

Mapping of ARC Ratings S.A. 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 ARC Ratings S.A. (ARC).
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 entity² nor should be understood as a comparison of the rating methodologies of ARC with those of other ECAIs. This mapping should however be interpreted as the correspondence of the rating categories of ARC 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

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 Regulation. Figure 1 below shows the result for the ARC main ratings scale, the Medium and long-term issuers rating scale.

Figure 1: Mapping of ARC's Medium and long-term issuers rating scale

Credit assessment	Credit quality step
AAA	1
AA	1
A	2
BBB	3
BB	4
B	5
CCC	6
CC	6
C	6
D	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 ARC Ratings S.A. (ARC).
7. ARC is a credit rating agency that has been registered with ESMA in 26 August 2011 and therefore meets the conditions to be an eligible credit assessment institution (ECAI)³. At that time of registration, the rating agency was known as Companhia Portuguesa de Rating, S.A. (CPR), and was legally converted into ARC on October 7, 2013. ARC focusses on financial and non-financial corporations.
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. On the one hand, the quantitative and qualitative information available in ESMA Central Repository (CERP⁴) has been used to obtain an overview of the main characteristics of this ECAI. On the other hand, specific information has also 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.
9. The following sections describe the rationale underlying the mapping exercise carried out by the Joint Committee (JC) to determine the mappings. Section 3 describes the relevant ratings scales of ARC for the purpose of the mapping. Section 4 contains the methodology applied to derive the mapping of ARC’s main rating scale, whereas Sections 5 and 6 refer to the mapping of its remaining relevant ratings scales. The mapping table is 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.

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

⁴ CERP 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. ARC credit ratings and rating scales

10. ARC 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)⁵:

- **Medium and Long-term issuer rating**, which is assigned by assessing the creditworthiness of the corporation over a five-year horizon. If principal and interest payments would appear to be especially onerous during one year of this period, the related default risk of the corporation in that year will define the assigned overall rating. In general it expresses ARC's opinion concerning the ability and willingness of an entity to honour, on a full and timely basis, the financial commitments (capital and interest) subject to that rating.
- **Short-term issuer rating**, which is typically strongly linked to the medium and long-term issuer rating. This linkage may be broken under certain circumstances, at the discretion of a Rating Panel.
- **Medium and Long-term issue rating**, which incorporates for example the rank and the collateralisation of a particular issue and, consequently, may either receive a higher or lower rating than that of the entity's own issuer credit rating.
- **Short-term issue rating**, which is typically strongly linked to the medium and long-term issue rating. This linkage may be broken under certain circumstances, at the discretion of a Rating Panel.

11. ARC 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:

- **Medium and long-term issuers rating scale**. The specification of this rating scale is described in Figure 3 of Appendix 1.
- **Medium and long-term issues rating scale**. The specification of this rating scale is described in Figure 4 of Appendix 1.
- **Short-term issuers rating scale**. The specification of this rating scale is described in Figure 5 of Appendix 1.
- **Short-term issues rating scale**. The specification of this rating scale is described in Figure 6 of Appendix 1.

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.

12. The mapping of the Medium and long-term issuers 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.
13. The mapping of the Short-term issuers rating scale is explained in Section 5 and it has been indirectly derived from the mapping of the Medium and long-term issuers rating scale and the internal relationship established by ARC between these two scales, as specified in Article 13 of the ITS. This internal relationship is shown in Figure 7 of Appendix 1.
14. The indirect mapping approach described in the previous paragraph has also been applied in the case of Medium and long-term and short-term issues rating scales, as explained in Section 6. In these cases, however, the relationship with the Medium and long-term issues ratings scale (or Short-term issues 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 ARC's Medium and long-term issuers rating scale

15. The mapping of the Medium and 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.
16. 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. 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.
17. 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 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 short-run and long-run default rates

18. The number of credit ratings for all rating categories of the ARC Medium and long-term issuers rating scale, shown Figure 8 and Figure 9 in Appendix 3, cannot be considered to be sufficient for the calculation of the short and long run default rates specified in the Articles 3 – 5 of the ITS. Although ARC has historical data covering over 25 years (mostly non-financial medium-size Portuguese corporates), on average it only rated six customers per year (based on CPR data). Moreover, most of these ratings were not maintained for the longer time periods and were withdrawn relatively quickly. As a result the rating numbers in each rating category are below the required minimum. Therefore the calculation of the long run default rate has been made in accordance with Article 6 of the ITS, as shown in Figure 10 of Appendix 3.

19. 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.

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

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

22. The default definition applied by ARC, 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

23. As illustrated in the second column of Figure 12 and Figure 13 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 result is shown in Figure 10 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 steps associated with the AAA/AA, A, BBB, BB, B rating categories in the international rating scale (CQS 1, CQS 2, CQS 3, CQS 4 and CQS 5 respectively) can be assigned.
- **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

24. 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 behavior⁶, as is the case for all rating categories of the ARC's Medium and long-term issuers rating scale.

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

- The types of default events considered are shown in Appendix 2 and are consistent with letter (a), (b), (c) and (d) of the benchmark definition specified in Article 4(4) of the ITS.

⁶ 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.

- The 2 defaults that have been recorded refer to insolvency of the issuer, with a legal requirement for protection against creditors and the application of a restructuring plan to the debt payments.

Therefore, no specific adjustment has been proposed based on this factor.

26.Regarding **the meaning and relative position of the credit assessments**, the meaning is consistent with that stated in Annex II ITS.

27.Regarding the **time horizon** reflected by the rating category, ARC claims a five-year time horizon for their ratings, what can be considered as comparable with the time horizon that characterizes the benchmarks established in Annex I ITS. Although this cannot be further supported by transition probabilities due to the low number of ratings, no change is proposed to the mapping.

28.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.

5. Mapping of ARC's Short-Term issuers rating scale

29.ARC also produces short-term ratings and assigns them to the Short-term issuers rating scale (see Figure 5 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 ITS, the internal relationship established by ARC between these two rating scales (described in Figure 7 of Appendix 1) has been used to derive the mapping of the Short-term issuers rating scale. This should ensure the consistency of the mappings proposed for ARC.

30.More specifically, as each Short-term issuers rating can be associated with a range of Medium and long-term issuers ratings, the CQS assigned to the Short-term issuers rating category has been determined based on the most frequent CQS assigned to the related Medium and long-term issuers 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.

31.The result is shown in Figure 14 of Appendix 4.

- **A-1+**. This rating category indicates that an obligor shows very strong capacity to meet its financial commitment. It is internally mapped to long-term categories AAA to AA-, which are mapped to CQS 1. Therefore, CQS 1 is the proposed mapping.

- **A-1.** This rating category indicates that an obligor shows strong capacity to meet its financial commitment. It is internally mapped to long-term categories AA- to A-, which are mapped to CQS 1 and CQS 2. Therefore, CQS 2 is the proposed mapping.
- **A-2.** This rating category indicates that an obligor shows satisfactory capacity to meet its financial commitment. Although pertaining to the strong debt-paying capacity level, the obligor may be somewhat more susceptible to certain adverse effects from changes in the expected economic conditions. It is internally mapped to the long-term category A- to BBB, which are mapped to CQS 2 and CQS 3. Therefore, CQS 3 is the proposed mapping.
- **A-3.** This rating category indicates that an obligor shows an adequate endogenous capacity to meet its financial commitments, although adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet these commitments. It is internally mapped to long-term categories BBB to BBB-, which are mapped to CQS 3. Therefore, CQS 3 is the proposed mapping.
- **B.** This rating category indicates that an obligor faces major on-going uncertainties the timely and full payment of its financial commitments and is vulnerable to a changing environment. This rating category is internally mapped to long-term categories BB+ to B-, which are mapped to CQS 4 and CQS 5. 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 B rating category is CQS 4.
- **C.** This rating category indicates that an obligor is more likely than not to under-perform and thus remains very dependent upon favourable business, financial and economic conditions to fully meet its financial commitments. It is internally mapped to long-term categories CCC+ to CC, which are mapped to 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 C rating category is CQS 4.
- **D.** A short-term obligation rated 'D' is in payment default, consistent with the meaning and relative position representative of CQS 6. In addition, it is internally mapped to long-term category D, which is mapped to CQS 6. Since the risk weights assigned to CQS 4 to 6 are equal to 150% according to Article 131 CRR, the mapping proposed for the D/SD rating category is CQS 4.

6. Mapping of other ARC's credit rating scales

32.As mentioned in Section 3, ARC produces two additional credit ratings that are assigned to different credit rating scales – Medium and long term and Short-term issues rating scales.

33.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 Medium and long-term or Short-term issuers rating scales. More specifically, as each rating can be

associated with one or a range of Medium and 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.

34. The results are shown in Figure 16, Figure 17, Figure 18 and Figure 19 of Appendix 4:

- **Medium and long term issues rating scale** (see Figure 4 in Appendix 1). The rating categories can be considered comparable to those of the Medium and long-term issuers 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 Medium and long-term issuers rating scale. The result of the mapping of this scale is shown in Figure 16 and Figure 17 of Appendix 4.
- **Short-term issues rating scale** (see Figure 6 in Appendix 1). The rating categories can be considered comparable to those of the Short-term issuers rating 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 issuers rating scale. The result of the mapping of this scale is shown in Figure 18 and Figure 19 of Appendix 4.

Appendix 1: Credit ratings and rating scales

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

SA exposure classes	Name of credit rating	Credit rating scale
Long-term ratings		
Central governments / Central banks	Medium and long-term issuer rating	Medium and long-term issuers
	Medium and long-term issue rating	Medium and long-term issues
Institutions	Medium and long-term issuer rating	Medium and long-term issuers
	Medium and long-term issue rating	Medium and long-term issues
Corporates	Medium and long-term issuer rating	Medium and long-term issuers
	Medium and long-term issue rating	Medium and long-term issues
Short-term ratings		
Institutions	Short-term issuer rating	Short-term issuers
	Short-term issue rating	Short-term issues
Corporates	Short-term issuer rating	Short-term issuers
	Short-term issue rating	Short-term issues

Source: ARC

Figure 3: Medium and long-term issuers rating scale

Credit assessment	Meaning of the credit assessment
AAA	An obligor rated “AAA” has the highest possible Issuer’s Credit Rating assigned by ARC Ratings. It has not only been able to show an extremely strong capacity to meet its financial commitments but is also benefited by a full set of circumstances that actually turn the possibility of credit default into a strictly remote event.
AA	An obligor rated “AA” also has very strong capacity to meet its financial commitments. It differs from the highest rated obligors only in a very small degree.
A	An obligor rated “A” has a quite strong capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions when compared to obligors in highest-rated categories.
BBB	An obligor rated “BBB” exhibits an adequate capacity to meet its financial commitments. However, adverse economic conditions or suddenly changing circumstances are more likely to lead to a weakened capacity to the obligor to meet its financial commitments.
BB	An obligor rated “BB” exhibits a fair capacity to meet its financial obligations. However, it faces major on-going uncertainties or exposure to adverse business, financial or economic conditions, which could lead to an unforeseen deterioration of the obligor’s capacity to meet its financial commitments.
B	An obligor rated “B” is more vulnerable than the obligors rated “BB”, in the sense that its capacity to meet its financial commitments may, under adverse business, financial or economic conditions very likely impair such capacity or even the willingness to service its debts.
CCC	An obligor rated “CCC” is currently very vulnerable, and is thus strictly dependent upon favourable business, financial and economic conditions to meet its financial commitments.
CC	An obligor rated “CC” is highly vulnerable to not being able to meet future obligations, although not showing payment delays at present.

Credit assessment

Meaning of the credit assessment

C	Default would appear to be imminent. A debt restructuring procedure may be under way either by creditors' own initiative or through a judicial ordinance.
D	A "D" rating is assigned when the obligor is currently in default.

Source: ARC



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Figure 4: Medium and long-term issues rating scale

Credit assessment	Meaning of the credit assessment
AAA	An obligation rated “AAA” has the highest possible rating assigned by ARC Ratings. The obligor’s future cash flow capacity to meet its financial commitments on the obligation is gauged as extremely strong. A timely and full payment of principal and interest thereof is not but remotely subject to adverse influence of an outside force or future event.
AA	An obligation rated “AA” differs from the highest rated obligations only in a very small degree. The obligor’s capacity to meet its financial commitments on the obligation remains very strong.
A	An obligation rated “A” is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions when compared to obligations in highest categories. However, the obligor’s capacity to meet its financial commitments on the obligation remains quite strong.
BBB	An obligation rated “BBB” always exhibits an adequate set of protection parameters. However, adverse economic conditions or suddenly changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments on the obligation.
BB	An obligation rated “BB” exhibits a fair set of financial protection parameters. However, the obligor may face a future deterioration of its payment capacity due to adverse business, financial or economic conditions, which could lead to an unforeseen deterioration of the chances of a timely and full debt servicing.
B	An obligation rated “B” is more vulnerable than obligations rated “BB”, in the sense that its obligor, while currently showing a limited capacity to meet its financial commitments on the obligation, may under adversely changing business, financial or economic conditions very likely impair such capacity or even the willingness to service its debt.
CCC	An obligation rated “CCC” is currently very vulnerable, and is thus strictly dependent upon favourable business, financial, and economic conditions facing the obligor to meet its financial commitment. Upon the event of adverse business, financial or economic conditions, the obligor will most likely not have the capacity to meet its financial commitments on the obligation.

Credit assessment

Meaning of the credit assessment

CC	An obligation rated “CC” is highly vulnerable to payment delays and/or partial default although not showing payment delays at present, due to its own endogenous limitations, notwithstanding the outside conditions facing the obligor.
C	An obligation rated “C” faces an imminent default. The “C” rating may be used to cover a situation where a bankruptcy petition has been filed or similar action taken, but payments on this obligation have not yet been discontinued.
D	An obligation rated “D” is currently under payments default.

Source: ARC



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Figure 5: Short-term issuers rating scale

Credit assessment	Meaning of the credit assessment
A-1+	An obligor rated “A-1+” shows a very strong capacity to meet its financial commitments. It is rated in the highest category by ARC Ratings
A-1	An obligor rated “A-1” shows a strong capacity to meet its financial commitments.
A-2	An obligor rated “A-2”, although pertaining to the strong debt-paying capacity level, may be somewhat more susceptible to certain adverse effects from changes in the expected economic conditions. However, the obligor’s capacity to meet its financial commitments is considered to remain very satisfactory.
A-3	An obligor rated “A-3” exhibits adequate endogenous capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments. Outside conditions thus become a relevant issue here.
B	An obligor rated “B” is regarded as having significant vulnerabilities to a changing environment. Notwithstanding the obligor’s current capacity to meet its financial commitments, the timely and full payment thereof faces major on-going uncertainties.
C	An obligor rated “C” is currently more likely than not to under-perform and thus remains very dependent upon favourable business, financial and economic conditions to fully meet its financial commitments.
D	An obligor rated “D” has failed or is about fail to pay one or more of its financial commitments (rated or unrated) when it/they came due.

Source: ARC



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Figure 6: Short-term issues rating scale

Credit assessment	Meaning of the credit assessment
A-1+	A short-term obligation rated “A-1+” is rated in the highest category by ARC Ratings. The obligor’s capacity and willingness to meet its financial commitments is very strong.
A-1	A short-term obligation rated “A-1” shows that the obligor’s capacity and willingness to meet its financial commitments is strong.
A-2	A short-term obligation rated “A-2”, although pertaining to the strong debt-paying capacity level, may be somewhat susceptible to certain adverse effects from changes in the expected economic conditions. However, the obligor’s capacity to meet its financial commitments on such obligation is considered to remain very satisfactory.
A-3	A short-term obligation rated “A-3” exhibits adequate endogenous protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments on the obligation. Outside conditions thus become a relevant issue here.
B	A short-term obligation rated “B” is regarded as having significant vulnerabilities to a changing environment. Notwithstanding the obligor’s current capacity to meet its financial commitments, the timely and full payment thereof faces major on-going uncertainties.
C	A short-term obligation rated “C” is currently more likely than not to under-perform and thus remains very dependent upon favourable business, financial, and economic conditions for the obligor to fully meet its financial commitments on the obligation.
D	A short-term obligation rated “D” is or is likely to enter into default at maturity.

Source: ARC

Figure 7: Internal relationship between ARC's Medium and long-term and Short-term issuer rating scales



Source: ARC

Appendix 2: Definition of default

ARC's definition of default includes a more objective component ("lack of full and timely payment of capital or interest") and a more subjective one ("occurrence of any event that explicitly indicates that the future full and timely payment of those commitments will not occur (e.g. in case of insolvency)").

The following types of events are included in the ARC default definition:

- Bankruptcy and other similar legal proceedings
- Failure to observe the payment obligation
- Distressed exchange
- Regulatory supervision

Source: ARC

Appendix 3: Default rates of each rating category

Figure 8: Number of rated items

Date	AAA	AA	A	BBB	BB	B	CCC/CC/C
01/01/1989	1	0.5	0	0	0	0	1
01/07/1989	2	0.5	0	0	0	0	2
01/01/1990	3	1	0	0	0	0	3
01/07/1990	3.5	1	0	0	0	0	3.5
01/01/1991	3	1.5	0	0	0	0	3
01/07/1991	2	4.5	0.5	0.5	0	0	2
01/01/1992	2	4	0.5	0.5	0	0	2
01/07/1992	2.5	3	0	0	0	0	2.5
01/01/1993	2	3.5	1	1	0	0	2
01/07/1993	1.5	2	1	1	0	0	1.5
01/01/1994	1	2.5	0.5	0	0	0	1
01/07/1994	1.5	2.5	0.5	0	0	0	1.5
01/01/1995	1	3.5	0.5	0	0	0	1
01/07/1995	0.5	4	0.5	0	0	0	0.5
01/01/1996	0	2	0	0	0	0	0
01/07/1996	0	2.5	0	0	0	0	0
01/01/1997	0	4	0	0	0	0	0
01/07/1997	1.5	2.5	0	0	0	0	1.5
01/01/1998	2.5	1	0	0	0	0	2.5
01/07/1998	2.5	1.5	0	0	0	0	2.5
01/01/1999	2.5	1	0	0	0	0	2.5
01/07/1999	2	1	0	0	0	0	2

Date	AAA	AA	A	BBB	BB	B	CCC/CC/C
01/01/2000	1.5	1.5	0	0	0	0	1.5
01/07/2000	1.5	1.5	0	0	0	0	1.5
01/01/2001	1	1.5	0	0	0	0	1
01/07/2001	1	0.5	0.5	0	0	0	1
01/01/2002	0.5	0.5	0.5	0	0	0	0.5
01/07/2002	2	0.5	0.5	0	0	0	2
01/01/2003	2	0.5	0.5	0	0	0	2
01/07/2003	1.5	0.5	0.5	0	0	0	1.5
01/01/2004	2	0	0.5	0	0	0	2
01/07/2004	1.5	0.5	0.5	0	0	0	1.5
01/01/2005	1.5	0.5	0	0	0	0	1.5
01/07/2005	1	0.5	0.5	0	0	0	1
01/01/2006	1	1	0.5	0	0	0	1
01/07/2006	1	1	0.5	0	0	0	1
01/01/2007	1	0.5	0.5	0	0	0	1
01/07/2007	0	1	0	0	0	0	0
01/01/2008	0.5	1	0.5	0	0	0	0.5
01/07/2008	2	1	0.5	0	0	0	2
01/01/2009	1.5	1	0.5	0	0	0	1.5
01/07/2009	0.5	1	0	0	0	0	0.5
01/01/2010	1.5	1.5	1	0	0	0	1.5
01/07/2010	1.5	1	1.5	0	0	0	1.5

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
01/01/1989	0	0	0	0	0	0	0
01/07/1989	0	0	0	0	0	0	0
01/01/1990	0	0	0	0	0	0	0
01/07/1990	0	0	0	0	0	0	0
01/01/1991	0	0	0	0	0	0	0
01/07/1991	0	0	0	0	0	0	0
01/01/1992	0	0	0	0	0	0	0
01/07/1992	0	0	0	0	0	0	0
01/01/1993	0	0	0	0	0	0	0
01/07/1993	0	0	0	0	0	0	0
01/01/1994	0	0	0	0	0	0	0
01/07/1994	0	0	0	0	0	0	0
01/01/1995	0	0	0	0	0	0	0
01/07/1995	0	0	0	0	0	0	0
01/01/1996	0	0	0	0	0	0	0
01/07/1996	0	0	0	0	0	0	0
01/01/1997	0	0	0	0	0	0	0
01/07/1997	0	0	0	0	0	0	0
01/01/1998	0	0	0	0	0	0	0
01/07/1998	0	0	0	0	0	0	0
01/01/1999	0	0	0	0	0	0	0
01/07/1999	0	0	0	0	0	0	0
01/01/2000	0	0	0	0	0	0	0
01/07/2000	0	0	0	0	0	0	0

Date	AAA	AA	A	BBB	BB	B	CCC/CC/C
01/01/2001	0	0	0	0	0	0	0
01/07/2001	0	0	0	0	0	0	0
01/01/2002	0	0	0	0	0	0	0
01/07/2002	0	0	0	0	0	0	0
01/01/2003	0	0	0	0	0	0	0
01/07/2003	0	0	0	0	0	0	0
01/01/2004	0	0	0	0	0	0	0
01/07/2004	0	0	0	0	0	0	0
01/01/2005	0	0	0	0	0	0	0
01/07/2005	0	0	0	0	0	0	0
01/01/2006	0	0	0	0	0	0	0
01/07/2006	0	0	0	0	0	0	0
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	1	0	0	0	0
01/07/2010	0	0	1	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

1989 - 2010	AAA/AA	A	BBB	BB	B	CCC/CC/C
CQS of equivalent international rating category	CQS 1	CQS 2	CQS 3	CQS 4	CQS 5	CQS 6
N. observed defaulted items	0	0	2	0	0	0
Minimum N. rated items	0	0	0	0	0	n.a.
Observed N. rated items	65	68	14.5	3	0	0
Mapping proposal	CQS 1	CQS 2	CQS 3	CQS 4	CQS 5	CQS 6

Source: Joint Committee calculations based on CEREP data

Appendix 4: Mappings of each rating scale

Figure 11: Mapping of ARC's Medium and long-term issuers 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	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	The quantitative factors are representative of the final CQS.
BB	4	n.a.	4	The quantitative factors are representative of the final CQS.
B	5	n.a.	5	The quantitative factors are representative of the final CQS.
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	6	n.a.	6	The meaning and relative position of the rating category is representative of the final CQS.

Figure 12: Mapping of ARC's Short-term issuers rating scale

Credit assessment	Corresponding Medium and long-term issuers rating scale (established by ARC)	Range of CQS of corresponding Medium and long-term issuers rating scale	Final review based on qualitative factors (CQS)	Main reason for the mapping
A-1+	AAA/AA-	1	1	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
A-1	AA-/A-	1 - 2	2	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
A-2	A-/BBB	2 – 3	3	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
A-3	BBB/BBB-	3	3	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
B	BB+/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.
C	C	6	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.
D	D	6	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.

Figure 13: Mapping of ARC's Medium and long-term issues rating scale

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

Figure 14: Mapping of ARC's Short-term issues rating scale

Credit assessment	Corresponding Short-term issuers rating scale assessment (assessed by JC)	Range of CQS of corresponding Short-term issuers rating scale	Final review based on qualitative factors (CQS)	Main reason for the mapping
A-1+	A-1+	1	1	
A-1	A-1	2	2	
A-2	A-2	3	3	
A-3	A-3	3	3	The final CQS has been determined based on the most frequent step associated with the corresponding Short-term issuers rating category.
B	B	4	4	
C	C	4	4	
D	D	4	4	