JCR

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JCR Rating Matrices and Cumulative Default Rates

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JCR is ready to announce, as it has done annually in the past, its rating transition matrices and cumulative default rates as based on its ratings in 2010.

1. Rating Transition Matrices for Corporations (Tables 1 through 3)

1.1 Definition of Default

Default means a debt issuer is in a state of default on debt obligation, unable to fulfill principal and interest payments for the rated debt as agreed originally. It includes situations where fulfillment of obligations is deemed impossible due to motions for legal procedures such as those under Bankruptcy Act, Corporate Reorganization Act and Civil Rehabilitation Act, and special liquidations and liquidations under the former Commercial Code.

Table 1. One-year Rating Transition Matrix (for period Jan. 2000 - Dec. 2010)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC or lower	D
AAA	96.46	3.07	0.47	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
AA+	1.89	91.19	5.53	0.51	0.87	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	0.49	1.72	93.58	3.23	0.61	0.20	0.00	0.16	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	3.38	88.35	7.30	0.21	0.43	0.05	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A+	0.00	0.00	0.26	5.92	86.80	6.44	0.05	0.17	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
A	0.00	0.00	0.46	0.24	6.63	85.11	6.00	1.45	0.02	0.01	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
A-	0.00	0.00	0.11	0.26	0.48	9.80	83.44	5.12	0.68	0.05	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00
BBB+	0.00	0.00	0.00	0.01	0.32	1.15	10.31	79.78	7.58	0.38	0.15	0.13	0.00	0.03	0.00	0.00	0.07	0.09
BBB	0.00	0.00	0.00	0.12	0.00	0.18	1.05	8.62	81.51	7.52	0.34	0.11	0.02	0.00	0.02	0.02	0.13	0.35
BBB-	0.00	0.00	0.00	0.00	0.34	0.40	0.06	0.52	10.60	78.55	6.77	1.16	0.18	0.29	0.06	0.15	0.02	0.90
BB+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	17.65	67.40	8.66	2.45	0.33	0.00	0.65	0.57	1.31
BB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37	13.35	58.50	12.62	8.25	0.00	1.94	0.00	0.97
BB-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.89	21.62	35.14	19.46	0.00	0.00	3.24	8.65
B+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.70	2.23	7.82	15.64	55.31	0.00	1.12	0.00	11.17
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	50.00	0.00	5.26	44.74
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	26.09	0.00	0.00	60.87	2.17	10.87
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	9.76	90.24

Table 2. Three-year Rating Transition Matrix (for period Jan. 2000 - Dec. 2010)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC or lower	D
AAA	89.74	8.80	1.47	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
AA+	5.22	68.48	19.76	3.44	3.11	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	0.92	6.17	82.28	7.03	0.31	1.59	0.00	1.71	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	9.12	70.28	17.55	1.42	0.00	0.07	0.76	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A+	0.00	0.00	2.29	16.11	64.32	14.28	1.01	1.24	0.04	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
A	0.00	0.00	1.00	1.61	19.50	59.93	11.68	5.54	0.33	0.00	0.02	0.00	0.05	0.28	0.00	0.00	0.08	0.00
A-	0.00	0.00	0.31	0.40	3.66	23.97	60.69	7.87	1.53	1.19	0.04	0.22	0.00	0.04	0.00	0.00	0.00	0.10
BBB+	0.00	0.00	0.02	0.20	0.82	6.98	23.38	50.58	12.54	4.30	0.32	0.20	0.06	0.04	0.00	0.02	0.32	0.22
BBB	0.00	0.00	0.00	0.29	0.00	1.74	5.28	19.73	56.47	13.95	1.45	0.21	0.01	0.22	0.00	0.06	0.00	0.59
BBB-	0.00	0.00	0.00	0.59	0.26	1.21	2.56	4.62	24.09	51.20	8.80	1.70	0.57	0.17	0.09	0.52	0.00	3.62
BB+	0.00	0.00	0.00	0.00	0.00	0.00	0.77	4.99	10.12	32.52	29.71	12.80	3.97	1.41	0.00	0.00	0.00	3.71
BB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.16	11.23	29.41	19.79	13.37	13.90	0.00	0.00	0.00	2.14
BB-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	30.19	27.36	0.00	18.87	8.49	0.00	0.00	0.00	13.21
B+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.48	17.93	8.28	11.03	12.41	11.72	0.00	0.00	0.00	24.14
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	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	75.86	10.34	0.00	0.00	0.00	0.00	13.79
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	100.00

Table 3. Five-year Rating Transition Matrix (for period Jan. 2000 - Dec. 2010)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC or lower	D
AAA	85.32	10.41	2.08	0.00	2.19	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+	7.06	53.22	31.40	7.69	0.63	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	11.92	67.53	11.92	1.19	2.58	0.00	4.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-	0.00	0.57	15.95	63.26	16.88	1.51	0.00	0.00	1.15	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A+	0.00	0.00	3.48	22.12	53.20	16.22	2.06	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
A	0.00	0.00	2.63	2.39	29.45	47.22	11.83	4.69	0.57	0.29	0.02	0.50	0.00	0.00	0.00	0.00	0.38	0.00
A-	0.00	0.00	0.43	1.50	8.91	29.75	45.81	10.15	1.43	1.24	0.20	0.31	0.00	0.00	0.00	0.11	0.00	0.15
BBB+	0.00	0.00	0.03	0.55	0.95	10.70	29.55	41.07	10.91	4.57	0.14	0.10	0.07	0.00	0.14	0.41	0.00	0.82
BBB	0.00	0.00	0.00	0.28	0.14	5.75	6.42	26.69	47.47	11.61	1.02	0.14	0.09	0.00	0.00	0.00	0.00	0.39
BBB-	0.00	0.00	0.00	0.00	0.30	1.85	6.25	10.96	27.09	44.16	3.84	2.49	0.83	0.00	0.00	0.00	0.00	2.22
BB+	0.00	0.00	0.00	0.00	0.00	0.19	2.87	6.50	25.62	26.00	19.89	8.03	0.00	2.10	0.00	0.00	0.00	8.80
BB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	27.34	2.16	12.95	14.39	12.95	16.55	0.00	0.00	0.00	7.91
BB-	0.00	0.00	0.00	0.00	0.00	0.00	13.51	0.00	32.43	0.00	1.35	8.11	25.68	0.00	0.00	0.00	0.00	18.92
B+	0.00	0.00	0.00	0.00	0.00	0.00	19.05	0.00	30.48	2.86	18.10	2.86	0.00	0.00	0.00	0.00	0.00	26.67
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	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	20.00	0.00	0.00	0.00	0.00	0.00	80.00
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	100.00

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1.2 Rating Data Employed

Data used are JCR's long-term ratings for residents made public during the 11 years from January 2000 through December 2010 except the following:

- Ratings on Guaranteed Bonds
- Ratings on Subordinated Bonds
- 'p' Ratings

Included, however, are the ratings that were changed to Dp from the original ratings that had not been 'p' ratings, such as ratings on ability to pay insurance claims. Employed here are the corporate rating data available as of the end of each month. Corporations that fell into D or Dp are listed in Table 4.

Table 4. List of Corporations that fell to D or Dp Rating

Corporation	Rating	Year of Default
Toho Mutual Life Insurance	Dp	2000
Kawasaki Electric	D	2000
Taisei Fire and Marine	D	2001
Mycal	D	2001
Kyoei Life Insurance	Dp	2001
Chiyoda Mutual Life Insurance	Dp	2001
Tokyo Mutual Life Insurance	D	2001
Daihyaku Mutual Life Insurance	Dp	2001
Painthouse	D	2005
Suruga Corporation	D	2008
Zephyr	D	2008
Urban Corporation	D	2008
Yamato Life Insurance	Dp	2008
Japan General Estate	D	2009
Pacific Holdings	D	2009
Joint Corporation	D	2009
ES-CON Japan	D	2009
Japan Airlines International	D	2010
Japan Airlines Corporation	D	2010
Willcom	D	2010

1.3 Method Employed

JCR prepared a frequency distribution table, listing the initial ratings on vertical axis (column) and those a year (3 years and 5 years) later on horizontal axis (row). For example, a rating on an issue at the end of January 2000 has been compared with that on the same issue at the end of January 2001 (2003 and 2005), with the rating at the end of February 2000 compared with that at the end of February 2001 (2003 and 2005). JCR then added up a cell of all of the tables (10 years x 12 months) for the same position and divided the figure by the total number of data in each row to provide the results in percentage terms as shown in Tables 1 through 3.

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1.4 How to read Rating Transition Matrices and Example for Use

Ratings are reviewed once a year or when events affecting credibility occur. They are upgraded, retained or downgraded depending on the creditworthiness of issuers at that time.

Rating matrices illustrate to which ratings the current ratings change n years later (1, 3 or 5 years later as shown in Tables 1 through 3) in a probability (percentage) form based on past rating data.

Rating transition matrices created for changes in ratings n years later in this manner allow us to obtain numerical values true to actual performance unlike estimates by some other models because they are based on JCR's actual rating performance for the past 11 years. They also show stable rating transitions that are not influenced by temporary and accidental events.

Rating matrices show that the lower the ratings are, the higher will be the probability of upgrading or downgrading a year later rather than being kept unchanged. Consequently, they show that the creditworthiness of corporations with lower ratings lacks stability as compared with that of corporations with higher ratings.

Investors can know how much the bonds held by them are exposed to risk of rating change.

Using rating transition matrices, investors can estimate a future rating based on the current rating.

For example, given the Markov chain, they can get a pseudo rating transition matrix n years later by multiplying one-year rating transition matrix by n times in accordance with matrix multiplication. They can also estimate changes in ratings n year later by reading the pseudo matrix created in this way.

2. CDRs Based on Category-wise Corporate Ratings (Table 5)

To validate the adequacy of JCR ratings objectively, 1-, 3- and 5-year CDRs have been calculated based on category-wise corporate ratings, using the data on past records as described in "1. Rating Transition Matrices for Corporations (for the period from January 2000 to December 2010)." The results are as shown in Table 5.

Table 5. CDRs by Rating Category

Rating	One-year	Three-year	Five-year
AAA	0.00%	0.00%	0.00%
AA	0.00%	0.00%	0.00%
A	0.05%	0.16%	0.23%
BBB	0.41%	1.27%	1.01%
BB	1.98%	4.38%	9.65%
B	15.97%	27.81%	36.59%
CCC or lower	90.24%	100.00%	100.00%

Compiled from Rating Transition Matrices for period Jan. 2000 - Dec. 2010

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3. Broadly Defined Three-year CDRs Based on Category-wise Ratings (Table 6)
JCR has calculated CDRs based on definition of broadly defined default.

3.1 What is Broadly Defined Default?
JCR has counted those corporations which were accorded debt forgiveness by banks or carried out debt-to-equity swaps as defaults and calculated broadly defined defaults by adding up those defaults and defaults shown in Table 4.

Corporations whose ratings were withdrawn or extinguished have also been included in the default counting for both numerators and denominators for defaulted corporations, and for denominators only for corporations which have not defaulted.

3.2 Method Employed
To calculate the three-year CDRs (average of past 10 years) based on 2010 ratings, JCR counted the number of corporations that defaulted on a broadly defined basis one year, two years and three years later in each rating category at the end of each December for the period from 1998 through 2009, calculated defaults one year, two years and three years later and produced weighted averages against the beginning number of corporations during the period covered. Then, JCR calculated three-year CDRs by accumulating default rates for one year, two years and three years later.

Table 6. Broadly Defined 3-year CDRs by Rating Category (Average of past 10 years)

	AAA-AA	A	BBB	BB	B	CCC or lower
2010	0.00%	0.39%	2.40%	9.92%	53.85%	85.71%

Where DR one year later is α1, DR two years later is α2 and DR three years later is α3, three-year CDR equals 1 - (1-α1) x (1-α2) x (1-α3).

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4. Rating Transition Matrices for Asset-backed Securities (ABS)

As in last year, JCR has made public the "Rating Transition by Lapse of Months" and "One-year (on a Calendar Year Basis) Rating Transitions" based on the data in the latest three years.

4.1 Rating Data Employed

The data covered are asset-backed securities with credit enhancement provided in the form of senior-subordinated structure for the period from November 1996 to December 2010.

Data on repackaged bonds and asset-backed securities guaranteed by third parties have been excluded.

Asset-backed securities consisting of multiple tranches have been counted as one when they have the same rating status while different in maturities.

4.2 Method Employed

4.2.1 Rating Transition Matrices by Lapse of Months (Tables 7 through 9)

JCR surveyed and tallied how the rating on each of the asset-backed securities changed as months elapsed from that at the time of the issuance. Shown in Tables 7, 8 and 9 are the distributions of changes after the lapse of 12 months, 24 months and 36 months, respectively. Excluded from the tally are the issues redeemed before the end of each period or the issues that, despite changes in ratings, failed to survive each period.

4.2.2 One-Year (on a Calendar Year Basis) Rating Transition Matrices (Tables 10 & 11)

JCR studied how the ratings at the beginning of January each year changed by the end of the year over the period from 2008 to 2010. The changes in the three years were tallied and averaged as indicated in Table 10. The rating transitions in the year 2010 are also given in Table 11 for reference.

Table 7. 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		3.70	96.30													
AA-				100.00												
A+					100.00											
A					2.63	97.37										
A-							100.00									
BBB+								100.00								
BBB									95.00	5.00						
BBB-										100.00						
BB+											100.00					
BB												100.00				
BB-																
B+														100.00		
B																
B- or lower																

Table 8. 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+	50.00	50.00														
AA	9.52	14.29	71.43		4.76											
AA-			33.33	60.00	6.67											
A+	33.33				66.67											
A	3.23			3.23		93.55										
A-		11.11					88.89									
BBB+								100.00								
BBB									94.12	5.88						
BBB-										100.00						
BB+																
BB												100.00				
BB-																
B+														100.00		
B																
B- or lower																

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Table 9. 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	22.22	11.11	50.00		5.56	5.56	5.56									
AA-			14.29	57.14			14.29		7.14	7.14						
A+	50.00				50.00											
A	8.70		4.35	4.35		82.61										
A-	11.11						77.78	11.11								
BBB+								100.00								
BBB						7.69	7.69		76.92	7.69						
BBB-										100.00						
BB+																
BB												100.00				
BB-																
B+														100.00		
B																
B- or lower																

Table 10. One-year (on a Calendar Year Basis) Average Rating Transition Matrix (for period 2008 - 2010)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	99.21	0.79														
AA+	55.56	33.33				11.11										
AA	5.00	5.00	72.50	2.50	5.00	5.00	5.00									
AA-			21.74	69.57			4.35			4.35						
A+					60.00	40.00										
A	3.33			3.33	6.67	83.33					3.33					
A-							84.62	7.69		7.69						
BBB+								100.00								
BBB									100.00							
BBB-									100.00							
BB+											100.00					
BB																
BB-																
B+																
B																
B- or lower																

Table 11. One-year (on a Calendar Year Basis) Rating Transition Matrix for 2010

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B- or lower
AAA	100.00															
AA+	50.00	50.00														
AA	16.67		83.33													
AA-			11.11	88.89												
A+					50.00	50.00										
A	9.09				18.18	63.64					9.09					
A-							83.33			16.67						
BBB+								100.00								
BBB									100.00							
BBB-									100.00							
BB+											100.00					
BB																
BB-																
B+																
B																
B- or lower																