Amended Mapping of CRIF Ratings S.r.l.'s credit assessments under the Standardised Approach

1. Executive summary

1. This report describes the mapping exercise carried out by the Joint Committee (JC) to propose an amended 'mapping'[1] report of the credit assessments of CRIF Ratings (CRIF), with respect to the version published on 11 November 2015. The resulting mapping tables have remained unchanged with respect to the afore-mentioned version.

2. The methodology applied to produce the mapping is the one specified in the Commission Implementing Regulation (EU) 2016/1799 of 7 October 2016 (the Implementing Regulation) [2] laying down implementing technical standards with regard to the mapping of credit assessments of external credit assessment institutions for credit risk in accordance with Articles 136(1) and 136(3) of Regulation (EU) No 575/2013 of the European Parliament and of the Council (Capital Requirements Regulation – CRR). This Implementing Regulation employs a combination of the provisions laid down in Article 136(2) of the CRR.

3. The information base used to produce this mapping report reflects additional quantitative information collected after the submission of the draft Implementing Technical Standards by the JC to the European Commission. Regarding qualitative developments, the qualitative factors described in the Implementing Regulation remain unchanged while additional credit rating scales have been incorporated (the short-term issuer credit rating scale and the and the short-term issue credit rating scale), long-term credit ratings scale should be broken down by issuer/issue and rating categories CC and C have been introduced.

4. The mapping neither constitutes the one which ESMA shall report on in accordance with Article 21(4b) of Regulation (EC) No 1060/2009 (Credit Rating Agencies Regulation - CRA) with the objective of allowing investors to easily compare all credit ratings that exist with regard to a

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[1] According to Article 136(1), the 'mapping' is the correspondence between the credit assessments of and ECAI and the credit quality steps set out in Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR).
[2] OJ L 275, 12.10.2016, p. 3-18

specific rated entity[3] nor should be understood as a comparison of the rating methodologies of CRIF with those of other ECAIs. This mapping should however be interpreted as the correspondence of the rating categories of CRIF with a regulatory scale which has been defined for prudential purposes.

5. As described in Recital 12 of the Implementing Regulation, it is necessary to avoid causing undue material disadvantage on those ECAIs which, due to their more recent entrance in the market, present limited quantitative information, with the view to balancing prudential with market concerns. Updates to the mapping should be made wherever this becomes necessary to reflect quantitative information collected after the entry into force of the Implementing Regulation.

6. The resulting mapping tables have been specified in Annex III of the revised draft ITS on the mapping of ECAIs' credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013. Figure 1 below shows the result for the main ratings scale of CRIF, the long-term ratings scale.

Figure 1: Mapping of CRIF's long-term credit ratings scale

Credit assessment	Credit quality step
AAA	1
AA	1
A	2
BBB	3
BB	4
B	5
CCC	6
CC	6
C	6
D1S	6
D	6

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[3] In this regard, please consider
https://www.esma.europa.eu/sites/default/files/library/esma_2015-1473_report_on_the_possibility_of_establishing_one_or_more_mapping.pdf.

2. Introduction

7. This report describes the mapping exercise carried out by the JC to propose an amended 'mapping' report of the credit assessments of CRIF Ratings (CRIF), with respect to the version published on 11 November 2015.

8. CRIF Ratings is a credit rating agency that has been registered with ESMA in 22 December 2011 and therefore meets the conditions to be an eligible credit assessment institution (ECAI)[4]. CRIF is an independent company that issues ratings towards corporations not belonging to financial and public sectors.

9. The methodology applied to produce the mapping is the one specified in the Implementing Regulation. This Implementing Regulation employs a combination of the provisions laid down in Article 136(2) of the CRR. The information base used to produce this mapping report reflects additional quantitative information collected after the submission of the draft Implementing Technical Standards by the JC to the European Commission. Regarding qualitative developments, the qualitative factors described in the Implementing Regulation remain unchanged while additional credit rating scales have been incorporated (the short-term issuer credit rating scale and the and the short-term issue credit rating scale), the long-term credit ratings scale should be broken down by issuer/issue and rating categories CC and C have been introduced. The quantitative information is drawn from data available in the ESMA's central repository (CEREP[5]) based on the credit rating information submitted by the ECAIs as part of their reporting obligations.

10. The following sections describe the rationale underlying the mapping exercise carried out by the JC. Section 3 describes the relevant ratings scales of CRIF for the mapping. Section 4 contains the methodology applied to derive the mapping of CRIF's main ratings scale, whereas Sections 5 and 6 refer to the mapping of its remaining relevant ratings scales. The mapping tables are shown in Appendix 4 of this document and have been specified in Annex III of the revised draft ITS on the mapping of ECAIs' credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013.

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[4] It is important to note that the mapping does not contain any assessment of the registration process of CRIF carried out by ESMA.

[5] https://cerep.esma.europa.eu/cerep-web/

3. CRIF credit ratings and rating scales

11. CRIF produces a variety of credit ratings. Column 2 of Figure 2 in Appendix 1 shows the relevant credit ratings that may be used by institutions for the calculation of risk weights under the Standardised Approach (SA)[6]:

- **Long-term issuer ratings,** defined as CRIF Ratings' opinion on the ability of a subject to honor its financial obligations in full and on time. The assessment focuses on the ability of the debtor to repay its financial obligations irrespective of their ranking over a medium-long time horizon.

- **Long-term issue ratings,** defined as CRIF Ratings' opinion on the relative risk of default of a specific debt instrument over a medium-long time horizon. The assessment takes into account the level of expected loss on the instrument in the event of default, which will depend on the guarantees supporting the underlying debt obligation and the degree of subordination of the instrument itself in the issuer's capital structure.

- **Short-term issuer ratings,** defined as CRIF Ratings' opinion on the risk of default of an issuer calculated over a time horizon shorter than 12 months.

- **Short-term issue ratings,** defined as CRIF Ratings' opinion on the risk of default of a debt instrument calculated over a time horizon shorter than 12 months.

12. CRIF assigns these credit ratings to different rating scales as illustrated in column 3 of Figure 2 in Appendix 1. Therefore, a specific mapping has been prepared for the following rating scales:

- **Long-term issuer rating scale.** The specification of this rating scale is described in Figure 3 of Appendix 1.

- **Long-term issue rating scale.** The specification of this rating scale is described in Figure 5 of Appendix 1.

- **Short-term issuer rating scale.** The specification of this rating scale is described in Figure 6 of Appendix 1.

- **Short-term issue rating scale.** The specification of this rating scale is described in Figure 7 of Appendix 1.

13. The mapping of the long-term issuer rating scale is explained in Section 4 and it has been derived in accordance with the quantitative factors, qualitative factors and benchmarks specified in the Implementing Regulation.

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[6] As explained in recital 4 ITS, Article 4(1) CRA allows the use of the credit assessments for the determination of the risk-weighted exposure amounts as specified in Article 113(1) CRR as long as they meet the definition of credit rating in Article 3(1)(a) CRA.

14. The mapping of the short-term issuer rating scale is explained in Section 5 and it has been indirectly derived from the mapping of the International long-term issuer ratings scale and the internal relationship established by CRIF between these two scales, as specified in Article 13 of the Implementing Regulation. This internal relationship is shown in Figure 9 of Appendix 1.

15. The indirect mapping approach described in the previous paragraph has also been applied In the case of the other long-term and short-term issue rating scales, as explained in Section 6. In these cases, however, the relationship with the Long-term issuer rating scale (or Short-term issuer rating scale) has been assessed, for the purpose of the mapping, by the JC based on the comparison of the meaning and relative position of the rating categories.

4. Mapping of CRIF's long-term rating scale

16. The mapping of the long-term rating scale has consisted of two differentiated stages where the quantitative and qualitative factors as well as the benchmarks specified in Article 136(2) CRR have been taken into account.

17. In the first stage, the quantitative factors referred to in Article 1 of the Implementing Regulation have been taken into account to differentiate between the levels of risk of each rating category. The *long run default rate* of a rating category has been calculated in accordance with Article 6 of the ITS, as the number of credit ratings cannot be considered to be sufficient.

18. In a second stage, the qualitative factors proposed in Article 7 of the Implementing Regulation have been considered to challenge the result of the previous stage, especially in those ratings categories where less default data has been available.

4.1. Initial mapping based on the quantitative factors

19. This mapping report reflects additional quantitative information collected after the submission of the draft ITS by the JC to the Commission.

4.1.1. Calculation of the long-run default rates

20. CEREP data is available from 2010H2 to 2015H2 but it reflects two rating scales, as there was a change in rating scale categories in 2013H1. Figures 10 and 12 of Appendix 3 display the CEREP data available for the current rating scale. As the Implementing Regulation requires the calculation of three-year horizon, the only short-run default rate that can be computed is 2013H1.

21. For robustness, the internal mapping between the old and the new rating scales provided by CRIF, described in Figure 8 in Appendix 1, has been used to build a longer time series, as it was also done in the original mapping report. Since the relationship between them is not unique (e.g. 'old' A1 may either correspond to 'new' AAA or AA), two calculations have been performed: one that assigns the old ratings to the best of the new categories available (i.e. 'old' A1 corresponding to 'new' AAA) and another where the assignment is done to the more

conservative choice (i.e. 'old' A1 corresponding to 'new' AA). See Figures 10, 11 and 12 in Appendix 3 for the number of rated items, and Figures 13, 14 and 15 in Appendix 3 for the number of defaulted items. As explained in the next section, the resulting mapping is the same regardless of the method applied.

22. The number of observations cannot be considered sufficient for the calculation of the short and long run default rates specified in the Articles 3 – 5 the implementing Regulation. As a result, the allocation of the CQS has been made in accordance with Article 6 of the Implementing Regulation, as shown in Figures 16, 17 and 18 of Appendix 3.

23. The long run default rate benchmark associated with the equivalent category in the international rating scale is a key qualitative factor that has been used for the mapping proposal.

24. For D rating category, no calculation of default rate has been made since it already reflects a 'default' situation.

25. Withdrawn ratings have been weighted by 50% as indicated in Article 4(3) of the Implementing Regulation.

26. The default definition applied by CRIF, described in Appendix 2, has been used for the calculation of default rates.

4.1.2. Mapping proposal based on the long run default rate

27. As illustrated in the second column of Figure 19 in Appendix 4, the assignment of the rating categories to credit quality steps has been initially made in accordance with Article 6 of the Implementing Regulation. Therefore, the numbers of defaulted and non-defaulted rated items have been used together with the prior expectation of the equivalent rating category of the international rating scale. The results are specified in Figures 16, 17 and 18 of Appendix 3.

- **AAA/AA/A/BBB/BB/B**: the number of rated items in each of these categories is equal or larger than the respective minimum required number of observed items given the number of defaulted items in the rating category. Thus the credit quality step associated with the AAA/AA, A, BBB, BB and B rating categories in the international rating scale (CQS 1, CQS 2, CQS 3, CQS 4 and CQS 5 respectively) can be assigned.

- **CCC:** since the CQS associated with the equivalent rating category of the international rating scale is 6, the proposed mapping for this rating category is also CQS 6.

4.2. Final mapping after review of the qualitative factors

28. The qualitative factors specified in Article 7 of the Implementing Regulation have been used to challenge the mapping proposed by the default rate calculation. Qualitative factors acquire more importance in the rating categories where quantitative evidence is not sufficient to test

the default behavior[7], as it is the case for all rating categories of CRIF's long-term issuer rating scale.

4.2.1. Other qualitative factors

29. CRIF has not registered any change in the quantitative factors since the draft Implementing Technical Standards submitted by the JC to the Commission. The qualitative considerations remain unchanged with respect to the original mapping report, where no adjustment was made to mapping based on qualitative factors.

5. Mapping of CRIF's Short-Term Issuer rating scale

30. CRIF also produces short-term issuer ratings and assigns them to the short-term issuer rating scale (see Figure 6 in Appendix 1). Given that the default information referred to these rating categories cannot be comparable with the 3-year time horizon that characterizes the benchmarks established in the Implementing Regulation, the internal relationship established by CRIF between these two rating scales (described in Figure 9 of Appendix 1) has been used to derive the mapping of the international short-term rating scale. This should ensure the consistency of the mappings proposed for CRIF.

31. More specifically, as each short-term issuer rating can be associated with a range of long-term issuer ratings, the CQS assigned to the short-term rating category has been determined based on the most frequent CQS assigned to the related long-term rating categories. In case of draw, the most conservative CQS has been considered. If the most frequent step is identified as CQS 5 or 6, CQS 4 is allocated, as the risk weights assigned to CQS 4 to 6 are all equal to 150% according to Article 131 CRR.

32. The results are shown in Figure 20 of Appendix 4.

- **IG-1.** This rating category denotes an issuer with very good ability to repay short-term debt obligations. It is internally mapped to long-term categories AAA to A. The proposed mapping is CQS 1 as it is the most frequent step.

- **IG-2.** This rating category denotes an issuer with good ability to repay short-term debt obligations. It is internally mapped to the long-term categories A to BBB-. The proposed mapping is CQS 3 as it is the most frequent step.

- **SIG-1.** This rating category denotes an issuer with medium ability to repay short-term debt obligations. It is internally mapped to long-term categories BB+ to BB, which are mapped to CQS 4.

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[7] The default behavior of a rating category is considered to be properly tested if the quantitative factors for that rating category are calculated under Articles 3 – 5 ITS.

- **SIG-2.** This rating category denotes an issuer with weak ability to repay short-term debt obligations. It is internally mapped to long-term categories BB to B+, which are mapped to CQS4.

- **SIG-3.** This rating category denotes an issuer with very weak ability to repay short-term debt obligations. It is internally mapped to long-term categories B+ to B-, which are mapped to CQS5. Since the risk weights assigned to CQS 4 to 6 are all equal to 150% according to Article 131 CRR, the mapping proposed for the SIG-3 rating category is CQS 4.

- **SIG-4.** This rating category denotes an issuer with vulnerable or inadequate ability to repay short-term debt obligations. It is internally mapped to long-term categories B- to CCC-. Since the risk weights assigned to CQS 4 to 6 are all equal to 150% according to Article 131 CRR, the mapping proposed for the SIG-4 rating category is CQS 4.

6. Mapping of other CRIF credit rating scales

33. As mentioned in Section 3, CRIF produces a number of additional credit ratings that are assigned to different credit rating scales.

34. Based on the methodology described in the previous section, the mapping of each rating scale has been derived from the relationship established by the JC with the relevant Long-term or Short-term issuer ratings scale. Specifically, as each rating can be associated with one or a range of long-term (or short-term) rating categories, its CQS has been determined based on the most frequent CQS assigned to the related rating categories. In case of draw, the most conservative CQS has been considered. Results are shown in Figures 21 and 22 of Appendix 4:

- **Long-term issue rating scale** (see Figure 5 in Appendix 1). The rating categories can be considered comparable to those of the long-term issuer ratings scale. Therefore the mapping of each rating category has been derived from its meaning and relative position and the mapping of the corresponding categories of the long-term issuer rating scale. The result of the mapping of this scale is shown in Figure 21 of Appendix 4.

- **Short-term issue rating scale** (see Figure 7 in Appendix 1). The rating categories can be considered comparable to those of the short-term issuer ratings scale. Therefore the mapping of each rating category has been derived by the JC from its meaning and relative position and the mapping of the corresponding categories of the Short-term issuer rating scale. The result of the mapping of this scale is shown in Figure 22 of Appendix 4.

Appendix 1: Credit ratings and rating scales

Figure 2: CRIF's relevant credit ratings and rating scales

SA exposure classes	Name of credit rating	Credit rating scale
Long-term ratings		
Corporates	Long-term issuer credit rating	Long-term issuer credit rating scale
Corporates	Long-term issue credit rating	Long-term issue credit ratings scale
Short-term ratings		
Corporates	Short-term issuer credit rating	Short-term issuer credit ratings scale
Corporates	Short-term issue credit rating	Short-term issue credit ratings scale

Source: CRIF

Figure 3: Long-term issuer rating scale

Credit assessment	Meaning of the credit assessment
AAA	Issuer with excellent credit quality. Risk of default is the lowest
AA	Issuer with very good credit quality. Risk of default is very low
A	Issuer with good credit quality. Risk of default is low
BBB	Issuer with satisfactory credit quality. Risk of default is moderate
BB	Issuer whose credit quality is exposed to adverse business or economic conditions and with speculative characteristics. Risk of default is medium
B	Issuer whose credit quality is vulnerable to adverse business or economic conditions and with highly speculative characteristics. Risk of default is high
CCC	Issuer with business and/or financial profile compromised, highly vulnerable to adverse economic conditions and with extremely speculative characteristics. Risk of default is very high
CC	Risk of default is realistic, including a grace period situation on unpaid obligations representing less than 20% of total issuer debt
C	Risk of default is imminent, including a grace period situation on unpaid obligations representing or potentially affecting more than 20% of total issuer debt
D1S	Issuer with one or more unpaid financial obligations
D	Issuer subject to an ongoing proceeding according to European insolvency regulation

Source: CRIF

Figure 4: Long-term issuer rating scale (old scale)

Credit assessment	Meaning of the credit assessment
A1	Stable company with a solid and balanced financial situation. The default risk is minimal.
A2	Stable company with a solid and balanced financial situation. The default risk is minimal.
A3	Company with an excellent situation for the financial balance. The risk of default is very low.
A4	Company with an excellent situation for the financial balance. The risk of default is very low.
A5	Company with a balanced financial structure. The default risk is moderate and it depends on external / market factors not easily predictable.
B1	Company with an overall acceptable financial situation. The risk of default indicates average levels, linked to market trends.
B2	Company with an overall acceptable financial situation. The risk of default indicates average levels, linked to market trends.
B3	Company that shows a financial balance is not completely stable. The default risk is above average but acceptable.
B4	Company that shows a financial balance is not completely stable. The default risk is above average but acceptable.
B5	Company with an unbalanced financial structure and frequent shortages of liquidity. The default risk is above average.
B6	Company with an unbalanced financial structure and frequent shortages of liquidity. The default risk is above average.
C1	Company with significant weaknesses in financial terms. The default risk is significant.
C2	Company with significant weaknesses in financial terms. The default risk is significant.
C3	Company with a financial situation compromised. The default risk is high.
Default	State of declared insolvency (delinquent) or temporary insolvency (non-performing and restructured loans) or where public information certifies a pre-existing state of insolvency.

Source: CRIF

Figure 5: Long-term issue rating scale

Credit assessment	Meaning of the credit assessment
AAA	Debt instrument with the lowest risk of default
AA	Debt instrument with very low risk of default
A	Debt instrument with low risk of default
BBB	Debt instrument with moderate risk of default
BB	Debt instrument with speculative characteristics, risk of default is medium
B	Debt instrument with highly speculative characteristics, risk of default is high
CCC	Debt instrument with extremely speculative characteristics, risk of default is very high
CC	Debt instrument with a realistic risk of default
C	Debt instrument with imminent or inevitable default, or in standstill situation
DS	Debt instrument that has experienced a payment default on principal or interests

Source: CRIF

Figure 6: Short-term issuer rating scale

Credit assessment	Meaning of the credit assessment
IG-1	Issuer with very good ability to repay short term debt obligations
IG-2	Issuer with good ability to repay short term debt obligations
SIG-1	Issuer with medium ability to repay short term debt obligations
SIG-2	Issuer with weak ability to repay short term debt obligations
SIG-3	Issuer with very weak ability to repay short term debt obligations
SIG-4	Issuer with vulnerable or inadequate ability to repay short term debt obligations

Source: CRIF

Figure 7: Short-term issue rating scale

Credit assessment	Meaning of the credit assessment
IG-1	Debt instrument with minimal risk
IG-2	Debt instrument with low risk
SIG-1	Debt instrument with moderately speculative characteristics
SIG-2	Debt instrument with speculative characteristics
SIG-3	Debt instrument with very speculative characteristics
SIG-4	Debt instrument with extremely speculative characteristics

Source: CRIF

Figure 8: Internal relationship between the old and current labelling of the long-term issuer rating scale

Old Scale	Current Scale	
A1	AAA	AAA
	AA+	AA
A2	AA	
	AA-	
	A+	
A3	A	A
	A-	
A4		
	BBB+	
A5	BBB	BBB
	BBB-	
B1		
	BB+	
B2		
	BB	BB
B3		
	BB-	
B4		
	B+	
B5		
	B	B
B6		
C1	B-	
C2		
	CCC	CCC
C3		

Source: CRIF

Figure 9: Internal relationship between CRIF's long-term issuer and short-term issuer rating scales[8]

Long-term issuer rating scale	Short-term issuer rating scale
AAA	
AA+	
AA	IG-1
AA-	
A+	
A	
A-	
BBB+	IG-2
BBB	
BBB-	
BB+	
BB	
BB-	SIG-1
B+	SIG-2
B	SIG-3
B-	SIG-4
CCC	
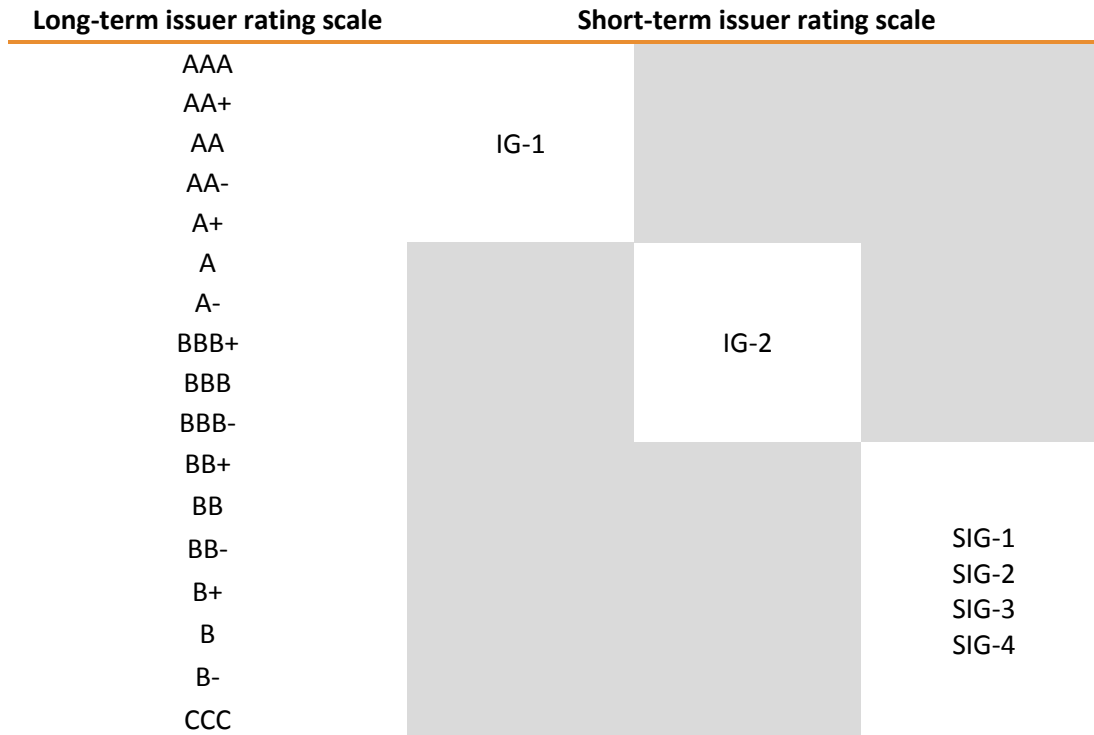
Source: CRIF

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[8] CRIF Ratings does not issue a short-term rating for issuers with a 'CC' and 'C' rating in the long-term scale. This is due to the fact that these two rating categories are connected to a company being in a distressed situation.

Appendix 2: Definition of default

According to CRIF, a default situation occurs:

- when the issuer has filed an insolvency proceeding according to the European Insolvency regulation (EU 2015/848 of the European Parliament and of the European Council and its modifications), or
- when the issuer missed one or more payments affecting interests or principal of any of its debt obligations (excluding missed payments cured within a grace period).

Source: CRIF

Appendix 3: Default rates of each rating category

Figure 10: Number of rated items, with relevant weights

Date	AAA	AA	A	BBB	BB	B	CCC
01/01/2013	0.0	3.0	2.0	8.0	8.0	6.5	3.0

Source: Joint Committee calculations based on CEREP data

Figure 11: Number of rated items, with relevant weights, considering the internal relationship between the old and the new rating scale and the best choice assignment

Date	AAA	AA	A	BBB	BB	B	CCC
01/07/2010	1	2	8.5	4	11	3	0
01/01/2011	1	2	9.5	6.5	14.5	12	0
01/07/2011	0.5	2	9	6.5	17	9.5	1
01/01/2012	1.5	2.5	6	10	11.5	8.5	0
01/07/2012	1	2	5.5	9.5	7.5	6.5	0
01/01/2013	0	3	2	8	8	6.5	3

Source: Joint Committee calculations based on CEREP data

Figure 12: Number of rated items, with relevant weights, considering the internal relationship between the old and the new rating scale and a conservative assignment

Date	AAA	AA	A	BBB	BB	B	CCC
01/07/2010	1	3	9.5	9	6	1	1
01/01/2011	1	6.5	8.5	13.5	14	2	1
01/07/2011	0.5	6	7	16.5	14.5	1	0.5
01/01/2012	1.5	4.5	8	16	10	0	1.5
01/07/2012	1	4.5	5.5	13.5	6.5	1	1
01/01/2013	3	2	8	8	6.5	3	3

Source: Joint Committee calculations based on CEREP data

Figure 13: Number of defaulted rated items

Date	AAA	AA	A	BBB	BB	B	CCC
01/01/2013	0.0	0.0	0.0	0.0	1.0	0.0	1.0

Source: Joint Committee calculations based on CEREP data

Figure 14: Number of defaulted rated items, considering the internal relationship between the old and the new rating scale and the best choice assignment

Date	AAA	AA	A	BBB	BB	B	CCC
01/07/2010	0	0	0	0	1	2	0
01/01/2011	0	0	0	0	1	3	0
01/07/2011	0	0	0	0	1	2	1
01/01/2012	0	0	0	1	1	3	0
01/07/2012	0	0	0	1	1	2	0
01/01/2013	0	0	0	0	1	0	1

Source: Joint Committee calculations based on CEREP data

Figure 15: Number of defaulted rated items, considering the internal relationship between the old and the new rating scale and a conservative assignment

Date	AAA	AA	A	BBB	BB	B	CCC
01/07/2010	0	0	0	1	1	1	0
01/01/2011	0	0	0	1	1	2	0
01/07/2011	0	0	0	1	2	1	0
01/01/2012	0	0	0	2	3	0	0
01/07/2012	0	0	0	2	1	1	0

01/01/2013	0	0	0	1	0	1	0

Source: Joint Committee calculations based on CEREP data

Figure 16: Mapping proposal for rating categories with a non-sufficient number of credit ratings

	AAA/AA	A	BBB	BB	B
CQS of equivalent international rating category	CQS1	CQS 2	CQS3	CQS4	CQS5
N. observed defaulted items	0	0	0	1	0
Minimum N. rated items	0	0	0	12	0
Observed N. rated items	3.0	2.0	8.0	8.0	6.5
Mapping proposal	CQS1	CQS 2	CQS3	CQS5	CQS5

Source: Joint Committee calculations based on CEREP data

Figure 17: Mapping proposal for rating categories with a non-sufficient number of credit ratings, considering the internal relationship between the old and the new rating scale and the best choice assignment

	AAA/AA	A	BBB	BB	B
CQS of equivalent international rating category	CQS1	CQS 2	CQS3	CQS4	CQS5
N. observed defaulted items	0	0	2	6	12
Minimum N. rated items	0	0	0	55	46
Observed N. rated items	18.5	40.5	44.5	69.5	46.0
Mapping proposal	CQS1	CQS 2	CQS3	CQS4	CQS5

Source: Joint Committee calculations based on CEREP data

Figure 18: Mapping proposal for rating categories with a non-sufficient number of credit ratings, considering the internal relationship between the old and the new rating scale and the conservative assignment

	AAA/AA	A	BBB	BB	B
CQS of equivalent international rating category	CQS1	CQS 2	CQS3	CQS4	CQS5
N. observed defaulted items	0	0	0	8	8
Minimum N. rated items	0	0	0	71	32
Observed N. rated items	8.0	26.5	46.5	76.5	57.5
Mapping proposal	CQS1	CQS 2	CQS3	CQS4	CQS5

Source: Joint Committee calculations based on CEREP data

Appendix 4: Mappings of each rating scale

Figure 19: Mapping of CRIF's long-term issuer rating scale

Credit assessment	Initial mapping based on LRDR (CQS)	Review *based on SRDR*(CQS)	Final review *based on qualitative factors* (CQS)	Main reason for the mapping
AAA	1	n.a.	1	The quantitative factors are representative of the final CQS.
AA	1	n.a.	1	
A	2	n.a.	2	
BBB	3	n.a.	3	
BB	4	n.a.	4	
B	5	n.a.	5	
CCC	6	n.a.	6	The meaning and relative position of the rating category is representative of the final CQS
CC	n.a.	n.a.	6	
C	n.a.	n.a.	6	
D1S	n.a.	n.a.	6	
D	n.a.	n.a.	6	

Figure 20: Mapping of CRIF's short-term issuer rating scale

Credit assessment	Corresponding Long-term issuer rating scale assessment (established by CRIF)	Range of CQS of corresponding long-term issuer rating scale	Final review *based on qualitative factors* (CQS)	Main reason for the mapping
IG-1	AAA to A+	1-2	1	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
IG-2	A to BBB-	2-3	3	
SIG-1	BB+ to BB	4	4	
SIG-2	BB to B+	4-5	4	The final CQS has been determined based on the range of steps associated with the corresponding long-term credit rating category. The risk weights assigned to CQS 4 to 6 are all 150%, therefore CQS 4.
SIG-3	B+ to B-	5	4	
SIG-4	B- to CCC	5-6	4	

Figure 21: Mapping of CRIF's long-term issue rating scale

Credit assessment	Corresponding long-term issuer rating scale assessment (assessed by JC)	Range of CQS corresponding to long-term issuer rating scale	Final review *based on qualitative factors* (CQS)	Main reason for the mapping
AAA	AAA	1	1	
AA	AA	1	1	
A	A	2	2	
BBB	BBB	3	3	
BB	BB	4	4	The final CQS has been determined based on the most frequent step associated with the corresponding long-term issuer rating category.
B	B	5	5	
CCC	CCC	6	6	
CC	CC	6	6	
C	C	6	6	
DS	D1S	6	6	

Figure 22: Mapping of CRIF's short-term issue rating scale

Credit assessment	Corresponding long-term issuer rating scale assessment (established by CRIF)	Range of CQS of corresponding long-term issuer rating scale	Final review *based on qualitative factors* (CQS)	Main reason for the mapping
IG-1	AAA to A+	1-2	1	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
IG-2	A to BBB-	2-3	3	
SIG-1	BB+ to BB	4	4	
SIG-2	BB to B+	4-5	4	The final CQS has been determined based on the range of steps associated with the corresponding long-term credit rating category. The risk weights assigned to CQS 4 to 6 are all 150%, therefore CQS 4.
SIG-3	B+ to B-	5	4	
SIG-4	B- to CCC	5-6	4	