Mapping of Cerved Rating Agency S.p.A.'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 Cerved Rating Agency S.p.A. (CERVED).

2. The methodology applied to produce the mapping is the one specified in the Commission's Implementing Regulation (EU) 2016/1799 ('the Implementing Regulation') laying down Implementing Technical Standards (ITS) with regard to the mapping of credit assessments of External Credit Assessment Institutions (ECAIs) for credit risk in accordance with Articles 136(1) and (3) of the Regulation (EU) No 575/2013 of the European Parliament and the Council ('the CRR'). This Implementing Regulation employs a combination of the provisions laid down in Article 136(2) CRR.

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[2] nor should be understood as a comparison of the rating methodologies of CERVED with those of other ECAIs. This mapping should however be interpreted as the correspondence of the rating categories of CERVED 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. 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. Therefore, the relevance of quantitative factors for deriving the mapping should be relaxed. This allows ECAIs which present limited quantitative information to enter the market and increases competition. Updates to the mapping should be made wherever this

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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] In this regard please consider http://www.esma.europa.eu/system/files/esma__2015-1473_report_on_the_possibility_of_establishing_one_or_more_mapping....pdf.

becomes necessary to reflect additional quantitative information collected after the entry into force of the revised draft ITS.

5. The resulting mapping tables have been specified in Annex III of the Implementing Technical Standards 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 CERVED, the Long-term rating scale.

Figure 1: Mapping of CERVED's Corporate long-term rating scale

Credit assessment	Credit quality step
A1.1	1
A1.2	1
A1.3	1
A2.1	2
A2.2	2
A3.1	2
B1.1	3
B1.2	3
B2.1	4
B2.2	4
C1.1	5
C1.2	6
C2.1	6

2. Introduction

6. This report describes the mapping exercise carried out by the Joint Committee (JC) to determine the 'mapping' of the credit assessments of Cerved Rating Agency S.p.A.(CERVED).

7. CERVED is a credit rating agency that has been registered with ESMA on 20 December 2012 and therefore meets the conditions to be an eligible credit assessment institution (ECAI)[3]. CERVED an Italian company resulting from the merger of three pre-existing legal entities (Lince, Cerved BI, Centrale dei Bilanci) carried out in 2009. It provides credit information to Italian financial institutions and non-financial companies; in particular it is specialized in the assessment of creditworthiness of non-financial companies and in the development of credit risk assessment models aimed to support credit decision making processes.

8. The methodology applied to produce the mapping is the one specified in the Commission's Implementing Regulation (EU) 2016/1799 ('the Implementing Regulation') laying down Implementing Technical Standards (ITS) with regard to the mapping of credit assessments of External Credit Assessment Institutions (ECAIs) for credit risk in accordance with Articles 136(1) and (3) of the Regulation (EU) No 575/2013 of the European Parliament and the Council ('the CRR'). This Implementing Regulation employs a combination of the provisions laid down in Article 136(2) CRR. Two sources of information have been used. Firstly, as the information in ESMA Central Repository (CEREP[4]) refers to the data based on an old rating model and scale, specific information has been directly requested to the ECAI for the purpose of the mapping, especially the list of relevant credit assessments and detailed information regarding the default definition. Secondly, the information on the combined public and private ratings with the default information for withdrawn items provided by CERVED was used to estimate the default rates of the rating categories.

9. The following sections describe the rationale underlying the mapping exercise carried out by the Joint Committee (JC). Section 3 describes the relevant ratings scales of CERVED for the purpose of the mapping. Section 4 contains the methodology applied to derive the mapping of CERVED's rating scale. The mapping tables are shown in Appendix 4 of this document and have been specified in Annex III of the Implementing Technical Standards on the mapping of ECAIs' credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013.

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

[4] CEREP is the central repository owned by ESMA to which all registered/certified CRAs have to report their credit assessments. http://cerep.esma.europa.eu/cerep-web/.

3. CERVED credit ratings and rating scales

10. CERVED produces one credit rating, **Long-term issuer rating**, which may be used by institutions for the calculation of risk weights under the Standardised Approach (SA)[5], as shown in column 2 of Figure 2 in Appendix 1.

11. CERVED provides both public and private ratings[6], available since 2009 and 2005 respectively. Private ratings are not subject to the CRA Regulation[7] and therefore only public ratings can be used for regulatory purposes. For the purpose of this mapping, public ratings have been used to estimate the quantitative factor and private ratings have only been considered as a qualitative factor.

12. CERVED assigns this credit rating to the **Corporate long-term rating scale** as illustrated in column 3 of Figure 2 in Appendix 1. Therefore, a specific mapping has been prepared for this rating scale. The specification of Corporate long-term rating scale is show in Figure 3.

13. The mapping of the Corporate 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 ITS.

4. Mapping of CERVED's Corporate long-term rating scale

14. The mapping of the Corporate 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.

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

16. In a second stage, the qualitative factors proposed in Article 7 of the ITS have been considered to challenge the result of the previous stage, especially the additional information that can be obtained from the default experience of private credit ratings assigned by CERVED and the default definition.

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[5] 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.

[6] According to ESMA requirements, ratings are defined as "public" when they are employed by banks in order to compute capital requirements in respect of the Standardised Approach; on the other hand ratings are defined as "private" when they are employed by CERVED customers to assess creditworthiness of their counterparties.

[7] Regulation (EC) No 1060/2009.

4.1 Initial mapping based on the quantitative factors

4.1.1 Calculation of the long-run default rates

17. In the case of CERVED, CEREP data has not been used since a new rating scale has been introduced in 2014. Therefore, CERVED has provided a database with a recalculation of their public ratings under the new rating scale.

18. The information on ratings and default data is shown in Figure 4 and Figure 5 in Appendix 3. The following aspects should be highlighted:

    - From A1.1 to A2.1 categories, the number of credit ratings cannot be considered sufficient for the calculation of the short and long run default rates specified in the Articles 3 – 5 of the ITS since the number of rated items is below the required minimum. Therefore the allocation of the CQS for these rating categories has been made in accordance with Article 6 of the ITS, as shown in Figure 7 and Figure 8 of Appendix 3. In these cases, 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.

    - Also for the remaining categories the number of ratings cannot be considered sufficient for the calculation of the short and long run default rates specified in Articles 3 – 5 of the ITS. Therefore also in this case the allocation of the CQS has been made in accordance with Article 6 of the ITS, by considering the number of defaulted and not defaulted items. However in this case the size of the pools is too large[8] to be evaluated by a small pool methodology. In this situation Article 6 is applied by considering the number of defaulted and not defaulted items through the computation of short run default rates and a proxy for the long run default rate[9] (see Figure 6 in Appendix 3). Thus the computed proxy of the long run default rate is considered as a first indicator to perform the allocation to each CQS, together with the prior expectation of the equivalent rating category of the international rating scale. However in this case the result needs to be confirmed by the qualitative factors given that only a proxy of the long run default rate has been achieved.

19. Withdrawn ratings have been weighted by 50% as indicated in Article 4(3) of the ITS.

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

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[8] If the total number of rated items over a 5 years period is larger than 10 times the number representing the inverse of the long run default rate benchmark associated with the equivalent rating category in the international rating scale, but at the same time this pool of ratings does not satisfy Article 3 ITS, then this pool of ratings is considered to be too large for the application of a small pool methodology.

[9] It has to be noted that in this situation the proxy LRDR is formally not a LRDR, the latter needs indeed to be computed over at least 10 short run default rates. We are here abusing of the LRDR naming.

4.1.2   Mapping proposal based on the long run default rate

21. As illustrated in the second column of Figure 12 in Appendix 4, the assignment of the rating categories to credit quality steps has been initially made in accordance with Article 6 of the 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 6, Figure 7 and Figure 8 of Appendix 4.

22. As the rating scale of the Corporate long-term rating scale does not follow the conventional letter and symbols, the prior expectation of the international rating scale was based on the meaning and relative position of rating categories. This qualitative factor will be discussed in more detail in Section 4.2.

- **A1.1/A1.2/A1.3/A2.1**: 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 steps associated with the A1.1/A1.2, A1.3 and A2.1 rating categories in the international rating scale (CQS 1, CQS 1 and CQS 2 respectively) can be assigned.

- **A2.2 to C2.1**: The proxy long run default rates are considered as a first indicator to perform the allocation to each CQS, together with the prior expectation of the equivalent rating category of the international rating scale. In accordance with these factors A2.2, A3.1, B1.1, B1.2, B2.1, B2.2, C1.1, C1.2 and C2.1 can be assigned respectively with CQS 2, CQS 2, CQS 3, CQS 4, CS 4, CQS 5, CQS 5, CQS 6 and CQS 6.

4.2   Final mapping after review of the qualitative factors

23. The qualitative factors specified in Article 7 of the 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[10], as it is the case for all rating categories of CERVED's Corporate long-term rating scale.

4.2.1   Public and private ratings

24. As described in the previous sections, a sufficient number of credit ratings is not available for CERVED's rating categories. However, CERVED also assigns **private ratings** which can represent a different measure of creditworthiness than can be used for mapping purposes in accordance with Article 11(2) of the ITS. Although they are available only since 2005, internal estimates for the previous period do not show a significant change in a full economic cycle were considered. Therefore, the data for years 2005-2010 is sufficient.

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[10] 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.

25. Figure 9 shows the number of rated items and defaulted items for the combined private and public ratings. These ratings include the defaults of the items that were withdrawn, so there is no need for withdrawal adjustment. The weighted 3-year default rate has been calculated for each rating category based on the combined private and public ratings. The result is shown in Figure 11 in Appendix 3.

- **A1.1 – A1.3:** The default rates of the combined private and public ratings sample suggest the mapping of A1.1 – A1.3 to CQS 1, which is consistent with the meaning and relative position of this rating category. Therefore no change is proposed to the initial mapping based on Article 6.

- **A2.1 – A2.2**: The default rates of the combined private and public ratings sample suggest the mapping of A2.1 and A2.2 to CQS 1. However, the meaning and relative position of these rating categories suggest CQS 2. Therefore, the initial mapping based on Article 6 is not changed.

- **B1.2/B2.2**: The default rates of the combined private and public ratings sample suggest a mapping of B1.2 and B2.2 respectively to CQS 3 and CQS 4, which is consistent with the meaning and relative position of this rating categories. Also, the numbers are not close to the upper bound of CQS 3 and CQS 4 respectively. Therefore, considering also the limited evidence from public ratings, this factor would suggest a change in the mapping proposed based on Article 6.

- **A3.1/B1.1/B2.1/C1.1/C1.2/C2.1**: The default rates of the combined private and public ratings sample confirm the mapping based on meaning and relative position. Also, the numbers are not close to the upper bound of the proposed CQS and therefore no change to the mapping is proposed based on the default definition.

4.2.2   Other qualitative factors

26. The **definition of default** applied by CERVED and used for the calculation of the default rates has been analysed:

- The types of default events considered are shown in Appendix 2. Regarding those specified in Article 4(4) of the ITS, the defaults registered by CERVED can be considered as consistent with point (a) and (b) of the benchmark definition. Point (d) is not relevant for CERVED's pool of rated items.

- According to CERVED data, legal defaults represent 39% of total defaults, which is below the reference level of 50%.

27. Although the bankruptcy related default events are below the reference level of 50%, the defaults registered by CERVED do not include events related to banking debt, which constitutes a main source of financing for the firms rated by this ECAI. Therefore, when

analyzing default rates, it has to be assessed if the numbers are close to the upper bounds of their respective credit quality steps.

28. Regarding **the meaning and relative position of the credit assessments**, it suggests the following mapping for the different rating categories:

- **A1.1 – A1.3** reflects either minimal or very low credit risk, consistent with the reference meaning of CQS 1.

- **A2.1** and **A2.2** reflects low credit risk, consistent with the reference meaning of CQS 2.

- **A3.1** reflects low credit risk and good capacity to meet financial commitments, consistent with the reference meaning of CQS 2 and 3.

- **B1.1** and **B1.2** reflect an adequate capacity to meet financial commitments and moderate credit risk, consistent with the reference meaning of CQS 3.

- **B2.1** and **B2.2** reflect credit risk not far but below average, consistent with CQS 4.

- **C1.1** reflects high credit risk, consistent with CQS 5.

- **C1.2** and **C2.1** reflect very high credit risk, consistent with CQS 6.

29. Regarding the **time horizon** reflected by the rating category, CERVED follows a point-in-time (PIT) methodology. This is supported by the low probabilities of keeping the same rating category after 3 years, as shown in Figure 12 of Appendix 3.

30. 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 6 of the ITS.

Appendix 1: Credit ratings and rating scales

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

SA exposure classes	Name of credit rating	Credit rating scale
Long-term ratings		
Corporates	Long-term issuer rating	Corporate long-term rating scale

Source: CERVED

Figure 3: Corporate long-term rating scale

Credit assessment	Meaning of the credit assessment
A1.1	Large company, with an excellent business and financial profile. Extremely strong capacity to meet financial commitments. Minimal credit risk.
A1.2	Large / medium-sized company, with excellent business and financial profile. Very strong capacity to meet financial commitements. Very low credit risk.
A1.3	Very good business and financial risk profile. Very good capacity to meet financial commitments. Very low credit risk.
A2.1	Very good fundamentals and high capacity to meet financial commitments. Low credit risk.
A2.2	Very good fundamentals and good capacity to meet financial commitments. Low credit risk.
A3.1	Good fundamentals and good capacity to meet financial commitments. Low credit risk.
B1.1	Adequate capacity to meet financial commitments. Potentially vulnerable to serious and unexpected changes in business, financial and economic conditions. Moderate credit risk.
B1.2	Adequate capacity to meet financial commitments. Vulnerable to serious and unexpected changes in business, financial and economic conditions. Moderate credit risk.
B2.1	Overall good fundamentals. Vulnerable to unexpected changes in business, financial and economic conditions. Credit risk is below average.
B2.2	Evidence of weaknesses in business and / or financial profile. Vulnerable to changes in business, financial and economic conditions. Credit risk is substantial but not far from the average.
C1.1	Serious weaknesses in business and / or financial profile. The company could not meet financial commitments. High credit risk.

Credit assessment	Meaning of the credit assessment
C1.2	Very serious weaknesses in business and / or financial profile. The company could not meet financial commitments. Very high credit risk.
C2.1	Very serious problems in economic and / or financial profile. The company could not meet financial commitments even in the short term. Maximum credit risk.

Source: CERVED

Appendix 2: Definition of default

According to CERVED definition, defaults include events all represented in data filed with public registers. In particular the definition of default that CERVED is going to adopt includes:

- Legal default: bankruptcy other legal proceedings, and debt restructuring stated in the Italian bankruptcy law (recorded by Chambers of Commerce);

- Non-legal default: these events are not considered as legal default by the Italian civil law, however they result in domestic public registers:

    o relevant material protests on trade bills or cheques, filed in a public electronic register of protests

    o other prejudicial actions (judicial mortgages, distraint of property), resulting in public register of properties and tax offices registers

Source: CERVED

Appendix 3: Default rates of each rating category

Figure 4: Number of rated items

Date	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
01/01/2009	1	56	63	405	2 009	4 481	5 919	7 914	10 471	5 416	6 791	2 521	901
01/01/2010	Na	38	58	381	2 235	5 678	7 698	10 789	12 447	6 069	6 916	2 825	1 155

Source: Joint Committee calculations based on data provided by CERVED

Figure 5: Number of defualted items

Date	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
01/01/2009	0	0	0	0	5	19	51	238	708	683	1 563	1 051	533
01/01/2010	Na	0	0	0	5	23	83	318	865	818	1 496	1 131	686

Source: Joint Committee calculations based on data provided by CERVED

Figure 6: Short-run and proxy of the long-run default rates

Date	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
01/01/2009	0.2448	0.4240	0.8616	3.0073	6.7615	12.6108	23.0158	41.6898	59.1565
01/01/2010	0.2237	0.4051	1.0782	2.9474	6.9495	13.4783	21.6310	40.0354	59.3939
Weighted Average	**0.2356**	**0.4134**	**0.9841**	**2.9728**	**6.8636**	**13.0692**	**22.3171**	**40.8156**	**59.2899**

Source: Joint Committee calculations based on data provided by CERVED

Figure 7: Mapping proposal for rating categories with a non-sufficient number of credit ratings

2009-2010	A1.1 – A1.2	A1.3	A2.1
CQS of equivalent international rating category	CQS 1	CQS 1	CQS 2
N. observed defaulted items	0	0	0
Minimum N. rated items	0	0	0
Observed N. rated items	95	121	786
Mapping proposal	**CQS 1**	**CQS 1**	**CQS 2**

Source: Joint Committee calculations based on data provided by CERVED

Figure 8: Public and private ratings: Number of rated items

Date	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
01/01/2005		65	43	483	3074	6130	9686	16357	34866	18622	12947	5379	756
01/01/2006		59	21	528	4242	6882	10209	18739	29769	15445	14746	4485	1385
01/01/2007		69	46	601	5830	9849	13945	23941	36109	17370	21464	6664	2347
01/01/2008	2	66	63	517	4156	8696	14045	21553	33344	18289	24146	8642	3104
01/01/2009	2	71	77	532	3710	9878	17336	27874	40958	20740	27263	9886	3762
01/01/2010		48	76	515	3770	10695	16621	27596	36359	19007	23373	9065	3584

Source: Joint Committee calculations based on data provided by CERVED

Figure 9: Public and private ratings: Number of defaulted items

Date	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
01/01/2005		0	0	0	0	9	64	285	1313	1477	1807	1318	303
01/01/2006		0	0	0	5	22	66	312	1179	1063	1915	1136	518
01/01/2007		0	0	0	10	27	129	485	1640	1549	3332	1798	947
01/01/2008	0	0	0	0	9	30	130	433	1526	1636	3982	2549	1331
01/01/2009	0	0	0	0	8	38	145	632	2065	1958	4590	3005	1668
01/01/2010		0	0	1	5	45	174	640	1887	1870	3692	2599	1561

Figure 10: Public and private ratings: Default rates

Date	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
01/01/2005		0.00	0.00	0.00	0.00	0.15	0.66	1.74	3.77	7.93	13.96	24.50	40.08
01/01/2006		0.00	0.00	0.00	0.12	0.32	0.65	1.66	3.96	6.88	12.99	25.33	37.40
01/01/2007		0.00	0.00	0.00	0.17	0.27	0.93	2.03	4.54	8.92	15.52	26.98	40.35
01/01/2008	0.00	0.00	0.00	0.00	0.22	0.34	0.93	2.01	4.58	8.95	16.49	29.50	42.88
01/01/2009	0.00	0.00	0.00	0.00	0.22	0.38	0.84	2.27	5.04	9.44	16.84	30.40	44.34
01/01/2010		0.00	0.00	0.19	0.13	0.42	1.05	2.32	5.19	9.84	15.80	28.67	43.55
Weighted default rate	**0.00**	**0.00**	**0.00**	**0.03**	**0.15**	**0.33**	**0.87**	**2.05**	**4.55**	**8.73**	**15.59**	**28.12**	**42.36**

Source: Joint Committee calculations based on data provided by CERVED; the data includes both public and private ratings

Figure 11: Transition matrix

3-year transition matrices, 5-year average (2005 - 2011)

Rating end period	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
Rating start period													
A1.1				50.0		50.0							
A1.2	5.6	26.7	14.9	17.4	10.8	11.8	6.7	3.1	1.5	1.0		0.5	
A1.3	0.7	14.7	16.2	20.6	14.7	17.6	8.8	5.1			1.5		
A2.1	0.6	3.8	5.9	22.9	19.8	20.7	14.0	6.7	4.0	0.6	0.7	0.3	0.1
A2.2	0.0	0.2	0.4	4.3	26.8	28.0	20.3	10.7	7.4	1.1	0.7	0.0	0.1
A3.1	0.0	0.1	0.4	1.7	11.0	26.9	27.4	16.6	11.4	2.5	1.6	0.3	0.0
B1.1	0.0	0.0	0.1	0.6	4.6	15.2	29.2	23.0	17.9	5.0	3.4	0.9	0.2
B1.2		0.0	0.0	0.2	1.7	7.4	21.4	25.1	25.7	9.3	7.0	1.6	0.4
B2.1		0.0	0.0	0.1	0.7	3.0	11.1	18.6	30.8	16.0	14.7	4.1	1.0
B2.2		0.0	0.0	0.0	0.2	1.1	5.9	11.7	26.3	20.8	24.1	7.7	2.1
C1.1				0.0	0.1	0.7	3.5	7.5	20.1	19.4	30.9	13.5	4.3
C1.2			0.0		0.0	0.3	2.0	3.8	12.7	15.1	34.4	22.7	8.9
C2.1					0.5	0.2	1.9	2.7	5.6	12.1	28.2	25.2	23.5

Note: Withdrawals represent between 44 and 95% of rated items for each rating category.
Source: Joint Committee analysis based on CERVED data.

1-year transition matrices, 7-year average (2005 - 2012)

Rating end period	A1.1	A1.2	A1.3	A2.1	A2.2	A3.1	B1.1	B1.2	B2.1	B2.2	C1.1	C1.2	C2.1
Rating start period													
A1.1			50.0			50.0							
A1.2	0.3	47.1	9.7	19.3	12.1	4.8	4.5	1.8	0.3				
A1.3		15.6	22.9	24.3	11.1	15.6	5.6	3.8	1.0				
A2.1	0.0	3.1	4.9	46.6	17.5	16.3	6.5	3.1	1.6	0.2	0.1		
A2.2		0.2	0.4	3.9	45.1	29.1	12.0	5.6	3.3	0.3	0.1	0.0	0.0
A3.1		0.1	0.2	1.2	14.7	39.4	24.6	12.0	6.5	0.8	0.3	0.0	0.0
B1.1	0.0	0.0	0.1	0.3	4.0	18.0	35.9	25.0	13.2	2.3	1.1	0.1	0.0
B1.2		0.0	0.0	0.1	1.0	5.9	21.5	35.5	26.1	6.3	3.2	0.4	0.1
B2.1		0.0	0.0	0.0	0.3	1.7	8.0	21.1	40.6	15.8	10.5	1.6	0.4
B2.2			0.0	0.0	0.1	0.4	2.3	9.9	31.2	27.7	23.0	4.6	0.8
C1.1			0.0	0.0	0.0	0.1	0.9	4.0	17.3	22.1	40.7	12.2	2.8
C1.2						0.0	0.3	1.1	6.2	11.1	35.4	36.2	9.6
C2.1					0.0	0.0	0.0	0.4	2.0	3.1	15.7	34.1	44.5

Note: Withdrawals represent between 18 and 77% of rated items for each rating category.
Source: Joint Committee analysis based on CERVED data.

Appendix 4: Mappings of each rating scale

Figure 12: Mapping of CERVED's Corporate 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
A1.1	1	n.a.	1	The quantitative factors are representative of the final CQS.
A1.2	1	n.a.	1	The quantitative factors are representative of the final CQS.
A1.3	1	n.a.	1	The quantitative factors are representative of the final CQS.
A2.1	2	n.a.	2	The quantitative factors are representative of the final CQS.
A2.2	2	n.a.	2	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
A3.1	2	n.a.	2	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
B1.1	3	n.a.	3	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
B1.2	4	n.a.	3	The meaning and relative position of the rating category and available default experience are representative of the final CQS.

B2.1	4	n.a.	4	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
B2.2	5	n.a.	4	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
C1.1	5	n.a.	5	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
C1.2	6	n.a.	6	The meaning and relative position of the rating category and available default experience are representative of the final CQS.
C2.1	6	n.a.	6	The meaning and relative position of the rating category and available default experience are representative of the final CQS.