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JCR Rating Transition Matrices and Cumulative Default Rates

JCR announces, as it has done annually in the past, its latest rating transition matrices and cumulative default rates ("CDRs") as based on its ratings assigned by 2013. Historical data used in the calculation (the number of issuers or issues, number of defaulted corporations, etc.) are to be posted on JCR's website (http://www.jcr.co.jp).

Rating Transition Matrices and Cumulative Default Rates for Corporations

I. Corporate Rating Transition Matrices

1. Coverage of Survey

In this survey "Rating Transition Matrices and Cumulative Default Rates" ("this survey" or "the survey"), the rating transition matrices for corporations cover resident corporations, for which JCR made public long-term ratings during period from January 1, 2000 to December 31 2013, and did not include non-resident corporations, countries (sovereigns), local governments, and investment corporations or J-REITs.

In principle, JCR uses long-term issuer ratings. In cases where there is no long-term issuer rating, JCR chose a proper rating from long-term issue rating or ability to pay insurance claims rating and used it. JCR excluded ratings on guaranteed products or products with subordinated clause and unsolicited credit ratings ("p" ratings, ratings assigned without soliciting by an issuer) from the survey. However, in cases where JCR withdrew a solicited rating following request for withdrawal from the issuer and then assigned an unsolicited rating to the issuer shortly after the rating withdrawal, and this unsolicited rating has defaulted finally, JCR treated such unsolicited ratings as succession from the solicited rating. In cases where a rating is placed under Credit Monitor, JCR uses the symbol of the rating, on which Credit Monitor is placed.

2. Method Employed

Rating transition matrices illustrate changes of ratings at a certain point after a certain period elapses in probability form (percentage).

JCR prepares a frequency distribution table in the form of matrix, listing the ratings at the beginning of each year during the covered period (from 2000 to 2013 in this survey) as the initial ratings on vertical axis (column) and the ratings after a lapse of tallying unit period on horizontal axis (row). In case of creation of rating transition matrix for 1 year tallying unit period, for example, JCR creates a frequency distribution table that indicates changes of ratings at the beginning of year 2000 one year later and then creates a table in the same way for the ratings at the beginning of year 2001, and thereafter. JCR then simply adds the numbers in the cells of the multiple frequency distribution tables created in the aforementioned process at the same position and divides the figure totaled in each cell by the total number of ratings at the initial time (the total number of data for each row) for each rating category to indicate the results in percentage form as rating transition matrix.

In cases where reorganizations such as mergers and company splits have been conducted, JCR focuses attention on legal survival or extinction and decides continuation or non-continuation of the transition observations. In cases where JCR assigned a rating for a new company into which two companies rated by JCR merged, JCR, in principle, traces rating transition of the new company from the rating of the surviving company and does not trace rating transition of the new company from the extinct company.

In cases where "LD" or "D" has been assigned for a certain issuer during a certain year, JCR treats the record in the rating transition matrix as if the rating at the end of the year was "LD" or "D."

3. Rating Transition Matrices (from 2000 to 2013) (Please refer to Tables 1 through 3)

Table 1. Rating Transition Matrix (tallying unit period: 1 year)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC or lower	LD	D
AAA	94.36	4.62	0.51	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA+	1.18	91.76	5.88	0.59	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.30	0.90	93.69	4.20	0.00	0.30	0.00	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-	0.00	0.00	3.25	89.87	5.93	0.57	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A+	0.00	0.00	0.24	5.19	88.55	5.67	0.12	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
A	0.00	0.00	0.26	0.52	6.55	86.72	5.09	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A-	0.00	0.00	0.08	0.15	0.31	9.15	84.69	4.92	0.54	0.08	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
BBB+	0.00	0.00	0.00	0.00	0.22	0.97	9.31	81.71	7.14	0.22	0.00	0.11	0.00	0.11	0.00	0.00	0.11	0.11	0.00
BBB	0.00	0.00	0.00	0.09	0.00	0.18	0.88	7.95	83.48	6.27	0.44	0.09	0.00	0.00	0.09	0.00	0.09	0.09	0.35
BBB-	0.00	0.00	0.00	0.00	0.31	0.16	0.16	0.31	9.94	80.28	6.37	1.24	0.00	0.31	0.31	0.31	0.00	0.00	0.31
BB+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	16.38	69.83	7.76	1.72	0.86	0.00	0.86	0.00	0.00	1.72
BB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	15.56	64.44	11.11	4.44	0.00	0.00	0.00	0.00	0.00
BB-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	20.00	45.00	15.00	0.00	0.00	10.00	0.00	0.00
B+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.14	0.00	0.00	21.43	57.14	0.00	0.00	0.00	0.00	14.29
B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.57	0.00	14.29	0.00	57.14
B-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00	60.00	20.00	0.00	0.00
CCC or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	0.00	60.00

Table 2. Rating Transition Matrix (tallying unit period: 3 years)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC or lower	LD	D
AAA	83.03	9.70	4.24	1.21	0.00	1.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA+	3.31	76.86	14.88	2.48	2.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.40	4.05	83.00	8.50	0.81	1.21	0.81	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-	0.00	0.00	8.11	72.48	15.72	2.46	0.00	0.00	0.74	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A+	0.00	0.00	1.53	12.69	70.49	13.00	1.07	0.61	0.15	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
A	0.00	0.00	0.57	1.48	17.06	66.10	9.78	4.32	0.34	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.11	0.00	0.00
A-	0.00	0.00	0.29	0.29	2.42	22.00	64.05	8.04	1.45	0.97	0.10	0.10	0.00	0.10	0.00	0.00	0.00	0.10	0.10
BBB+	0.00	0.00	0.14	0.14	0.58	5.05	20.49	54.69	14.43	3.46	0.29	0.00	0.14	0.00	0.00	0.00	0.29	0.00	0.29
BBB	0.00	0.00	0.00	0.24	0.00	1.42	4.25	19.69	59.79	12.03	0.94	0.24	0.00	0.12	0.00	0.00	0.12	0.24	0.94
BBB-	0.00	0.00	0.00	0.43	0.43	1.28	1.70	3.40	23.83	52.55	9.57	1.70	0.21	0.21	0.43	0.64	0.00	0.00	3.62
BB+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	8.22	32.88	30.14	10.96	5.48	1.37	0.00	0.00	0.00	0.00	5.48
BB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.23	26.92	30.77	19.23	3.85	0.00	0.00	0.00	0.00	0.00
BB-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.77	23.08	0.00	15.38	15.38	0.00	0.00	0.00	0.00	15.38
B+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.67	16.67	0.00	16.67	8.33	8.33	0.00	0.00	0.00	0.00	33.33
B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
B-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.67	0.00	0.00	0.00	0.00	0.00	0.00	33.33
CCC or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	75.00

Table 3. Rating Transition Matrix (tallying unit period: 5 years)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC or lower	LD	D
AAA	76.15	12.31	6.92	1.54	0.77	2.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA+	4.30	65.59	23.66	5.38	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	7.56	70.93	13.37	2.91	1.74	1.16	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-	0.00	0.33	12.05	63.19	18.24	3.58	0.00	0.00	1.63	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A+	0.00	0.00	2.42	18.18	59.60	15.56	2.22	1.41	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
A	0.00	0.00	1.40	1.56	25.43	53.35	10.76	5.93	0.62	0.16	0.00	0.16	0.16	0.00	0.00	0.00	0.47	0.00	0.00
A-	0.00	0.00	0.25	1.24	6.09	28.36	49.50	10.57	2.36	1.12	0.12	0.12	0.00	0.00	0.00	0.12	0.00	0.00	0.12
BBB+	0.00	0.00	0.21	0.63	0.84	8.63	26.11	42.74	14.53	3.58	0.21	0.21	0.00	0.00	0.42	0.21	0.21	0.42	1.05
BBB	0.00	0.00	0.00	0.16	0.16	4.56	6.84	27.04	47.72	11.07	0.81	0.16	0.00	0.00	0.00	0.00	0.16	0.00	1.30
BBB-	0.00	0.00	0.29	0.29	0.58	2.05	4.97	9.36	25.73	42.40	5.26	1.75	0.58	0.00	0.00	0.00	0.00	0.00	6.73
BB+	0.00	0.00	0.00	0.00	0.00	3.85	1.92	3.85	23.08	26.92	17.31	5.77	3.85	1.92	0.00	0.00	0.00	0.00	11.54
BB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.53	31.58	15.79	21.05	10.53	5.26	0.00	0.00	0.00	0.00	5.26
BB-	0.00	0.00	0.00	0.00	0.00	0.00	11.11	0.00	33.33	0.00	0.00	11.11	22.22	0.00	0.00	0.00	0.00	0.00	22.22
B+	0.00	0.00	0.00	0.00	0.00	0.00	18.18	0.00	18.18	0.00	18.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.45
B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
B-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
CCC or lower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00

II. CDRs Based on Category-wise Corporate Rating

1. Coverage of Survey

Coverage of CDRs in this survey is the same as that for rating transition matrix.

2. Method Employed

To calculate CDRs, JCR observes change in the pool of ratings which existed at the beginning of each year during the covered period (from 2000 to 2013 in this survey) (cohort of each year). JCR counts the number of defaulted issuers for each number of years elapsed for cohort of each year by rating category, and produces weighted averages against the number of surviving issuers at the beginning of each number of years elapsed to obtain a marginal default rate for each number of years elapsed. The method employed is summarized as follows.

Y year denotes each year of the period covered.

a_Y : The number of initially rated issuers for Y year cohort (pool of ratings existed at the beginning of Y year).

$d_{Y,t}$: The number of defaulted issuers among the initially rated issuers which defaulted during t th year for Y year cohort.

Then, the number of surviving issuers at the beginning of t th year for Y year cohort can be described as below.

$$a(Y,t) = \begin{cases} a_Y & t = 1 \\ a_Y - \sum_t d_{Y,t-1} & t \neq 1 \end{cases}$$

Using the above, weighted average default rate at t th year is described as below.

$$\alpha_t = \frac{\sum_Y d_{Y,t}}{\sum_Y a(Y,t)}$$

Then, CDRs for n years are described by the following formula:

$$1 - \prod_{i=1}^{n} (1 - \alpha_i)$$

In cases where reorganizations such as mergers and company splits have been conducted, JCR, in principle, focuses attention on legal survival or extinction and traces rating transition accordingly. This is the same as the policy for rating transition matrices. To calculate CDRs, however, in cases where a new company created by merger between rated companies defaults, JCR treats both the surviving company and the extinct company as defaulted. In case of default of a new company created by merger of the extinct company being rated by JCR and the surviving company not being rated by JCR, JCR counts a default for the extinct company which had been rated.

JCR traces default of issuers, for which ratings have been extinguished owing to withdrawals requested by the issuer or other reasons, and reflects the results in calculation of CDRs. JCR includes these traced issuers whose ratings have been extinguished in calculation of the default rate for both the numerator and the denominator if they default. JCR includes these traced issuers whose ratings have been extinguished in calculation of the default rate for the denominator only if they do not default. JCR stops the tracing, however, when tracing of defaults is considered difficult owing to some reasons such as significant difficulty in obtaining important information including financial statements on such issuers whose ratings have been extinguished.

3. Definition of Default

Default means a state, in which principal or interest payments of financial obligations cannot be honored as initially agreed, with respect to the CDRs. This includes the following cases: (i) JCR judges that all the financial obligations are, in effect, in default. (ii) JCR judges that while an obligor does not honor part of the agreed to financial obligations, but it honors all its other agreed to financial obligations. Usually, when cases fall under the former, “D” ratings are assigned, and “LD” ratings are assigned when cases fall under the latter. Commencement of legal bankruptcy proceedings is a typical example of the former situation, and a situation where specific creditor grants debt forgiveness or DES for debt relief is a typical example of the latter situation. JCR counts a case where “JCR judges that while an obligor does not honor part of the agreed to financial obligations, but it honors all its other agreed to financial obligations” as a default for calculating CDRs even prior to its introduction of “LD” to the rating symbol on August 28, 2012.

4. CDRs (from 2000 to 2013) (Please refer to Table 4)

CDRs from 2000 to 2013 are shown in Table 4. There was only one defaulted corporation, AvanStrate Inc., in 2013, as change from the previous survey (with covered period from 2000 to 2012). Although CDRs for “A” category have risen (from 0.22% to 0.26% for 3-year CDRs, for example), reflecting default of AvanStrate Inc., CDRs for many other rating symbols dropped. Ranking order, which the higher the ratings, the lower the CDRs are, has been maintained. In contrast to CDRs of “BB” and higher categories, CDRs of “B” and lower categories tend to become substantially higher than those of the next upper categories. The extremely small number of rated issuers with a rating of “B” and lower categories is one of the factors which cause such tendency. The largest number of issuers with “B” category at the beginning of each year during the covered period was 6, and such number for issuers with “CCC” and lower was 3.

Table 4. CDRs (Unit: %)

Rating	1-year	2-year	3-year	4-year	5-year
AAA	0.00	0.00	0.00	0.00	0.00
AA	0.00	0.00	0.00	0.00	0.00
A	0.03	0.16	0.26	0.42	0.60
BBB	0.62	1.43	2.22	2.81	3.33
BB	3.32	5.85	9.28	12.36	15.10
B	20.59	38.24	52.94	58.82	58.82
CCC or lower	60.00	60.00	60.00	60.00	60.00

Rating Transition Matrices for Asset-Backed Securities (ABS)

"Rating Transition Matrices by Lapse of Months" and "1-Year (on a Calendar Year Basis) Rating Transition Matrices" based on data in the latest three years are as follows.

1. Coverage of Survey

The data covered products with credit enhancement provided in the form of senior-subordinated structure for the underlying assets in principle, for which their ratings were made public from November 1996 to December 2013, in the survey.

Products such as repackaged bonds and guaranteed products linked to ratings of third parties have been excluded in principle. Products consisting of multiple tranches have been counted as one when they have the same ranking while different in maturities.

2. Method Employed and Results

(1) Rating Transition Matrices by Lapse of Months (Please refer to Tables 5 through 7)

JCR surveyed and tallied how the rating on each of the products changed as months elapsed from the rating at the time of the issuance. Shown in Tables 5, 6 and 7 are the distributions of changes after lapse of 12 months, 24 months and 36 months, respectively. JCR did not count the products redeemed before the end of each period or the products that did not exist for each aforementioned period, despite changes in ratings.

There have been no records of defaults in asset-backed securities (ABS) rated by JCR, and default rates at any time points, 12 months, 24 months, or 36 months after the initial rating assignment, have been zero counts.

The number of ratings upgraded exceeded the number of ratings downgraded for all of the three time points with proportion of 3 to 1 approximately. Even a small number of rating changes tends to push up the rate of rating changes for some of rating symbols of “AA+” or lower, because initial ratings for asset-backed securities (ABS) concentrate in “AAA” ratings.

Table 5. 12-months Later Rating Transition Matrix

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	100.00															
AA+		100.00														
AA		5.88	94.12													
AA-				100.00												
A+					100.00											
A					2.00	98.00										
A-							100.00									
BBB+								100.00								
BBB									96.30	3.70						
BBB-										100.00						
BB+											100.00					
BB												100.00				
BB-																
B+														100.00		
B																
B- or lower																

Table 6. 24-months Later Rating Transition Matrix

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	100.00															
AA+	33.33	66.67														
AA	9.68	12.90	74.19		3.23											
AA-			25.00	65.00	10.00											
A+	16.67				83.33											
A	2.63			2.63		92.11	2.63									
A-		11.11					88.89									
BBB+								100.00								
BBB									94.44	5.56						
BBB-										100.00						
BB+											100.00					
BB												100.00				
BB-																
B+														100.00		
B																
B- or lower																

Table 7. 36-months Later Rating Transition Matrix

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	100.00															
AA+		100.00														
AA	24.00	16.00	48.00		4.00	4.00	4.00									
AA-			10.53	68.42			10.53		5.26	5.26						
A+	25.00				75.00											
A	7.14		7.14	3.57	7.14	75.00										
A-	11.11						77.78	11.11								
BBB+								100.00								
BBB						6.67	6.67		80.00	6.67						
BBB-										100.00						
BB+											100.00					
BB												100.00				
BB-																
B+														100.00		
B																
B- or lower																

(2) 1-Year (on a Calendar Year Basis) Rating Transition Matrices (Please refer to Tables 8 & 9)

JCR studied how the ratings at the beginning of January each year changed by the end of the year over the period from 2011 to 2013. The changes in the three years were added and averaged as indicated in Table 8. The rating transitions in the year 2013 are also shown in Table 9 for reference.

While there were both rating upgrades and rating downgrades in 2011 and 2012, there was no rating downgraded, and there were only rating upgrades for 2013 against the background of decline in the number of bankruptcies. Products, for which ratings were upgraded in 2013, were classified into the following three: (i) housing loan receivables, (ii) real estate and (iii) synthetic CDOs. JCR upgraded ratings for products of (i) and (ii), valuing rise in level of credit enhancement, and upgraded ratings for products of (iii), valuing creditworthiness of the referenced pools and shortened remaining period.

Table 8. 1-year (on a Calendar Year Basis) Average Rating Transition Matrix for 2011 - 2013

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	100.00															
AA+		100.00														
AA	18.52	11.11	66.67			3.70										
AA-			6.67	86.67	6.67											
A+			9.09		81.82		9.09									
A	4.35		4.35		13.04	73.91	4.35									
A-				12.50		25.00	50.00			12.50						
BBB+								100.00								
BBB					14.29				85.71							
BBB-										100.00						
BB+											100.00					
BB												100.00				
BB-																
B+																
B																
B- or lower																

Table 9. 1-year (on a Calendar Year Basis) Rating Transition Matrix for 2013

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	100.00															
AA+																
AA	50.00	33.33	16.67													
AA-				100.00												
A+					100.00											
A					28.57	71.43										
A-						33.33	66.67									
BBB+								100.00								
BBB									100.00							
BBB-										100.00						
BB+																
BB												100.00				
BB-																
B+																
B																
B- or lower																

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