30 October 2014

Mapping of Scope Rating's credit assessments under the Standardised Approach

1. Executive summary

1. This report describes the mapping exercise carried out by the Joint Committee to determine the 'mapping'[1] of the credit assessments of Scope Rating (Scope).

2. The methodology applied to produce the mapping is a combination of the provisions laid down in Article 136(2) Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR) and those proposed in the Consultation paper on draft Implementing Technical Standards on the mapping of ECAIs' credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013 published on 5 February 2014 (draft ITS).

3. 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 specific rated entity nor should be understood as a comparison of the rating methodologies of Scope with those of other ECAIs. This mapping should however be interpreted as the correspondence of the rating categories of Scope with a regulatory scale which has been defined for prudential purposes. This implies that an appropriate degree of prudence may have been applied wherever not sufficient evidence has been found with regard to the degree of risk underlying the credit assessments.

4. The resulting mapping tables have been specified in Annex III of the addendum to the draft ITS published today. Figure 1 below shows the result for the main ratings scale of Scope, the Global long-term rating scale, together with a summary of the main reasons behind the mapping proposal for each rating category. The results for the remaining ratings scales can be found in Appendix 6 of this document.

[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).

Figure 1: Mapping of Scope's Global long-term rating scale rating scale

Credit assessment	Credit quality step	Main reason for the mapping
AAA	2	The quantitative factors are representative of the final CQS.
AA	2	
A	2	The quantitative factors are representative of the final CQS.
BBB	3	The quantitative factors are representative of the final CQS.
BB	4	The quantitative factors are representative of CQS 5. The scoring information suggests that it can be mapped to the CQS 4.
B	5	The quantitative factors are representative of CQS 6. The scoring information suggests that it can be mapped to CQS 5.
CCC	6	The quantitative factors are representative of the final CQS.
CC	6	
C	6	
D	6	The meaning and relative position of the rating category is representative of the final CQS.

2. Introduction

5. This report describes the mapping exercise carried out by the Joint Committee (JC) to determine the 'mapping' of the credit assessments of Scope Rating (Scope).

6. Scope is a credit rating agency that has been registered with ESMA in 24 May 2011 and therefore meets the conditions to be an eligible credit assessment institution (ECAI)[2]. Scope focuses on the evaluation of the economic stability and the default risk of companies.

7. The methodology applied to produce the mapping is a combination of the provisions laid down in Article 136(2) CRR and those proposed in the Consultation paper on draft Implementing Technical Standards on the mapping of ECAIs' credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013 published on 5 February 2014 (draft ITS). Two sources of information have been used. Firstly, the quantitative and qualitative information available in CEREP has been used to obtain an overview of the main characteristics of this ECAI and an initial estimate of the default rates of its credit assessments. Secondly, since the available data in CEREP for Scope is scarce, specific information has also been directly requested to the ECAI for the purpose of the mapping, especially the list of relevant credit assessments, scoring information and detailed information regarding the default definition.

8. 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 specific rated entity nor should be understood as a comparison of the rating methodologies of Scope with those of other ECAIs. This mapping should however be interpreted as the correspondence of the rating categories of Scope with a regulatory scale which has been defined for prudential purposes. This implies that an appropriate degree of prudence may have been applied wherever not sufficient evidence has been found with regard to the degree of risk underlying the credit assessments.

9. Section 3 describes the relevant ratings scales of Scope for the purpose of the mapping. Section 4 contains the methodology applied to derive the mapping of Scope's ratings scale. The mapping tables are shown in Appendix 6 of this document and have been specified in Annex III of the addendum to the draft ITS published today.

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

3. Scope credit ratings and rating scales

10. Scope 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)[3]:

- **Issuer credit-strength rating (ICSR)**
- **Senior unsecured debt rating**
- **Senior unsecured long-term debt rating**
- **Senior secured long-term debt rating**
- **Subordinated debt rating**
- **Capital securities rating**
- **Long-term issue rating**
- **Short-term issuer credit strength rating**
- **Short-term issue rating**

11. These ratings can be divided into two groups, the credit ratings and the ratings of capital securities. Scope provides a general definition for both groups:

- The credit ratings reflect a credit opinion on a debt issuer's ability to meet its contractual financial commitments – either long-term or short-term – on a timely basis and in full as a going concern. As such credit ratings point to the relative default risk of debt issuers as well as the potential loss severity should a default occur.

- The ratings of capital securities reflect a credit opinion on the issuer's ability to meet its financial commitments on a timely basis and in full as a going concern even if contractually payments can be missed subject to specific conditions.

12. Scope 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:

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

[3] As explained in recital 2 draft 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.

- **Global short-term rating scale.** The specification of this rating scale is described in Figure 4 of Appendix 1.

13. The mapping of the Global long-term 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 draft ITS.

14. The mapping of the Global short-term rating scale is explained in Section 5 and it has been indirectly derived from the mapping of the Global long-term rating scale and the internal relationship established by Scope between these two scales, as specified in Article 14 of the draft ITS. This internal relationship is shown in Figure 5 of Appendix 1.

4. Mapping of Scope's Global long-term rating scale rating scale

15. The mapping of the Global 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. Figure 15 in Appendix 6 illustrates the outcome of each stage.

16. In the first stage, the quantitative factors referred to in Article 1 draft ITS 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 7 draft ITS, as the number of credit ratings cannot be considered to be sufficient.

17. In a second stage, the qualitative factors proposed in Article 8 draft ITS 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

4.1.1. Calculation of the long-run default rates

18. The information contained in CEREP on ratings and default data, shown in Figure 8 and Figure 9 in Appendix 4, cannot be considered sufficient for the calculation of the short and long run default rates specified in the Articles 2 – 4 of the draft ITS since the number of rated items is below the required minimum. As a result, the allocation of the CQS has been made in accordance with Article 7 of draft ITS, as shown in Figure 10 of Appendix 4.

19. Figure 6 shows the relationship between the between scorings and ratings. The fact that this relationship is only available for a short period (2012 to 2014) and not a full economic cycle may bias the estimates of the long run default rates of the rating categories if Articles 5 and 6 draft ITS are applied. Therefore, the default rates arising from the scoring population have only been considered in the qualitative framework, as described in section 4.2.

20. 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.

21. For D rating category, no allocation has been made based on this methodology since it already reflects a 'default' situation.

22. Withdrawn ratings have been weighted by 50% as proposed in Article 3(5) draft ITS because no default information has been available after withdrawal.

23. The default definition applied by Scope, described in Appendix 3, has been used for the calculation of default rates.

4.1.2. Mapping proposal based on the long run default rate

24. As illustrated in the second column of Figure 15 in Appendix 6, the assignment of the rating categories to credit quality steps has been initially made in accordance with Article 7 of draft ITS. 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 Figure 10 of Appendix 4:

- **AAA/AA, BB and B**: the number of rated items in these categories is not sufficient to justify the credit quality step associated with the AAA/AA, BB and B rating categories in the international rating scale (CQS 1, CQS 4 and CQS 5 respectively). Therefore, the proposed credit quality steps for these rating categories are CQS 2, CQS 5 and CQS 6 respectively.

- **A and BBB:** the number of rated items in these categories is sufficient to justify the credit quality step associated with the A, BBB, BB and B rating categories in the international rating scale, CQS 2 and CQS 3 respectively.

- **CCC/CC/C:** since the CQS associated with the equivalent rating categories of the international rating scale is 6, the proposed mapping for these rating categories is also CQS 6.

4.2. Final mapping after review of the qualitative factors

25. The qualitative factors specified in Article 8 draft ITS 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, as it is the case for all rating categories of Scope's Global long-term rating scale rating scale.

4.2.1. Credit scoring information

26. As described in the previous sections, a sufficient number of credit ratings is not available for Scope's rating categories. However, Scope also assigns **credit scorings** which represent a different measure of creditworthiness than can be used for mapping purposes.

27. The empirical relationship between credit scorings and credit ratings has been applied to the distribution of credit scorings (Figure 11) to estimate the distribution of hypothetical ratings in the scoring population. The result is shown in Figure 12 and the first columns of Figure 13 and Figure 14 in Appendix 5.

28. Once the (hypothetical) rating distribution has been calculated, the long term default rate associated with each rating category needs to be determined. The observed default rates are not available because defaulted and non-defaulted items cannot be distinguished during the assignment process to hypothetical rating categories. Therefore, the long run default rates of rating categories have been indirectly estimated by means of a set of informal tests:

- The long run default rate benchmarks corresponding to the CQS of the equivalent international rating categories have been initially assumed. In this case, AAA, AA, A, BBB, BB, B and CCC have been associated with 0.10%, 0.10%, 0.25%, 1.00%, 7.50%, 20.00% and 34.00% hypothetical long run default rates respectively.

- An overall benchmark-implied long run default rate has been calculated for the scoring population. This number, 21.02%, has been compared to the actually observed default rate[4] 5.85% (see for example Figure 13). The result reflects that the long run benchmark could constitute a conservative estimate of Scope's rating categories' long term default rates because the implied default rate is well above the observed value. This result is reinforced by the fact that SCOPE's scoring population has been observed during a recessionary period, where default rates should be expected to be higher than their long-term level.

- The same test has been performed at a more granular level:

    - Figure 13 shows the benchmark-implied default rates of the scoring population for each date within the observation period. The levels are in all cases significantly above the observed default rates, especially during the first years where the economic crisis had not affected yet the Italian firms.

    - Figure 14 shows a different breakdown of the scoring population, this time by scoring category. Again, the benchmark-implied default rates are clearly above the observed default rates, except for the BBB scoring category, where the observed default rate is close to the implied one.

29. Although the tests described above do not address the default rate calculation for each individual rating category, they suggest that the mapping of Scope's rating categories to the

[4] Default rates have been calculated according to the requirements set out in Article 3 draft ITS.

CQS of the equivalent rating categories in the international scale could be sufficiently prudent, at least on a portfolio basis[5]. This implies that BB and B can be mapped to CQS 4 and CQS 5 respectively. However, AAA, AA are mapped to CQS 2 (as suggested by the quantitative framework) given the lack of any additional evidence in the qualitative framework.

4.2.2. Other qualitative factors

30.The **definition of default** applied by Scope and used for the calculation of the quantitative factors has been analysed:

- The types of default events considered are shown in Appendix 3 and are the ones specified in Article 3(6) draft ITS. D is consistent with letters (a), (b), (c) and (d) of the benchmark definition.

- Since there are no reported defaults, it is not possible to assess the severity of Scope's definition of default.

Therefore, no adjustment is proposed based on this factor.

31.Regarding **the meaning and relative position of the credit assessments**, it suggests a more favourable mapping of AAA and AA rating categories. However, the absence of empirical evidence does not allow a significant use of this factor to modify any of the proposed mappings. In the case of the D rating category, its meaning is consistent with the one of CQS 6 stated in Annex II draft ITS.

32.Regarding the **time horizon** reflected by the rating category, Scope's rating methodology focuses on the long-term. Although this cannot be further supported by transition probabilities due to the low number of ratings, no change is proposed to the mapping.

33.Finally, it should be highlighted the use of the long run default rate benchmark associated with the equivalent category in the international rating scale as the **estimate of the long run default rate** for the calculation of the quantitative factor of all rating categories under Article 7 draft ITS.

5. Mapping of Scope's Global short-term rating scale

34.Scope also produces short-term ratings and assigns them to the Global short-term rating scale (see Figure 4 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 draft ITS, the internal relationship established by Scope between these two rating scales (described in Figure 5 of Appendix 1) has been used to derive

[5] This assessment takes into account point (a) Article 138 CRR, according to which "*an institution which decides to use the credit assessments produced by an ECAI for a certain class of items shall use those credit assessments consistently for all exposures belonging to that class*". Therefore, given that SCOPE only rates firms which belong to the exposure class 'Corporates' it could be argued that the mapping is sufficiently conservative, at least, on a portfolio basis.

the mapping of the Global short-term rating scale. This should ensure the consistency of the mappings proposed for Scope.

35.More specifically, as each short-term rating can be associated with a range of long-term 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.

36.The result is shown in Figure 16 of Appendix 6:

- **S-1+.** This rating category indicates the highest capacity to repay short-term obligations with the lowest credit risk on a short-term basis. It is internally mapped to long-term categories AAA to A+, which are mapped to CQS 2. Therefore, CQS 2 is the proposed mapping.

- **S-1.** This rating category indicates high capacity to repay short-term obligations with very low credit risk on a short-term basis. It is internally mapped to the long-term category AA- to A-, which are mapped to CQS 2. Therefore, CQS 2 is the proposed mapping.

- **S-2.** This rating category indicates good capacity to repay short-term obligations with low credit risk on a short-term basis. It is internally mapped to long-term categories A to BBB-, which are mapped to CQS 2 and 3, but mostly CQS 3. Therefore, CQS 3 is the proposed mapping.

- **S-3.** This rating category indicates a fair capacity to repay short-term obligations with acceptable credit risk on a short-term basis. It is internally mapped to long-term categories BBB to BB-, which are mapped to CQS 3 and 4, but mostly CQS 4. 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 S-3 rating category is CQS 4.

- **S-4.** This rating category indicates low capacity to repay short-term obligations, with high credit risk on a short-term basis. It is internally mapped to long-term categories BB to C, which are mapped to CQS 4 to 6, but mostly CQS 6. 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 S-4 rating category is CQS 4.

Appendix 1: Credit ratings and rating scales

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

SA exposure classes	Name of credit rating	Credit rating scale
Long-term ratings		
Institutions	Corporate long-term rating	Global long-term rating scale
	Issuer credit-strength rating (ICSR)	Global long-term rating scale
	Senior unsecured debt rating	Global long-term rating scale
	Subordinated debt rating	Global long-term rating scale
	Capital securities rating	Global long-term rating scale
Corporates	Issuer credit-strength rating (ICSR)	Global long-term rating scale
	Senior secured long-term debt rating	Global long-term rating scale
	Senior unsecured long-term debt rating	Global long-term rating scale
	Subordinated debt rating	Global long-term rating scale
Covered bonds	Long-term issue rating	Global long-term rating scale
Short-term ratings:		
Institutions	Short-term issue rating	Global short-term rating scale

SA exposure classes	Name of credit rating	Credit rating scale
	Short-term issuer credit-strength rating	Global short-term rating scale
	Short-term issue rating	Global short-term rating scale

Source: Scope

Figure 3: Global long-term rating scale

Credit assessment	Meaning of the credit assessment
AAA	Ratings at the AAA level reflect an opinion of the strongest credit quality with the lowest default risk.
AA	Ratings at the AA level reflect an opinion of strong credit quality with very low default risk.
A	Ratings at the A level reflect an opinion of good credit quality with low default risk.
BBB	Ratings at the BBB level reflect an opinion of moderate credit quality with acceptable default risk.
BB	Ratings at the BB level reflect an opinion of weak credit quality with material default risk and potentially marginal loss-severity risk upon default.
B	Ratings at the B level reflect an opinion of very weak credit quality with high default risk and potentially limited loss-severity risk upon default.
CCC	Ratings at the CCC level reflect an opinion of poor credit quality with very high default risk and potentially material loss-severity risk upon default.
CC	Ratings at the CC level reflect an opinion of very poor credit quality with extremely high default risk and potentially very material loss-severity risk upon default.
C	Ratings at the C level reflect an opinion of extremely poor credit quality with extremely high default risk and potentially material loss-severity risk upon default.
D	Ratings at the D level refer to credit default situations.

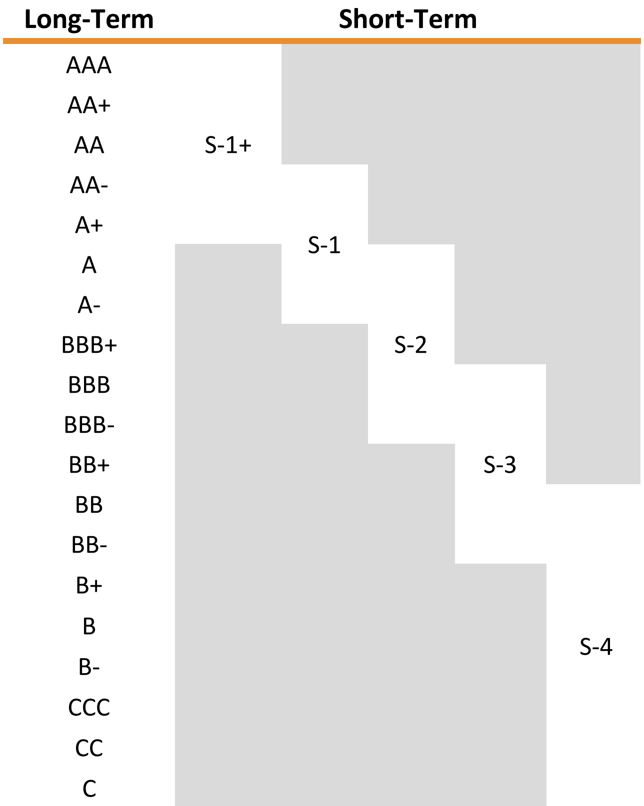
Source: Scope

Figure 4: Global short-term rating scale

Credit assessment	Meaning of the credit assessment
S-1+	Ratings at the S-1+ level reflect an opinion of the highest capacity to repay short-term obligations with the lowest credit risk on a short-term basis.
S-1	Ratings at the S-1 level reflect an opinion of high capacity to repay short-term obligations with very low credit risk on a short-term basis.
S-2	Ratings at the S-2 level reflect an opinion of good capacity to repay short-term obligations with low credit risk on a short-term basis.
S-3	Ratings at the S-3 level reflect an opinion of fair capacity to repay short-term obligations with acceptable credit risk on a short-term basis.
S-4	Ratings at the S-4 level reflect an opinion of low capacity to repay short-term obligations, with high credit risk on a short-term basis.

Source: Scope

Figure 5: Internal relationship between Scope's Global long-term and short-term rating scales



Source: Scope

Appendix 2: Relationship between credit ratings and credit scorings assigned by Scope

Figure 6: Observed relationship between credit scorings and credit ratings assigned by Scope (2012 – 2014)

Credit scoring Scope	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**	**CCC**		
Credit rating SCOPE									
AAA	0	0	0	0	0	0	0	0	0
AA	0	0	0	0	0	0	0	0	0
A	0	0	0	0	0	0	0	0	0
BBB	0	0	0	9	0	0	0	0	0
BB	0	0	0	3	33	0	0	0	0
B	0	0	0	0	8	16	0	0	0
CCC	0	0	0	0	0	1	2	0	0
	0	0	0	0	0	0	2	1	0
	0	0	0	0	0	0	3	1	0

Source: Joint Committee analysis based on CEREP and Scope data

Figure 7: Expected relationship between credit scorings and credit ratings assigned by Scope

Financial risk	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**	**CCC**	**CC**	**C**
Business risk									
AAA	AAA	AA	AA/A	A	A/BBB	BBB/BB	BB	BB/B	B
AA	AA	AA	AA/A	A/BBB	A/BBB	BBB/BB	BB/B	BB/B	B
A	AA	AA/A	A	A/BBB	BB/BB	BBB/BB	B	B	B/CCC
BBB	AA/A	AA/A	A/BBB	BBB	BBB/BB	BB/B	B	B/CCC	B/CCC
BB	A	A/BBB	A/BBB	BBB/BB	BB	BB/B	B/CCC	B/CCC	CCC
B	A/BBB	A/BBB	BBB/BB	BBB/BB	BB/B	B	CCC	CCC	CCC
CCC	A/BBB	BBB	BBB/BB	BB/B	BB/B	B/CCC	CCC	CCC/CC	CC/C
CC	BBB	BBB	BBB/BB	BB/B	B	B/CCC	CCC/CC	CC	CC/C
C	BBB	BBB	BBB/BB	BB/B	B	B/CCC	CCC/CC	CC/C	C

Source: Scope

Appendix 3: Definition of default

Scope defines a corporate default as (i) a bankruptcy ii) a failed or delayed payment of interest and/or principal, including payments made within a grace period, or iii) a distressed exchange defined as a debt restructuring, a debt repurchase or any equivalent action initiated with the apparent aim of avoiding payment failure and ultimately leading to an economic loss or a diminished financial obligation for the debt investor.

Source: Scope

Appendix 4: Default rates of each rating category

Figure 8: Number of rated items

Date	AAA	AA	A	BBB	BB	B	CCC/CC /C
01/01/2007	0	0	0	0	0	0	0
01/07/2007	0	0	0	1	1	0	0
01/01/2008	0	0	0	1	1	0	0
01/07/2008	0	0	0	1	1	0	0
01/01/2009	0	0	0	0	1	0	0
01/07/2009	0	0	0	1	1	0	0
01/01/2010	0	0	0	1	0	0	0
01/07/2010	0	0	0	1	0	0	0

Source: Joint Committee calculations based on CEREP data

Figure 9: Number of defaulted rated items

Date	AAA	AA	A	BBB	BB	B	CCC/CC /C
01/01/2007	0	0	0	0	0	0	0
01/07/2007	0	0	0	0	0	0	0
01/01/2008	0	0	0	0	0	0	0
01/07/2008	0	0	0	0	0	0	0
01/01/2009	0	0	0	0	0	0	0
01/07/2009	0	0	0	0	0	0	0
01/01/2010	0	0	0	0	0	0	0
01/07/2010	0	0	0	0	0	0	0

Source: Joint Committee calculations based on CEREP data

Figure 10: Mapping proposal for rating categories with a non-sufficient number of credit ratings

	AAA/AA	**A**	**BBB**	**BB**	**B**	**CCC/CC/C**
CQS of equivalent international rating category	CQS 1	CQS 2	CQS 3	CQS 4	CQS5	CQS 6
N. observed defaulted items	0	0	0	0	0	0
Minimum N. rated items	496	0	0	10	5	n.a.
Observed N. rated items	0	0	4	3	0	0
Mapping proposal	**CQS 2**	**CQS 2**	**CQS 3**	**CQS 5**	**CQS 6**	**CQS 6**

Source: Joint Committee calculations based on CEREP data

Appendix 5: Calculation of the hypothetical credit rating distribution

Figure 11: Distribution of scoring categories

Date	AAA	AA	A	BBB	BB	B	CCC	CC	C
2007	2	1,627	8,497	17,121	28,020	41,618	39,083	4,376	9,072
2008	2	1,815	8,943	17,887	29,680	44,132	42,960	5,170	11,224
2009		1,727	8,887	18,427	29,907	44,907	46,213	6,307	14,253
2010	1	1,800	9,286	18,781	30,934	45,211	46,693	6,755	16,306

Source: Joint Committee calculations based on Scope data

Figure 12: Distribution of hypothetical credit ratings (observation date 2007)

Credit scoring Scope	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**	**CCC**	**CC**	**C**	**Total**
Hypothetical credit rating Scope										
AAA	0	0	0	0	0	0	0	0	0	**0**
AA	0	0	0	0	0	0	0	0	0	**0**
A	0	0	0	0	0	0	0	0	0	**0**
BBB	0	0	0	12841	0	0	0	0	0	**12841**
BB	0	0	0	4280	22553	0	0	0	0	**26833**
B	0	0	0	0	5467	39170	0	0	0	**44637**
CCC	0	0	0	0	0	2448	11167	0	0	**13615**
CC	0	0	0	0	0	0	11167	2188	0	**13355**
C	0	0	0	0	0	0	16750	2188	0	**18938**
Total	0	0	0	17121	28020	41618	39083	4376	0	**130218**

Source: Joint Committee calculations based on CEREP and Scope data

Figure 12 reflects the estimation of the hypothetical credit rating distribution for the population of scored items available in 2007 (see Figure 11). In order to derive the number of scorings that would fall in each rating category, the relationship described in Figure 6 between the rating and scoring measures has been used (the similarity of the sector distribution in the rating and scoring populations shown in **Error! Reference source not found.** suggests that such relationship can be applied to the scoring population, although it is acknowledged that other factors may also be relevant).

For example, 75%% and 25%% of the 17121 BBB-scored items would have been (hypothetically) assigned to the BBB and BB rating categories respectively. These ratios correspond to the share of BBB-scored items that have been rated as BBB and BB by Scope between 2012 and 2014 (9 were rated as BBB and 3 were rated as BB).

Figure 13: Distribution of hypothetical credit ratings by observation date and hypothesis testing of benchmark long run default rates

Hypothetical credit rating Scope	AAA	AA	A	BBB	BB	B	CCC	CC	C	Benchmark-implied default rate	Observed 3-year default rate
Date											
2007	0	0	0	12841	26833	44637	13615	13355	18938	**20.49%**	
2008	0	0	0	13415	28361	47327	14870	14859	20996	**20.72%**	
2009	0	0	0	13820	28678	48101	15845	16357	22959	**21.04%**	**3.67%**
2010				14086	29593	48587	16000	16718	23389	**21.00%**	**7.96%**
Total	0	0	0	54162	113465	188653	60331	61289	86282	**20.82%**	
Total (2009-2010)	0	0	0	27906	58272	96688	31846	33076	46348	**21.02%**	**5.85%**

Source: Joint Committee calculations based on CEREP and Scope data

The rows in the first columns show the result of the process described in Figure 12 for each available period (e.g. row 2007 reflects the (hypothetical) rating distribution calculated in the last column of Figure 12). The aggregate result is shown in the last row. The column '**Benchmark-implied default rate**' reflects the estimated default rate of the scoring pool under the assumption that the default rate of the rating categories is equal to the long run default rate benchmarks (0.10%, 0.10%, 0.25%, 1.00%, 7.50%, 20.00% and 34.00% respectively). The column '**Observed 3-year default rate**' reflects the actually observed 3-year default rate of the scoring population in each date of the period 2007 to 2010.

Figure 14: Distribution of hypothetical credit ratings by scoring category and hypothesis testing of benchmark long run default rates (2009-2010)

Hypothetical credit rating Scope	AAA	AA	A	BBB	BB	B	CCC	Benchmark-implied default rate	Observed 3-year default rate
Credit scoring SCOPE									
AAA	0	0	0	0	0	0	0		0.00%
AA	0	0	0	0	0	0	0		1.77%
A	0	0	0	0	0	0	0		1.89%
BBB	0	0	0	27906	9302	0	0	2.63%	2.14%
BB	0	0	0	0	48970	11871	0	9.94%	2.83%
B	0	0	0	0	0	84817	5301	20.82%	4.03%
CCC	0	0	0	0	0	0	26545	34.00%	7.79%
CC	0	0	0	0	0	0	0	34.00%	12.82%
C	0	0	0	0	0	0	0		15.67%
Total	0	0	0	27906	58272	96688	31846	**21.02%**	**5.85%**

Source: Joint Committee calculations based on CEREP and Scope data

The first columns display the distribution of (hypothetical) credit ratings by scoring category. The aggregate result is shown in the last row.
The column '**Benchmark-implied default rate**' reflects the estimated default rate of the scoring pool under the assumption that the default rate of the rating categories is equal to the long run default rate benchmarks (0.10%, 0.10%, 0.25%, 1.00%, 7.50%, 20.00% and 34.00% respectively). The column '**Observed 3-year default rate**' reflects the actually observed 3-year default rate of the scoring population in each scoring category (during 2009-2010)
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Appendix 6: Mappings of each rating scale

Figure 15: Mapping of Scope's Global long-term rating scale

Credit assessment	Initial mapping *based on LR DR* (CQS)	Review *based on SR DR* (CQS)	Final review *based on qualitative factors* (CQS)	Main reason for the mapping
AAA	2	n.a.	**2**	The quantitative factors are representative of the final CQS.
AA	2	n.a.	**2**	
A	2	n.a.	**2**	The quantitative factors are representative of the final CQS.
BBB	3	n.a.	**3**	The quantitative factors are representative of the final CQS.
BB	5	n.a.	**4**	The quantitative factors are representative of CQS 5. The scoring information suggests that it can be mapped to the CQS 4.
B	6	n.a.	**5**	The quantitative factors are representative of CQS 6. The scoring information suggests that it can be mapped to CQS 5.
CCC	6	n.a.	**6**	The quantitative factors are representative of the final CQS.
CC	6	n.a.	**6**	
C	6	n.a.	**6**	

D	n.a.	n.a.	**6**	The meaning and relative position of the rating category is representative of the final CQS.

Figure 16: Mapping of Scope's Global short-term rating scale

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