FitchRatings

Structured Finance

Credit Market Research

Fitch Ratings 1991–2003 Structured Finance Transition Study

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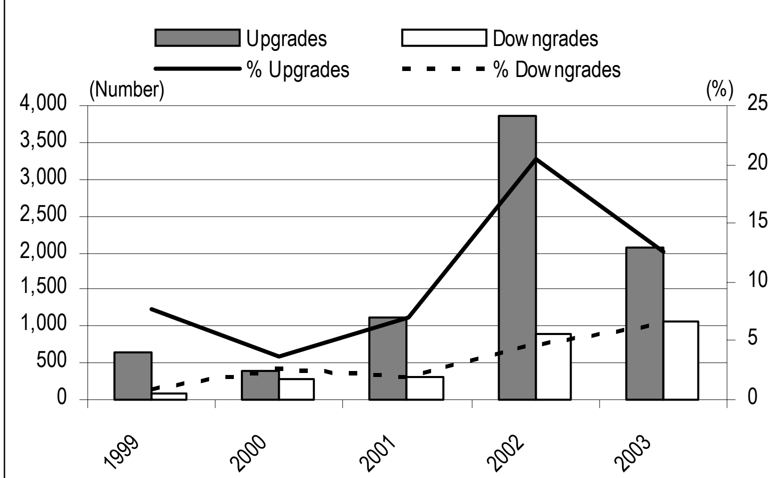
Summary

This new study tracks the migration of Fitch rated U.S. structured finance securities from 1991–2003, with special emphasis on 2003 performance. The report offers insights into rating activity for each of the major structured finance sectors, including the asset-backed securities (ABS), residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), and collateralized debt obligation (CDO) sectors. For the purposes of this study, real estate assets, such as manufactured housing (MH) and home equity loans (HEL), are categorized under the ABS sector. As illustrated in the chart below, over the past five years, rating volatility has increased significantly for the U.S. structured finance market, with both upgrades and downgrades becoming more frequent. However, to date, rating activity has been strongly skewed toward upgrades due to exceptionally positive trends in the large RMBS and CMBS sectors. In contrast, the ABS and CDO sectors have generally experienced more downgrades than upgrades in recent years, although within each of these segments, rating activity has varied dramatically depending on the unique characteristics and performance of underlying collateral.

In 2003, U.S. structured finance upgrades continued to exceed downgrades, though by a smaller margin of 1.96 to one, down from the 4.27 to one ratio recorded in 2002. The contraction in the ratio was due mostly to fewer upgrades in the RMBS sector and a pickup in downgrades in all four major segments. In total, there were 2,074 upgrades in 2003 (representing 13% of all ratings), compared with 3,853 in 2002 (21% of ratings outstanding in 2002). Upgrades were

Historical Structured Finance Rating Changes



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once again concentrated in the RMBS sector (72% of the total). As noted, downgrades were up year over year in 2003, totaling 1,060 compared with 903 in 2002. The bulk of the downgrades came from the real estate ABS sectors, specifically the MH and HEL asset categories. Of note, through the first three quarters of 2004, Fitch rated structured finance securities generally experienced less credit erosion than 2003, with downgrades coming down sharply from previous levels. However the pace of upgrades also slowed, continuing the trend seen in 2003.

Highlights

- The rating performance of Fitch structured finance credits was mixed in 2003, with upgrades declining to 2,074, compared with 3,853 in 2002, and downgrades totaling 1,060, up from 903 in 2002. As a result, the upgrade-to-downgrade ratio declined to 1.96 to one in 2003, compared with 4.27 to one in 2002.
- Rating volatility decreased in 2003, with 81% of all structured finance ratings remaining the same, compared with 75% in 2002. This was mostly due to fewer rating upgrades. The share of structured finance ratings upgraded declined last year, totaling 13%, down from the 21% recorded in 2002. The proportion of downgrades increased marginally to 6% in 2003, compared with 5% in the prior year.
- The RMBS sector dominated the positive rating actions in 2003, accounting for over 72% of total structured finance upgrades. The continued low interest rate environment and strong housing price appreciation, coupled with good performance and low delinquencies, resulted in rapid prepayments, which helped increase credit enhancement levels and keep losses in check.
- A majority (54%) of structured finance downgrades were attributed to the ABS sector. However, the negative credit migration was driven by the performance of just a few sectors. MH accounted for 37% of the total ABS downgrades last year. The sector continued to be plagued by poor collateral performance and depreciating MH values. The HEL sector ranked second, representing approximately 20% of total ABS downgrades. However, due to its large size, just 4.7% of the HEL sector overall was subject to downgrades. Downgrades were attributed to the poor performance of a few select issuers. In contrast, the non-real estate ABS sectors actually showed improvement, with downgrades declining by 11% in 2003.
- RMBS rating performance was relatively less positive, as upgrades declined to 1,496 in 2003, compared with 3,444 in 2002, while downgrades totaled 122, up from the 58 in the prior year. The contraction in upgrades resulted in greater rating stability in the sector, from 63% in 2002 to 76% in 2003.
- While the total number of ABS upgrades and downgrades both rose over year-earlier levels, the share of the sector downgraded or upgraded remained relatively flat. Upgrades increased from 1% of sector ratings in 2002 to 2% in 2003, while downgrades remained level at 9% of all ABS ratings.
- Both positive and negative rating activity increased in the CMBS sector last year. Upgrades totaled 398 and downgrades 105, compared with 311 and 72, respectively, reported in 2002. While rating volatility increased (78% of credits maintained their rating in 2003 versus 84% in 2002), upgrades exceeded downgrades by a ratio of 3.79 to one. Upgrades were driven primarily by collateral paydowns and a realignment of credit enhancement levels by Fitch.
- The rating performance of CDO securities was also mixed in 2003, with upgrades increasing nearly threefold to 65 and downgrades rising 17.1% to 260. CDOs backed by corporate bonds and select troubled structured finance assets (MH, mutual fund fees, aircraft leases, and franchise loans) continued to experience downward credit migration in 2003.

Structured Finance Rating Performance Mixed But Still Skewed Toward Upgrades

While upgrades continued to outnumber downgrades by a margin of nearly two to one in 2003, negative rating volatility increased when compared with 2002 levels. The number of downgrades in the structured finance market totaled 1,060 in 2003, a 17.4% increase over the 903 reported in 2002. In addition, structured finance upgrades declined by 46.2% to 2,074 in 2003, down from 3,853 in 2002.

Due mostly to fewer upgrades, rating volatility decreased for Fitch's U.S. structured finance ratings in 2003. The share of ratings remaining the same moved up to 81% in 2003 compared with 75% in 2002. The share of structured finance ratings upgraded declined from 21% in 2002 to 13% in 2003, and the proportion of ratings downgraded rose to 6% in 2003 from 5% in 2002.

With the exception of the RMBS sector, all the other structured finance sectors experienced a rise in upgrades. The ABS sector saw upgrades increase in excess of 50%, totaling 115 in 2003, compared with 76 in 2002. The increase in positive rating actions

2003 Rating Distribution By Sector Within Structured Finance

%

	ABS	RMBS	CMBS	CDO	All SF
‘AAA’	42	47	5	6	100
‘AA’	34	47	12	7	100
‘A’	47	31	15	7	100
‘BBB’	42	28	19	11	100
‘BB’	20	45	25	10	100
‘B’	11	51	30	8	100
‘CCC’–‘C’	47	11	15	27	100
Total	37	40	14	8	100

ABS – Asset-backed securities. RMBS – Residential mortgage-backed securities. CMBS – Commercial mortgage-backed securities. CDO – Collateralized debt obligation. SF – Structured finance.

was driven primarily by the HEL sector, which saw upgrades nearly double to 65 in 2003. The CMBS sector had 398 upgrades in 2003, representing a 28% rise over the 311 upgrades reported in 2002, while the CDO sector experienced a threefold increase in upgrades, totaling 65 in 2003.

However, each of these sectors also posted increases in downgrades. The ABS sector, which accounted for over half of the total downgrades, saw downgrades rise by 4% to 573 in 2003. Downgrades were concentrated in the MH and HEL asset categories as a result of poor collateral performance. In addition, the RMBS sector also reported an increase in downgrades in 2003, predominantly in the Alt-A sector, totaling 122, more than double the 58 reported in 2002. Furthermore, CMBS downgrades rose to 105 last year, a 46% increase over the 72 reported in 2002. The downgrades were attributed to a number of factors, including higher loss severities on loan resolutions, lower occupancy rates, and weakened rental rates. The CDO sector also saw the overall number of downgrades increase in 2003, with 260 downgrades, compared with 222 in 2002. The CDO market continued to come under stress as a result of its large exposure to deteriorating corporate credit quality. In fact, while

2003 Rating Distribution Within Each Sector

%

	ABS	RMBS	CMBS	CDO	All SF
‘AAA’	34	36	11	23	31
‘AA’	15	19	14	15	17
‘A’	22	14	19	14	18
‘BBB’	18	12	22	22	16
‘BB’	5	10	16	11	9
‘B’	2	9	14	6	7
‘CCC’–‘C’	3	1	3	8	3
Total	100	100	100	100	100

ABS – Asset-backed securities. RMBS – Residential mortgage-backed securities. CMBS – Commercial mortgage-backed securities. CDO – Collateralized debt obligation. SF – Structured finance.

U.S. corporate defaults and downgrades declined in 2003, credit erosion was still the norm.

Across the major rating categories, broad rating category downgrades increased at every rating level, with the exception of the ‘CCC’ to ‘C’ category. For example, 5.7% of ‘A’ and 8.6% of ‘BBB’ notes were downgraded in 2003, up from 3.6% and 5.0%, respectively, in 2002. Downgrades at the ‘AAA’ and ‘AA’ levels were up but just slightly, remaining practically even with 2002.

Below-investment-grade tranches also experienced higher levels of credit deterioration, with 10.1% of ‘BB’ and 12.1% of ‘B’ credits being downgraded in 2003, up from 6.0% and 11.5%, respectively, in 2002. The one exception was the ‘CCC’ to ‘C’ category, which reported a decline in downgrade activity. The proportion of ‘CCC’ to ‘C’ credits experiencing defaults in 2003 was nearly cut in half, totaling 10.7%, compared with 21.9% in 2002. However the total number of defaults actually increased to 45 in 2003, up from 39 in 2002. Due to negative migration in 2002, the size of the ‘CCC’ to ‘C’ pool grew larger in 2003 compared with 2002, thereby contributing to the lower

Fitch U.S. Structured Finance Ratings Upgrade/Downgrade Averages

(%)

	1991–2002		2002		2003	
	Downgrade	Upgrade	Downgrade	Upgrade	Downgrade	Upgrade
‘AAA’	0.6	N.A.	1.2	N.A.	1.3	N.A.
‘AA’	0.9	10.2	3.1	26.3	3.5	21.9
‘A’	2.0	11.0	3.6	26.2	5.7	14.8
‘BBB’	3.4	10.7	5.0	25.9	8.6	11.0
‘BB’	3.7	12.1	6.0	29.6	10.1	14.9
‘B’	5.7	9.4	11.5	20.9	12.1	12.7
‘CCC’–‘C’	21.9	1.2	21.9	1.1	10.7	0.0

N.A. – Not applicable.

One-Year U.S. Structured Finance 2003 Transition Matrix*
(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	98.68	0.72	0.33	0.19	0.04	0.04	0.00	0.00	100.00
'AA'	21.93	74.54	1.95	0.87	0.46	0.25	0.11	0.00	100.00
'A'	4.66	10.18	79.47	3.60	1.10	0.45	0.48	0.07	100.00
'BBB'	1.32	3.58	6.14	80.34	4.17	2.70	1.72	0.04	100.00
'BB'	0.20	1.72	4.64	8.29	75.07	4.84	4.51	0.73	100.00
'B'	0.09	0.09	1.08	4.33	7.12	75.20	10.64	1.44	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	89.31	10.69	100.00

*Includes asset-backed, residential mortgage-backed, commercial mortgage-backed, and collateralized debt obligation securities.

default rate. Nonetheless, it is meaningful to observe that both migration into the 'CCC' to 'C' bucket and 'CCC' to 'C' default rates slowed in 2003 compared with 2002.

With respect to rating improvements, upgrades declined across each of the major rating categories last year compared with 2002 levels. For example, at the 'AA', 'A', and 'BBB' levels, 21.9%, 14.8%, and 11%, respectively, experienced broad rating category upgrades in 2003, down from approximately 26% each in 2002. Below-investment-grade credits saw upgrade rates shrink to nearly half their year-earlier levels, with 14.9% of 'BB' and 12.7% of 'B' issuers being upgraded in 2003, compared with 29.6% and 20.9%, respectively, in 2002.

Manufactured Housing Drives ABS Downgrades

ABS ratings generally showed improvement in 2003, with upgrades increasing 51.3% to 115, compared with 76 in 2002. However, downgrades continued to surpass upgrades by a margin of nearly five to one (compared with 6.6 to one in 2002). Real estate-related sectors, such as MH and HEL, reported higher negative rating activity, while the non-real estate ABS sectors actually recorded an 11% decline in downgrades in 2003. Although total ABS downgrades were up from year-earlier levels, they only rose modestly, totaling 573 in 2003, compared with 551 in the prior year.

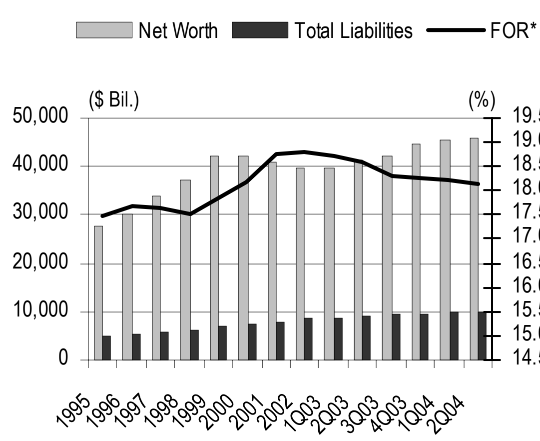
Both the consumer and commercial ABS sectors experienced rating volatility last year as a result of collateral pressures. Within consumer ABS assets, prime issuers reported stable rating performance, while subprime issuers exhibited negative rating volatility. Downgrades were concentrated in the MH and HEL sectors, which represented 37.2% and 19.6%, respectively, of the total ABS downgrades in 2003. The MH sector continued to be plagued by poor collateral performance and an oversupply of repo inventory. On the HEL side, structural features of subprime transactions have a direct impact on rating migrations, skewing toward downgrades. For example, the structures typically include a lockout period for the first three years, with any excess cash going directly to building overcollateralization (OC). As a result, the

Average Annual Probability of Maintaining or Improving Rating 1991–2003
(%)

	ABS	RMBS	CMBS	CDO*
'AAA'	98.8	99.9	99.7	93.5
'AA'	96.0	100.0	99.9	93.4
'A'	94.9	99.9	99.6	86.3
'BBB'	91.7	99.3	98.7	86.3
'BB'	81.2	98.5	98.1	81.9
'B'	68.7	97.1	95.8	74.8
'CCC'–'C'	78.3	70.3	95.3	95.8

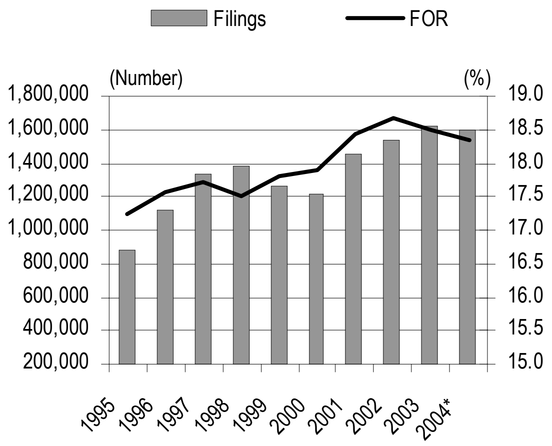
*Collateralized debt obligation (CDO) averages based on the 1995–2002 period. ABS – Asset-backed securities. RMBS – Residential mortgage-backed securities. CMBS – Commercial mortgage-backed securities.

Household Net Worth and Liabilities vs. Debt Service Burden



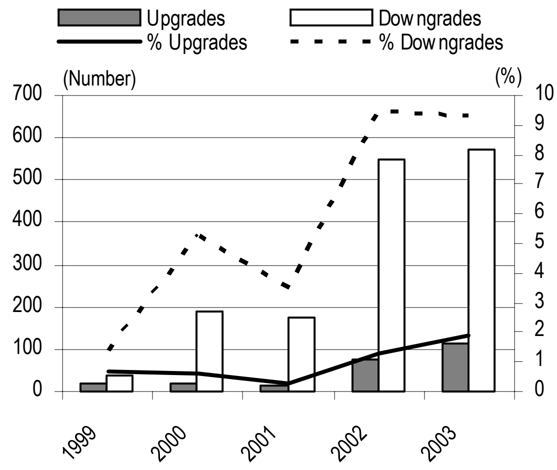
*Financial obligations ratio (FOR) as percentage of disposable personal income. Sources: Federal Reserve Board – Flow of Funds and Bureau of Economic Analysis.

Personal Bankruptcy Filings and Consumer Debt



*Projected. Source: Bureau of Economic Analysis, U.S. Department of Commerce, Board of Governors, Federal Reserve, and American Bankruptcy Institute.

Historical Asset-Backed Securities Rating Changes



subprime securities with this lockout feature are infrequently upgraded during the first three years.

It is interesting to note that the HEL sector accounted for the majority of ABS upgrades, representing 56.5% in 2003. The sector saw upgrades nearly double from the previous year's level, totaling 65 in 2003. The upgrades were driven by 'AAA' tranches being paid down, which resulted in 'AA' upgrades since they subsequently became the most senior tranches in the structures as well as being fully enhanced. However, the sheer size of the HEL sector magnified both positive and negative rating migration proportions, as HEL ratings accounted for 38.8% of total ABS ratings at the beginning of 2003. In fact, when viewed in the context of just within the HEL sector, only 2.7% of the HEL tranches were upgraded in 2003, while 4.7% were downgraded. In addition, the prime auto loan and student loan sectors also recorded upgrades in 2003 as a result of high underlying asset quality.

Within commercial ABS assets, the aircraft leasing and tobacco settlement sectors accounted for the bulk of negative rating actions, representing 10.5% and 7.7%, respectively, of the total ABS downgrades. The aircraft sector continued to suffer against the backdrop of declining revenues, higher operating costs, and external pressures beyond its control, such as terrorism and the threat of diseases. Meanwhile, Fitch lowered its credit assessment of the tobacco industry in 2003, resulting in numerous downgrades in the tobacco settlement revenue bond sector.

Across the major rating categories, volatility generally increased when moving down the rating scale. The 'B' category recorded the highest broad rating category downgrade rate, with 32.3% being downgraded in 2003. The 'BB' category followed, with 26.9% being downgraded last year. Interestingly, the 'CCC' to 'C' category recorded the lowest downgrade rate among the below-investment-grade credits, with only 10.2% being downgraded to default status in 2003.

In the first three quarters of 2004, ABS rating performance was mixed, with some sectors beginning to

One-Year Asset-Backed Securities Transition Matrix*

2003	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	98.04	0.94	0.56	0.37	0.05	0.05	0.00	0.00	100.00
'AA'	2.86	89.95	4.66	1.16	0.74	0.53	0.11	0.00	100.00
'A'	0.07	2.56	88.35	6.30	1.10	0.88	0.73	0.00	100.00
'BBB'	0.26	0.26	1.05	85.13	6.39	4.02	2.80	0.09	100.00
'BB'	0.00	0.00	0.34	2.68	70.13	11.74	12.42	2.68	100.00
'B'	0.85	0.00	0.00	0.00	0.85	66.10	28.81	3.39	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	89.85	10.15	100.00

*Includes home equity and manufactured housing transactions.

Asset-Backed Securities Transition Matrices: 1991–2003*
(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
Average Annual									
'AAA'	98.81	0.64	0.34	0.10	0.03	0.01	0.07	0.00	100.00
'AA'	1.29	94.75	2.45	0.92	0.32	0.18	0.05	0.02	100.00
'A'	0.16	1.26	93.53	3.38	0.70	0.54	0.39	0.03	100.00
'BBB'	0.10	0.16	0.66	90.73	3.44	3.06	1.51	0.34	100.00
'BB'	0.09	0.17	0.17	1.80	78.96	8.21	8.04	2.57	100.00
'B'	0.15	0.00	0.15	0.00	0.76	67.68	25.04	6.22	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	78.32	21.68	100.00
Average Two-Year									
'AAA'	97.68	1.03	0.61	0.26	0.13	0.09	0.17	0.03	100.00
'AA'	2.44	90.16	3.56	2.25	0.66	0.62	0.28	0.03	100.00
'A'	0.43	2.36	88.69	4.36	1.61	1.02	1.32	0.20	100.00
'BBB'	0.20	0.37	1.25	82.57	4.64	6.65	3.42	0.91	100.00
'BB'	0.26	0.64	0.13	3.21	66.41	7.69	15.64	6.03	100.00
'B'	0.21	0.00	0.62	0.00	1.24	46.06	43.15	8.71	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	86.14	13.86	100.00

*Includes home equity and manufactured housing transactions.

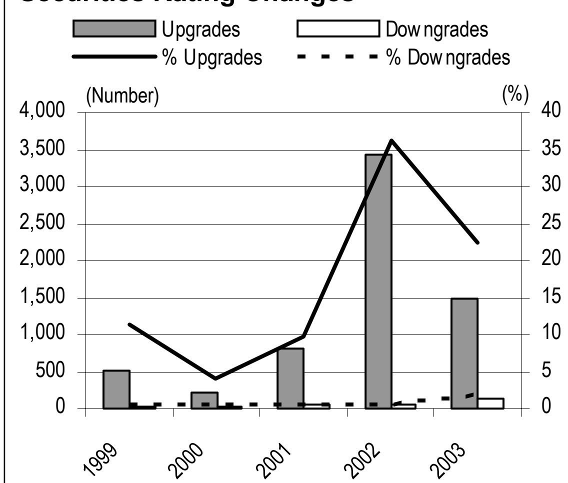
stabilize while others continued to experience credit deterioration. The MH sector still exhibited negative rating activity as a result of continuing poor collateral performance, which led to distressed loss severities. This trend is expected to continue for the remainder of the year. In contrast, upgrades rebounded for most of the other asset classes, driven by stable collateral performance and improving credit enhancement levels. While upgrades were mainly concentrated among the prime consumer ABS asset classes in prior periods, upgrade activity in the first nine months of 2004 was more diversified, with equipment leases, prime autos, subprime credit cards, and student loans all experiencing positive rating activity.

■ Positive RMBS Rating Performance Continues

The RMBS sector continued to experience a large number of upgrades in 2003, albeit at a slower pace than in 2002. RMBS upgrades totaled 1,496 in 2003, eclipsing the 122 downgrades in 2002, though much lower than the 3,444 upgrades for the same period. Upgrades were again driven by rapid prepayments seen in the residential mortgage market as a result of the historically low interest rate environment and strong home price appreciation. The slowing in upgrades can mainly be attributed to refinancing burnout, which occurred as a result of most homeowners already having taken advantage of the relatively lower interest rate environment by refinancing their existing mortgage loans. In addition, many of the positively performing classes were already upgraded in 2002. The increase in downgrades reflected poor collateral performance that was concentrated among a select group of issuers in the Alt-A sector.

Across the major rating categories, rating performance was generally positive in 2003, with an overwhelming majority of tranches either remaining stable or being upgraded. At the 'AAA' level, 100% of credits maintained their rating last year, while 99.9% of 'AA' and 99.7% of 'A' tranches either remained the same or improved. For 'BBB' credits, 97.8% either maintained their rating or were upgraded in 2003, while 95.9% of 'BB' and 93.9% of 'B' tranches held or improved their rating. The 'CCC' to 'C' category exhibited the greatest amount of credit deterioration, with 27% defaulting in 2003.

Historical Residential Mortgage-Backed Securities Rating Changes



Residential Mortgage-Backed Securities One-Year Transition Matrix: 2003*

(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	37.65	62.19	0.00	0.15	0.00	0.00	0.00	0.00	100.00
'A'	12.22	22.25	65.20	0.33	0.00	0.00	0.00	0.00	100.00
'BBB'	3.24	9.99	14.79	69.78	1.30	0.39	0.52	0.00	100.00
'BB'	0.15	3.41	9.50	13.65	69.14	1.78	1.93	0.45	100.00
'B'	0.00	0.18	1.93	8.42	11.93	71.40	4.39	1.75	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	72.92	27.08	100.00

*Includes Alt-A and A-jumbo mortgage transactions.

Residential Mortgage-Backed Securities Transition Matrices: 1991–2003*

(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
Average Annual									
'AAA'	99.85	0.15	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	17.15	82.80	0.03	0.02	0.00	0.00	0.00	0.00	100.00
'A'	8.36	13.88	77.62	0.12	0.02	0.00	0.00	0.00	100.00
'BBB'	2.00	7.85	11.13	78.33	0.41	0.16	0.11	0.00	100.00
'BB'	0.21	1.57	5.61	10.26	80.88	0.64	0.60	0.23	100.00
'B'	0.00	0.15	0.92	3.93	8.37	83.68	2.04	0.90	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	70.27	29.73	100.00
Average Two-Year									
'AAA'	99.75	0.25	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	26.77	73.14	0.07	0.02	0.00	0.00	0.00	0.00	100.00
'A'	19.15	17.92	62.64	0.20	0.10	0.00	0.00	0.00	100.00
'BBB'	6.36	14.43	15.47	62.53	0.65	0.27	0.21	0.08	100.00
'BB'	0.83	4.18	9.99	15.27	67.15	1.00	1.02	0.56	100.00
'B'	0.00	0.60	2.76	7.71	13.51	70.42	3.38	1.62	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	84.48	15.52	100.00

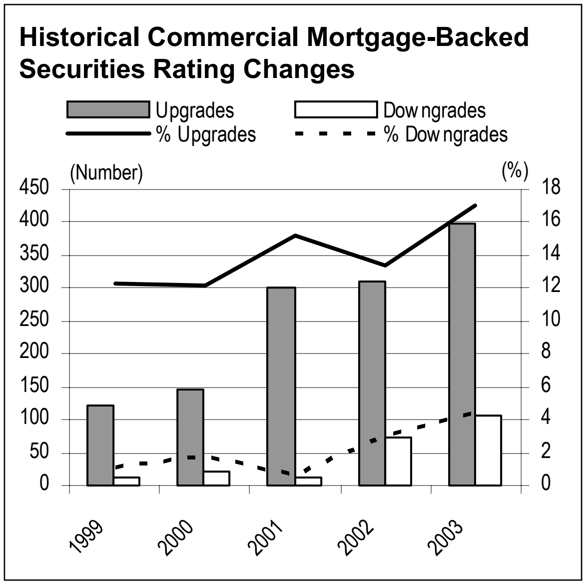
*Includes Alt-A and A jumbo mortgage transactions.

Through the first nine months of 2004, RMBS upgrades continued to dominate downgrades, primarily a result of the deleveraging within the prime and Alt-A sectors, whereby seasoned loans were paid down and credit enhancement levels subsequently grew. While Fitch expects future prepayments to slow in response to the recent Federal Reserve increases in interest rates, losses and delinquencies should remain in check.

■ CMBS Upgrades Continue to Outnumber Downgrades

While rating volatility in the CMBS sector increased last year, upgrades continued to outnumber downgrades by a disproportionate amount, with an upgrade to downgrade ratio of 3.79 to one in 2003. CMBS upgrades totaled 398 in 2003, a 28% increase over the 311 reported in 2002, while downgrades also rose by 45.8% to 105, up from 72 the previous year. Upgrades were driven by the collateral paydowns as well as Fitch's realignment of required credit enhancement levels. In addition, seasoning had an impact on the upgrade rate, as many prepayment lockout periods on loans expired. As a result, many borrowers were able to take advantage of the lower interest rate environment and refinance their higher interest bearing loans. Meanwhile, downgrades in 2003 were largely a result of higher loss severities on loan resolutions, declining occupancy rates, and lower rental rates in many markets. Many of the downgrades came from conduit or fusion transactions where there were underperforming large loans as a result of adverse selection. As loans paid down and credit enhancement grew, the most senior classes were upgraded, while the bottom classes suffered from adverse selection, with interest shortfalls and realized losses.

At the investment-grade level, broad rating category downgrades were relatively low, with only 0.4% of 'AAA', 1% of 'A', and 2.7% of 'BBB' tranches being downgraded in 2003. The 'AA' category did not record a single downgrade last year, with 100% improving or remaining the



same. Upgrades again were pronounced in the investment-grade credits. Over 26% of 'AA' tranches were upgraded last year, while 17.2% of 'A' and 11.7% of 'BBB' credits improved. For below-investment-grade tranches, 97% of 'BB' and 90% of 'B' and 'CCC' to 'C' credits either remained the same or were upgraded in 2003. Of note, 7.6% of 'BB' tranches were upgraded in 2003. However, there was meaningful negative rating activity at the 'B' and 'CCC' to 'C' levels, with each rating category experiencing approximately 10% in downgrades last year.

Through the first three quarters of 2004, upgrades continued to outpace downgrades by a large margin. Interestingly, multiborrower transactions accounted for the overwhelming majority of both upgrades and downgrades. The barbell effect came into play, where investment-grade classes experienced greater credit support as a result of the loans paying down and amortizing, while the lower rated classes were simultaneously downgraded since they now represented a larger proportion of the remaining collateral. Although loan paydowns and amortization were contributing factors to the upgrade total, it should also be noted that Fitch's implementation of enhanced performance analytics also affected the number of upgrades.

Commercial Mortgage-Backed Securities One-Year Transition Matrix: 2003
(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	99.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	26.75	73.25	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'A'	5.36	11.83	81.70	0.67	0.45	0.00	0.00	0.00	100.00
'BBB'	1.54	3.26	6.91	85.60	2.50	0.00	0.19	0.00	100.00
'BB'	0.52	0.78	1.04	5.21	89.58	2.86	0.00	0.00	100.00
'B'	0.00	0.00	0.30	0.00	2.68	87.50	8.93	0.60	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	90.32	9.68	100.00

Commercial Mortgage-Backed Securities Transition Matrices: 1991–2003
(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC' to 'C'	'D'	Total
Average Annual									
'AAA'	99.69	0.31	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	14.04	85.86	0.05	0.00	0.05	0.00	0.00	0.00	100.00
'A'	2.69	9.06	87.80	0.34	0.10	0.00	0.00	0.00	100.00
'BBB'	1.19	1.85	5.87	89.78	1.07	0.04	0.21	0.00	100.00
'BB'	0.57	0.57	1.02	4.61	91.30	1.54	0.28	0.11	100.00
'B'	0.33	0.13	0.33	0.59	3.47	90.96	4.06	0.13	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	1.05	1.57	92.67	4.71	100.00
Average Two-Year									
'AAA'	99.63	0.37	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	20.90	78.96	0.00	0.00	0.14	0.00	0.00	0.00	100.00
'A'	6.05	12.23	80.96	0.49	0.28	0.00	0.00	0.00	100.00
'BBB'	3.21	3.84	8.63	82.23	1.30	0.39	0.39	0.00	100.00
'BB'	1.48	1.48	1.72	6.56	84.92	2.50	1.02	0.31	100.00
'B'	0.80	0.35	1.06	1.77	5.84	82.57	7.26	0.35	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	3.39	4.24	88.14	4.24	100.00

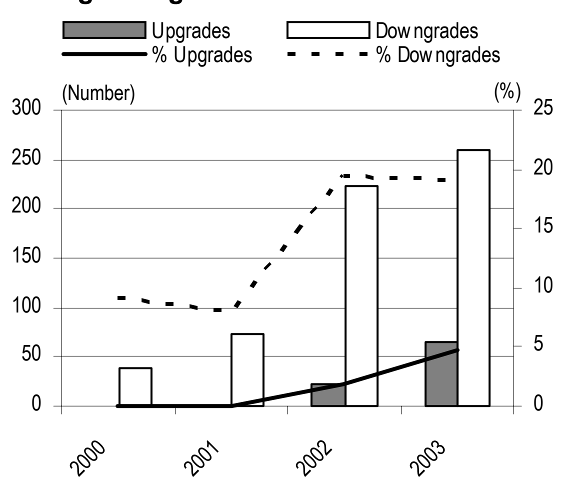
CDO Rating Performance Varies, But Still Sensitive to Health of Corporate Credit Markets

The rating performance of Fitch CDOs was mixed in 2003, with both upgrades and downgrades increasing in frequency. Upgrades rose nearly threefold over year-earlier levels, totaling 65 in 2003, while downgrades also increased by 17% to 260. Through 2003, the stronger performing market sectors included market value CDOs and certain structured finance CDOs. Market value CDOs constituted the majority of upgrades, representing 39% of the total, while structured finance CDOs ranked second in upgrades, with 34%. The improvement in market value performance was mainly attributed to strong increases in the market values of the underlying assets, de-leveraging of the CDO liabilities, and higher recoveries on the relatively fewer defaulted assets, resulting in greatly improved OC ratios.

Meanwhile, downgrades were concentrated in the high yield bond sector, which accounted for 31% of the total, followed by the investment-grade corporate CDO sector, which represented 27%. The corporate CDO market sectors remained vulnerable to the large number of corporate defaults and downgrades that marked this most recent recession. The par value of U.S. high yield bonds defaults alone totaled an astonishing $250 billion over the four-year period ended in 2003.

The table on the top of page 10 illustrates how mixed the rating performance was across the broad rating categories. At the investment-grade level, almost all the major rating categories experienced a decline in downgrades, with the exception of the ‘AA’ category, which saw its downgrade rate rise to 13.9% in 2003 from 8.6% in the prior year. This increase was attributed primarily to continued CDO asset credit deterioration, which resulted in downgrades to mezzanine CDO tranches prior to 2003 and subsequently affected ‘AA’ tranche migration in 2003. Meanwhile, a retreat in downgrades was observed at the ‘AAA’ level, with 8% being downgraded last year, compared with 8.5% in 2002. The rating performance for ‘A’ tranches improved, with 82.1% either maintaining the same rating or being upgraded in 2003, compared with 78.6% in 2002. At the ‘BBB’ level, 82.3% either remained the same or improved in 2003, an increase from the 77.5% seen in the prior year. For ‘BB’ tranches, 78.3% maintained the same rating or were upgraded in 2003, up from the 72.3% in 2002. Rating migration was relatively unchanged for ‘B’ notes, while 6% of ‘CCC’ to ‘C’ tranches were downgraded to default status.

Historical Collateralized Debt Obligations Rating Changes



CDO rating activity through the first three quarters of 2004 paints a more positive picture than in 2003, with downgrades decreasing by half and upgrades more than doubling over the same period last year. Market value CDOs continued to represent the majority of upgrades through the first nine months of 2004. Fitch expects to see a continuation of fewer downgrades and more upgrades for CDOs overall through the remainder of this year.

Structured Rating Transitions Compared With Corporates

Over the past decade, the structured finance sector has on average exhibited less negative rating volatility relative to the corporate sector. For example, an average 99% of ‘AAA’ and ‘AA’ structured finance credits either maintained or improved their rating after one year, compared with 97% of ‘AAA’ and 91% of ‘AA’ corporate credits. At the ‘A’ level, an average 97% of structured tranches remained the same or were upgraded over a one-year period, higher than the 94% reported for corporate issuers. For below-investment-grade credits, the same pattern continued; however, the comparisons become less meaningful as a result of small samples in select speculative-grade categories. It is important to note that the structured finance transition rates are based on rated tranches, whereas the corporate rating movements are examined at the issuer or obligor level.

U.S. Collateralized Debt Obligations One-Year Transition Matrix: 2003

(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	92.01	5.11	1.60	0.64	0.32	0.32	0.00	0.00	100.00
'AA'	2.48	83.66	4.95	5.45	1.49	0.99	0.99	0.00	100.00
'A'	0.00	3.59	78.46	6.67	7.69	0.51	2.05	1.03	100.00
'BBB'	0.00	0.33	2.00	80.00	6.00	8.33	3.33	0.00	100.00
'BB'	0.00	0.00	0.66	3.29	74.34	9.87	11.84	0.00	100.00
'B'	0.00	0.00	0.00	0.00	1.19	64.29	34.52	0.00	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	94.74	5.26	100.00

U.S. Collateralized Debt Obligations Transition Matrices: 1995–2003

(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
Average Annual									
'AAA'	93.47	3.26	1.93	0.85	0.12	0.24	0.12	0.00	100.00
'AA'	0.76	92.68	2.53	1.89	1.14	0.63	0.38	0.00	100.00
'A'	0.00	1.80	84.48	5.72	4.58	1.80	1.31	0.33	100.00
'BBB'	0.00	0.10	1.26	84.94	3.40	5.34	4.96	0.00	100.00
'BB'	0.00	0.00	0.22	1.30	80.35	6.26	11.88	0.00	100.00
'B'	0.00	0.00	0.00	0.00	0.80	74.00	25.20	0.00	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	95.80	4.20	100.00
Average Two-Year									
'AAA'	85.89	5.32	2.45	2.04	2.04	1.64	0.61	0.00	100.00
'AA'	1.00	86.83	3.59	3.39	2.79	1.00	1.40	0.00	100.00
'A'	0.26	2.07	73.39	8.01	4.13	4.13	7.49	0.52	100.00
'BBB'	0.00	0.29	1.15	72.41	5.46	7.90	12.50	0.29	100.00
'BB'	0.00	0.00	0.33	0.67	64.67	9.67	24.33	0.33	100.00
'B'	0.00	0.00	0.00	0.00	1.89	63.52	33.96	0.63	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	92.59	7.41	100.00

■ Rating Transitions Expanded to Include Modifier Analysis

Included in the Appendix in this year's study are rating migration tables at the modifier level, making a distinction between the plus (+) and minus (–) rating categories. While the tables have been expanded, it is important to point out that the statistics in some rating categories can be skewed as a result of limited sample sizes.

■ Methodology

All Fitch U.S. structured finance (ABS, RMBS, CMBS, and CDO) long-term debt ratings from 1991–2003 were included in this study. Public, private, and 144A issues were included. If a new rating was picked up as a result of a merger, it was treated as a new rating as of the merger date. Fitch's continuing data enhancement efforts may result in slightly different statistics than in previously published studies. Therefore, this most recent study supersedes all prior versions.

The occurrence and timing of both rating upgrades and downgrades may be attributed to several factors. Upgrades generally result from increased levels of credit enhancement that are achieved as the collateral and transaction season past the asset-specific default curve

Average Annual U.S. Structured Finance Transition Matrix: 1991–2003*

(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	99.24	0.45	0.19	0.07	0.02	0.01	0.03	0.00	100.00
'AA'	12.11	86.57	0.75	0.33	0.14	0.07	0.03	0.01	100.00
'A'	3.99	7.70	85.62	1.68	0.48	0.29	0.21	0.03	100.00
'BBB'	1.07	3.67	5.97	84.95	1.77	1.50	0.95	0.12	100.00
'BB'	0.25	1.09	3.66	7.50	82.70	2.14	2.14	0.51	100.00
'B'	0.09	0.13	0.69	2.69	6.31	83.41	5.48	1.20	100.00
'CCC'–'C'	0.00	0.00	0.00	0.00	0.24	0.35	83.08	16.33	100.00

*Includes asset-backed, collateralized debt obligation, residential mortgage-backed, and commercial mortgage-backed securities.

Average Annual Global Corporate Transition Matrix: 1990–2003
(%)

	'AAA'	'AA'	'A'	'BBB'	'BB'	'B'	'CCC'–'C'	'D'	Total
'AAA'	96.54	3.31	0.14	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	0.09	90.99	8.47	0.40	0.03	0.03	0.00	0.00	100.00
'A'	0.03	2.50	91.78	5.29	0.24	0.02	0.10	0.05	100.00
'BBB'	0.00	0.25	4.85	89.26	3.97	0.87	0.40	0.40	100.00
'BB'	0.07	0.13	0.20	7.33	79.39	8.06	2.71	2.11	100.00
'B'	0.00	0.00	0.00	0.51	8.09	83.83	5.01	2.57	100.00
'CCC'–'C'	0.00	0.00	0.00	0.44	0.00	10.62	58.85	30.09	100.00

*Includes issuers worldwide of all Fitch publicly rated corporate long-term debt.

or as a result of upgrades of third-party credit enhancers. Factors associated with rating downgrades are more diverse. Collateral performance outside expectations remains a primary cause. This may be due to aggressive underwriting caused by excessive market competition, small changes to underwriting criteria over time that cause the quality of originations to decline, and servicing operational issues. These problems may also be exacerbated by the effect of an economic slowdown on consumers and businesses. Unforeseeable event risks such as fraud may also cause rating downgrades.

It is important to observe that the rating transitions outlined in this study represent a distinct historical period and may not represent future rating migration patterns. Transition rates are influenced by a number of factors, including credit enhancement, macroeconomic variables, and credit conditions.

To calculate transition rates, cohorts were created for each year from 1991–2003. A cohort is defined as a fixed pool representing the number of outstanding ratings at the beginning of a respective year. For example, the 2003 cohort may include ratings from 1996, 1997, 1998, and so on if these ratings were indeed outstanding at the beginning of 2003. However, if a new rating were picked up in the middle of 2003, that rating movement would be included in a future study in the 2004 cohort. Cohort should not be confused with vintage, which represents the year in which a transaction came to market.

The cohorts remain fixed over time, with the rating performance of all tranches in each cohort tracked accordingly. A tranche was defined as a class of securities or certificates within the same rating category. Pari passu tranches were treated as one observation. If a rating was withdrawn, it was not included in the analysis for the cohort year in which it was withdrawn since transition rates examine beginning-of-the-year ratings versus the end-of-the-year ratings. Furthermore, for the purposes of calculating average one- and two-year transition rates, the transition rates for each year were weighted by the number of tranches outstanding for each rating category at the beginning of the year or cohort. This was done to give a fair evaluation of rating performance, since the number of structured finance tranches rated by Fitch grew substantially over the 14-year period.

■ Appendix

Average Annual Transition Matrices: 1991–2003

(%, Modifier Level)

U.S. Structured Finance

	'AAA'	'AA+'	'AA'	'AA–'	'A+'	'A'	'A–'	'BBB+'	'BBB'	'BBB–'	'BB+'	'BB'	'BB–'	'B+'	'B'	'B–'	'CCC+'–'C'	'D'	Total
'AAA'	99.24	0.04	0.29	0.12	0.03	0.14	0.02	0.02	0.02	0.03	0.00	0.01	0.00	0.00	0.01	0.00	0.03	0.00	100.00
'AA+'	26.01	71.20	2.52	0.07	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.00	100.00
'AA'	11.05	2.06	85.73	0.12	0.21	0.19	0.16	0.01	0.15	0.11	0.02	0.06	0.03	0.01	0.06	0.01	0.03	0.00	100.00
'AA–'	8.11	3.56	3.13	79.86	0.36	1.64	1.42	0.07	0.36	0.85	0.00	0.28	0.21	0.00	0.00	0.07	0.00	0.07	100.00
'A+'	4.16	2.64	4.75	2.19	82.67	0.36	0.18	0.31	1.79	0.31	0.09	0.18	0.04	0.09	0.18	0.00	0.04	0.00	100.00
'A'	4.19	2.50	3.96	0.98	1.72	84.43	0.52	0.19	0.37	0.33	0.09	0.18	0.08	0.01	0.18	0.03	0.21	0.03	100.00
'A–'	1.91	1.99	3.06	1.83	2.29	3.59	74.41	5.12	0.99	1.38	0.38	0.69	0.99	0.15	0.46	0.31	0.46	0.00	100.00
'BBB+'	1.35	0.94	2.97	1.62	2.90	4.18	2.36	72.69	0.88	1.69	0.40	0.81	1.01	0.00	5.33	0.00	0.88	0.00	100.00
'BBB'	1.16	0.84	1.79	1.22	2.32	2.49	1.07	1.81	83.84	0.52	0.20	0.84	0.28	0.04	0.58	0.19	0.74	0.07	100.00
'BBB–'	0.32	0.16	0.59	0.32	0.81	1.66	1.29	2.04	3.97	79.33	0.91	2.25	0.97	0.32	1.40	0.91	2.25	0.48	100.00
'BB+'	0.85	0.00	1.33	0.48	1.45	3.15	1.21	4.24	4.48	5.58	73.45	0.36	0.73	0.36	0.48	0.24	1.33	0.24	100.00
'BB'	0.21	0.17	0.56	0.37	0.77	1.91	1.07	2.11	3.37	1.84	2.50	80.64	0.23	0.11	1.28	0.43	1.94	0.50	100.00
'BB–'	0.00	0.00	0.24	0.12	0.24	0.24	0.36	0.36	0.71	1.31	1.43	2.61	81.12	1.43	2.61	1.78	4.63	0.83	100.00
'B+'	0.44	0.00	0.22	0.22	0.22	0.44	0.22	0.22	1.32	2.64	4.63	5.07	3.08	75.77	0.66	0.66	3.30	0.88	100.00
'B'	0.07	0.03	0.05	0.02	0.16	0.36	0.23	0.42	1.35	1.13	2.22	3.11	1.18	2.24	80.60	0.68	5.00	1.15	100.00
'B–'	0.00	0.00	0.13	0.00	0.00	0.00	0.13	0.00	0.26	0.00	0.00	0.90	0.13	0.64	1.80	83.89	10.31	1.80	100.00
'CCC+'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.12	0.00	0.12	0.24	83.08	16.33	100.00

U.S. Asset-Backed Securities

	'AAA'	'AA+'	'AA'	'AA–'	'A+'	'A'	'A–'	'BBB+'	'BBB'	'BBB–'	'BB+'	'BB'	'BB–'	'B+'	'B'	'B–'	'CCC+'–'C'	'D'	Total
'AAA'	98.81	0.04	0.38	0.22	0.02	0.31	0.01	0.02	0.05	0.03	0.00	0.02	0.01	0.00	0.01	0.00	0.07	0.00	100.00
'AA+'	1.05	98.25	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	100.00
'AA'	1.54	0.63	94.23	0.27	0.85	0.63	0.48	0.00	0.48	0.30	0.00	0.21	0.09	0.00	0.18	0.03	0.06	0.00	100.00
'AA–'	0.27	0.27	0.27	90.93	0.69	2.61	2.34	0.00	0.27	1.65	0.00	0.41	0.14	0.00	0.00	0.00	0.00	0.14	100.00
'A+'	0.33	0.80	0.93	0.07	93.09	0.53	0.27	0.33	2.59	0.46	0.13	0.07	0.00	0.07	0.27	0.00	0.07	0.00	100.00
'A'	0.12	0.12	0.91	0.05	0.35	93.75	1.11	0.35	0.67	0.84	0.07	0.44	0.16	0.02	0.42	0.09	0.49	0.05	100.00
'A–'	0.00	0.00	0.66	0.66	0.00	2.31	65.35	19.14	2.31	3.63	0.66	0.33	2.64	0.66	0.66	0.33	0.66	0.00	100.00
'BBB+'	0.27	0.00	0.14	0.00	0.95	1.09	0.00	79.02	1.23	2.59	0.68	1.23	1.91	0.00	9.81	0.00	1.09	0.00	100.00
'BBB'	0.05	0.00	0.13	0.05	0.08	0.38	0.00	0.03	92.81	0.67	0.40	1.74	0.62	0.05	1.18	0.27	1.31	0.21	100.00
'BBB–'	0.25	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	76.92	0.74	5.96	3.23	0.25	4.22	1.49	4.47	2.23	100.00
'BB+'	0.00	0.00	0.00	0.00	0.00	0.93	0.00	3.70	7.41	0.00	83.33	0.00	0.00	0.93	0.00	0.00	3.70	0.00	100.00
'BB'	0.11	0.00	0.23	0.00	0.00	0.11	0.00	0.00	0.79	0.23	0.34	79.26	0.23	0.45	5.19	2.14	8.12	2.82	100.00
'BB–'	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.97	1.71	11.97	7.69	15.38	4.27	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	72.00	0.00	0.00	20.00	8.00	100.00
'B'	0.17	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.35	0.52	0.00	0.00	66.55	0.17	26.34	5.72	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	73.08	15.38	11.54	100.00
'CCC+'–'C'	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	78.32	21.68	100.00

U.S. Residential Mortgage-Backed Securities

	'AAA'	'AA+'	'AA'	'AA–'	'A+'	'A'	'A–'	'BBB+'	'BBB'	'BBB–'	'BB+'	'BB'	'BB–'	'B+'	'B'	'B–'	'CCC+'–'C'	'D'	Total
'AAA'	99.85	0.00	0.15	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
'AA+'	34.97	64.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA'	15.45	1.62	82.87	0.01	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA–'	20.56	8.12	5.33	65.99	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
'A+'	16.84	9.18	13.27	3.83	56.89	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
'A'	8.13	4.79	6.43	1.61	1.43	77.51	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'A–'	3.46	5.43	7.90	3.46	4.20	3.21	71.11	0.74	0.00	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'BBB+'	3.61	3.31	9.64	5.12	6.93	9.64	3.61	56.93	0.00	0.00	0.30	0.00	0.00	0.00	0.60	0.00	0.30	0.00	100.00
'BBB'	2.00	1.65	3.41	2.40	4.47	4.21	1.65	1.65	77.91	0.05	0.00	0.33	0.04	0.00	0.09	0.04	0.11	0.00	100.00
'BBB–'	0.31	0.63	1.56	1.88	4.06	6.56	4.69	4.69	4.38	69.69	0.00	1.25	0.00	0.00	0.31	0.00	0.00	0.00	100.00
'BB+'	0.00	0.00	2.54	1.45	3.99	6.16	3.62	8.70	5.07	7.97	59.78	0.00	0.00	0.00	0.36	0.00	0.36	0.00	100.00
'BB'	0.23	0.25	0.68	0.53	1.09	2.58	1.54	2.95	4.37	2.26	2.26	79.77	0.08	0.00	0.55	0.10	0.57	0.21	100.00
'BB–'	0.00	0.00	0.72	0.00	1.45	0.72	1.45	1.45	3.62	6.52	3.62	3.62	72.46	0.00	0.00	0.72	2.17	1.45	100.00
'B+'	0.00	0.00	0.69	0.00	0.00	1.39	0.69	0.69	3.47	7.64	9.03	11.81	1.39	61.81	0.00	0.00	0.00	1.39	100.00
'B'	0.00	0.05	0.05	0.02	0.18	0.39	0.30	0.55	1.71	1.48	2.75	3.77	1.48	2.24	81.96	0.25	2.08	0.74	100.00
'B–'	0.00	0.00	1.27	0.00	0.00	0.00	1.27	0.00	0.00	0.00	0.00	2.53	1.27	2.53	2.53	75.95	3.80	8.86	100.00
'CCC+'–'C'	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	70.27	29.73	100.00

U.S. Commercial Mortgage-Backed Securities

	'AAA'	'AA+'	'AA'	'AA–'	'A+'	'A'	'A–'	'BBB+'	'BBB'	'BBB–'	'BB+'	'BB'	'BB–'	'B+'	'B'	'B–'	'CCC+'–'C'	'D'	Total
'AAA'	99.69	0.00	0.31	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	0.00	0.00	100.00
'AA+'	34.06	64.71	1.24	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
'AA'	9.27	7.83	82.69	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'AA–'	16.67	7.78	11.67	63.89	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
'A+'	7.75	3.87	13.38	10.92	63.73	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'A'	1.65	1.05	3.90	1.58	7.43	83.41	0.68	0.08	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'A–'	2.59	0.94	1.41	1.88	2.82	5.88	83.53	0.00	0.00	0.47	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	100.00
'BBB+'	2.24	1.12	4.10	2.24	4.85	8.21	8.21	66.42	1.49	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	100.00
'BBB'	1.44	0.30	0.76	0.30	0.91	2.27	1.97	7.65	82.65	1.21	0.08	0.38	0.00	0.00	0.00	0.00	0.08	0.00	100.00
'BBB–'	0.47	0.12	0.71	0.00	0.12	1.06	0.94	2.47	6.95	84.33	0.94	1.18	0.24	0.00	0.12	0.00	0.35	0.00	100.00
'BB+'	1.79	0.00	1.02	0.00	0.26	2.05	0.00	1.79	3.84	5.88	80.82	0.77	0.51	0.51	0.26	0.00	0.00	0.51	100.00
'BB'	0.32	0.00	0.43	0.00	0.00	0.76	0.00	0.43	1.51	1.51	6.26	86.30	0.86	0.43	0.65	0.22	0.32	0.00	100.00
'BB–'	0.00	0.00	0.23	0.23	0.00	0.23	0.23	0.23	0.23	0.45	1.59	3.86	89.55	1.59	1.14	0.00	0.45	0.00	100.00
'B+'	0.76	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.38	0.38	3.04	2.28	4.56	83.65	1.14	1.14	1.90	0.00	100.00
'B'	0.42	0.00	0.14	0.00	0.00	0.56	0.00	0.00	0.56	0.14	0.98	1.82	0.42	4.07	85.97	3.23	1.54	0.14	100.00
'B–'	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.73	0.00	0.55	2.18	87.64	8.36	0.18	100.00
'CCC+'–'C'	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.52	0.00	0.52	1.05	92.67	4.71	100.00

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Average Annual Transition Matrix: 1995–2003
(%, Modifier Level)

	‘AAA’	‘AA+’	‘AA’	‘AA–’	‘A+’	‘A’	‘A–’	‘BBB+’	‘BBB’	‘BBB–’	‘BB+’	‘BB’	‘BB–’	‘B+’	‘B’	‘B–’	‘CCC+’–‘C’	‘D’	Total
U.S. Collateralized Debt Obligations																			
‘AAA’	93.47	0.85	1.45	0.97	0.73	0.60	0.60	0.24	0.12	0.48	0.00	0.12	0.00	0.12	0.12	0.00	0.12	0.00	100.00
‘AA+’	1.87	65.42	31.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	100.00
‘AA’	0.51	2.57	89.73	1.03	0.34	0.68	1.20	0.17	0.86	0.86	0.34	0.17	0.34	0.17	0.51	0.00	0.51	0.00	100.00
‘AA–’	0.99	1.98	0.00	82.18	0.00	3.96	2.97	0.99	2.97	0.00	0.00	0.99	1.98	0.00	0.00	0.99	0.00	0.00	100.00
‘A+’	0.00	0.00	4.00	4.00	78.00	0.00	0.00	2.00	2.00	0.00	0.00	6.00	2.00	2.00	0.00	0.00	0.00	0.00	100.00
‘A’	0.00	0.26	1.55	0.00	1.55	86.53	0.52	1.04	2.59	0.78	1.81	0.52	0.52	0.00	0.78	0.00	1.04	0.52	100.00
‘A–’	0.00	0.00	0.00	0.00	0.57	1.14	75.57	3.41	3.41	2.27	1.70	2.84	2.84	0.00	2.27	1.70	2.27	0.00	100.00
‘BBB+’	0.00	0.00	0.00	0.91	0.00	0.00	0.91	83.64	0.00	3.64	0.00	2.73	0.91	0.00	4.55	0.00	2.73	0.00	100.00
‘BBB’	0.00	0.00	0.00	0.00	0.15	0.76	0.61	1.67	83.76	2.12	0.91	0.91	0.91	0.30	2.43	1.37	4.10	0.00	100.00
‘BBB–’	0.00	0.00	0.00	0.00	0.38	0.00	0.38	0.77	0.38	76.15	2.31	1.54	1.15	1.92	2.69	4.23	8.08	0.00	100.00
‘BB+’	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	68.75	0.00	8.33	0.00	4.17	4.17	12.50	0.00	100.00
‘BB’	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.75	1.12	1.49	77.99	0.75	0.00	3.73	1.49	12.31	0.00	100.00
‘BB–’	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.63	2.04	2.04	3.40	10.88	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	77.27	0.00	0.00	22.73	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	0.75	2.26	67.67	3.01	26.32	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	1.05	0.00	0.00	0.00	74.74	24.21	0.00	100.00
‘CCC+’–‘C’	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	95.80	4.20	100.00