The Prudential Treatment of Residential Mortgage Backed Exposures Under Basel III Finalisation

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1. Introduction

In the wake of the Global Financial Crisis of 2007-2009 (hereinafter: Financial Crisis) there was a broad consensus in the international community that the financial regulatory framework for banks required a thorough revision. This view was strongly supported by the participants of the G20 summits in London and Pittsburgh in 2009, which summits culminated in the Basel III accord (hereinafter: Basel III) in 2011,[2] adopted by the Basel Committee on Banking Supervision (hereinafter: BCBS). The Basel III accord was set out to significantly revamp the 'old' Basel II[3] framework that entered into force a couple of years earlier. Surprisingly, the international framework in respect of the credit risk posed by mortgage exposures was not significantly amended by Basel III. Mortgage backed securities, and securitisations more broadly, did receive some attention, though the underlying (sub-prime) mortgages were not heavily impacted from a capital framework perspective, despite the general consensus that these products ignited the Financial Crisis.[4]

In Europe, the Basel III accord was finally transposed into the Capital Requirements Regulation (hereinafter: CRR)[5] and the fourth Capital Requirements Directive (hereinafter: CRD IV).[6] European banks, and in particular Dutch banks, traditionally have a relatively high exposure to residential mortgage loans.[7] Although the revisions to the prudential framework did have a large impact on the market for securitisations containing residential mortgages, which almost vanished in Europe, banks were not required to maintain significantly more capital for their mortgage exposures.

Now, almost ten years after the entry into force of CRR, the Basel III finalisation package (hereinafter: Basel IV), also known in the EU as the Banking Package 2021 or Basel III-Reform,[8] introduces amendments to CRR (hereinafter: CRR3) and CRD IV (hereinafter: CRD VI). CRR3 and CRD VI, which will come into force on 1 January 2025, cover, amongst others, significant revisions to the prudential treatment of residential mortgage loans, thereby incorporating some of the 'overdue' lessons of the Financial Crisis.[9]

In this article, we discuss the changes introduced to the risk weighting of residential mortgage loans under CRR3, whereby specific attention is paid to the standardised approach (hereinafter: SA) and internal ratings based (hereinafter: IRB) approach to the quantification of the risk-weighted assets.[10] Paragraph 2 covers the objective and functioning of the prudential risk weighting framework as well as the valuation of residential property. Paragraph 3 sets out the current prudential regime applicable to residential mortgage loans under the SA as well as the amendments introduced under CRR3. The prudential regime applicable to residential mortgages and

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2. BCBS, *Basel III: A global regulatory framework for more resilient banks and banking systems*, (2011). By others than the Basel Committee on Banking Supervision commonly referred to as Basel IV.
3. BCBS, *International Convergence of Capital Measurement and Capital Standards A Revised Framework*, (2004) (hereinafter: Basel II).
4. J. de Larosiére et al., *The High-Level Group on Financial Supervision in the EU*, (2009), par. 7.
5. Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012.
6. Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.
7. See ESRB, *Follow-up report on vulnerabilities in the residential real estate sectors of the EEA countries February 2024 Country analysis*, 2024, particularly par. 5.22 on the Netherlands.
8. Commission, *Banking Package 2021: new EU rules to strengthen banks' resilience and better prepare for the future*, (2021).
9. Where we refer to CRR3 in this paper we refer to the future scenario once CRR3 has been implemented in EU law. For now, the current CRR remains applicable.
10. This paper does not cover the prudential treatment of corporate exposures secured by immovable property.

CRR3 amendments under the IRB approach are covered in paragraph 4. Paragraph 5 contains some concluding remarks on the impact of Basel IV on European banks having an exposure to residential mortgage loans.

2. Background on prudential risk weighting of mortgages

2.1. Prudential risk weighting

The objective of the prudential risk weighting framework is to translate the riskiness of a bank's assets to a requirement to hold a certain amount of capital, as a form of a regulatory provision for potential future *unexpected* losses from exposures.[11] This is done by assigning a certain risk weight, expressed as a percentage, to a specific type of exposure, such as residential mortgage loans. These risk weights can either be assigned by the legislature, i.e., the SA, based on a certain economic and political assessment[12] or banks can model a risk weight based on their historical loss experiences and other proprietary and market data, i.e., the IRB approach.[13] The risk weight is then multiplied by the exposure value, creating the risk weighted assets (hereinafter: RWA). It is the RWA that must be multiplied with the capital requirement ratio, i.e., the percentage that banks must maintain as regulatory capital buffer, which at least needs to be 8% - the so-called BIS-ratio.[14] If a bank foresees a loss because of an exposure at default, e.g., due to a significant deterioration in credit quality, it must take an accounting provision to cover for such *expected losses*.

A quintessential metric in mortgage loan risk weighting is the loan to value (hereinafter: LTV) ratio. The LTV ratio is calculated by dividing the amount of the loan by the value of the property collateral securing the loan.[15] Generally, the use of LTV as a key risk metric for mortgage loans is based on two economic assumptions: (i) that the LTV is an indicator of the risk of default; and (ii) that the risk of default increases as the LTV increases.[16] Moreover, LTV can also be seen as an indicator of the loss given default.[17] The LTV is becoming increasingly important as risk driver under the Basel framework, with the biggest increment in the importance of LTV being comprised in the revisions to the SA under Basel IV.[18]

2.2. The valuation of residential property

Another essential aspect of mortgage loans is the valuation of the securing residential property. Under CRR, banks are required to ensure the prudent valuation of the property at the moment of loan origination, which valuation must be monitored at least once every three years or more frequently where the real estate markets were subject to significant changes.[19] The valuations must be reviewed by an independent valuer[20] if there are indications that the value of the property has materially declined relative to general market prices. A bank can use statistical models for monitoring valuations. However, where a review is in order, such review must be performed by an independent valuer each and every time.[21] As such, the current CRR utilises a market value based approach, where the valuation of the property securing the mortgage loan principally aligns with the market value of such property.

Basel IV prescribes that valuations are principally to be maintained at the level set at the moment of the loan origination. Modifications to these valuations are only to be made when extraordinary, idiosyncratic events permanently reduce the value of the property or where improvements to the property *unequivocally* increase its value.[22] Ergo, contrary to the CRR framework, Basel IV does not incorporate an active monitoring obligation as currently required in the Union for banks applying the SA.[23] The Commission chose not to follow the provisions of Basel IV, stating understandable arguments that the removal of a monitoring obligation might be to the detriment of risk management or could put an unreasonable

11. See, for example: BCBS, *Basel Framework CRE31, par. 31.1*, (2020).
12. For instance, government bonds which are considered, somewhat debatably, very safe receive a 0% risk-weight whilst crypto-asset exposures may receive a 1250% risk weight. Formerly, the SA was also heavily reliant on external ratings. These were initially phased out somewhat, however, recently they have been progressively reintroduced.
13. E.P.M. Joosen, *The construction of TREA and the relationship with the CBR*, in: Capital and Liquidity Requirements for European banks (eds. E.P.M. Joosen, M. Lamandini and T.H. Tröger), Oxford University Press (2022), p. 142.
14. E.P.M. Joosen, *Credit Risk Weighting – SA and IRB Approaches*, in: Capital and Liquidity Requirements for European banks (eds. E.P.M. Joosen, M. Lamandini and T.H. Tröger), Oxford University Press (2022), p. 187.
15. Basel IV, par. 62.
16. Hence also serving as the rational of the whole loan approach, see EBA Report, *Policy Advice on the Basel III Reforms: Credit Risk SA And IRB Approach*, (2019), par. 167 (hereinafter: EBA Policy Advice): *'...LTV is used as a simple proxy for assessing the default risk of an exposure that is also assumed to reflect a range of additional factors influencing default risk, including the loan to income (LTI) ratio.'*
17. L. Liu, *The demand for long-term mortgage contracts and the role of collateral*, 142 ESRB Working Paper (2023), p. 48: *'A higher LTV is correlated with a higher probability of default, as well as a greater loss given default,...'*
18. See also H.S. Næss-Schmidt et al., Impact of Final Basel III on the EU Mortgage Sector, Copenhagen Economics (2022), p. 6, (hereinafter: Copenhagen Economics Study).
19. See art. 208(3) and 229(1) CRR.
20. Meaning a person who possesses the necessary qualifications, ability and experience to execute a valuation and who is independent from the credit decision process.
21. EBA Q&A 2017_3078.
22. Basel IV, par. 62.
23. Compare Basel IV, par. 283-284, for the requirements under the IRB approach.

burden on supervisory authorities requiring valuation adjustments, triggering national bias concerns and as a result thereof harming the level playing field between banks.

Nevertheless, the Commission recognised the need to adjust the current framework somewhat, in the sense that the current market value based valuation framework[24] does not address the risk of overvaluation of residential properties and volatile capital requirements for mortgages, as it does not include a mechanism addressing pro-cyclical effects in real estate.[25] For instance, the requirements of Basel IV that ex ante valuations should account for the potential for the current market price to be significantly above the value that would be sustainable over the life of the loan, or that the valuation may not include expectations on price increases, are currently not included in CRR.[26] Nor does Basel IV permit the regular upward adjustment of property values.

Under the Commission's original proposal, upward adjustments of property values were capped at the average value measured for that property or comparable properties, over a backward looking period of six years and modifications that improved the energy efficiency of property were considered as unequivocally increasing its value.[27] Eventually, unlike Basel IV, the revised art. 208(3) CRR3 retains the current CRR requirement for frequent monitoring of property values, although it bends the initially proposed upward adjustment by the Commission due to sustainability modifications into a downward adjustment of the value based on ESG-risk considerations.[28] Instead, art. 229(1) CRR3 was significantly expanded, for instance with a sub-paragraph (d) wherein the Commission's proposal is integrated, limiting the property revaluation to an amount that does not exceed the average value measured for that property, or for a comparable property, over the last six years or the value at origination, whichever is higher.[29] In line with the Commission's proposal, the value of the property can exceed that average value of the property where modifications to the property unequivocally increase its value, e.g., improvements of the energy performance or protection against physical risks.[30] Under CRR3, the property value shall not be permitted to be revalued upward if banks do not have sufficient data to calculate the average value of the property in question over the mandatory measurement period of six years notwithstanding the value increase due to unequivocally value increasing modifications.

Moreover, CRR3 introduces rules for model governance for the models used in the monitoring of the valuation of the properties and the identification of which properties need to be reviewed.[31] It does seem, however, that CRR3 continues not to permit the actual review of the valuations of properties by means of a statistical valuation model. Nevertheless, the statistical valuation model outputs will play a larger role in the revaluation of residential property as the average values referenced above may be deduced from the monitoring data pursuant to art. 208(3) CRR.

3. Standardised approach (SA) to the (credit) risk weighting of residential mortgage loans

Currently, the prudential treatment of mortgage loans is included in art. 124 to 126 CRR for banks applying the SA. The SA to the (credit) risk weighting of residential mortgage loans is based on the Basel I framework of 1988 and was first bifurcated to introduce the IRB approach under Basel II in 2006. Since then, the SA has been amended somewhat by Basel III, and was included in CRR in 2013 along with all other risk weighting requirements for banks. Nevertheless, the fundamental premise of the current SA remains similar to the original framework under Basel I.[32] Basically, the SA provides for a pre-configured risk weight with which banks can quantify their RWA, by means of set risk weights to be applied to various asset classes.[33] The first Capital Requirements Directive (hereinafter CRD)[34] recites that this supervisory formula is meant as a simpler formula compared to the more advanced IRB approach, though also

24. Art. 208(3) CRR. And as supported by the Dutch government, see: Dutch Parliamentary History II, 2021-2022, 22112 Nr. 3250, p. 8.
25. Commission Staff Working Document, *Impact Assessment to the CRR3 Proposal*, Part Three, p. 104; see also Recital (17) of Commission Decision, C(2022) 7012, of 6 October 2022.
26. Basel IV, Par. 62; as now included in art. 229(1)(b)(ii) CRR3; see for a discussion: EBA Policy Review, (2019), par. 178-185 and 52.
27. Commission CRR3 Proposal, art. 208(3).
28. Recital (19) CRR3 and Explanatory Memorandum to the CRR3 proposal, p. 17.
29. For the purpose of calculating the average value, banks shall take the average across property values observed at equal intervals in time and the reference period shall include at least three data points. For the purpose of calculating the average value, banks may use results of the monitoring of property values in accordance with art. 208(3) CRR; EBA Policy Advice, (2019), par. 186-190.
30. With such environmental risks becoming more and more prominent and even specifically defined in art. 4(1)(52f) CRR3.
31. Art. 208(3a) CRR3.
32. E.P.M. Joosen, *Credit Risk Weighting – SA and IRB Approaches*, in: Capital and Liquidity Requirements for European banks (eds. E.P.M. Joosen, M. Lamandini and T.H. Tröger), Oxford University Press (2022), p. 197.
33. These external ratings, subject to some of the fiercest debates in the wake of the Financial Crisis, are not relevant for retail exposures such as residential mortgage loans and shall therefore remain undiscussed here; see Basel II, par. 50-52.
34. Composed of Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions and Directive 2006/49/EC of the European Parliament and of the Council of 14 June 2006 on the capital adequacy of investment firms and credit institutions, where we refer to the former Directive here.

reciting that the SA serves as a cost controlled version for smaller banks and not as a punitive regime to usher banks into the more advanced IRB approach.[35]

For residential mortgage loans, the original Basel I risk weight was 50%[36] which was transposed into the Solvency Ratio Directive (hereinafter: SRD)[37] in Europe. That risk weight was lowered under Basel II and CRD to 35%, supported by the intensification of the qualitative requirements for eligible residential mortgages.[38] For instance, further to the broad requirement of the SRD that the loan is being secured by a mortgage on a residential property which is or will be occupied or let by the borrower, Basel II required that the national competent authorities (hereinafter: NCAs) would satisfy themselves that the mortgage loan is *fully and completely secured* by the real estate collateral, the fulfilment of which criterion shall be determined along the lines of a restrictive set of qualitative criteria.[39] These qualitative criteria required that: (a) the value of the property does not materially depend upon the credit quality of the borrower,[40] (b) the exposure on the borrower does not materially depend upon the performance of the underlying property, but rather on the underlying capacity of the borrower to repay the debt from other sources, (c) the observance of certain legal requirements and prudent valuation rules, and (d) the value of the property exceeds the value of the loan by a substantial margin (and therefore precluding the later LTV framework set out in Basel IV).[41] The part of a mortgage loan that is not fully and completely secured by the residential real estate, shall be assigned the risk weight that an unsecured exposure to the (retail) borrower would attract, thereby splitting the loan in two parts, i.e., the loan splitting approach.

In the wake of the Financial Crisis and Basel III, the European Commission revised the treatment of mortgage loans through the introduction of a qualitative review provision in art. 124 CRR, that requires NCAs to assess the adequacy and prudency of the quantitative risk weight (of 35%) on residential mortgage loans as set in art. 125 CRR. This latter article incorporates the majority of the CRD/Basel II framework, setting out the actual risk weight and the conditions for when it applies, i.e., conditions (a) through (d) listed above. Art. 124 CRR, sought to address the issue of an inherently backward looking framework, as became clear during the Financial Crisis that the risk weighting approach of the SA was too pro-cyclical. CRR requires NCAs to incorporate a forward looking assessment as to the property market developments in their qualitative evaluation of the residential mortgage loan risk weight and the appropriateness thereof.[42]

Moreover, in assessing the fulfilment of requirement (b) banks are held to consider a maximum loan-to-income (hereinafter: LTI) ratio as part of their lending policy.[43] The derogation of requirement (b) included in CRD, the evaluation of the ability of the borrower to repay the loan, was retained in CRR. However this derogation was structured as a so-called *hard test* derogation, i.e., it was framed by clear historical loss rates of 0.3% over mortgage loans with an LTV up to 80% and 0.5% of losses on the entire residential mortgage loan portfolio.[44] Furthermore, requirement (d) was specified to a set maximum of 80% LTV of the mortgage loan to which the 35% risk weight could be applied, though allowing NCAs room to deviate.

Nevertheless, the first iteration of CRR did originally not alter the quantitative risk weighting of mortgage loans nor the SA for that matter, all too radically sticking to the 35% flat risk weight to mortgage loans backed by residential properties up to a certain maximum LTV.[45] Already in the first consultation paper published by the BCBS in 2014 on revisions to the SA for credit risk after the implementation of Basel III, the BCBS stated that the current approach to residential mortgage loans was not sufficiently risk sensitive.[46] In this consultation paper, the BCBS considered the LTV ratio to be the most appropriate risk driver as history had shown that the lower the outstanding loan amount relative to the value of the residential real estate collateral, the lower the loss incurred in the event of a default of the borrower and the lower the incidence of a default of the borrower.[47] Arguably, such effects of the LTV are only second order effects, i.e. the LTV is a proxy for factors driving default risk but not necessarily a direct factor itself that drives default risk. Eventually and notwithstanding the pushback from the banking industry,[48] Basel IV proposes significant alterations to

35. Recital (38) to (42) CRD.
36. BCBS, *International Convergence Of Capital Measurement And Capital Standards (Basel I)*, (1988), par. 41.
37. Art. 6(1)(c)(1) of the Council Directive of 18 December 1989 on a solvency ratio for banks.
38. CRD, Annex VI, Part I, paragraph 9.1.
39. Basel II, par. 72.
40. This requirement does not preclude situations where purely macro economic factors affect both the value of the property and the performance of the borrower.
41. CRD, Annex VI, Part I, paragraph 48.
42. Art. 124(2)(b) (old) CRR; which has been largely taken over by CRR3 in art. 124(7), although the new article permits competent authorities not only to alter the risk weight but also to set more stringent qualitative requirements than those set out in art. 124(3) CRR3. Moreover, the competent authority may also change the risk weight buckets of art. 125(1) and 126(1) CRR3. This could greatly affect the harmonizing effort of CRR3 as different member state may use different buckets, risk weights and qualitative requirements; see also the Explanatory Memorandum to the CRR3 proposal, p. 15.
43. Art. 125(2)(b) (old) CRR.
44. Art. 125(3) (old) CRR; see also Basel II, (2006), fn. 25.
45. Being 80%.
46. BCBS, *Consultation Paper on Revisions to the SA for credit risk*, (2014), p. 15.
47. Ibid.
48. See BCBS, *Second Consultation Paper on Revisions to the SA for credit risk*, (2015), p. 11-13.

the SA to residential mortgage loans, which are now to be applied in the Union under the forthcoming CRR3.

Basel IV, and CRR3, make the SA more risk sensitive by adding more granularity in specific exposure classes. First, CRR3 distinguishes real estate by the type of financing of the exposure, i.e., differentiates between income producing real estate (hereinafter: IPRE)[49] and non-IPRE[50]. Second, Basel IV, and CRR3, introduce a new treatment of land acquisition, development and construction (hereinafter: ADC) exposures, comprising loans to companies or special purpose vehicles financing any land acquisition for development and construction purposes, or development and construction of any residential or commercial immovable property.[51] Third, the entirely new art. 124 and 125 CRR are implemented, detailing the revised treatment of residential mortgage loans. The loan splitting approach is retained, whereby the uncovered part of the loan continues to be risk weighted as if it were an unsecured exposure to the borrower if it is a non-IPRE exposure or be applied with a 150% risk weight if it is an IPRE exposure (i.e., as an expression of the riskier nature of IPRE exposures).[52] The covered part of the residential mortgage exposure will be treated differently based on whether it concerns a non-IPRE exposure, which shall be treated pursuant to art. 125(1) CRR3, or an IPRE exposure, which shall be treated pursuant to art. 125(2) CRR3. The qualitative requirements ((a) through (d) above) of the current art. 124 and 125 CRR, are consolidated and broadly maintained within the new art. 124 CRR3. However, these qualitative requirements are expanded with a further requirement on the status of the real estate collateral, e.g., whether the property is finished, agricultural land or a property under construction.[53] Requirement (b), seeing to the ability of the borrower to repay and as expressed currently by the LTI ratio, is altered from an evidence gathering obligation to an assessment of the ability of the borrower to repay.[54] Moreover, the LTI-ratio is no longer explicitly mentioned, instead CRR3 refers to *relevant metrics* that need to be included in the now more prominent underwriting policy of banks, which could comprise LTIs but also, for example, occupancy rates for IPRE exposures.[55]

CRR3 sets the quantitative risk weight for eligible non-IPRE[56] and eligible IPRE[57] exposures, i.e. those mortgage loans that meet the strict qualitative requirements of art. 124(3) CRR3 as touched upon above, to 20% for the part of the loan up to 55% LTV provided that the strict qualitative requirements are met, which if not met will warrant the alternative treatment discussed below. Moreover, banks need to account for other liens on the property and the remaining part of the loan secured by residential real estate shall be risk weighted as an unsecured exposure to the borrower, which in the case of residential real estate shall be 75% (i.e., that of other retail exposures).[58] Thereby, confirming the choice of the European legislature for the more risk sensitive loan splitting approach as used in the current CRR and forwarded by the BCBS.[59]

For IPRE that is not eligible for the treatment of art. 125(1) CRR3, and importantly for non-IPRE that does not meet the strict qualitative criteria, but does fulfil the requirements of art. 124(3) CRR3 (e.g. property is ADC), a risk weight bucket system is introduced using a new metric, the exposure to value (hereinafter: ETV) ratio. The ETV is calculated by dividing the gross (accounting) exposure value of the loan that is being secured by immovable property, without applying any adjustments thereto or recognising any effect of credit risk mitigation techniques,[60] by the value of the immovable property securing the loan.[61] Moreover, following the provisions of Basel IV, banks will have to account for other (more senior) liens on the residential property securing their exposures, possibly leading to a multiplier of 1.25 to the base risk weight, expressing the riskier position of junior liens.[62] The risk weight buckets based on

49. According to art. 4(1)(75b) CRR3: *'means an exposure secured by one or more residential or commercial immovable properties where the fulfilment of the credit obligations related to the exposure materially depends on the cash flows generated by those immovable properties securing that exposure, rather than on the capacity of the obligor to fulfil the credit obligations from other sources; the primary source of such cash flows would be lease or rental payments, or proceeds from the sale of the residential property or commercial immovable property.'*.
50. Recital (15), final text of CRR3.
51. Recital (18) CRR3; EBA Policy Advice, (2019), par. 164.
52. Art. 124(1) CRR3; see for an extensive discussion on the pro's and con's of the loan splitting approach versus the whole loan approach, EBA Policy Advice, (2019), par. 166-172.
53. Art. 124(3)(a) CRR3; Explanatory Memorandum to the CRR3 Proposal, p. 19.
54. To what extent this introduces a useful addition to the creditworthiness assessment of the Mortgage Credit Directive can be debated; EBA Policy Advice, (2019), par. 190-193.
55. See EBA Policy Advice, (2019), par. 194-200; See for metrics (already applicable): FSB Report, *Principles for Sound Residential Mortgage Underwriting Practices*, (2012); EBA Final Report, *Guidelines on creditworthiness assessment*, (2015).
56. Art. 124(2)(a)(i) CRR3.
57. Art. 124(2)(a)(ii) CRR3.
58. Art. 123(3) CRR3.
59. As compared to the *whole loan approach* under which the entirety of the loan would be assigned a risk weight based on the LTV, i.e., similar to non-eligible IPRE exposures; see also for a clear discussion and graph, the Impact Assessment to the CRR3 Proposal, Part Three, p. 103-104.
60. Notwithstanding any pledged deposits that the borrower holds with the lending institution and that are eligible for (on balance sheet) netting.
61. Art. 124(5) CRR3; where several exposures that are being secured by the same residential property, e.g., multiple mortgage loans on one house, shall be added together for the gross exposure amount insofar that no other party holds a lien on the property in question.
62. Art. 124(4) and (5)(c) CRR3.

ETV are represented in table 1 below and follow the *whole loan approach*, i.e., the risk weight of the respective ETV bucket shall apply to the entire loan.

Table 1 – ETV risk weight buckets

ETV	ETV ≤50%	50%< ETV ≤ 60%	60% < ETV ≤ 80%	80% < ETV ≤ 90%	90% < ETV ≤ 100%	> 100%
Risk Weight	30%	35%	45%	60%	75%	105%

Notwithstanding the risk weight treatment based on ETVs, CRR3 permits for a derogation to the general approach whereunder residential IPRE exposures may benefit from the preferential treatment, i.e., art. 125(1) CRR3, when such exposures pass the hard test. This derogation ties back into the current hard test derogation in art. 125(3) CRR, whereby IPRE exposures or secondary homes may be treated as non-IPRE exposures where the Member State in which the mortgage exposure is located has a well-developed and long-established residential property market with loss rates within certain margins.[63]

Thus, on the whole the SA to residential mortgage loans has been thoroughly revised, with new risk weights and new qualitative requirements, though retaining the core of the framework that was already in place. The Commission expects that as a result of the revised SA, banks will have a largely similar risk weight for non-IPRE exposures, although the risk weight for IPRE exposures is expected to rise with 47% on average.[64] Even though only about 4% of Dutch residential real estate exposures are subjected to the SA, the Dutch market is expected to be relatively heavily impacted by the revised SA given that the LTVs are relatively high with 68% on average and with the fundamental alterations to the IRB approach following the implementation of the output floor.[65]

4. Internal Ratings Based Approach

For banks applying the IRB approach, the prudential treatment of mortgage loans is covered in art. 147(5)(a) and 154(3) CRR. Currently, 92% to 96% of Dutch mortgage loans held on the balance sheet of banks are risk weighted by means of an IRB model.[66] These mortgage loans attract a comparatively low risk weight, with the Dutch average risk weight being only 8.3% in 2022, whereas the average LTV is relatively high with 68%.[67]

Under the current IRB approach, which was largely designed under Basel II, residential mortgage loans are classified as a form of retail exposure. Notably, under the corporate exposure class, mortgage exposures are already partly differentiated as IPRE or non-IPRE, with IPRE being included in the subset of real estate exposures under the specialised lending regime.[68] For these type of exposures, banks must use their own probability of default (hereinafter: PD), which shall at least be 0.03%,[69] values and loss given default (hereinafter: LGD), which shall not be lower than 10%,[70] values for purposes of calculating the risk weighted exposure value, for which the institution shall need prior supervisory permission based on meeting a range of operational and technical requirements.[71] Subsequently, these values must be entered into a complex formula, where certain variables are adjusted due to the fact that the retail exposure is covered by immovable property.[72] Additionally, under the IRB approach, banks are required to calculate the expected loss amount by multiplying the same PD and LGD factors as were used to calculate the risk weighted exposure value with one another, giving one of the distinctive features of the IRB approach – the fact that it specifically differentiates

63. Art. 125(2) and (2a) CRR3, where the derogation is also extended to third-countries that either have an equivalent regulatory framework and have published the loss rate data or where the third country has an equivalent regulatory framework and the EBA has published the loss rate data. See also, EBA Policy Advice, (2019), par. 173-76 for a thorough discussion of the benefits of the hard test and the need for its calibration.
64. Commission Staff Working Document, *Impact Assessment to the CRR3 Proposal*, Part Three, p. 106.
65. Recital (12) and Commission Decision, C(2022) 7012, of 6 October 2022.
66. Recital (12) Commission Decision, C(2022) 7012, of 6 October 2022 and Copenhagen Economics Study, (n17), p. 35, respectively.
67. Recital (8) Commission Decision, C(2022) 7012, of 6 October 2022; Copenhagen Economics Study, (n17), p. 36.
68. See EBA, *Final Draft RTS on Assigning Risk Weights to Specialised Lending* Exposures, (2016), par. 4.1.5 and feedback note 23; Art. 147(2)(d) CRR; see Basel II, *Compiled Version*, (2006), par. 328; Basel IV, (2016), par. 282 and fn 30; EBA Policy Advice, (2019), par. 391-398. I.e. for corporate exposures pursuant to art. 147(8)(c) and 153 CRR and art. 1 of Commission Delegated Regulation (EU) 2021/598 of 14 December 2020 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for assigning risk weights to specialised lending exposures; and as further clarified in art. 147(8) CRR3.
69. Art. 163(1) CRR.
70. Art. 164(4) CRR.
71. Art. 151(6) and (7) CRR respectively. See art. 143 and art. 169 *et seq.* CRR; as also further developed in Commission Delegated Regulation (EU) 2022/439 of 20 October 2021 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for the specification of the assessment methodology competent authorities are to follow when assessing the compliance of credit institutions and investment firms with the requirements to use the Internal Ratings Based Approach.
72. I.e., the correlation factor simplification of art. 154(3) CRR.

between expected loss and unexpected loss.[73] Similar to the risk weights under the SA, NCAs may adjust the minimum LGD values upward if they consider them not to be appropriate.[74] As a result of this more granular approach, IRB risk weights ought to be more precise reflections of the actual risk profiles of firms as compared to the SA, with technical differentiations between banks being cancelled out due to a standardised methodology in modelling risk weights.

Under Basel IV not that many directly significant alterations appear to be made to the IRB approach *vis-à-vis* residential real estate exposures. CRR3, however, does implement certain qualitative adjustments that ought to align the SA and IRB somewhat further, for instance by further aligning the scope of what constitute retail exposures (and thus residential real estate) and corporate exposures. Currently, under the IRB approach all exposures to SMEs, with an exposure to a natural person automatically qualifying as retail, that are *secured on residential real estate* are excluded from counting towards the EUR 1 mln. threshold, being one of the qualifying criteria of being a retail exposures, whereas the present SA only discounts those exposures to natural persons *and* SMEs that are *fully and completely secured on residential property collateral* from the EUR 1 mln. threshold.[75] CRR3 alters art. 147(5)(a)(ii) CRR to solely exclude exposures up to the property value of the real estate collateral, which value is to be assessed in accordance with the concepts highlighted above.[76] Basel IV does not exclude any exposures secured by residential real estate and simply sets a threshold at EUR 1 mln for inclusion of exposures in the retail asset class.[77]

One of the most impactful amendment under CRR3 is the introduction of the so-called *output floor*. This highly controversial and arguably unnecessary measure increases the IRB risk weights to a minimum of 72.5% of the SA outcomes.[78] The floor to risk weightings is to combat the structurally lower risk weights that are assigned to similar exposures under the IRB approach compared to the SA.[79] According to the BCBS, the output floor is introduced:

> *"[t]o reduce excessive variability of risk-weighted assets and to enhance the comparability of risk weighted capital ratios [...]."*[80]

As a result of the output floor, banks modelling their risk weights using the IRB approach will also be required to calculate risk weights based on the significantly revised SA. For residential real estate exposures this means that IRB banks shall basically have to maintain 72.5% of the risk weighted assets of the reduced 20% risk weighted up to 55% LTV and 72.5% of the risk weighted remaining part of the loan, generally attracting a 75% risk weight, i.e., that of unsecured retail exposures.

Unmistakeably, this means a marked increase in the risk weighted assets of residential mortgage loans under CRR3 of banks using the IRB approach. Recognising that this may have a severe impact on the residential real estate market, art. 465(5) CRR3 does provide for a transitional regime.[81] Under this Member State option banks applying the IRB approach may, subject to certain strict qualitative criteria,[82] assign a 10% risk weight to the part of the loan secured by residential real estate up to 55% of the property value, which value is to be determined in accordance with art. 125(1)(a) CRR3, i.e., in accordance with the manner described above.[83] The unsecured part of the loan shall attract a 45% risk weight up to 80% of the property value determined accordingly, or an institution may apply an increasing risk weight of 52.5% to 67.5% to any remaining part of the mortgage loan over 55%, ergo including parts of the loan with an LTV above 80%.[84] Ultimately, the transitional regime may reduce IRB risk weights for residential mortgage loans by 3% and is currently set to end on 31 December 2032 with a maximum possible extension of four years, where the EBA shall produce a report on the appropriateness of the risk weights under the transitional regime before the end of 2028.[85] It shall be clear that for the Dutch market the application of such a transitional regime shall be of paramount importance. Nevertheless, the Dutch Minister for Finance has indicated not to adopt the transitional regime citing reasons of ensuring the full effect of the output floor and strict adherence to Basel IV as principle drivers.[86]

73. Art. 158(1) and (5) CRR; see also Basel IV, p. 53: '*The IRB approach is based on measures of unexpected losses (UL) and expected losses (EL). The risk-weight functions produce capital requirements for the UL portion. Expected losses are treated separately, as outlined in [...] the Basel II framework.*'
74. Art. 164(6) CRR.
75. Art. 147(5)(a)(ii) and art. 123(c) CRR respectively; see also EBA Q&A 2016_2599, for a mention of this difference in a different context.
76. I.e. in accordance with the valuation methodology of the SA. Under the SA, this altered exclusion is also incorporated in the new art. 123(1)(b) CRR3, which now also refers to the value of the property.
77. Basel IV, p. 56-57.
78. Art. 92(3) CRR3.
79. Recital (4) and (5) CRR3. CRR3 recites that: '*By setting a lower limit to the capital requirements that are produced by institutions' internal models to 72,5% of the capital requirements that would apply if [SA] were used by those institutions, the output floor limits the risk of excessive reductions in capital.*'
80. Basel IV, p. 137. As the ECB also identified in the Targeted Review of Internal Models (TRIM) exercise that different risk weights between IRB banks could not always be explained by different risks, see: ECB, *Targeted Review of Internal Models Project report*, (2021).
81. See also Recital (17) CRR3.
82. Amongst which a requirement, art. 465(5)(d) CRR3, similar to the hard test requiring historical average losses of no more than 0.25% of the total of outstanding residential mortgage exposures per year on the part of the mortgage loan up to 55% property value.
83. Art. 465(5)(a) CRR3.
84. Art. 465(5)(b) CRR3.
85. Copenhagen Economics Study, (n17), p. 23-24.
86. See Dutch Parliamentary History I, 2021-2022, 36090 Nr. B, p. 16, for initial thoughts and *Brief van de Minister van Financiën inzake Voorgenomen uitoefening lidstaatoptie verordening kapitaalvereisten (CRR3)*, (2024).

5. Concluding remarks

In abstracto, CRR3 brings significant changes to the SA for residential real estate exposures and is expected to lower the capital requirements of banks using the SA for these exposures with 8%.[87] The changes to the prudential framework will make the risk weighting more sensitive to the creditworthiness of the borrower, as the risk weight of the loan is no longer solely based on the collateral (i.e., the residential property securing the loan), but also on the risk profile of the retail borrower for the part of the loan exceeding 55% LTV. Furthermore, differentiating between IPRE, non-IPRE and ADC exposures seems a logical move that will bring greater granularity to the SA and more harmonisation between the SA and the IRB approach. Moreover, the revised valuation approach will ensure a more prudent valuation of properties within the Union, reducing the pro-cyclicality of the current unbridled upward adjustments of property values.

In a Dutch context, the revised SA will have comparatively limited first order effects. Seeing as the large majority of residential real estate exposures are weighted using the IRB approach, the output floor will surely have a much more noticeable direct impact on the risk weighted assets of Dutch banks. This is due to a second order effect of the SA, as banks will have to calculate risk weights for residential mortgage loans under the SA in order to determine the minimal IRB risk weight according to the output floor. As a result, the risk-sensitivity of IRB risk weights is greatly reduced where the default risk shall only inform the applied risk weight where the output floor is not binding on the calculating bank, as otherwise the default risk proxy LTV will be leading for the capital requirement (given that the SA relies on this metric).[88] For exposures with an LTV under 55% no differentiation in risk weight is made whatsoever under the SA, though one could argue that the risk weight calibration of the SA is commensurate to the risks posed by residential mortgage loans on an average, market broad basis. Nevertheless, by completely removing any actual default risk sensitivity for mortgage loans above an LTV of 55%, the SA is undoubtably more punitive for banks with a high LTV mortgage loan portfolio, such as Dutch banks.

Moreover, the incentives to use the more risk-sensitive IRB models, as also acknowledged by the Commission and EBA, have lessened with the introduction of the output floor. Banks will only have a (capital) incentive to apply these models if their costs are lower than then the maximum of 27.5% risk weight advantage compared to the SA. It could be argued that in that sense, the original consideration of CRR that the IRB approach is the preferred, more risk sensitive method for the calculation of RWA is somewhat frustrated by CRR3 and the output floor. Crucially, banks will have to also bridge a certain data challenge, where a substantial amount of information on the borrower and its property must be collected, in order to be able to determine whether a mortgage loan meets the qualitative criteria and thus is eligible for the preferential treatment of art. 125(1) CRR3. It would remain to be seen to what extent the current valuation practices of Dutch banks meet these criteria and whether such valuation practices will not have the consequence that residential mortgages need to be risk weighted using the ETV buckets, based on the whole loan approach.

All in all, in the Netherlands IRB banks will see a further increase in their risk weights, notwithstanding the already applicable national macroprudential regime, based on art. 458 CRR, that floors IRB risk weights for mortgage loans to *natural* persons at 12% up to 55% LTV and 45% for the remaining part of the exposures.[89] This should provide for further capital buffers to cover against the risks of the heated Dutch housing market, although one could argue that the models that have been developed by the highly specialised Dutch banks that have a long standing historical loss experience helping the accurate modelling of PD and LGD values for the traditionally high LTV residential mortgage exposures. Whereas in the past these banks may have relied on such (low) historical loss data to arrive a low risk weights, the output floor, in conjunction with the SA incorporating the loan splitting approach, will force banks to retain substantial capital buffers. At least in the (Dutch) residential mortgage loan context, it seems that as a result of CRR3 the SA will become significantly more important and the IRB approach, as well as the models developed thereunder, may only be used to assess the applicability of the output floor, marginalising the importance of the true default risk of a borrower.

87. Copenhagen Economics Study, (n17), p. 8-9.
88. Copenhagen Economics Study, (n17), p. 11.
89. Commission Decision, C(2022) 7012, of 6 October 2022;continuing art. 2:2 of the Dutch *Regeling specifieke bepalingen CRD en CRR*.