companies, might apply, hence leading to more favourable risk weights.

Commercial real estate exposure class

The Basel Committee defines commercial real estate as any immovable property that is not a residential real estate in accordance with the respective Basel definition. As with

Residential real estate – LTV-based approach							If requirements for real estate exposure treatment are not met:
Repayment is materially dependent on cash flows generated by the property							
LTV Range	**LTV ≤ 50%**	**50% < LTV ≤ 60%**	**60% < LTV ≤ 80%**	**80% < LTV ≤ 90%**	**90% < LTV ≤ 100%**	**LTV > 100%**	
Base Risk weight (senior lien)	**30%**	**35%**	**45%**	**60%**	**75%**	**105%**	150%
Effective risk weight for junior lien *(if applicable)*	30%	43.75%	56.25%	62.5%	93.75%	131.25%	

Figure 1.16: LTV approach for residential real estate where repayment materially depends on cash flows generated by the property

the residential real estate exposure class, the treatment of exposures in the commercial real estate exposure class is differentiated in:

- exposures where the repayment does not materially depend on the cash flows generated by the property, and
- exposures where the repayment materially depends on the cash flow generated by the property (in previous documents referred to as "Income producing real estate" exposures).

The quantitative criterion to determine a material dependency on the property's cash returns is the same as for real estate exposures, while no qualitative exemption criteria are incorporated for commercial real estate exposures where the repayment depends on cash flows generated by the property. However, the revised CR-SA includes an option for national authorities to significantly ease the capital requirements of respective exposures which is further outlined in the respective subsection of this chapter.

Commercial real estate exposures where the repayment does not materially depend on the cash flows generated by the property

Loans secured by commercial real estate, where the repayment does not materially depend on the cash flows generated by the real estate and where the overall real estate exposure requirements are met, can be risk weighted using the LTV-based or the loan splitting approach which is to be specified by the national authorities.[11]

1) LTV-based approach

Under this approach, Commercial real estate exposures receive a risk weight of 60% if the LTV is less than 60% or the risk weight of the counterparty, provided the latter is lower. If the LTV exceeds 60%, the risk weight of the counterparty is applied.

For the risk weight of the counterparty, the Basel Committee prescribes 75% for Individuals (as with the retail exposure class, if respective criteria are met) and 85% for SME (which equals the general risk weight for non-retail SME exposures).

The details are illustrated in Figure 1.17.

Technically, this exposure class is not exempted from the additional capital surcharge (multiplier of 1.25) for junior lien claims, if applicable in accordance with the overall requirements, although it actually does not increase the risk weights due to the general exemption of the lowest LTV bucket and the cap at a risk weight for unsecured exposures (which equals the risk weight of the counterparty in this approach).

If the operational requirements for these loans are not fulfilled the exposure receives the risk weight of the counterparty.

11 For a detailed outline of both approaches, see section "Residential Real Estate exposure class" in the current chapter

Commercial real estate – LTV approach					If requirements for Real Estate exposure treatment are not met:
Repayment is not materially dependent on cash flows generated by the property					
LTV range	**LTV ≤ 60%**	**LTV > 60%**			
Risk weight *(for senior lien, as well as junior lien if applicable)*	**MIN (60%, risk weight of counterparty)**	**Risk weight of counterparty:**			Risk weight as for unsecured exposures
		Individuals	**SME**	**Other**	
		75%	**85%**	as unsecured exposures	

Figure 1.17: LTV approach for commercial real estate

2) Loan splitting approach

As for residential real estate exposures, the loan splitting approach leads to the splitting of loans in:

- a secured exposure with the lower risk weight of 60% or the counterparty-related risk weight for unsecured exposures, respectively, for a loan amount of up to 55% of the property value less claims with higher or equal (in this case with a pro rata consideration) rank, and
- an unsecured part which receives a risk weight based on the counterparty type.

The details are illustrated in Figure 1.18.

In a direct comparison of effective risk weights for commercial real estate exposures, the loan splitting approach leads, with the exception of a few constellations, to either identical – which holds for LTV ≤ 55% as well as for the whole exposures to counterparties with an individual risk weight lower than 60% – or lower risk weights than the LTV approach, as the following scenarios prove in detail.

For exposures to individuals, a risk weight of 75% is to assign to the unsecured part of a loan under the loan splitting approach, while the secured part (max. 55% of the property value) receives a risk weight of 60%. The LTV approach, in contrast, leads to a 75% risk weight for the full loan amount as soon as the LTV threshold of 60% is exceeded.

Thus, the resulting risk weights under both approaches are

- for LTVs ≤ 55% identical,
- for 55% < LTV ≤ 60% slightly better under the LTV approach, and

Commercial real estate – Loan splitting approach					Only applicable if requirements for real estate exposure treatment are met
Only applicable where the repayment is not materially dependent on cash flows generated by the property					
LTV range	**Secured part** (max. 55% of the property value less senior claims)	**Unsecured part**			
		Individuals	**SME**	**Other Counterparties**	
Risk weight *(for senior lien, as well as junior lien if applicable)*	**MIN (60%, risk weight of counterparty)**	**75%**	**85%**	Risk weight as for unsecured exposures	

Figure 1.18: Loan splitting approach for commercial real estate

- for LTV > 60% significantly lower (up to almost 14 percentage points) under the loan splitting approach (with a maximum the relative advantage decreases with increasing LTV).

The respective risk weight curves are shown in Figure 1.19.

The comparison of risk weights for commercial real estate exposures to unrated corporates (assuming a risk weight of 100%) leads to similar curve shapes, which are illustrated in Figure 1.20, as for exposures to individuals. However, the quantitative advantage of the loan splitting approach is even more material with a maximum advantage of more than 35 percentage points for LTV slightly above 60%.

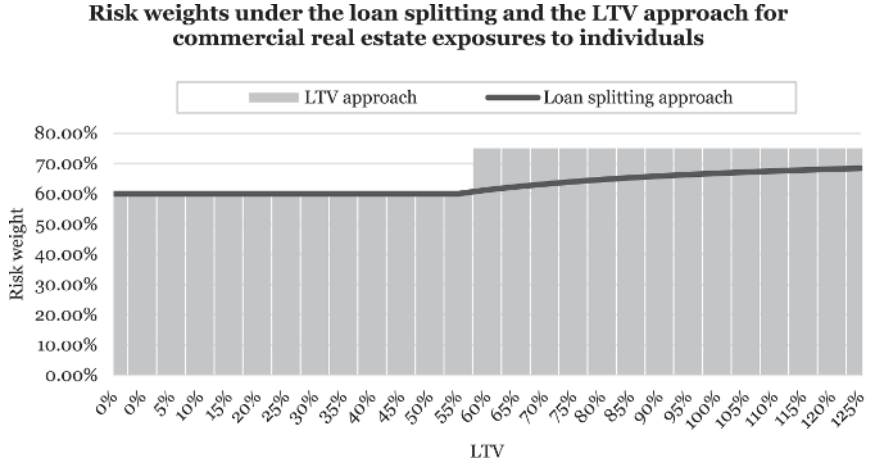


Figure 1.19: LTV vs loan splitting approach for commercial real estate exposures to individuals

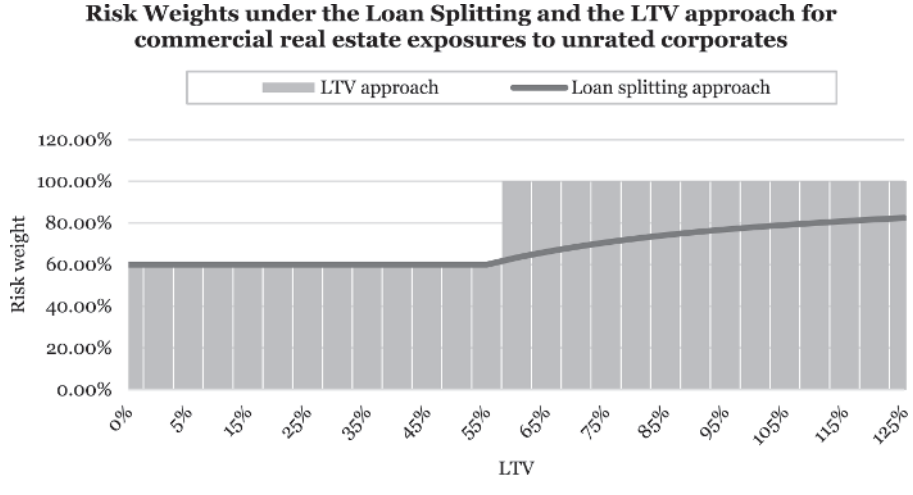


Figure 1.20: LTV vs loan splitting approach for commercial real estate exposures to unrated corporates

Commercial real estate exposures where the repayment materially depends on the cash flows generated by the property

If the repayment of the commercial real estate loan materially depends on the cash flows generated by the property, the following provisions apply (see Figure 1.21).

Unlike for residential real estate exposures, national authorities have the option to waive the assignment of more conservative risk weights to commercial real estate exposures where the repayment materially depends on the cash flows generated by the property. Instead they can opt for the standard commercial real estate exposure treatment.

For this option, certain conditions must be met in the respective jurisdiction at any year: losses from commercial real estate lending up to a LTV of 60% must not exceed 0.3% of the outstanding loans at any year, and overall losses among commercial real estate exposures must not exceed 0.5% of the outstanding loans.[12]

For those jurisdictions where these conditions are not met, as well as in jurisdictions not going for the preferential option, more conservative risk weights in accordance with the look-up table provided by the Basel Committee are applicable. Thereby, a risk weight of 70% is assigned to exposures with a LTV not exceeding 60%, while exposures with a LTV of up to 80% and more than 80% receive a risk weight of 90% and 110%, respectively.

Junior lien claims receive an effective capital requirement surcharge of 25% in the form of a risk weight multiplier, as introduced in the previous section.

If the overall real estate exposure requirements are not fulfilled, a risk weight of 150% is applied to these loans.

Land acquisition, development and construction (ADC)

The Basel Committee defines a specific treatment for loans to companies or SPVs with the purpose of financing land acquisition for development and construction purposes

Commercial real estate				If requirements for Real Estate exposure treatment are not met:
Repayment is materially dependent on cash flows generated by the property				
LTV range	**LTV ≤ 60%**	**60% < LTV ≤ 80%**	**LTV > 80%**	
Base risk weight (senior lien)	**70%**	**90%**	**110%**	**150%**
Effective risk weight for junior lien *(if applicable)*	70%	112.5%	137.5	

Figure 1.21: Commercial real estate where repayment materially depends on cash flows generated by the property

12 If at least one of these conditions is not met in one year, the preferential treatment of such exposures ceases for the respective year and the specific risk weights for commercial real estate exposures where the repayment materially depends on the cash flows generated by the property become applicable. Respective statistics have to be publicly disclosed.

or the development and construction of any residential or commercial property (with certain exemptions applicable, as set out in the residential real estate exposure section).

Loans granted for land acquisition development or construction purposes are assigned a risk weight of 150% in general.

However, ADC exposures for residential real estate building can qualify for a preferential risk weight of 100% if the prudential underwriting standards are met, in accordance with the overall requirements for real estate exposures, and if a sufficient number of pre-sale/pre-lease contracts exists following (yet to be defined) national requirements.

The CR-SA within the Basel II framework does not explicitly contain a specific treatment of ADC exposures, however, in some jurisdictions they are treated as higher-risk exposures with a corresponding higher risk weight.[13]

Changes to existing Basel II framework, developments during the consultation process and subsequent considerations

The revised capital requirements for real estate exposures had been subject to dramatic amendments in the course of the consultation process, further discussions, and negotiations, respecting both the conceptual approach as well as the quantitative impact.

The Basel II framework differentiates only between residential property (with an implicit loan splitting approach, leading to a 35% risk weight for fully secured exposures) and commercial real estate with a risk weight of 100% that can be reduced to 50% at national discretion (e.g. in some European jurisdictions).

The first consultative paper on the CR-SA revision proposed a calculation of risk weights for claims secured by residential real estate based on a matrix comprising the LTV ratio and the debt service coverage ratio (DSCR). The resulting risk weights ranged between 25% and 100%. As the parameter DSCR proved not to be comparable among different jurisdictions on an international basis, the Basel Committee let go of this approach with its second consultative paper and focused on a LTV-based approach. However, neither consultative paper addressed the loan splitting approach, which was reintroduced in the final framework as an option at national discretion and, furthermore, explicitly defined.

For the commercial real estate exposure class, the first consultative paper contained two options for the future treatment: Option A envisaged treating these claims as unsecured

13 The Basel II framework allows national supervisors to include asset classes in the "higher-risk category"' if deemed appropriate. In the European Union, for instance, art. 128 (2)(d) lists "speculative immovable property financing" under the corresponding Items associated with particular high risk class, assigning a risk weight of 150%.

and applying a risk weight of 50% at national discretion. Option B was a LTV-based approach with a range of risk weights between 75% and 120%. The second consultative paper focused on Option B, while the final document, apart from lowering the risk weights, reintroduces the possibility of a differentiated risk weighing for secured and unsecured parts of a loan (loan splitting approach).

With the first consultative paper, a concept of aligning the IRB and SA-exposure classes more closely led to the introduction of Income Producing Real Estate (IPRE) and Land Acquisition, Development and Construction (ADC) financing in the SA-CR as specialised lending exposures, which had changed to sub-categories of the real estate exposure class in the second consultative paper.

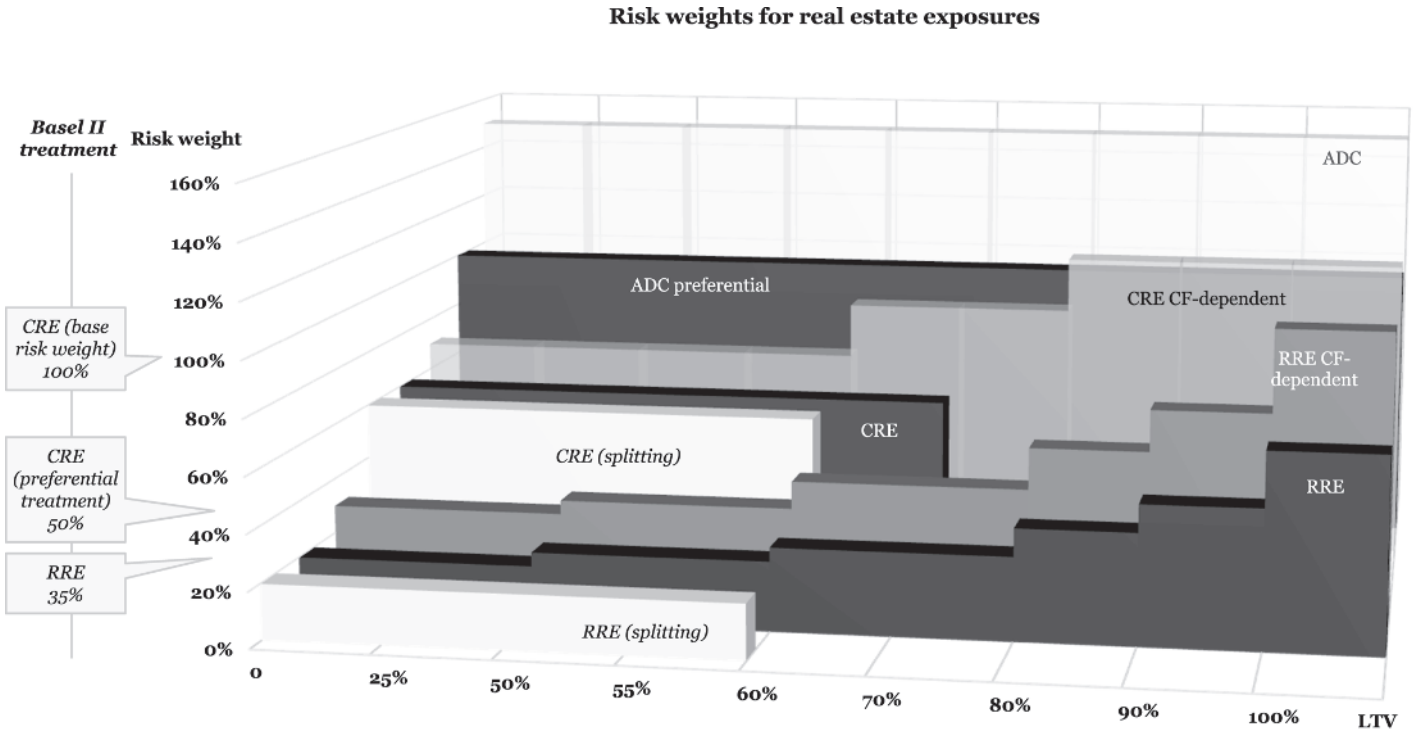
While ADC is also included in the final document as a new sub-category of the real estate exposure class, the IPRE exposure class has been replaced by a more specific approach focusing on the material dependency of loan repayments on the cash flows generated by the financed property as a criterion for the application of higher risk weights (with additional exemption criteria).

As Figure 1.22 illustrates graphically, both RWA-increasing and RWA-decreasing effects are to be expected from all these changes, depending on the individual risk profile of exposures: in any case, loans secured by residential property with very low LTV ratios receive significantly lower risk weights than under current regulation.[14] The same may hold for respective commercial real estate loans in jurisdictions that apply the Basel II base instead of the preferential risk weight.

However, changes and more precise conditions for the recognition of a property value (e.g. 25% surcharge for junior-lien claims, if applicable, and a new 55% cap for secured exposures under the loan splitting approach) lift the RWA for respective exposures. Further RWA increases can be expected from exposures that are classified as ADC as well as from loans where the repayment materially depends on returns from the financed property.

As a matter of fact, the Basel Committee's initial objective of a more risk-sensitive approach seems to be reflected in decreasing RWA for low-risk exposures, while exposures with high LTV – particularly with LTV > 100% where the loan amount exceeds the actual property value – and loans with riskier characteristics receive higher risk weights. Nevertheless, the latter effect can be eased by national authorities through an implementation of the loan splitting approach.

14 In this context, it is worth mentioning that the current EU regulation (CRR), for instance, allows an assignment of the preferential risk weight of 35% to secured residential real estate exposures of up to 80% of the market value or the sustainable mortgage value of the collateral, respectively. Depending on the EU implementation aspects, the Basel IV requirements (20% risk weight for up to 55% of the property value) can lead to higher risk weights compared to the current regulation, particularly for LTV ratios ≥ 80%.



RRE = Residential Real Estate Exposures; CRE = Commercial Real Estate Exposure; ADC = Land acquisition, development and construction, ADC preferential: preferential risk weight for certain residential ADC exposures; CF-dependent = exposures where the repayment materially depends on cash flows generated by the financed property;

Further explanations: The diagram does not show the capital requirement multiplier of 1.25 for junior lien claims (if applicable); Splitting approaches: The diagram shows only the risk weight for the fully secured part of an exposure (the unsecured part receives the counterparty's risk weight); CRE: The diagram shows only the prescribed risk weight of 60% for LTV ≤ 60%, though a lower counterparty risk weight can be assigned alternatively (if applicable), for LTV >60%, the counterparty risk weight is assigned

Figure 1.22: Overview of risk weights for real estate exposures

1.2.10 Additional risk weights for positions with currency mismatch

In the past, several banks experienced increasing defaults among loans where the repayment currency was different from the currency of the borrower's regular income when there were sudden changes in the exchange rate between these two currencies.

When the Swiss central bank decided in early 2015 to stop taking measures to strictly control the EUR/SFR exchange rate, the value of the Swiss franc suddenly increased against the euro. Borrowers with loans in Swiss francs, who had beenreceiving their main income in the Euro area suddenly faced a sharp increase in their obligations to repay which subsequently led to increased risks and defaults for the lenders.

In the Basel II framework, there is no requirement to anticipate and cover such developments and risks.

In the revised CR-SA an additional risk weight for retail and residential real estate exposures to individuals with a respective unhedged currency mismatch is introduced. It is not calculated by using an add-on of 50%, as discussed earlier in the consultation process, but by applying a multiplier of 1.5 to the risk weight of the position in scope with a 'capped' maximum risk weight of 150%.

Two types of foreign exchange rate hedging prevent exposures in scope from being subject to this additional capital requirement.

- Natural hedge where the borrower receives regular income (e.g. salaries or lease payments) in the currency of the loan.
- Financial hedge where the borrower contractually hedged foreign exchange rate changes with respect to his obligations another currency.

In both cases, at least 90% of the loan instalment have to be covered by the hedging measures to avoid the application of the currency mismatch multiplier. Banks need to ensure that the corresponding hedging measures are recorded, documented and regularly monitored in order to avoid risk weight add-ons in relation to foreign currency loans.

This new feature in the Basel framework had been introduced for retail and residential retail exposures in the Basel Committee's first consultative paper and was extended to corporate exposures in the second consultative paper. However, in the final document the scope was eventually narrowed down again to retail and real estate exposures to individuals.

While the first consultative paper had not specified the amount of the add-on, the second consultative paper proposed an add-on of 50% to the present risk weight (with a maximum of 150%) on unhedged exposures which was replaced by a multiplier in the final revision of the CR-SA.

The market share of foreign currency loans with currency mismatches to individuals varies significantly from one country to another. While loans denominated in Swiss

Franc used to be popular for residential real estate financing in some European countries (often motivated by low CHF interest rates in combination previously stable exchange rates to other European currencies till the central banks' strict exchange rate control suddenly came to an end), such positions are not very common for retail portfolios and residential property financing in other countries, e.g. in Germany.

In general, these financing schemes tend to occur primarily in relation to commercial real estate loans which are now excluded from the requirement to apply additional risk weights.

For said reasons, the quantitative impact on these exposure classes for the entire sector will vary among the jurisdictions with presumably less material impact in many countries.

1.2.11 Off-balance sheet items

Off-balance sheet positions are converted into credit exposures by multiplying the nominal (e.g. committed but undrawn) amount by a credit conversion factor (CCF). Under the new Basel framework, according to the type of exposure and their associated risk, in line with relevant CRR classification, the applied CCFs range from 10% to 100% (Figure 1.23).

This marks an increase of applicable CCF range compared to current Basel II framework and CRR, where positions with a low risk profile – such as commitments that are unconditionally cancellable at any time without any prior notice – receive a CCF of 0%, thus attracting no regulatory capital charge.

In relation to commitments, the new Basel framework applies a standard 40% risk weight, irrespective of the maturity of the underlying facility – with maturity being the differentiator for the applicable risk weight on the existing Basel II rules. In addition, the applicable risk weight for commitments that are unconditionally cancellable at any time by the bank without prior notice, or that effectively provide for automatic cancellation due to deterioration in a borrower's creditworthiness is increased to 10% compared to

	CRR	New Basel framework
Guarantees and other credit substitutes	100%	100%
Undrawn credit facilities commitments, NIFs and RFUs	50%	50%
Short-term self-liquidating letters of credit	20%	20%
Unconditionally cancellable retail credit facilities	0%	10%

Figure 1.23: Selected credit conversion factors (CCF)

the 0% risk weight under Basel II framework. A typical example of the latter category is retail open credit lines, e.g. current accounts which offer overdraft facilities.

Under the new Basel framework, the applicable CCFs for the majority of off-balance sheet exposure types remain unchanged. However, the key impact of new rules is focused on commitments exposures which typically constitute the majority of banks' off-balance sheet positions. For this category, the applicable CCFs will result in increased capital requirements, since banks may have large exposures on commitments that currently receive a CCF of 0% or 20% depending on the type.

1.2.12 Defaulted exposures

While the CRR has already modified the former exposure class "past-due loans" into "defaulted exposures", the Basel regulations still rely on this concept. Under the new framework, the Basel Committee is proposing an alignment of the classification of these loans with the IRB Approach, by replacing the "past due" criterion with the definition of default. While this represents a substantial change in the Basel framework, it does not affect banks under EU regulation as the CRR has already implemented this "alignment".

In the new regulation, the process for assigning risk weights to defaulted exposures remains unchanged compared to Basel II, even though this approach leads to a double benefit since specific provisions both influence the exposure amount and the risk weight.

The net unsecured part of any defaulted exposure – other than qualifying residential real estate – receives a risk weight of 150% if the level of specific provisions applied to this loan is less than 20%. On the other hand, exposures with specific provisions equal to or greater than 20% are assigned a 100% risk weight. As with Basel II, it remains at the national supervisor's discretion to reduce the applicable risk weight to 50% given that specific provisions applied are no less than 50%.

Regarding residential real estate exposures where the repayment is not materially dependent on the cash flows generated by the property, the net unsecured part of the loan is risk weighted at 100% regardless of the level of provisions. This approach differentiates from both Basel II and CRR. Specifically the new framework, introduces a linkage of the purpose of the mortgage with the applicable risk weight and eliminates the option for a reduced risk weight if specific provisions exceed 20%.

Finally, the Basel Committee removed the option to allow for a risk weight of 100% if the defaulted exposure is fully backed with collateral that is not eligible as financial collateral under the standardised approach, and with specific provisions of that exposure that exceed 15%. As this element of the Basel framework was not implemented within EU regulation, no specific effects are to be expected within the CRR.

To conclude, the new regulation preserves the relationship of risk weights with the level of specific provisions applied to the exposure even though the Basel Committee

initially removed the linkage during the consultation process by proposing universal risk weights.

1.2.13 Other assets

In terms of other assets, the new Basel framework marks no major changes compared to existing regulations and in particular under the CRR treatment. This exposure class will continue to serve as a residual exposure class for positions that are not subject or do not fit into other exposure classes.

The standard risk weight for all exposures that cannot be classified under a different asset class remains at 100%.

A 0% risk weight will be applied to the following positions:

- cash owned and held at the bank or in transit, and
- gold bullion held at the bank or held in another bank on an allocated basis, to the extent the gold bullion assets are backed by gold bullion liabilities.

A risk weight of 20% will be applied to cash items in the process of collection.

Thus, the new rules are not expected to have an impact on a bank's capital requirements attributable to other assets exposure class.

1.3 Use of external ratings

1.3.1 Recognition process for external ratings by national supervisors

Similar to the existing Basel regulations, external ratings can only be used for regulatory purposes if they meet certain eligibility criteria and are explicitly recognised by the national supervisor. To be eligible, external ratings have to meet the following eight criteria.

1. Objectivity

The methodology for assigning external ratings must be rigorous, systematic, and subject to some form of validation. It has to be established for at least one year (preferably three years) before being eligible for supervisory recognition.

2. Independence

The external rating agency should be independent and especially not subject to political or economic pressure that might influence the rating.

3. Internal access/transparency

In order to allow, at least, a generic understanding of how the external ratings have been derived, the rating agency is required to make certain key elements underlying the assessment publicly available.

4. Disclosure

In order to enable a solid understanding of the rating agency it is required to disclose a number of relevant pieces of information such as its code of conduct, the general nature of its compensation arrangements with assessed entities, any conflict of interest, its compensation arrangements and assessment methodology.

5. Resources

An external rating agency should be able to demonstrate that it has sufficient resources to provide for a high-quality credit assessment and an ongoing contact with the entities assessed

6. Credibility

The credibility of a rating agency is mainly derived by the previous criteria. In addition, the rating agency has to provide evidence that its external ratings are being used by independent parties such as investors and insurances.

7. No abuse of unsolicited ratings

This criteria has been added in the Basel IV regulation. Under current regulation the Basel Committee is expecting only solicited ratings to be used but also allows national supervisors to use unsolicited ratings if these ratings are not used to put pressure on the entities to obtain solicited ratings. Even though this criteria has been added, the requirement does not represent a fundamental change with respect to current regulation.

8. Cooperation with the supervisor

Also this criteria has been added. The Basel Committee now expects that the rating agency notifies the supervisor of significant changes to methodologies and grants access to relevant information. Also this requirement is to be seen as a clarification of the expected form of cooperation between the supervisor and the rating agency rather than a substantial additional eligibility criteria.

In addition to these eligibility criteria, supervisors should also consider the criteria and information provided in the IOSCO Code of Conduct Fundamentals for Credit Rating Agencies when determining ECAI eligibility.

Currently, many national supervisors have performed the recognition process for external rating agencies and have usually recognised the three dominating external rating agencies – Standard and Poors, FitchIBCA and Moodys – as eligible rating agencies. In addition, supervisors may have recognised smaller and more specialised rating agencies. It is to be expected that the range of eligible external rating agencies will not significantly change under Basel IV.

1.3.2 Mapping of external ratings and use of multiple ratings

Once a supervisor has decided on the eligibility of an external rating agency it also has to perform a mapping from the individual grades used by the rating agency to the risk weights in the standardised approach. While doing this mapping it has to be provided with comparable grades from different external rating agencies that result in the same regulatory risk weight.

If a bank intends to use external ratings it has to nominate one or more of the eligible external rating agencies. Once it has chosen the rating agency it has to use the ratings consistently for all types of claim where they have been recognised by their supervisor for both risk-weighting and risk management purposes. In many cases external ratings refer to any senior unsecured debt of the borrower. However, a number of aspects are to be considered in order to identify the correct external rating for the risk weighting.

In order to have the best possible coverage of external ratings, banks usually nominate several external rating agencies. As a consequence, it may happen that a borrower is rated by several of the nominated external rating agencies. Unchanged from current regulation the Basel Committee is prescribing a process by which the applicable rating from a number of available ratings is derived (Figure 1.24).

For determining the correct external rating banks also have to consider whether an issue-specific rating is available for exposure. If an issue-specific rating exists, this rating has to be used (if multiple external ratings exists, the rules for multiple ratings apply). If no issue specific rating is available, the applicable rating is derived by the process illustrated in Figure 1.25.

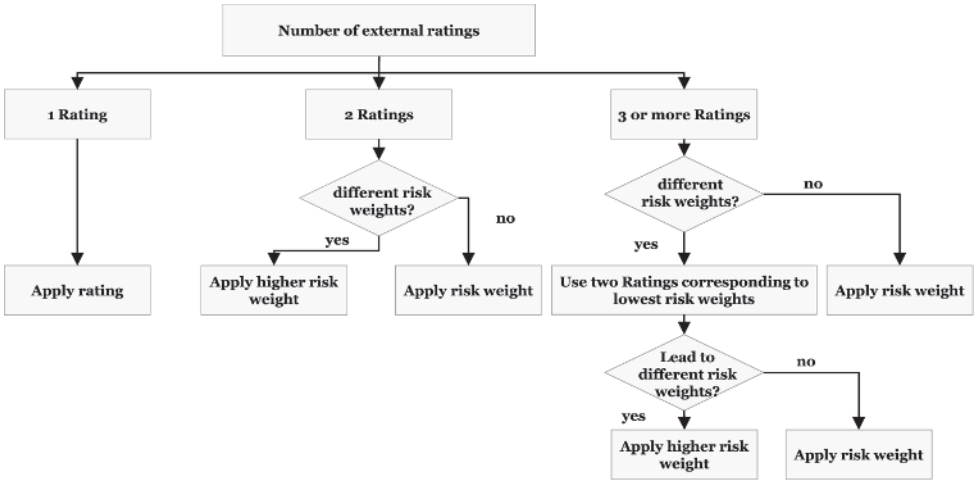


Figure 1.24: Process if multiple external ratings by several ECAIs are available

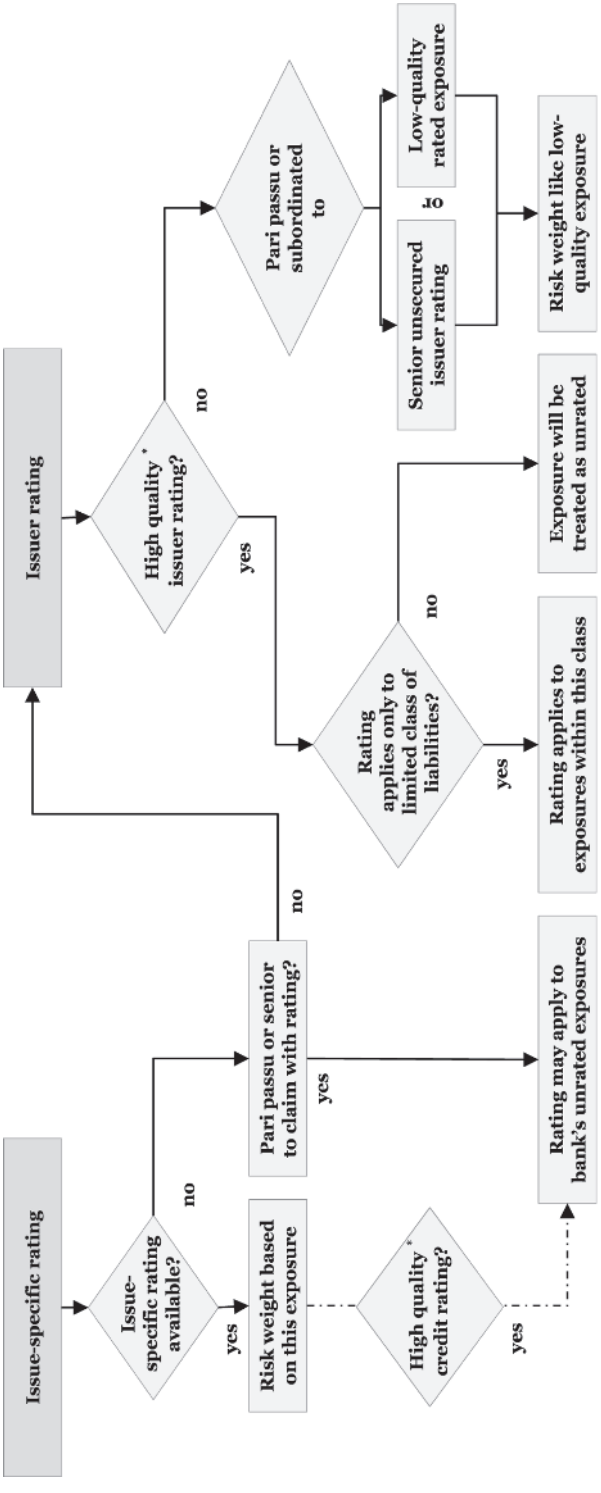


Figure 1.25: Issue-specific vs issuer rating

As a third aspect, banks have to differentiate between short-term and long-term ratings. Short-term ratings are deemed to be issue-specific and may only be used for other exposures under restrictive conditions which are unchanged from Basel II. Under no circumstances may a short-term rating be used for long-term exposures.

In general, external ratings for one entity within a corporate group cannot be used to risk-weight other entities within the same group.

With respect to the mapping process of external ratings to risk weights, the use of multiple ratings and the derivation of the applicable risk weight from external ratings, there are no material differences between the current Basel regulations and the regulations under Basel IV.

1.4 Credit risk mitigation techniques

The requirements for credit risk mitigation remain largely identical to the requirements under the current regulation. However, the structure of the wording of the individual has been altered.

With respect to OTC derivatives and SFT counterparties the Basel Committee now explicitly requires banks to devote sufficient resources to ensure an orderly operation of margin agreements.

In terms of the recognition of financial collateral such as cash or debt instruments, however, differences arise with respect to the use of external ratings. In jurisdictions that allow for the use of external ratings the extent of eligible collateral for both the simple and the comprehensive approach remains largely unchanged, only resecuritisations are now explicitly referred to as not eligible financial collateral.

Under the simple approach, the conditions for an exemption from the minimum risk weight of 20 % are now laid out in greater detail – not, however, significantly changing the requirements itself.

With respect to the comprehensive approach the current risk mitigation requirements allow for calculating haircuts based on internal estimates – something which is not in line with the general concept of standardised approaches. As already indicated in the first and second consultative papers the use of internal estimates will not be allowed anymore. Also the use of VaR-Models for certain securities financing transactions (SFT) and the internal models method for SFT and collateralised OTC derivatives, presently available to banks using the standardised approach have been removed for the standardised approach. The table to derive supervisory haircuts in the standardised approach has been modified both in terms of the structure and applicable haircuts (Figure 1.26). The haircuts for main index equities have been increased from 15–20% and for other equities from 25–30%. For other issuers the maturity grading has been altered by introducing maturity bands of 1–3 years, 3–5 years, 5–10 years and more

Supervisory haircuts for comprehensive approach
Jurisdictions that allow the use of external ratings for regulatory purposes

Issue rating for debt securities	Residual maturity	Sovereigns	Other Issuers	Securitisation exposures
AAA to AA–/A–1	≤ 1 year	0.5	1	2
	> 1 year, ≤ 3 years	2	3	8
	> 3 years, ≤ 5 years		4	
	> 5 years, ≤ 10 years	4	6	16
	> 10 years		12	
A+ to BBB–/A–2/A–3 /P-3 and unrated bank securities per para 148(c)(ii)	≤ 1 year	1	2	4
	> 1 year, ≤ 3 years	3	4	12
	> 3 years, ≤ 5 years		6	
	> 5 years, ≤ 10 years	6	12	24
	> 10 years		20	
BB+ to BB–	All	15	Not eligible	Not eligible
Main index equities (including convertible bonds) and gold		20		
Other equities and convertible bonds listed on a recognised exchange		30		
UCITS/mutual funds		Highest haircut applicable to any security in which the fund can invest, unless the bank can apply the look-through approach (LTA) for equity investments in funds, in which case the bank may use a weighted average of haircuts applicable to instruments held by the fund.		
Cash in the same currency		0		

Figure 1.26: Supervisory haircuts using external ratings

than 10 years. Unchanged from Basel II all of these haircuts are based on an assumed holding period of 10 days.

As the comprehensive approach is also an eligible approach in jurisdictions that do not allow the use of external ratings, a revised table for the derivation haircuts has been developed, based mainly on the maturity and the issuer (Figure 1.27).

Unchanged from the current Basel II regulations, the haircut for currency mismatches, i.e. differences in the currency of the exposure and the currency of the collateral is set at 8% and calibrated on a 10-day holding period.

All of these haircuts need to be adjusted in respect of the applicable holding period based on the individual type of collateralised transaction (5, 10 or 20 business days) and the frequency of the revaluation. Unchanged from Basel II regulations, banks need to apply a holding period of 5 days to all repo-style transactions, a 10-day holding period to other capital market transactions and a 20-day holding period to regular secured lending. If the bank does not perform a daily revaluation of the market value of the collateral, the Haircut is to be adjusted based on the formula shown in Figure 1.28.

Supervisory haircuts for comprehensive approach
Jurisdictions that do not allow the use of external ratings for regulatory purposes

Issue rating for debt securities	Residual maturity	Issuer's risk weight (only for securities issued by sovereigns)			Other investment-grade securities, consistent with paragraphs 148(d)(iii)	
		0%	20% or 50%	100%	Non-securitisation exposures	Senior securitisation exposures with risk weight < 100%
Debt securities	≤ 1 year	0.5	1	15	2	4
	> 1 year, ≤ 3 years	2	3	15	4	12
	> 3 years, ≤ 5 years				6	
	> 5 years, ≤ 10 years	4	6	15	12	24
	> 10 years				20	
Main index equities (including convertible bonds) and gold	20					
Other equities and convertible bonds listed on a recognised exchange	30					
UCITS/mutual funds	Highest haircut applicable to any security in which the fund can invest, unless the bank can apply the look-through approach (LTA) for equity investments in funds, in which case the bank may use a weighted average of haircuts applicable to instruments held by the fund.					
Cash in the same currency	0					
Other exposure types	30					

Figure 1.27: Supervisory haircuts without use of external ratings

$$H = H_{10}\sqrt{\frac{N_R + (T_M - 1)}{H_{10}}}$$

H = Haircut

H_{10} = 10 – *business day haircut for instrument*

N_R = *acutal number of business days between remargining for capital market transactions or revaluation for secured transactions*

T_M = *minimum holding period for the type of transaction*

Figure 1.28: Calculation of the haircut based on holding period and revaluation

The calculation requirements and formulae and also the options to apply a haircut of zero for core market participants are identical to the current Basel II regulations.

The treatment for security finance transactions covered by master netting has been modified. As already mentioned, the option to use internal models for quantifying the exposure amount in this type of transaction has been removed. The Basel Committee only allows the use of a formula that has been amended in order to better take into account the effect of diversification and correlation.

$$E^* = Max\left\{0; \sum_i E_i - \sum_i C_j + 0{,}4 \cdot \underbrace{\left|\sum_S E_S H_S\right|}_{\text{net exposure}} + \underbrace{0{,}6 \cdot \frac{\sum_S E_S |H_S|}{\sqrt{N}}}_{\frac{\text{gross exposure}}{\sqrt{N}}} + \sum_{fx}(E_{fx} \cdot H_{fx})\right\}$$

E^* = exposure value of the netting set after risk mitigation
E_i = current value of all cash and securities lent, sold with an agreement to repurchase or otherwise posted to the counterparty under the netting agreement
C_j = current value of all cash and securities borrowed, purchased with an agreement to resell or otherwise held by the bank under the netting agreement
E_s = The net current value of each security issuance under the netting set (positive value)
H_s = Haircut appropriate to E_s
N = Number of security issues contained in the netting set (except that issuances where the value E_s is less than one tenth of the value of the largest E_s in the netting set are not included the count)
E_{fx} = Absolute value of the net position in each currency fx different from the settlement currency
H_{fx} = haircut appropriate for currency mismatch of currency fx

Figure 1.29: Calculation of the haircut based on holding period and revaluation

Figure 1.29 shows the current standardised formula for calculating repo-style transactions.

The modification has been made in order to better consider diversification effects of the included positions in comparison to the formula being provided by current Basel II regulation.

The second element of the formula, which consists of an add-on to reflect potential price changes in the values of the securities in the netting set, is revised. The portion of the formula weighted with a factor of 0.4 corresponds to the current regulation and allows for negative haircuts ("net exposures"). The newly added portion, which is weighted with a factor of 0.6, takes into account haircuts in the form of add-ons without taking into account if the haircut should be applied as received securities collateral or as a security position established as exposure ("gross exposure"). As a result, higher weighted capital charges, which are divided by the number of exposures contained in the netting set, are calculated in the first step. Overall this results in a more favourable haircut than in the original version. This effect becomes even clearer the more exposures are contained in the netting set.

In jurisdictions that do not allow the use of external ratings, other entities are eligible, as long as they are classified as "investment grade" and meet additional requirements – such as having securities outstanding – and their creditworthiness is not positively correlated with the credit risk of the exposures for which they provided guarantees. Parent, subsidiary or other affiliated companies are also eligible, if their creditworthiness is not positively correlated with the credit risk of the exposure for which they provided for.

With respect to the use of guarantees and credit derivatives in the CRM framework the Basel Committee acknowledges that the range of eligible guarantors/protection providers might differ in jurisdictions that allow the use of external ratings and those jurisdictions that do not allow the use of external ratings and welcome feedback on how to narrow potential differences.

All of the proposed changes to the risk mitigation framework may eventually lead to increased capital requirements for banks. Especially banks using internal estimates that will no longer be allowed, may experience significant increases.

For certain non-centrally cleared SFT with certain counterparties, the Basel Committee introduces a minimum haircut floor. This haircut floor, however, only applies to transactions where cash is provided against collateral other than government securities to counterparties who are not supervised by a regulator that imposes prudential requirements consistent with international norms. This also includes transactions where securities are lent against lower quality securities (so-called "collateral upgrade transactions").

For SFT that meet these requirements ("inscope SFT") the Basel Committee provides a haircut table comparable to the table provided for financial collateral. All transactions that do not meet these haircut floors must be treated as uncollateralised.

As this type of transaction is only relevant for a small segment of the SFT market and current (non regulatory) market standards already contain similar mechanism, the overall effect from this new requirements will probably be quite limited.

With respect to the treatment of guarantees and credit derivatives the Basel Committee does not significantly alter the operational requirements or the range of eligible guarantors or protection providers or the methods to derive the risk weights after credit protection. However, it introduces specific requirements for positions with eligible credit protection where materiality thresholds triggering the payment requirements of the guarantor or protection provider exist. The portion below this minimum amount needs to be risk weighted with 1,250% by the bank purchasing the credit protection.

1.5 Conclusions

The reform of the standardised approach for credit risk is likely to be the most relevant element of Basel IV as it both effects standardised and – via the output floor – IRB-banks. Also credit risk amounts to the vast majority of RWA contribution for nearly all banks regardless of their size and business model.

The consultation process leading to this finalised version was quite intense and demonstrated that the Basel Committee intended to strike a balance between removing deficiencies of the existing approach and increasing risk sensitivity on one side and at the same time offering a standardised approach that would not unduly increase capital

requirements for all banks. This process needed two consultative papers and a number of quantitative impact studies and feedback from the industry.

While the intention of the Basel Committee to revise the standardised approach and remove the identified deficiencies was generally welcomed by all market participants, the modifications proposed in the first consultative paper resulted in some unintended consequences, above all an inappropriate increase in capital requirements. Moreover, considerable costs for the implementation of the new procedures, and especially for the replacement of external ratings by risk drivers to be calculated individually, were expected.

With the second consultative paper the Basel Committee showed a clear move back to some existing core elements of the standardised approach – such as the use of external ratings – and complemented these elements with additional requirements. Where available and approved for regulatory purposes, these ratings are used to determine so-called basic risk weights which must be verified by banks in the form of an internal due diligence analyses.

The final rules for the standardised approach mainly follow the concept developed in the second consultative paper. However, there are additional elements in order to avoid detrimental RWA effects or cliff effects without economic basis e.g. the introduction of a 75% risk weight for corporates that have an external rating between BBB+ and BBB– or the possibility of using the loan-splitting approach for real estate exposures that are not materially dependent on cash flows.

The Basel Committee considers that, in aggregate, these modifications between the second consultative paper and the final rules text will – on average – not lead to a significant increase in capital requirements. However, given the large amount of modifications which will in some areas lead to capital reductions and other areas to capital increases, any "average number" will be of limited use for an individual bank.

For banks, the following five areas of modifications are expected to be most relevant.

1. Claims on banks due to the modified regulation on banks without external rating.

2. The newly introduced exposure class of specialised lending, where risk weights above 100% have to be assigned under certain conditions.

3. Exposures secured by real estate (both commercial and residential and both materially depending on cash flows and not materially depending on cash flows).

4. Subordinated debt securities and non-deductible holdings,

5. Risk weight add-ons for currency mismatches.

While a number areas of possibly dramatic capital increases have been altered or removed, the RWA-consequences for an individual bank might still be quite severe. As a consequence, each bank should perform a thorough impact analysis on its individual exposure.

Recommended Literature

Basel Committee for Banking Supervision; BCBS 128 (2006): International Convergence of Capital Measurement and Capital Standards, 2006.

Basel Committee for Banking Supervision; BCBS 205 (2011): Treatment of trade finance under the Basel capital framework, 2011.

Basel Committee for Banking Supervision; BCBS 307 (2014): Consultative Document. Revisions to the Standardised Approach for credit risk, 2014.

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Basel Committee for Banking Supervision; BCBS 350 (2015): Guidance on credit risk and accounting for expected credit losses, 2015.

Basel Committee for Banking Supervision; BCBS 424 (2017): Basel III: Finalising post-crisis reforms, 2017.

Financial Stability Board; FSB (2012): Principles for sound residential mortgage underwriting practices, 2012.

IOSCO: Code of Conduct Fundamentals for Credit Rating Agencies, 2015.