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# Mapping of DBRS credit assessments under the Standardised Approach

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## 1. Executive summary

1. This report describes the mapping exercise carried out by the Joint Committee to determine the ‘mapping’<sup>1</sup> of the credit assessments of DBRS Ratings Limited (DBRS).
2. The methodology applied to produce the mapping is the one specified in the Implementing Technical Standards on the mapping of ECAIs’ credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR). These ITS employ a combination of the provisions laid down in Article 136(2) of Regulation (EU) No 575/2013.
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<sup>2</sup> nor should be understood as a comparison of the rating methodologies of DBRS with those of other ECAIs. This mapping should however be interpreted as the correspondence of the rating categories of DBRS 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 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 DBRS, the Long-term obligations rating scale.

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<sup>1</sup> 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).

<sup>2</sup> 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](http://www.esma.europa.eu/system/files/esma__2015-1473_report_on_the_possibility_of_establishing_one_or_more_mapping....pdf).

Figure 1: Mapping of DBRS's Long-term obligations 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

5. This report describes the mapping exercise carried out by the Joint Committee (JC) to determine the ‘mapping’ of the credit assessments of DBRS Ratings Limited (DBRS).
6. DBRS is a credit rating agency that has been registered with ESMA in 31 October 2011 and therefore meets the conditions to be an eligible credit assessment institution (ECAI)<sup>3</sup>.
7. The methodology applied to produce the mapping is the one specified in the Implementing Technical Standards on the mapping of ECAIs’ credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR). These ITS employ a combination of the provisions laid down in Article 136(2) of Regulation (EU) No 575/2013. The information base used to produce the mapping is the same that has been employed when performing the first mapping proposal which was disclosed during the consultation period to these ITS. Two sources of information have been used. On the one hand, the quantitative and qualitative information available in ESMA Central Repository (CEREP<sup>4</sup>) has been used to obtain an overview of the main characteristics of this ECAI and to calculate the default rates of its credit assessments. 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, ratings assigned by other ECAIs to items rated by DBRS, and detailed information regarding the default definition.
8. The following sections describe the rationale underlying the mapping exercise carried out by the Joint Committee (JC) to determine the applicable mapping. Section 3 describes the relevant ratings scales of DBRS for the purpose of the mapping. Section 4 contains the methodology applied to derive the mapping of DBRS’ main ratings scale whereas Sections 5 and 6 refer to the mapping of its remaining relevant ratings scales. The mapping tables are shown in Appendix 4 of this document and have been specified in Annex III of the Implementing Technical Standards on the mapping of ECAIs’ credit assessments under Article 136(1) and (3) of Regulation (EU) No 575/2013.

## 3. DBRS credit ratings and rating scales

9. DBRS 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)<sup>5</sup>:

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<sup>3</sup> It is important to note that the mapping does not contain any assessment of the registration process of DBRS carried out by ESMA.

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

<sup>5</sup> 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.

- **Long-term issue/security rating** - ratings on individual securities or classes of securities for a specific issuer include consideration for security or ranking. Ratings that apply to actual securities (secured or unsecured) may be higher, lower or equal to the issuer rating for a given entity.
- **Long-term issuer rating** – issuer rating addresses the overall credit strength of the issuer. Unlike ratings on individual securities or classes of securities, issuer ratings are based on the entity itself and do not include consideration for security or ranking.
- **Claims paying ability rating** - gives an indication of the risk that a borrower will not fulfil its full obligations in a timely manner. Claims paying ratings measure the capacity of an insurance company to pay its policyholder claims as they fall due. The rating for claims paying ability is the highest rating for an insurance company, since claims paying ranks ahead of all debt.
- **Short-term issue/security rating** - ratings on individual securities or classes of securities for a specific issuer include consideration for security or ranking. Ratings that apply to actual securities (secured or unsecured) may be higher, lower or equal to the issuer rating for a given entity
- **Short-term issuer rating** – reflects the issuer’s overall creditworthiness over a short-time horizon.

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

- **Long-term obligations rating scale.** The specification of this rating scale is described in Figure 3 of Appendix 1.
- **Commercial paper and short-term debt rating scale.** The specification of this rating scale is described in Figure 4 of Appendix 1.
- **Claims paying ability rating scale.** The specification of this rating scale is described in Figure 5 of Appendix 1.

11. The mapping of the Long-term obligations 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.

12. The mapping of the Commercial paper and short-term debt rating scale is explained in Section 5 and it has been indirectly derived from the mapping of the Long-term obligations rating scale and the internal relationship established by DBRS between these two scales, as specified in Article 13 ITS. This internal relationship is shown in Figure 6 of Appendix 1.

13. The indirect mapping approach described in the previous paragraph has also been applied in the case of Claims paying ability rating scale, as explained in Section 6. In this case, however, the relationship with the Long-term obligations 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 DBRS's Long-term obligations rating scale

14. The mapping of the Long-term obligations 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:

- The *long run default rate* of a rating category has been used to arrive at an initial mapping proposal by comparing its value with the benchmark specified in point (a) of Article 14 of the ITS.
- The *short run default rates* of a rating category have been compared with the benchmarks specified in point (b) of Article 14 of the ITS, which represent the maximum expected deviation of a default rate from its long-term value within a CQS.

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 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

17. The short run and long run default rates of each rating category have been calculated with the pools of items rated from 1 January 2000 to 1 July 2010, based on the information contained in CEREP and according to the provisions laid down in the ITS. The following aspects should be highlighted:

- For AAA/AA and A rating categories, the number of credit ratings cannot be considered to be sufficient for the calculation of the short run and long run default rates specified in Articles 3 – 5 of the ITS. Therefore the allocation of the CQS has been made in accordance with Article 6 of the ITS, as shown in Figure 13 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.
- For D rating category, no calculation of default rates has been made since it already reflects a 'default' situation.

- For the remaining rating categories, the number of credit ratings can be considered to be sufficient and therefore the calculation has followed the rules established in Articles 3 to 5 ITS. The result of the calculation of the short run and long run default rates for each rating category is shown in Figure 7 to Figure 9 of Appendix 3.

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

19. The default definition applied by DBRS, 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

20. As illustrated in the second column of Figure 16 in Appendix 4, the rating categories of the Long-term obligations rating scale of DBRS have been initially allocated to each CQS based on the comparison of the long run default rates (see Figure 9 in Appendix 3) and the long run default rate benchmark intervals established in point (a) of Article 14 of the ITS.

21. In the case of rating categories AAA/AA and A, where the number of credit ratings cannot be considered to be sufficient, this comparison has been made according to Article 6 of the ITS. The result, as shown in Figure 13 of Appendix 3, is not clear. When the analysis is done for the 2006h1 – 2010h2 period, the observed defaults in these rating categories suggest a mapping to CQS 2 and CQS 3 respectively. However, the analysis of the 2001h1 – 2005h2 period reveals that no defaults were observed during those years and that CQS 1 and CQS 2 should be proposed instead to rating categories AAA/AA and A respectively. Therefore the conclusion is not clear and should be based on the qualitative factors.

#### 4.1.3. Reviewed mapping based on the short run default rates

22. As shown in Figure 10 to Figure 12 in Appendix 3, the short run default rates of rating categories BBB to B have been compared with the short run default rate benchmark values established in point (b) of Article 14 of the ITS<sup>6</sup>.

23. The objective is to assess, for each rating category, whether the short-run default rates have deviated from their corresponding benchmark values and whether any observed deviation has been caused by a weakening of the assessment standards. Therefore short run default rates experienced within a rating category have been confronted with the short run benchmarks “monitoring” and “trigger” levels specified in Annex I of the ITS: to perform this analysis confidence intervals for the short run default rates have been calculated. The result of this comparison can be found in the third column of Figure 16 in Appendix 4:

- **BBB and BB:** the short run default rates have breached the monitoring on 5 occasions and trigger level on 4 occasions. However, the lower limit of the 95% confidence intervals did

<sup>6</sup> For AAA, AA and A rating categories, the number of credit ratings cannot be considered to be sufficient and therefore no calculation of the short run default rate has been made. In the case of rating categories CCC to C, the review of the short run default rates is not necessary since they have been mapped to CQS6.

not reach the monitoring level. These breaches cannot be considered as material and therefore the initial mapping based on the long run default rate is confirmed at this stage.

- **B:** the short run default rates have breached both the monitoring and the trigger levels for 5 consecutive periods in 2000-2003 and later in 2006-2008 (with the exception of one period). Moreover, the lower limit of the 95% confidence intervals also crossed both the monitoring and trigger levels in 2000-2003. However, given the small size of the pool during this period, this result cannot be considered as statistically robust and therefore the initial mapping to CQS 5 is maintained at this stage.

## 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 behavior<sup>7</sup>, as it is the case of AAA/AA and A rating categories.

### 4.2.1. External Benchmarks

25. A sufficient number of items assigned a different measure of creditworthiness is available, namely the credit ratings assigned by other ECAs (S&P, Moody's and Fitch) to the items rated by DBRS. Such items assigned a different measure of creditworthiness have been used in accordance with Article 11(2) ITS to complement the information provided by the quantitative factors, as they were relevant for the mapping. Specifically, proxy<sup>8</sup> long-run default rates of rating categories AAA/AA and A have been calculated as the weighted average of the long run default rate benchmarks associated with the related categories of the benchmark ratings.

26. The result of the calculation of the proxy long run default rates for AAA/AA and A rating categories is shown in Figure 14 of Appendix 3. The proxy long-run default rate of the AAA/AA rating categories is 0.16% which suggests CQS 1. The proxy long-run default rate of the A rating category is 0.59% which suggests CQS 3 for the A rating category. However it is important to notice that these results are not based on the ECA's own default experience.

### 4.2.2. Other qualitative factors

27. The **definition of default** applied by DBRS 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 the ones specified in Article 4(4) of the ITS. Selective default category (SD) is consistent with letters

<sup>7</sup> 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.

<sup>8</sup> Given that we are dealing with qualitative factors, in this context we are not assessing long run default rates as specified in Article 1 of the ITS. Instead we are deriving proxy long run default rates through the usage of a different measure of creditworthiness.



(b), (c) and (d) of the benchmark definition, while Default category (D) is consistent with letter (a) and (b) of the benchmark definition.

- The information provided by DBRS reveals that the share of bankruptcy-related events is close to 60%. Although this number is above the reference level (50%), the long run default rates of DBRS' rating categories are generally sufficiently below the upper bound of the proposed CQS.

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

28.Regarding **the meaning and relative position of the credit assessments**, they are aligned with most of the initial mapping proposals resulting from the quantitative factors. The following should be highlighted:

- In the case of AAA/AA, where the quantitative evidence is not clear, the meaning and relative position of these rating categories suggest CQS 1.
- In the case of A, the meaning and relative position of these rating categories would rather suggest CQS 2. Given that the quantitative evidence for A rating category is not clear, and that the resulting estimate is very close to CQS 2, the final mapping proposal of A will be CQS 2 as a result of this factor.
- In the case of D rating categories, their meaning is consistent with the one of CQS 6 stated in Annex II ITS.

29.Regarding the **time horizon** reflected by the rating category, DBRS's rating methodology focuses on the long-term, especially in the high-quality categories. This is confirmed by the stability of the AAA/AA and A rating categories over 1-year and 3-year time horizons, as shown in Figure 15 of Appendix 3. Therefore, the mapping proposal of rating categories AAA/AA and A to CQS 1 and CQS 2 respectively is reinforced.

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 rating categories under Article 6 of the ITS.

## 5. Mapping of DBRS Commercial paper and short-term debt rating scale

31.DBRS also produces short-term issuer and issue/security ratings and assigns them to the Commercial paper and short-term debt 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 ITS, the internal relationship established by DBRS between these two rating scales (described in Figure 6 of Appendix 1) has



been used to derive the mapping of the Commercial paper and short-term debt rating scale. This should ensure the consistency of the mappings proposed for DBRS.

32. More specifically, as each short-term rating can be associated with a range of long-term ratings, the CQS assigned to each 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.

33. The result is shown in Figure 17 of Appendix 4:

- **R-1 H.** This rating category indicates the highest credit quality. It is internally mapped to long-term categories AAA and AA, which are mapped to CQS 1. Therefore, CQS 1 is the proposed mapping.
- **R-1 M.** This rating category indicates superior credit quality. It is internally mapped to long-term categories AA, which is mapped to CQS 1, and only exceptionally to upper A category, which is mapped to CQS 2. Therefore, CQS 1 is the proposed mapping.
- **R-1 L.** This rating category indicates good credit quality. It is internally mapped to long-term categories A, which is mapped to CQS 2, and only exceptionally to lower AA category, which is mapped to CQS 1, and upper level of BBB category, which is mapped to CQS 3. Therefore, CQS 2 is the proposed mapping.
- **R-2.** The rating category R-2, which includes sub-categories from R-2 H to R-2 L, indicates adequate credit quality. It is internally mapped to long-term category BBB, which is mapped to CQS 3, and exceptionally to lower A category, which is also mapped to CQS 2. Therefore, CQS 3 is the proposed mapping.
- **R-3.** This rating category indicates the lowest end of adequate credit quality. The category is internally mapped to long-term categories BBB (low) and only exceptionally to BB (high), which are mapped to CQS 3 and 4 respectively. Therefore, CQS 3 is the proposed mapping.
- **R-4.** This rating category indicates speculative credit quality. The category is internally mapped to long-term categories BB and B, which are mapped to CQS 4 and 5 respectively. 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 R-4 rating category is CQS 4.
- **R-5.** This rating category indicates highly speculative credit quality. The category is internally mapped to long-term categories lower B and CCC to C categories, which are mapped to CQS 5 and 6 respectively. 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 R-5 rating category is CQS 4.

- **D.** This rating category indicates payment default, consistent with CQS 6. In addition, it is internally mapped to long-term categories D, which is 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 D rating category is CQS 4.

## 6. Mapping of DBRS Claims paying ability rating scale

34. As mentioned in Section 3, DBRS produces a **Claims paying ability rating** (Insurer Financial Strength) (see Figure 5 in Appendix 1) which is assigned to a different credit rating scale - Claims paying ability rating scale.
35. Based on the methodology described in the previous section, the mapping of this rating scale has been derived from the relationship established by the JC with the Long-term obligations rating scale. More specifically, as each rating can be associated with one or a range of long-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.
36. The rating categories of the Claims paying ability rating scale are not directly comparable to those of the Long-term obligations rating scale. However, although the definitions of the rating categories refer to insurance companies, the mapping was derived from the meaning and relative position of the rating categories and the mapping of the corresponding categories of the Long-term obligations rating scale. The result of the mapping of this scale is shown in Figure 18 of Appendix 4.

## Appendix 1: Credit ratings and rating scales

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

SA exposure classes	Name of credit rating	Credit rating scale
<b>Long-term ratings</b>		
Central governments/ Central banks	Long-term issue/security rating	Long-term obligations rating scale
	Long-term Issuer rating	Long-term obligations rating scale
Regional and local governments and PSEs	Long-term issue/security rating	Long-term obligations rating scale
	Long-term Issuer rating	Long-term obligations rating scale
Institutions	Long-term issue/security rating	Long-term obligations rating scale
	Long-term Issuer rating	Long-term obligations rating scale
Corporates	Long-term issue/security rating	Long-term obligations rating scale
	Long-term Issuer rating	Long-term obligations rating scale
	Claims paying ability rating (Insurer Financial Strength)	Claims paying ability rating scale
Covered bonds	Long-term issue/security rating	Long-term obligations rating scale
<b>Short-term ratings</b>		
Central governments/ Central banks	Short-term issue/security rating	Commercial paper and short-term

SA exposure classes	Name of credit rating	Credit rating scale
		debt rating scale
	Short-term issuer rating	Commercial paper and short-term debt rating scale
Regional and local governments and PSEs	Short-term issue/security rating	Commercial paper and short-term debt rating scale
	Short-term Issuer rating	Commercial paper and short-term debt rating scale
Institutions	Short-term issue/security rating	Commercial paper and short-term debt rating scale
	Short-term Issuer rating	Commercial paper and short-term debt rating scale
Corporates	Short-term issue/security rating	Commercial paper and short-term debt rating scale
	Short-term Issuer rating	Commercial paper and short-term debt rating scale

Source: DBRS

Figure 3: Long-term obligations rating scale

Credit assessment	Meaning of the credit assessment
AAA	Highest credit quality. The capacity for the payment of financial obligations is exceptionally high and unlikely to be adversely affected by future events.
AA	Superior credit quality. The capacity for the payment of financial obligations is considered high. Credit quality differs from AAA only to a small degree. Unlikely to be significantly vulnerable to future events.
A	Good credit quality. The capacity for the payment of financial obligations is substantial, but of lesser credit quality than AA. May be vulnerable to future events, but qualifying negative factors are considered manageable.
BBB	Adequate credit quality. The capacity for the payment of financial obligations is considered acceptable. May be vulnerable to future events.
BB	Speculative, non-investment grade credit quality. The capacity for the payment of financial obligations is uncertain. Vulnerable to future events.
B	Highly speculative credit quality. There is a high level of uncertainty as to the capacity to meet financial obligations.
CCC	Very highly speculative credit quality. In danger of defaulting on financial obligations. There is little difference between these three categories, although CC and C ratings are normally applied to obligations that are seen as highly likely to default, or subordinated to obligations rated in the CCC to B range. Obligations in respect of which default has not technically taken place but is considered inevitable may be rated in the C category.
CC	
C	
D	When the issuer has filed under any applicable bankruptcy, insolvency or winding up statute or there is a failure to satisfy an obligation after the exhaustion of grace periods, a downgrade to D may occur. DBRS may also use SD (Selective Default) in cases where only some



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securities are impacted, such as the case of a “distressed exchange”. See Default Definition for more information.

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Source: DBRS

Figure 4: Commercial paper and short-term debt rating scale

Credit assessment	Meaning of the credit assessment
R-1 H	Highest credit quality. The capacity for the payment of short-term financial obligations as they fall due is exceptionally high. Unlikely to be adversely affected by future events.
R-1 M	Superior credit quality. The capacity for the payment of short-term financial obligations as they fall due is very high. Differs from R-1 (high) by a relatively modest degree. Unlikely to be significantly vulnerable to future events.
R-1 L	Good credit quality. The capacity for the payment of short-term financial obligations as they fall due is substantial. Overall strength is not as favourable as higher rating categories. May be vulnerable to future events, but qualifying negative factors are considered manageable.
R-2 H	Upper end of adequate credit quality. The capacity for the payment of short-term financial obligations as they fall due is acceptable. May be vulnerable to future events.
R-2 M	Adequate credit quality. The capacity for the payment of short-term financial obligations as they fall due is acceptable. May be vulnerable to future events or may be exposed to other factors that could reduce credit quality.
R-2 L	Lower end of adequate credit quality. The capacity for the payment of short-term financial obligations as they fall due is acceptable. May be vulnerable to future events. A number of challenges are present that could affect the issuer's ability to meet such obligations.
R-3	Lowest end of adequate credit quality. There is a capacity for the payment of short-term financial obligations as they fall due. May be vulnerable to future events and the certainty of meeting such obligations could be impacted by a variety of developments.
R-4	Speculative credit quality. The capacity for the payment of short-term financial obligations as they fall due is uncertain.
R-5	Highly speculative credit quality. There is a high level of uncertainty as to the capacity to meet short-term financial obligations as they



fall due.

D

When the issuer has filed under any applicable bankruptcy, insolvency or winding up statute or there is a failure to satisfy an obligation after the exhaustion of grace periods, a downgrade to D may occur. DBRS may also use SD (Selective Default) in cases where only some securities are impacted, such as the case of a “distressed exchange”. See Default Definition for more information.

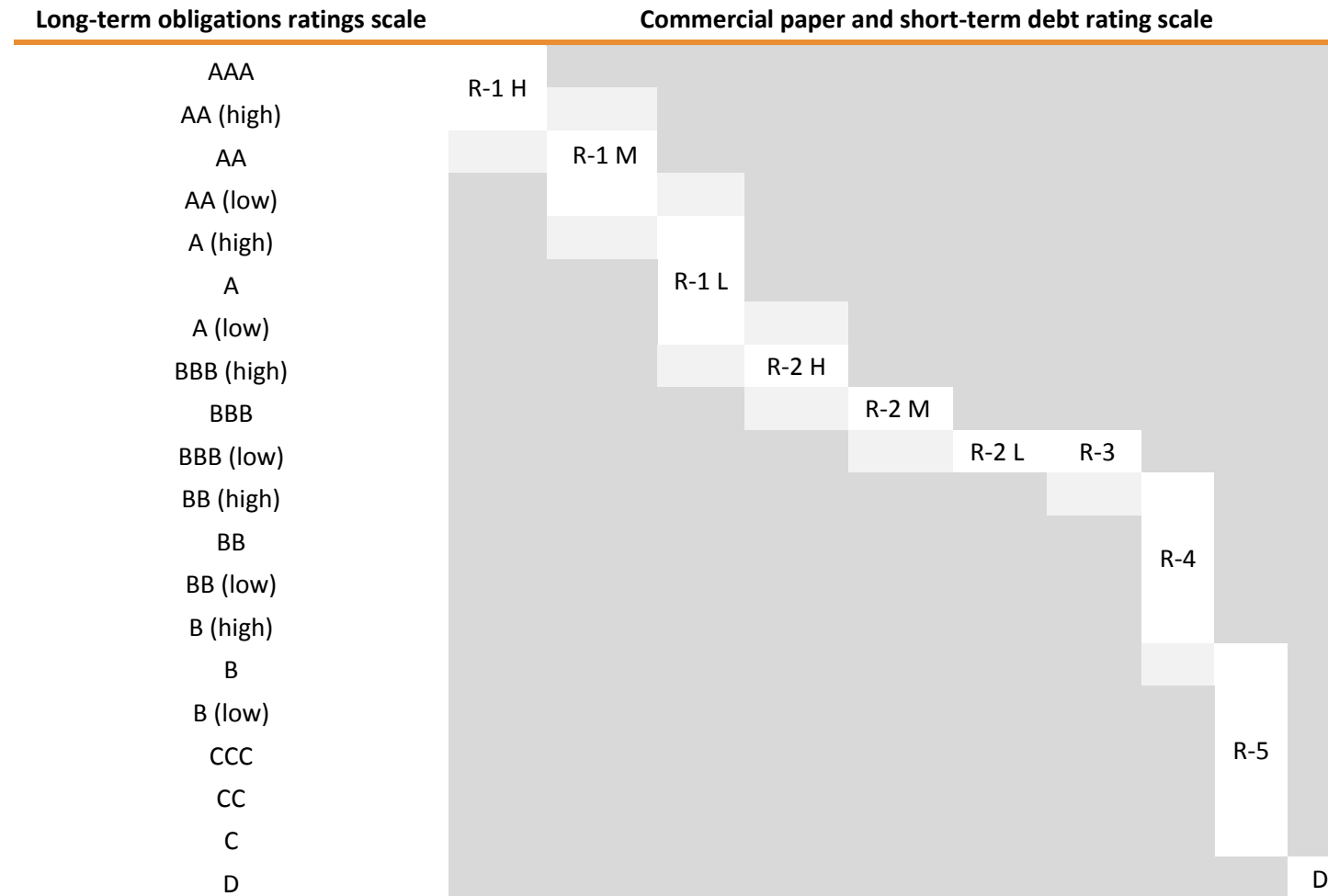
Source: DBRS

Figure 5: Claims paying ability rating scale

Credit assessment	Meaning of the credit assessment
IC-1	Superior credit quality. A claims paying rating of IC-1 represents superior credit quality. Companies attaining this rating category typically have above average strength in the key areas of asset quality, core profitability and the balance sheet. The entities would also normally be characterized as companies with critical mass and some degree of market leadership in their core products.
IC-2	Satisfactory credit quality. A claims paying rating of IC-2 represents satisfactory credit quality. Companies in this category usually have no major long-term structural problems and are normally of sufficient size to have an influence in their key markets. Core profitability may be a weakness but overall, IC-2 credits are considered to have the strength to work through any short-term negative factors that may exist.
IC-3	Adequate credit quality. A claims paying rating of IC-3 represents adequate credit quality. While the overall strength of insurance companies in this rating classification is acceptable, there are often weaknesses in asset quality, core earnings and/or capital that make the company more susceptible to stress in periods of adverse economic conditions and the possibility of poor experiences in the areas of claims and persistency. With some IC-3 credits, a better rating is restricted by competitive weaknesses or the presence of negative qualifying factors.
IC-4	Speculative credit quality. A claims paying rating of IC-4 is speculative. Insurance companies rated in this category normally have a meaningful weakness in at least one or two of the key areas of asset quality, capital and profitability, and often lack critical mass and competitive strength in their key markets.
IC-5	Highly speculative credit quality. A claims paying rating of IC-5 is highly speculative. Major weaknesses create a high degree of uncertainty regarding the ability of the company to pay its claims on a continuing basis in the future, especially in periods of economic recession and/or adverse claims and persistency experience.
D	Default. When the issuer has filed under any applicable bankruptcy, insolvency or winding up statute or there is a failure to satisfy an obligation after the exhaustion of grace periods, a downgrade to D may occur. See Default Definition for more information.

Source: DBRS

Figure 6: Internal relationship between DBRS' long-term and short-term ratings scales



Source: DBRS

## Appendix 2: Definition of default

Default rating status is represented by either 'D' ("default") or 'SD' ("selective default") on DBRS rating scales, depending on the nature of the situation.

A. Issuer and security ratings may all be moved to "**D**" when:

- 1) The issuer has filed under any applicable bankruptcy, insolvency or winding up statute.
- 2) There is failure to pay or satisfy an obligation (subject to applicable grace periods and/or waiver of such failure) in accordance with the underlying transaction documents and DBRS believes that this default will subsequently be general in nature and include all obligations.
- 3) Independent of the issuer rating, securities described as a Distressed Exchange are downgraded to D.
- 4) DBRS also reserves the right to move ratings to:
  - (a) Downgrade ratings to 'D' when it believes that a general default is imminent and unavoidable, although this is a less frequent and a more subjective decision.
  - (b) Discontinue – Withdraw 'D' ratings after 30 business days.

B. Issuer ratings may be moved to "**SD**" in the following circumstances:

- 1) The issuer has failed to satisfy an obligation on a debt issue but DBRS views this as being Selective in that the issuer is expected to continue to meet obligations in a timely manner on other securities and/or classes of securities. This case often relates to a Distressed Exchange. As noted in Section A., securities that qualify as a Distressed Exchange are downgraded to 'D'. The latter occurs when an issuer makes an offer to exchange debt securities and either (a) and (b) both apply, or (c) applies:
  - (a) Terms of the exchange are disadvantageous to bondholders (typically either with respect to the value of the new security package or a change in the duration of maturity).
  - (b) Bondholders are being compelled to consent to an exchange because failure to do so would likely lead to the company's inability to continue to make legally scheduled payments as agreed; as opposed to an offer that is purely opportunistic.
  - (c) A Distressed Exchange may also occur if the borrower repurchases a sizeable amount of bonds at a major discount, and DBRS views this as a means of debt restructuring. This would likely only apply to very low rated entities and the SD

decision would not apply if it was clear that the focus of the repurchases reflected considerations more related to the opportunity to benefit from changing term or interest rates and less related to the discount.

- 2) Issuer ratings that are classified as 'SD' may be reassessed in the future and a subsequent rating action may be taken.

C. Structured Finance Transactions:

- 1) For securitization transactions where assets are highly unlikely to repay future obligations, DBRS shall generally downgrade the security to 'C' until the legal maturity final date of such obligation.
- 2) For transactions where assets are structured and firewalled with a very high level of certainty to be bankruptcy remote (for example, a first mortgage on a property that will almost certainly result in an ongoing ability to keep payments current and fully repay principal), the Rating Committee shall have the discretion to deviate from the principle that on the occurrence of an insolvency event, all debt lines should be moved to 'D'.

D. Recovery Ratings:

Where an issuer rating is assigned default status, any related recovery rating is discontinued. For additional information on DBRS recovery ratings, see "DBRS Recovery Ratings for Non-Investment Grade Corporate Issuers".

E. Preferred Share Securities:

With respect to preferred share securities, the non-payment of a dividend is only a "default" if the non-payment constitutes default per the legal documents. As such, the non-payment of a dividend does not necessarily give rise to the assignment of a 'D' rating.

Source: DBRS

## Appendix 3: Default rates of each rating category

Figure 7: Number of rated items

Date	AAA	AA	A	BBB	BB	B	CCC-C	D
01/01/2000	4	34	93	56	10	3	1	n.a.
01/07/2000	5	37	102	55	10	3	0	n.a.
01/01/2001	6	41	101	61	11	3	0	n.a.
01/07/2001	7	49	105	61	12	3	0	n.a.
01/01/2002	8	46	96	69	13	3	0	n.a.
01/07/2002	8	45	96	66	13	2	2	n.a.
01/01/2003	7	43	96	65	13	2	1	n.a.
01/07/2003	7	42	92	67	14	3	1	n.a.
01/01/2004	7	38	96	69	20	5	1	n.a.
01/07/2004	6	38	97	87	25	9	0	n.a.
01/01/2005	5	43	116	100	31	11	1	n.a.
01/07/2005	5	53	142	128	35	11	1	n.a.
01/01/2006	5	62	161	147	38	14	1	n.a.
01/07/2006	5	66	140	128	32	10	3	n.a.
01/01/2007	5	73	141	131	30	11	3	n.a.
01/07/2007	5	75	137	125	29	12	4	n.a.
01/01/2008	2	77	133	117	28	12	5	n.a.
01/07/2008	2	75	129	110	22	13	3	n.a.
01/01/2009	3	71	125	109	20	8	9	n.a.
01/07/2009	2	59	117	85	17	4	6	n.a.
01/01/2010	3	58	121	87	14	6	4	n.a.
01/07/2010	3	58	123	95	13	8	4	n.a.

Source: Joint Committee calculations based on CEREP data

Figure 8: Number of defaulted rated items

Date	AAA	AA	A	BBB	BB	B	CCC-C	D
01/01/2000	0	0	0	2	0	2	1	n.a.
01/07/2000	0	0	0	3	0	2	0	n.a.
01/01/2001	0	0	0	2	1	2	0	n.a.
01/07/2001	0	0	0	3	1	2	0	n.a.
01/01/2002	0	0	0	1	2	3	0	n.a.
01/07/2002	0	0	0	0	1	2	2	n.a.
01/01/2003	0	0	0	0	1	1	1	n.a.
01/07/2003	0	0	0	0	1	0	1	n.a.
01/01/2004	0	0	0	0	0	1	1	n.a.
01/07/2004	0	0	0	0	0	0	0	n.a.
01/01/2005	0	0	0	0	1	0	0	n.a.
01/07/2005	0	0	0	1	1	1	0	n.a.
01/01/2006	0	1	1	0	2	2	0	n.a.
01/07/2006	0	1	0	2	5	3	2	n.a.
01/01/2007	0	1	2	3	6	3	2	n.a.
01/07/2007	0	1	3	2	4	4	3	n.a.
01/01/2008	0	1	3	1	3	4	4	n.a.
01/07/2008	0	1	2	1	1	5	1	n.a.
01/01/2009	0	0	1	1	0	2	4	n.a.
01/07/2009	0	0	0	0	2	0	3	n.a.
01/01/2010	0	0	0	1	0	1	1	n.a.
01/07/2010	0	0	1	1	0	0	2	n.a.

Source: Joint Committee calculations based on CEREP data

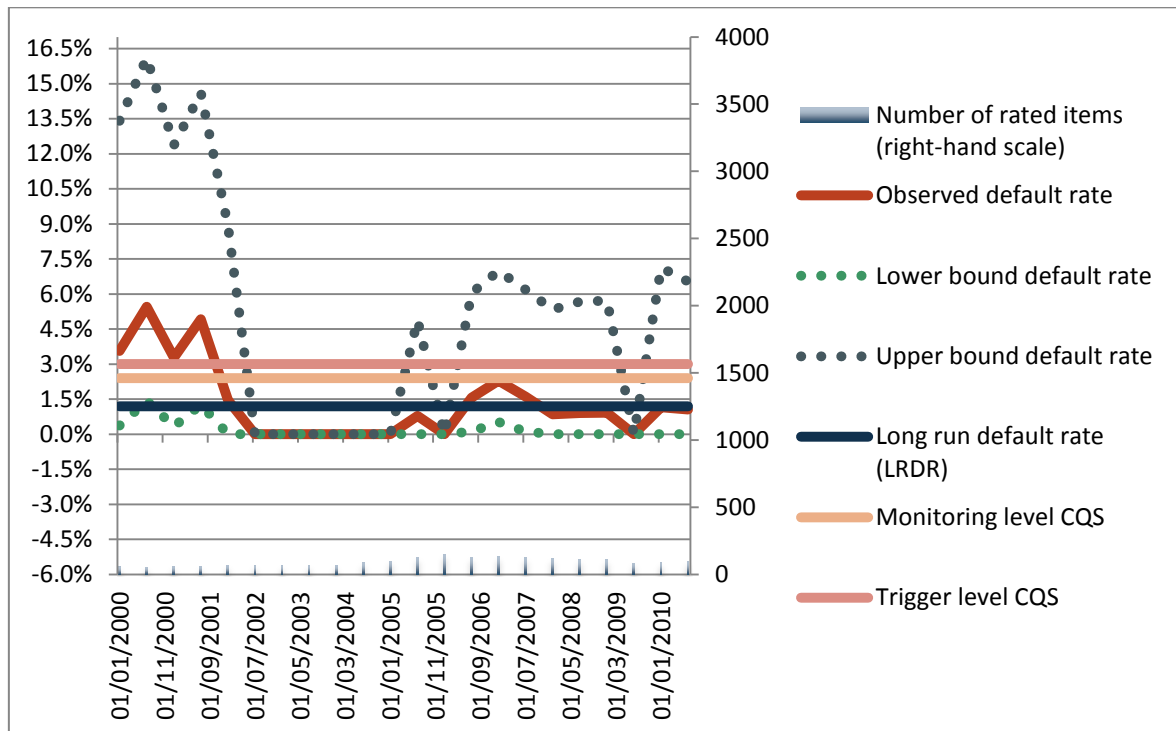


Figure 9: Short-run and long-run observed default rates

Date	AAA	AA	A	BBB	BB	B	CCC-C	D
01/01/2000	n.a.	n.a.	n.a.	3.57	0.00	66.67	100.00	n.a.
01/07/2000	n.a.	n.a.	n.a.	5.45	0.00	66.67		n.a.
01/01/2001	n.a.	n.a.	n.a.	3.28	9.09	66.67		n.a.
01/07/2001	n.a.	n.a.	n.a.	4.92	8.33	66.67		n.a.
01/01/2002	n.a.	n.a.	n.a.	1.45	15.38	100.00		n.a.
01/07/2002	n.a.	n.a.	n.a.	0.00	7.69	100.00	100.00	n.a.
01/01/2003	n.a.	n.a.	n.a.	0.00	7.69	50.00	100.00	n.a.
01/07/2003	n.a.	n.a.	n.a.	0.00	7.14	0.00	100.00	n.a.
01/01/2004	n.a.	n.a.	n.a.	0.00	0.00	20.00	100.00	n.a.
01/07/2004	n.a.	n.a.	n.a.	0.00	0.00	0.00		n.a.
01/01/2005	n.a.	n.a.	n.a.	0.00	3.23	0.00	0.00	n.a.
01/07/2005	n.a.	n.a.	n.a.	0.78	2.86	9.09	0.00	n.a.
01/01/2006	n.a.	n.a.	n.a.	0.00	5.26	14.29	0.00	n.a.
01/07/2006	n.a.	n.a.	n.a.	1.56	15.63	30.00	66.67	n.a.
01/01/2007	n.a.	n.a.	n.a.	2.29	20.00	27.27	66.67	n.a.
01/07/2007	n.a.	n.a.	n.a.	1.60	13.79	33.33	75.00	n.a.
01/01/2008	n.a.	n.a.	n.a.	0.85	10.71	33.33	80.00	n.a.
01/07/2008	n.a.	n.a.	n.a.	0.91	4.55	38.46	33.33	n.a.
01/01/2009	n.a.	n.a.	n.a.	0.92	0.00	25.00	44.44	n.a.
01/07/2009	n.a.	n.a.	n.a.	0.00	11.76	0.00	50.00	n.a.
01/01/2010	n.a.	n.a.	n.a.	1.15	0.00	16.67	25.00	n.a.
01/07/2010	n.a.	n.a.	n.a.	1.05	0.00	0.00	50.00	n.a.
<b>Weighted Average</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>1.19</b>	<b>7.11</b>	<b>25.64</b>	<b>56.00</b>	<b>n.a.</b>

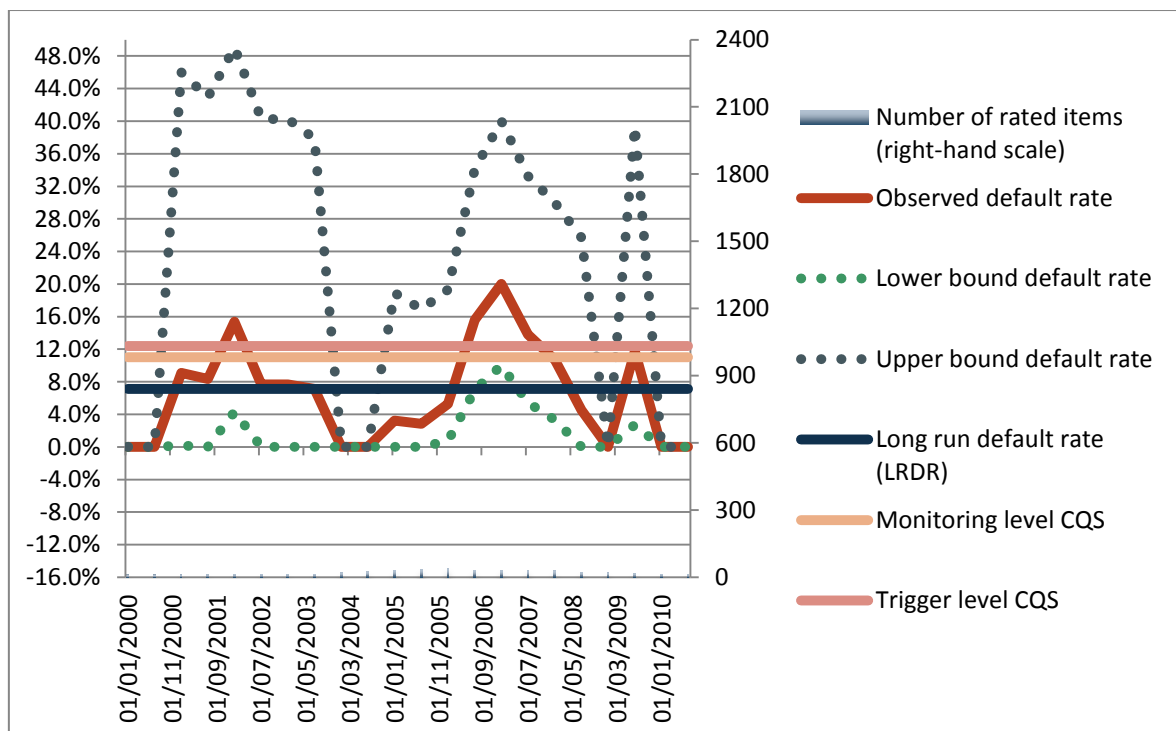
Source: Joint Committee calculations based on CERP data

Figure 10: Short-run and long-run observed default rates of BBB rating category



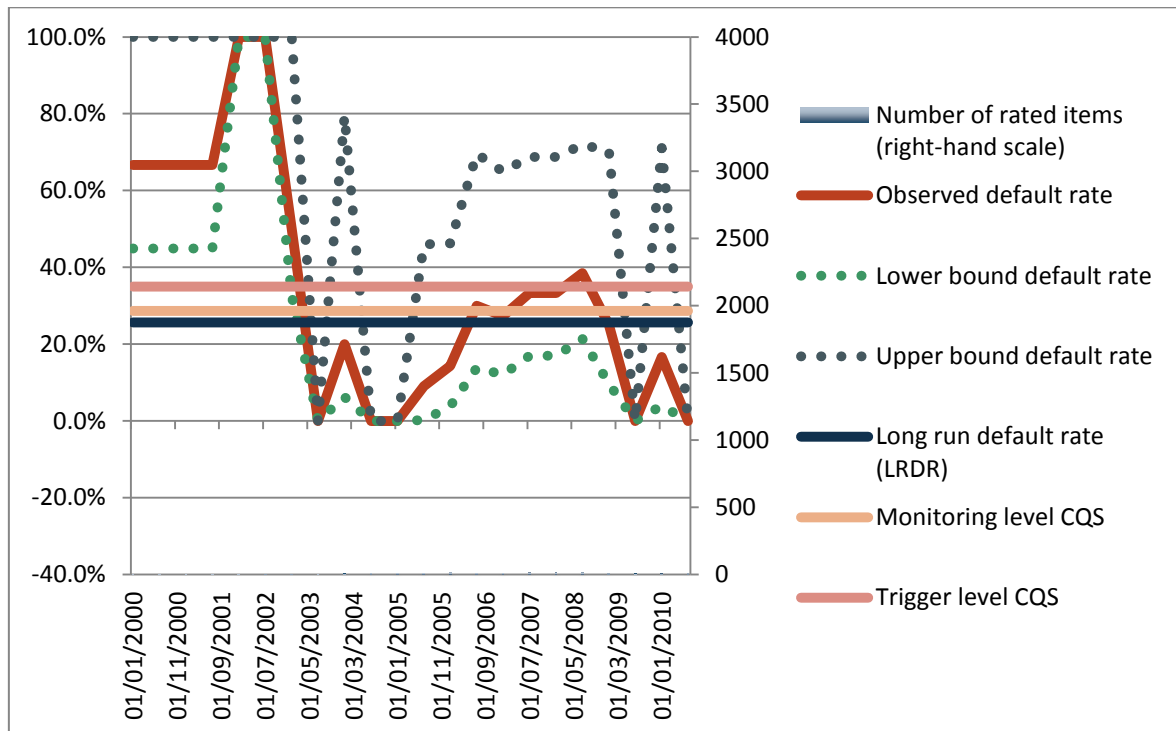
Source: Joint Committee calculations based on CEREP data

Figure 11: Short-run and long-run observed default rates of BB rating category



Source: Joint Committee calculations based on CEREP data

Figure 12: Short-run and long-run observed default rates of B rating category



Source: Joint Committee calculations based on CEREP data

Figure 13: Mapping proposal for rating categories with a non-sufficient number of credit ratings

2001 - 2005	AAA/AA	A
CQS of equivalent international rating category	CQS 1	CQS 2
N. observed defaulted items	0	0
Minimum N. rated items	496	0
Observed N. rated items	504	1037
<b>Mapping proposal</b>	<b>CQS 1</b>	<b>CQS 2</b>

2006 - 2010	AAA/AA	A
CQS of equivalent international rating category	CQS 1	CQS 2
N. observed defaulted items	6	13
Minimum N. rated items	3698	1975
Observed N. rated items	709	1327
<b>Mapping proposal</b>	<b>CQS 2</b>	<b>CQS 3</b>

Source: Joint Committee calculations based on CEREP data

Figure 14: Mapping proposal for rating categories AAA/AA and A based on ratings assigned by other ECAs

Rating benchmark	AAA/AA	A	BBB	BB	B	CCC-C
<b>DBRS Rating</b>						
<b>AAA/AA</b>	770	387	10	0	0	0
<b>A</b>	116	1096	397	31	3	0

Note: 'Rating benchmark' is based on the ratings assigned by the three international rating agencies (S&P, Moody's and Fitch) to items rated by DBRS on 31.12.2011, 31.12.2012, 31.12.2013 and 30.04.2014.

Source: Joint Committee calculations based on CEREP data

Figure 15: Transition matrix

3-year transition matrices, 10-year average (2000 - 2013)

Rating end period	AAA	AA	A	BBB	BB	B	CCC-C	D
<b>Rating start period</b>								
<b>AAA</b>	85.37	14.63	0	0	0	0	0	0
<b>AA</b>	0	84.78	14.27	0.86	0	0	0	0.09
<b>A</b>	0.23	2.35	86.16	9.81	0.54	0.54	0.23	0.14
<b>BBB</b>	0	0	6.58	83.67	7.34	1.14	0.95	0.32
<b>BB</b>	0	0	0	14.66	67.10	10.42	4.56	3.26
<b>B</b>	0	0	0	6.94	25.00	51.39	9.72	6.95
<b>CCC-C</b>	0	0	0	0	38.46	15.38	23.08	23.08

Source: Joint Committee analysis based on CEREP data. Only items rated both at the beginning and at the end of the time horizon have been considered in the calculation.

1-year transition matrices, 12-year average (2000 - 2013)

Rating end period	AAA	AA	A	BBB	BB	B	CCC-C	D
<b>Rating start period</b>								
<b>AAA</b>	96.55	3.45	0	0	0	0	0	0
<b>AA</b>	0	94.81	4.91	0.21	0	0	0	0.07
<b>A</b>	0.06	0.96	94.73	3.90	0.16	0.06	0.03	0.10
<b>BBB</b>	0.04	0.08	1.91	93.95	3.14	0.44	0.32	0.12
<b>BB</b>	0	0	0	6.23	84.98	5.49	2.38	0.92
<b>B</b>	0	0	0	0.54	8.60	74.73	9.68	6.45
<b>CCC-C</b>	0	0	0	0	5.26	15.79	52.6	26.35

Source: Joint Committee analysis based on CEREP data. Only items rated both at the beginning and at the end of the time horizon have been considered in the calculation.

## Appendix 4: Mappings of each rating scale

Figure 16: Mapping of DBRS's Long-term obligations rating scale

Credit assessment	Initial mapping <i>based on LR DR</i> (CQS)	Review <i>based on SR</i> <i>DR</i> (CQS)	Final review <i>based on</i> <i>qualitative</i> <i>factors</i> (CQS)	Main reason for the mapping
<b>AAA</b>	n.a.	n.a.	<b>1</b>	Quantitative evidence is not clear. The results obtained through the usage of a different measure of creditworthiness, the meaning and relative position of the rating category as well as its stability over time suggests CQS 1.
<b>AA</b>	n.a.	n.a.	<b>1</b>	
<b>A</b>	n.a.	n.a.	<b>2</b>	Quantitative evidence is not clear. The results obtained through the usage of a different measure of creditworthiness, the meaning and relative position of the rating category as well as its stability over time suggests CQS 2.
<b>BBB</b>	3	3	<b>3</b>	The quantitative factors are representative of the final CQS.
<b>BB</b>	4	4	<b>4</b>	The quantitative factors are representative of the final CQS.
<b>B</b>	5	5	<b>5</b>	The quantitative factors are representative of the final CQS.
<b>CCC</b>	6	6	<b>6</b>	The quantitative factors are representative of the final CQS.
<b>CC</b>	6	6	<b>6</b>	The quantitative factors are representative of the final CQS.
<b>C</b>	6	6	<b>6</b>	The meaning and relative position of the rating category is representative of the final CQS.
<b>D</b>	n.a.	n.a.	<b>6</b>	The meaning and relative position of the rating category is representative of the final CQS.

Figure 17: Mapping of DBRS Commercial paper and short-term debt rating scale

Credit assessment	Corresponding Long-term obligations ratings scale assessment (established by DBRS)	Range of CQS of corresponding Long-term obligations ratings scale	Final review based on qualitative factors (CQS)	Main reason for the mapping
<b>R-1 H</b>	AAA/AA(H)	1	<b>1</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
<b>R-1 M</b>	AA/AA(H)	1	<b>1</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
<b>R-1 L</b>	A(H)/A(L)	2	<b>2</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
<b>R-2</b>	BBB(H)/BBB(L)	3	<b>3</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
<b>R-3</b>	BBB(L)	3	<b>3</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category.
<b>R-4</b>	BB(H)/B(H)	4-5	<b>4</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category. The risk weights assigned to CQS 4 to 6 are all 150%, therefore CQS 4.
<b>R-5</b>	B/C	5-6	<b>4</b>	The final CQS has been determined based on the most frequent step associated with the corresponding long-term credit rating category. The risk weights assigned to CQS 4 to 6 are all 150%, therefore CQS 4.
<b>D</b>	D	6	<b>4</b>	The final CQS has been determined based on the most frequent step 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 18: Mapping of DBRS's Claims paying ability rating scale

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