



# NEWS RELEASE

Jun 27, 2002

## **The Relationship Between Ratings and Default *The Broad-Definition Default Ratio and the Rating Transition Matrix***

In June 2000, Rating and Investment Information, Inc. (R&I), began to publicly announce the broad-definition default ratio as an indicator of the probability of a corporate being substantially incapable to make payment on its debts. R&I releases an update each year, and data for fiscal 2001 (April 1, 2001, to March 31, 2002) have now been added. The definition of broad-definition default includes not only bond default and legal bankruptcy procedures but also such events as loan waivers. The surveys on which this ratio is based cover 1,234 companies rated by R&I from fiscal 1978 to fiscal 2001. A strong correlation between R&I ratings and the broad-definition default ratio can be observed.

Some of the major characteristics for fiscal 2001 are as follows.

- The number of cases covered by the survey that fall under broad-definition default continues to be high. In fiscal 2001 it totaled 15, which was the same figure as in fiscal 2000.
- Of the 687 companies that had an R&I rating as of the start of fiscal 2001, 5 could be categorized as instances of broad-definition default by the end of that fiscal year. As a result, the broad-definition default ratio for fiscal 2001 was zero for companies rated AAA or AA, 0.4% for those rated A or BBB, and 4.4% for those rated BB or lower.
- Of the companies categorized as instances of broad-definition default, the proportion of cases that involved bond default or legal bankruptcy proceedings was higher than in fiscal 2000.

This release is R&I's third annual announcement of broad-definition default ratio figures, and the volume of data amassed has grown. R&I is therefore no longer using the credit risk ratio, which it publicly announced from 1997 through last year, as of this year's release.

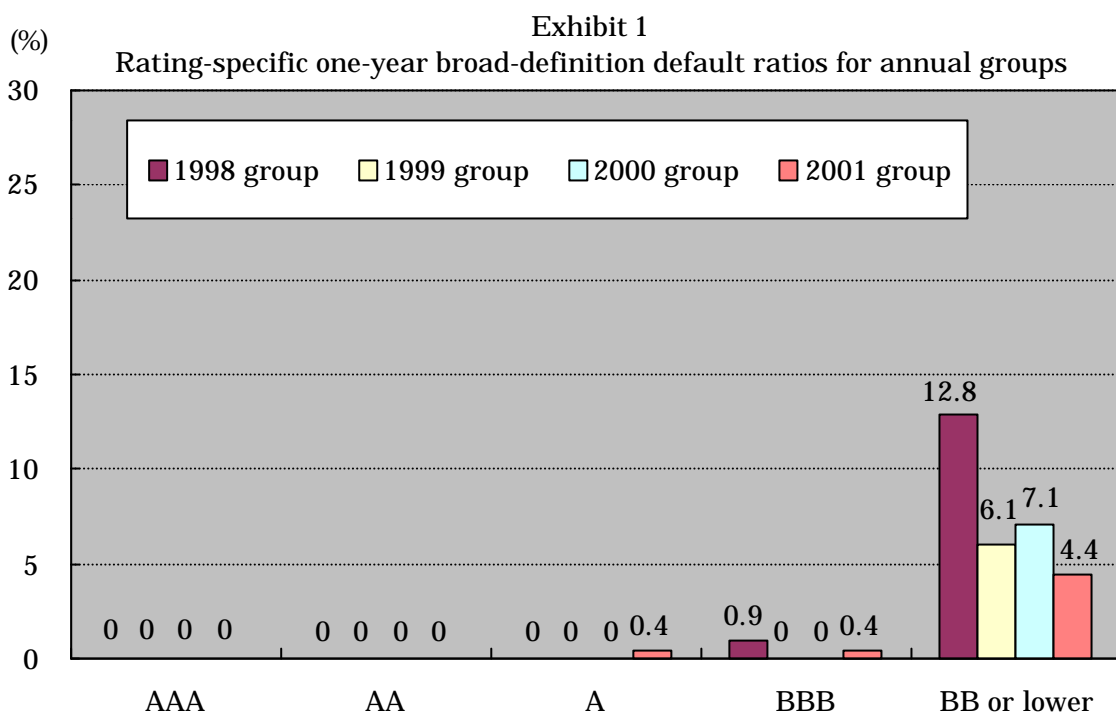
Clarification of the relationship between ratings and default on the basis of actual historical values can be seen as an important fundamental building block for the bond market. Broad-definition default ratio figures as well as the rating transition matrix data on which they are based can be downloaded from R&I's web site (<http://www.r-i.co.jp/>). The company intends to continue making this kind of information openly available.

---

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL [sfdept@r-i.co.jp](mailto:sfdept@r-i.co.jp) Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer

©Rating and Investment Information, Inc.



## I. The Broad-Definition Default Ratio

### 1. The Broad-Definition Default Ratio in Fiscal 2001

The broad-definition default ratio (henceforth referred to as the “default ratio”) refers to the probability of a corporate being substantially incapable to make payment on its debts. At the present time, when there are few actual instances of defaulting on publicly offered corporate bonds, this ratio serves as an indicator of the potential bond default ratio. The sample of companies covered includes all of the issuers domiciled in Japan that received an R&I long-term debt rating during the period from April 1, 1978, to April 1, 2001. Altogether, there are 1,234 such companies, of which 687 had ratings as of April 1, 2001.

When R&I calculates the default ratio, issuers that fit the definition shown in Exhibit 2 are counted as instances of broad-definition default. This definition provides a detailed enumeration of circumstances in which third-party economic loss is incurred due to substantial default. Exhibit 3 shows the transition in the number of cases of default on the basis of this definition. This number in fiscal 2001 is still high at 15, which was the same figure as

#### Exhibit 2

##### Definition of the broad-definition default ratio

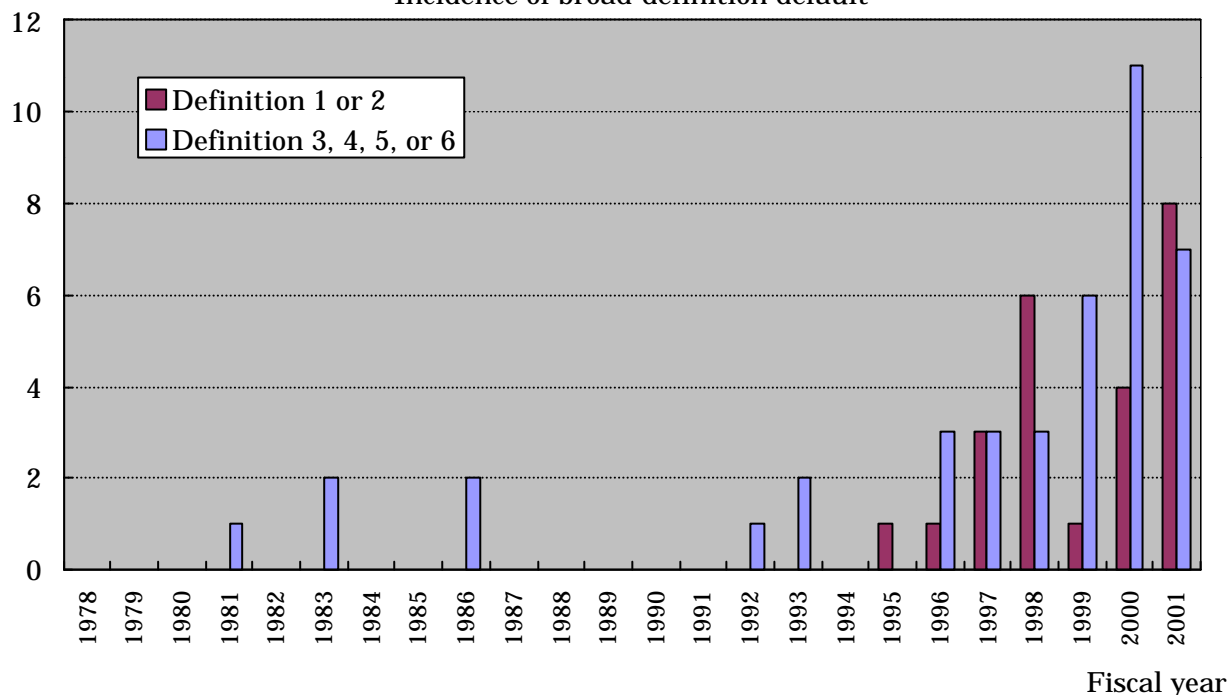
- (1) Bond default
- (2) Legal bankruptcy
  - (a) Court application for bankruptcy
  - (b) Court application to come under the protection of the Corporate Reorganization Law
  - (c) Court application to come under the protection of the Civil Rehabilitation Law (under the Composition Act prior to April 2000)
  - (d) Court application for special liquidation measures to commence
  - (e) Court application for liquidation procedures under commercial law to commence
  - (f) Discretionary liquidation after a first nonpayment
  - (g) Receipt of an order terminating bank dealings following a second nonpayment
  - (h) Internal liquidation even without nonpayment (i.e., when a company representative acknowledges a state of bankruptcy)
  - (i) Being brought under state control
  - (j) Voluntary termination of business
- (3) Abandonment of claims
- (4) Emergency merger or transfer of key operating assets (when the assets do not have any value)
- (5) Infusion of capital to avoid having negative equity
- (6) A position of negative equity (when this is followed by the receipt of financial assistance to avoid bankruptcy)

# NEWS RELEASE

in fiscal 2000. (At the time of last June's announcement 14 cases of default had been identified for fiscal 2001. One more company, a case of abandonment of claims, was added when a subsequent survey was conducted.)

Eight of the 15 companies fit category 1 or 2 of the definition, both of which are typically viewed as bankruptcy. The proportion of such cases among all instances of broad-definition default was higher than in fiscal 2000. These 8 bankruptcy cases included Mycal Corporation and Aoki Corporation, which both defaulted on bonds that R&I had rated.

Exhibit 3  
Incidence of broad-definition default

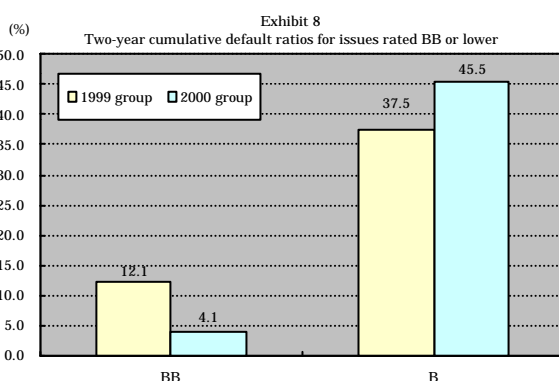
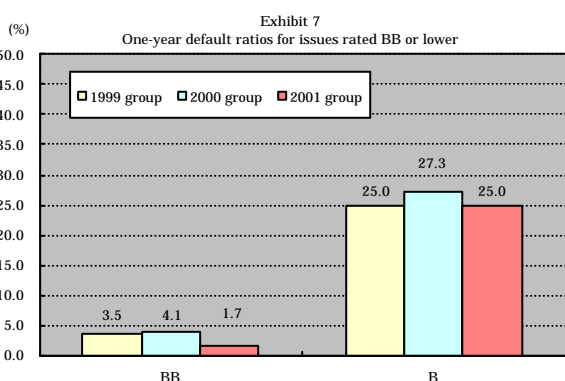
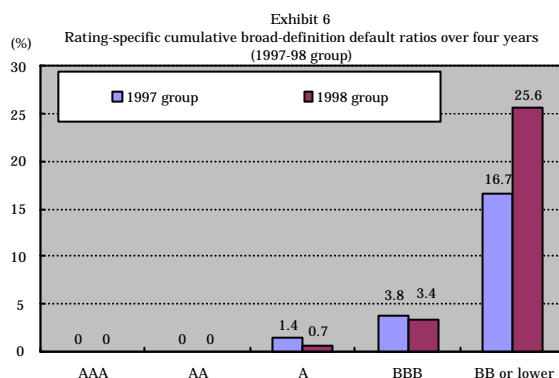
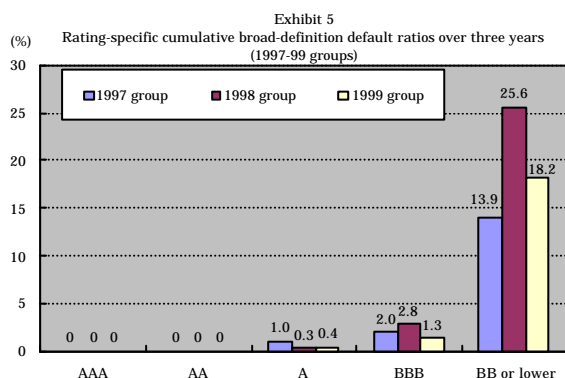
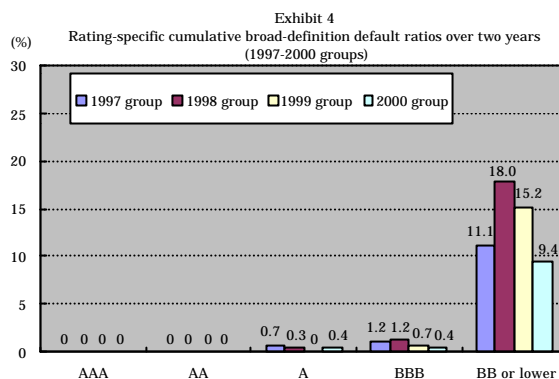


Five of the 15 cases had an R&I rating at the start of fiscal 2001. Taisei Fire & Marine Insurance Co., Ltd., which applied for bankruptcy under the Special Law Concerning Reorganization of Financial Institutions (Kosei Tokurei Ho), was among the five cases. The other 10 cases were all related to companies that had received ratings at least one year prior to the end of fiscal 2001 (that is, on or before March 31, 2001). The impact of their default status is also reflected in the revision of the cumulative default ratios for two years or longer.

## 2. Results of the Broad-Definition Default Ratio Calculation

Exhibit 1 on the first page of this news release presents the rating-specific one-year default ratios for annual groups. It shows the proportion of default among issuers with identical ratings at the outset of each fiscal year. Despite fiscal 2001 default ratios of 0.4% for both A and BBB ratings, overall it is clear that default occurrence rises high when ratings are low. A gap among different ratings is visible even in the case of cumulative default ratios for periods of two years or longer (Exhibits 4, 5, and 6). (The term “group” is defined below in “III-3. The Calculation Method.”)

R&I also calculated the default ratios for BB and B ratings (Exhibits 7 and 8). The number of issuers in the B sample was 8 companies in the 1999 group, 11 in the 2000 group, and 8 in the 2001 group. While it should be pointed out that just a single case of default causes the default ratio to change by as much as 10 percentage points or so, there is nevertheless a visible difference between the BB and B ratings.





# NEWS RELEASE

## II. The Rating Transition Matrix

The rating transition matrix shows how ratings assigned to issuers change over a certain period of time. Exhibit 9 is a concrete example of a rating transition matrix. It indicates what specific issuer ratings as of April 1, 2001, had become one year later, on April 1, 2002. For example, on April 1, 2001, there were 86 companies with a BBB- rating. Of these, 62 still had a BBB- rating on April 1, 2002, while 7 had moved to BB+ and 1 to BB-. One of the 16 remaining issuers fit category 1 of the definition of broad-definition default. The other 15 did not have ratings as of April 1, 2002.

The rating transition matrix serves as the basis for broad-definition default ratio computations. Exhibit 9 shows that the total number of companies considered cases of broad-definition default (the numbers appear in columns "BD1" through "BD6") was 5. Of them, 3 issuers were in the BB zone or lower on April 1, 2001. Meanwhile, as the exhibit's "Total" column shows, a total of 68 companies had a rating in the BB zone or lower on that date. Accordingly, the broad-definition default ratio for the BB zone or lower can be calculated as 4.4% (3 / 68).

Because the broad-definition default is not the same as actual default, there are instances when an issuer has a rating while it has been counted as a case of broad-definition default. Even such an issuer is categorized as an instance of broad-definition default in Exhibit 9. For example, even an issuer with an actual rating of B+ will be tallied in the "BD6" column and not in the one for a B+ rating if that issuer fits category 6 of the definition of broad-definition default. (The data that can be downloaded are available not only in the format shown in Exhibit 9 but also as a matrix that consists solely of actual ratings and omits any consideration of the concept of broad-definition default.)

Exhibit 9. Sample rating transition matrix

		Rating on April 1 of the final survey year																	Cumulative no. of companies fitting definition 1, 2, 3, 4, 5, or 6 of broad-definition default through April 1 of the final survey year						No. of companies with no rating on April 1 of the final survey year	TOTAL					
First survey year	Final survey year	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	BD1	BD2	BD3	BD4	BD5	BD6	(NR)		
(2001)	(2002)	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	
Rating on April 1 of the first survey year	AAA	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	19	
	AA+	0	1	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25	
	AA	0	0	0	31	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	44	
	AA-	0	0	0	0	0	50	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	67	
	A+	0	0	0	0	0	62	11	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	82	
	A	0	0	0	0	0	1	90	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	106	
	A-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	80
	BBB+	0	0	0	0	0	0	2	62	6	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	80
	BBB	0	0	0	0	0	0	1	4	65	6	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	92
	BBB-	0	0	0	0	0	0	0	0	0	62	7	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	15	86
	BB+	0	0	0	0	0	0	0	0	0	0	20	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	35
	BB	0	0	0	0	0	0	0	0	0	0	1	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13
	BB-	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	12
	B+	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
	B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCC+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CCC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CCC-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

## III. Methodology

### 1. Ratings

The ratings used for the default ratio calculation are senior long-term credit ratings, which R&I introduced in October 2001. The calculation does not include municipal bond ratings, insurance claims paying ability ratings, or asset-backed securities ratings. It also excludes ratings for bonds backed by guarantees by parent companies, banks, or financial guarantee companies. For the fiscal years up through March 31, 1998, the calculation uses ratings issued by the Japan Bond Research Institute (JBRI) and Nippon Investors Services (NIS), which are the two companies whose merger created R&I. It also includes publicly announced trial ratings that were assigned

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
 Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL sfdept@r-i.co.jp Homepage http://www.r-i.co.jp

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer



# NEWS RELEASE

prior to these two companies' commencement of business ratings. In instances when there are ratings from both JBRI and NIS, the lower of the two is used.

## *Definition of the senior long-term credit rating*

An R&I senior long-term credit rating is an opinion regarding an issuer's overall capacity to pay its entire financial obligations, without taking into account the degree of recovery of specific obligations.

A senior long-term credit rating will in principle be assigned to all issuers. A rating for an individual issue may be higher or lower than the issuer's senior long-term credit rating depending on the terms and conditions of the issue.

When R&I assigns an issuer a long-term debt rating, it first analyzes that company's default risk. In other words, R&I determines the likelihood that the issuer will fall into default or other management difficulties. The next step is to analyze recovery risk, which means gauging the likely extent of the recovery of the principal of corporate bonds and other specific obligations in the event of default. Analysis of default risk constitutes the essence of the rating process. Such analysis evaluates an issuer's ability to meet all of its financial obligations, and its outcome carries considerable weight in terms of assessing a company's creditworthiness. The rating at this stage is known as a senior long-term credit rating. It is used for the default ratio in order to perform a rating-specific calculation of the probability of a corporate being substantially incapable to make payment on its debts.

The type of rating that R&I utilized in its default ratio computation process up through last year is basically equivalent to this senior long-term credit rating. In conjunction with its switch to the senior long-term credit rating, however, R&I made adjustments in its data for senior long-term credit ratings going back to April 1, 1998. Data for ratings assigned on that date or later have therefore been slightly modified.

## **2. The Companies Covered**

The sample of issuers covered includes all of the issuers domiciled in Japan that received an R&I long-term debt rating during the period from April 1, 1978, to April 1, 2001. The total number of such companies was 1,234, of which 687 had current ratings as of April 1, 2001. Issuing companies that have only had a short-term debt rating have been excluded.

The long-term ratings data are managed in R&I's Bond Rating Data Base.

## **3. The Calculation Method**

The groups that appear in Exhibit 1 and elsewhere indicate groupings for default ratio surveys. Each group has been named according to the first fiscal year of its survey period. For example, the 1997 group refers to the group of 821 companies that had R&I ratings as of April 1, 1997.

The survey starts on April 1 of each year from 1978 to 2001. This produces a total of 24 sets of survey results.

Each group is broken down by each rating as of the survey's starting point. The number of default cases over the years that have elapsed since the survey began is counted for each rating. The default figure for each rating is then divided by the total number of issuers that initially held that rating. The outcome of this process is each group's rating-specific cumulative default ratios.

To use the 1997 group as an example, its 821 issuers can be broken down by their initial ratings as follows: 30 companies had an AAA rating, 120 an AA, 288 an A, 347 a BBB, and 36 a rating of BB or lower. Of the 36 issuers with a rating of BB or lower, 1 company had defaulted within one year, 4 within two years, 5 within three years, and 6 within four years. When each of these annual figures is divided by the original total of 36 companies, this yields cumulative default ratios for the first through the fourth years of 2.8%, 11.1%, 13.9%, and 16.7%, respectively.

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL sfdept@r-i.co.jp Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer

©Rating and Investment Information, Inc.

#### 4. The Method for Computing the Cumulative Average Default Ratio

The computation of the cumulative average default ratios that appear in Appendix A was performed as follows. First, R&I compiled data such as those in Exhibit 10, which presents data for the 1997 group. For instance, the number “3” that is under “Year 2” in the “BB or lower” row indicates that 3 of the 36 companies with a rating of BB or lower on April 1, 1997, defaulted during the second year. (It should be noted that this number is *not* the cumulative default figure in the first two years.) The data thus compiled then served as the basis for computing the proportion of issuers to which the definition of default applies in specific n’t h years, as is shown in Exhibit 11. For example, the proportion of issuers rated BB or lower actually defaulting in the second year becomes 8.3% (3 / 36). The proportion thus calculated is referred to as the “n’t h-year default ratio.” It is clear from the definition of the n’t h-year default ratio that adding

Exhibit 10: No. of companies defaulting in the n'th years

1997 group	Year 1	Year 2	Year 3	Year 4	No. in sample
AAA	0	0	0	0	30
AA	0	0	0	0	120
A	1	1	1	1	288
BBB	0	4	3	6	347
BB or lower	1	3	1	1	36

Exhibit 11: Default ratios in the n'th years (%)

1997 group	Year 1	Year 2	Year 3	Year 4	No. in sample
AAA	0.0	0.0	0.0	0.0	30
AA	0.0	0.0	0.0	0.0	120
A	0.3	0.3	0.3	0.3	288
BBB	0.0	1.2	0.9	1.7	347
BB or lower	2.8	8.3	2.8	2.8	36

Exhibit 12: Average n'th-year default ratios (%)

Average	Year 1	Year 2	Year 3	Year 4
AAA	0.0	0.0	0.0	0.0
AA	0.0	0.0	0.1	0.1
A	0.0	0.1	0.2	0.3
BBB	0.1	0.3	0.4	0.4
BB or lower	2.6	1.8	1.6	0.9

Exhibit 13: Cumulative average default ratios (%)

Average	After 1 year	After 2 year	After 3 year	After 4 year
AAA	0.0	0.0	0.0	0.0
AA	0.0	0.0	0.1	0.1
A	0.1	0.2	0.3	0.6
BBB	0.1	0.4	0.8	1.2
BB or lower	2.6	4.4	6.0	6.8

up individual n’t h-year default ratios when “n” is equivalent to 1 through 10 will produce a figure that corresponds to the 10-year cumulative broad-definition default ratio. In this way, the n’t h-year default ratios for each group are calculated in the same way as for the 1997 group in Exhibit 11. There is an upper limit, though, on “n” for each group. For example, the ratio calculation for the 1997 group can only be done up to five years (to fiscal 2001).

The next step is to calculate the averages of the n’t h-year default ratios for all the annual groups. The averages are weighted to compensate for the different sizes of the individual sample groups. The number of groups included in the average for each successive year shrinks as the value of “n” increases. This means there are 24 groups in the case of Year 1 and 23 in the case of Year 2. The results of this process, the average n’t h-year default ratios, are shown in Exhibit 12. Taking those results, the 10-year cumulative average default ratios can be obtained by adding up the broad-definition default ratios for each year from the first to the tenth. Exhibit 13 presents the outcome of performing such a calculation to determine the cumulative average default ratios for each year.

The rationale behind selecting this methodology is that it makes maximum use of all currently available data. In the case of the 1997 group, for example, tracking surveys have been performed over five years. To a certain extent, though, this 1997 group’s data also contain information that is relevant in terms of the cumulative default ratios for six- and seven-year periods. This is because a cumulative default ratio of 1% for a five-year period means that the cumulative default ratio over a period of five or more years will at the very least never be smaller than 1%. A process that follows this sequence—first calculate n’t h-year default ratios for individual groups as previously described, then find the averages of all of the groups’ n’t h-year default ratios, and subsequently use these n’t h-year averages to generate cumulative figures—allows the five years’ worth of default information provided by the 1997 group to also be utilized as information for the cumulative default ratios for periods of six years or longer. Conversely, information provided by the 1997 group will not be reflected at all in cumulative default ratios for six years or longer if the sequence of the



---

# NEWS RELEASE

---

methodology is to first calculate the cumulative default ratios for individual groups and then compute the averages of those ratios.

## **5. To Access the Data**

Detailed calculation results can be downloaded from R&I's web site (<http://www.r-i.co.jp/>). For a list of broad-definition default bond issuers not covered in this news release and changes in their ratings, please contact R&I as follows.

Akira Ishiwata or Tomoyuki Hirose  
Structured Finance Rating Dept.  
Phone: 81-3-5644-3454  
E-mail: [ishiwata@r-i.co.jp](mailto:ishiwata@r-i.co.jp) or [thirose@r-i.co.jp](mailto:thirose@r-i.co.jp)

---

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL [sfdept@r-i.co.jp](mailto:sfdept@r-i.co.jp) Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer

©Rating and Investment Information, Inc.

## Appendix

### Broad-definition default ratios for each rating

#### 1. Cumulative average broad-definition default ratios (%)

Years elapsed	1	2	3	4	5	6	7	8	9	10
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.40	0.62	0.85
AA	0.00	0.00	0.06	0.13	0.20	0.45	0.71	1.00	1.44	1.68
A	0.05	0.15	0.34	0.61	0.96	1.32	1.64	2.04	2.49	2.83
BBB	0.14	0.40	0.76	1.18	1.54	1.93	2.27	2.59	2.92	3.26
BB or lower	2.62	4.39	5.96	6.82	7.73	8.86	10.25	11.56	12.77	13.64

#### 2. Broad-definition default ratios for each group (%)

##### 2001 group (fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	-	-	-	-	-	-	-	-	-	18
AA	0.00	-	-	-	-	-	-	-	-	-	88
A	0.39	-	-	-	-	-	-	-	-	-	255
BBB	0.39	-	-	-	-	-	-	-	-	-	258
BB or lower	4.41	-	-	-	-	-	-	-	-	-	68

##### 2000 group (fiscal 2000 and fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	-	-	-	-	-	-	-	-	18
AA	0.00	0.00	-	-	-	-	-	-	-	-	92
A	0.00	0.38	-	-	-	-	-	-	-	-	263
BBB	0.00	0.36	-	-	-	-	-	-	-	-	279
BB or lower	7.06	9.41	-	-	-	-	-	-	-	-	85

##### 1999 group (fiscal 1999 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	-	-	-	-	-	-	-	24
AA	0.00	0.00	0.00	-	-	-	-	-	-	-	90
A	0.00	0.00	0.37	-	-	-	-	-	-	-	271
BBB	0.00	0.66	1.31	-	-	-	-	-	-	-	305
BB or lower	6.06	15.15	18.18	-	-	-	-	-	-	-	66

##### 1998 group (fiscal 1998 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	-	-	-	-	-	-	29
AA	0.00	0.00	0.00	0.00	-	-	-	-	-	-	118
A	0.00	0.33	0.33	0.66	-	-	-	-	-	-	302
BBB	0.93	1.23	2.78	3.40	-	-	-	-	-	-	324
BB or lower	12.82	17.95	25.64	25.64	-	-	-	-	-	-	39

##### 1997 group (fiscal 1997 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	30
AA	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	120
A	0.35	0.69	1.04	1.39	1.74	-	-	-	-	-	288
BBB	0.00	1.15	2.02	3.75	4.32	-	-	-	-	-	347
BB or lower	2.78	11.11	13.89	16.67	16.67	-	-	-	-	-	36

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL sfdept@r-i.co.jp Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer



# NEWS RELEASE

## 1996 group (fiscal 1996 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	29
AA	0.00	0.00	0.91	0.91	0.91	0.91	-	-	-	-	110
A	0.00	0.35	1.05	1.75	2.11	2.46	-	-	-	-	285
BBB	0.58	0.87	1.74	2.61	3.77	4.35	-	-	-	-	345
BB or lower	2.13	2.13	6.38	8.51	12.77	14.89	-	-	-	-	47

## 1995 group (fiscal 1995 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	31
AA	0.00	0.00	0.00	0.99	0.99	0.99	0.99	-	-	-	101
A	0.00	0.00	0.37	0.74	1.11	1.85	2.21	-	-	-	271
BBB	0.00	0.58	0.86	2.02	2.88	4.03	4.32	-	-	-	347
BB or lower	2.38	2.38	4.76	4.76	7.14	11.90	14.29	-	-	-	42

## 1994 group (fiscal 1994 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	29
AA	0.00	0.00	0.00	0.00	0.91	0.91	0.91	0.91	-	-	110
A	0.00	0.00	0.00	0.77	1.93	2.32	3.09	3.47	-	-	259
BBB	0.00	0.00	0.66	0.66	1.66	2.66	3.99	4.98	-	-	301
BB or lower	0.00	2.70	2.70	5.41	5.41	8.11	13.51	13.51	-	-	37

## 1993 group (fiscal 1993 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	31
AA	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89	1.79	-	112
A	0.00	0.00	0.00	0.00	0.79	1.98	2.77	3.95	3.95	-	253
BBB	0.80	0.80	0.80	1.61	1.61	2.81	3.21	4.02	5.62	-	249
BB or lower	0.00	0.00	3.13	3.13	3.13	3.13	6.25	12.50	12.50	-	32

## 1992 group (fiscal 1992 through fiscal 2001)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35
AA	0.00	0.00	0.00	0.00	0.00	1.68	3.36	3.36	3.36	4.20	119
A	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.62	3.24	3.24	247
BBB	0.00	0.86	0.86	1.29	2.16	2.16	3.45	3.88	4.31	6.03	232
BB or lower	0.00	0.00	0.00	0.00	3.70	3.70	7.41	11.11	18.52	18.52	27

## 1991 group (fiscal 1991 through fiscal 2000)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	2.38	2.38	2.38	2.38	42
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.91	2.73	2.73	2.73	110
A	0.00	0.00	0.89	0.89	1.33	1.33	1.33	2.22	3.11	4.89	225
BBB	0.00	0.00	0.00	0.00	0.00	0.89	0.89	1.79	2.23	2.68	224
BB or lower	0.00	0.00	0.00	0.00	0.00	3.70	7.41	11.11	14.81	18.52	27

## 1990 group (fiscal 1990 through fiscal 1999)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.22	4.44	4.44	45
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	1.85	1.85	108
A	0.00	0.00	0.00	1.01	1.01	1.52	1.52	1.52	2.02	2.53	198
BBB	0.00	0.00	0.41	0.41	0.41	0.41	1.23	1.23	2.46	2.87	244
BB or lower	0.00	0.00	0.00	0.00	0.00	0.00	4.17	8.33	8.33	12.50	24

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL sfdept@r-i.co.jp Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer



# NEWS RELEASE

1989 group (fiscal 1989 through fiscal 1998)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	39
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	2.27	88
A	0.00	0.00	0.00	0.00	1.18	1.18	1.76	1.76	1.76	1.76	170
BBB	0.00	0.00	0.00	0.36	0.36	0.36	0.36	1.09	1.45	2.55	275
BB or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70	7.41	7.41	27

1988 group (fiscal 1988 through fiscal 1997)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	68
A	0.00	0.00	0.00	0.00	0.00	1.31	1.31	1.96	3.27	3.27	153
BBB	0.00	0.00	0.00	0.00	0.34	0.34	0.34	0.34	0.34	0.68	296
BB or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70	7.41	27

1987 group (fiscal 1987 through fiscal 1996)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	117
BBB	0.00	0.00	0.00	0.00	0.00	0.37	0.37	0.37	0.37	0.37	271
BB or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.57	28

1986 group (fiscal 1986 through fiscal 1995)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96
BBB	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.43	0.43	230
BB or lower	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	23

1985 group (fiscal 1985 through fiscal 1994)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92
BBB	0.00	0.51	0.51	0.51	0.51	0.51	0.51	1.02	1.02	1.02	197
BB or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14

1984 group (fiscal 1984 through fiscal 1993)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78
BBB	0.00	0.00	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	168
BB or lower	0.00	0.00	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	27

1983 group (fiscal 1983 through fiscal 1992)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74
BBB	0.00	0.00	0.00	0.65	0.65	0.65	0.65	0.65	0.65	0.65	155
BB or lower	2.78	2.78	2.78	5.56	5.56	5.56	5.56	5.56	5.56	5.56	36

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL sfdept@r-i.co.jp Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer

©Rating and Investment Information, Inc.



# NEWS RELEASE

1982 group (fiscal 1982 through fiscal 1991)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76
BBB	0.00	0.00	0.00	0.00	0.68	0.68	0.68	0.68	0.68	0.68	148
BB or lower	0.00	2.17	2.17	2.17	4.35	4.35	4.35	4.35	4.35	4.35	46

1981 group (fiscal 1981 through fiscal 1990)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73
BBB	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74	0.74	0.74	136
BB or lower	2.13	2.13	4.26	4.26	4.26	6.38	6.38	6.38	6.38	6.38	47

1980 group (fiscal 1980 through fiscal 1989)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44
BBB	0.00	0.00	0.00	0.00	0.00	0.00	1.05	1.05	1.05	1.05	95
BB or lower	0.00	0.00	0.00	5.13	5.13	5.13	7.69	7.69	7.69	7.69	39

1979 group (fiscal 1979 through fiscal 1988)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45
BBB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96
BB or lower	0.00	0.00	0.00	0.00	2.78	2.78	2.78	5.56	5.56	5.56	36

1978 group (fiscal 1978 through fiscal 1987)

Years elapsed	1	2	3	4	5	6	7	8	9	10	No. of issuers
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19
A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48
BBB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96
BB or lower	0.00	0.00	0.00	0.00	0.00	2.78	2.78	2.78	5.56	5.56	36

**Rating and Investment Information, Inc.** TT-2 Bldg, 3-8-1, Nihonbashi Ningyocho, Chuo-ku, Tokyo 103-0013, Japan  
Structured Finance Rating Dept. TEL.03-5644-3454 FAX.03-5644-3457 EMAIL sfdept@r-i.co.jp Homepage <http://www.r-i.co.jp>

Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities. Information has been obtained by R&I from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, R&I or others, R&I does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. As a general rule, R&I provides the rating services for a rating fee paid by the issuer

©Rating and Investment Information, Inc.