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Moody's Structured Finance Rating Transitions - 1983-2006 (Moody's Special Comment)

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Structured Finance Rating Transitions: 1983-2006

Summary Opinion

This is Moody's fifth annual global structured finance rating transitions study. We review the 2006 and historical transition rates both on an aggregate basis and within key asset classes and provide comparisons to the corporate rating transition experience.

Global structured finance securities continued to experience positive rating transition trends in 2006. The 12-month downgrade rate remained below the historical average, the upgrade rate above the historical average, and migration rates into Caa or below were still low. This pattern held for almost all sectors and regions of the structured finance market.

Figure 1 –Global Structured Finance 12-Month Downgrade and Upgrade Rates by Sector in 2006, 2005, and Averaged over 1997-2006

	12-Month Downgrade Rate			12-Month Upgrade Rate		
	2006	2005	1997-2006	2006	2005	1997-2006
US ABS	2.6%	1.8%	5.0%	3.1%	2.8%	1.9%
US HEL	2.5%	1.8%	2.9%	2.2%	1.7%	1.4%
US Autos	0.0%	0.0%	1.5%	31.0%	13.1%	8.5%
US Credit Cards	0.1%	0.0%	0.8%	5.8%	4.0%	2.0%
US Student Loans	0.0%	0.0%	0.0%	1.8%	4.4%	1.1%
US non-mortgage ABS	1.7%	2.2%	4.5%	7.1%	4.0%	2.4%
US CDOs	3.2%	3.0%	9.0%	3.6%	1.6%	1.2%
US HY CBOs	7.3%	1.2%	19.4%	12.8%	4.8%	2.2%
US HY CLOs	0.7%	0.2%	2.1%	2.5%	0.5%	0.7%
US Resecuritization CDOs	3.8%	9.6%	8.2%	2.6%	1.6%	1.0%
US Synthetic Arbitrage CDOs	4.7%	1.6%	8.5%	1.5%	0.3%	0.5%
US CMBS	2.0%	3.4%	3.3%	22.3%	15.7%	10.7%
US RMBS	0.4%	0.9%	0.6%	3.8%	6.6%	5.1%
US Structured Finance	2.0%	2.0%	3.9%	6.0%	5.7%	4.1%
EMEA Structured Finance	1.6%	2.0%	4.1%	3.7%	7.3%	3.9%
Asia-Pacific Structured Finance	1.5%	0.4%	1.5%	6.8%	7.6%	5.9%
Latin American Structured Finance	4.1%	1.9%	10.5%	24.4%	2.9%	6.4%
Global Structured Finance	1.9%	2.0%	3.8%	5.8%	6.0%	4.1%
Global Corporate	8.9%	8.3%	13.0%	13.0%	13.9%	9.8%

Note: Canadian structured finance securities are included in the calculation of US transition rates. Non-mortgage ABS excludes transactions backed by subprime and home equity mortgages and manufactured housing loans. EMEA includes countries in Europe, the Middle East, and Africa. Global corporate transition rates include international corporate and sovereign issuers, but exclude US municipal ratings. For more details, see the Glossary in the Appendix.

Key findings in the report include:

- The global structured finance market experienced approximately three rating upgrades per rating downgrade in 2006, the same ratio as in 2005, and well above the historical average of roughly 1:1. Overall, 709 ratings from 438 deals were downgraded and 2161 ratings from 826 deals were upgraded. The 12-month downgrade rate decreased slightly to 1.9% in 2006 from 2.0% the previous year, while the upgrade rate also declined to 5.8% from 6.0%.
- The average number of notches lowered over the year per downgraded security also fell from 3.2 notches in 2005 to 3.0 notches in 2006; meanwhile, the average magnitude of upgrades rose from 2.4 notches to 2.6 notches.
- As in 2005, frequencies of transitions into the Caa or below rating category in 2006 were low for all rating categories and much below their historical averages.
- The frequency of both positive and negative rating actions increased for US ABS in 2006, but similar to 2005, the upgrade rate at 3.1% was still higher than the downgrade rate of 2.6%. Securities backed by subprime mortgages and manufactured housing loans accounted for 87% of the downgrades. As the largest asset type within ABS, the home equity sector (HEL) also made up the largest percentage of upgrades. Excluding HEL, securities backed by auto loans, which experienced an impressive 31.0% upgrade rate in 2006, contributed the most to US ABS upgrade activity.
- The US HEL sector experienced negative rating drift in 2006 as downgrades exceeded upgrades by a ratio of 1.2:1, compared to a ratio of 1:1 in 2005. However, the downgrade rate was still under the historical average and the upgrade rate above the average. There were a variety of factors behind the home equity downgrades including poor performance of the underlying collateral, weaknesses in the structure of the transactions, and excess spread compression.
- US CDOs enjoyed another strong year as the downgrade rate was essentially flat at 3.2%, far below the 10-year historical average of 9.0%, and the upgrade rate rose to a ten-year high of 3.6%. Resecuritization CDOs and high-yield CBOs (HY CBOs) made up approximately two-thirds of both downgrades and upgrades for the US CDO market.
- After a record-breaking year for upgrades in 2005, the US CMBS upgrade rate reached a new high of 22.3% in 2006. At the same time, the downgrade rate dropped to a four-year low of 2.0%. Elevated levels of commercial property price appreciation and the resulting wave of refinancing and defeasance were major factors behind the upgrades.
- High prepayment rates and low losses among pools of prime residential mortgages also led to a high upgrade-to-downgrade ratio for US RMBS in 2006. While the frequency of upgrades declined to 3.8% from 6.6% in 2005, the frequency of downgrades fell even further to 0.4% from 0.9%.
- International structured finance securities also exhibited strong performance in 2006. Upgrade-to-downgrade ratios for EMEA, the Asia-Pacific region, and Latin America were 2.4, 4.4, and 6.0 respectively.
- Upgrades outnumbered downgrades in the global credit derivatives sector in 2006 for the first time in almost four years. Structured notes – which generally experience rating changes whenever the ratings on the underlying reference credits change – accounted for most of the downgrade and upgrade activity in this sector.

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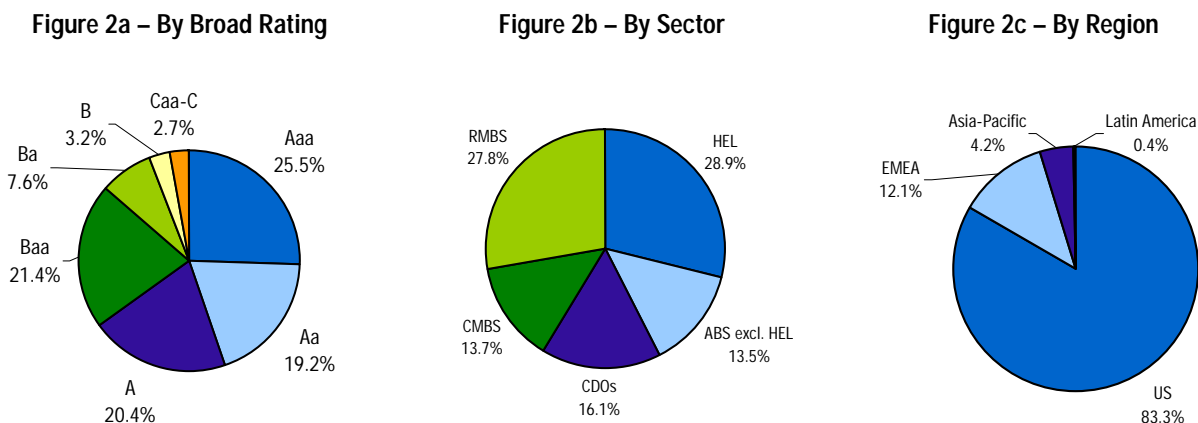
An Overview of Rating Transitions in 2006

The year 2006 saw the continuation of the positive rating transition trends experienced by the global structured finance market in 2005. Both the 12-month downgrade and upgrade rates experienced minor declines relative to the year-prior levels, but the frequency of downgrades remained well below its historical average and the frequency of upgrades above its historical average. All four major sectors of structured finance in the US, as well as the international structured finance markets, experienced more upgrades than downgrades in 2006, usually by a wide margin. However, the slowing US housing market and rising interest rate environment negatively affected US home equity securitizations within the ABS sector, as the downgrade rate for these transactions was on a rising trend for most of 2006.

In this section we discuss rating transitions for the entire structured finance market, combining the ABS, CDO, CMBS, and RMBS sectors across all regions, but excluding derivative securities such as structured notes, repackaged securities, and structured covered bonds. Detailed rating transitions data for each of the four sectors in the US are presented later in the report. Rating transitions in EMEA (Europe, the Middle East, and Africa), the Asia-Pacific region and Latin America, as well as the global derivatives sector, are also analyzed later in the report.¹ Multi-year horizon transition matrices can be found in the Appendix.

At the beginning of 2006, there were 38,187 global structured finance ratings outstanding from 10,341 deals.² The structured finance market remained heavily weighted towards investment-grade ratings with 86.5% of outstanding securities carrying a rating of Baa or higher and approximately a quarter rated Aaa (Figure 2a). The relative ranking of each of the four sectors of structured finance remained unchanged from prior years with ABS (including the home equity or HEL sector) still the largest sector (42.4%), followed by RMBS (27.8%), CDOs (16.1%), and CMBS (13.7%) (Figure 2b). Furthermore, the US³ still dominated the global structured finance market accounting for 83.3% of all ratings (Figure 2c), a slight increase over its percentage share in 2005.

Figure 2 – Distribution of Outstanding Structured Finance Ratings on 1/1/2006



Over the course of 2006, 709 ratings from 438 deals were downgraded and 2161 ratings from 826 deals were upgraded in the global structured finance market.⁴ As the largest structured finance sector, ABS also took the largest share of downgrades with a combined total of 52.9%, consisting mostly of home equity downgrades (Figure 3a). CDOs accounted for the second largest proportion of downgrades with a 28.6% share.

Upgrades were concentrated in the CMBS sector, which represented almost half of all structured finance upgrades in 2006 despite making up less than 14% of all ratings (Figure 3b). Although the number of ABS and CDO upgrades increased relative to 2005, their shares of the total were unchanged due to the dominance of CMBS in upgrade activity.

1. Moody's also publishes separate rating transition studies for the EMEA region and the Asia Pacific region ex-Japan (forthcoming).

2. See Appendix I for details on the construction of the data sample.

3. Canadian structured finance securities are included in the US total. There were 109 Canadian structured finance ratings outstanding as of 1/1/2006, representing only 0.34% of total US ratings.

4. In counting downgrades and upgrades, we only consider ratings at the beginning and the end of the year. All downgrade and upgrade rates are adjusted for withdrawals by deducting half of the withdrawn ratings from the total number of ratings outstanding at the beginning of the cohort formation date. See Appendix II for more details.

Figure 3 - Distribution of Structured Finance Rating Changes in 2006

Figure 3a - Downgrades by Sector

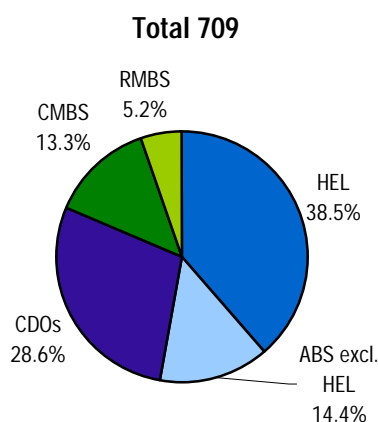
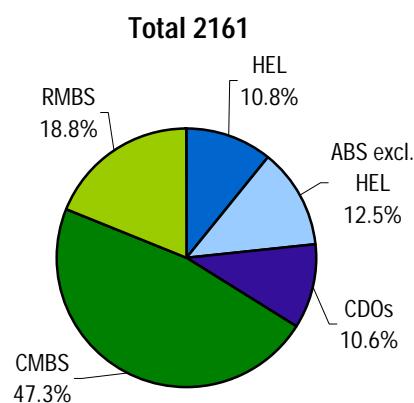


Figure 3b - Upgrades by Sector



The bulk of the downgrades in 2006 were caused by weaker-than-anticipated performance of the underlying collateral, although in some home equity transactions, structural weaknesses and declines in excess spread were the basis of the negative rating actions.

Most upgrades were due to increased credit support from loan and note amortization and/or stable or improving collateral performance. For some CDOs, a reduced time to maturity was sufficient grounds for an upgrade. A small percentage of rating changes were prompted by changes in the rating of a related third party or by structural changes to the transaction.

ANALYSIS OF RATING TRANSITION TRENDS

Both the 12-month downgrade and upgrade rates for global structured finance securities ticked downwards in 2006 leaving the downgrade-to-upgrade ratio unchanged relative to 2005 at 0.3. The frequency of downgrades for 2006 was 1.9%, down slightly from 2.0% in 2005 and less than half the historical average of 4.4% (Figures 4a and 5). The upgrade rate also dipped from 6.0% in 2005 to 5.8% in 2006, but remained well above the historical average of 3.7%. As a result, the rating drift - defined as the weighted upgrade rate minus the weighted downgrade rate - remained strongly positive at 9.4%, up from 8.2% last year (Figure 4c).

The average magnitude of rating downgrades, measured as the average number of notches changed in the course of a 12-month period per downgraded security, also fell slightly to 3.0 notches from 3.2 in 2005, while the magnitude of upgrades bumped upwards from 2.4 notches to 2.6 notches (Figure 4b).

Investment-grade and below investment-grade securities followed somewhat divergent trends in 2006 (Figure 4d). The downgrade rate was flat for investment-grade securities at 1.3%, whereas the rate declined for speculative-grade securities to 5.9% from 6.1%. The upgrade rate also went in opposite directions, decreasing from 6.4% in 2005 to 5.9% in 2006 for investment-grade securities and increasing from 3.8% to 5.2% for speculative-grade securities.

Figure 4 – Rating Transition Trends for Global Structured Finance

Figure 4a – 12-month Downgrade Rates and Upgrade Rates

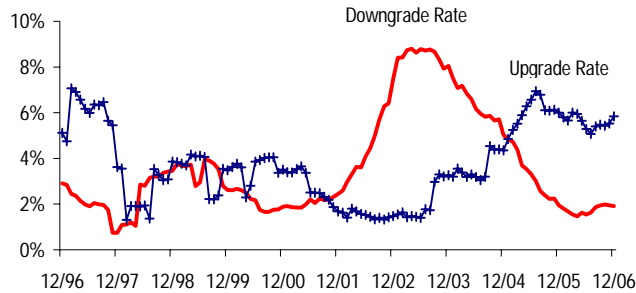


Figure 4b – Magnitude of Downgrades and Upgrades

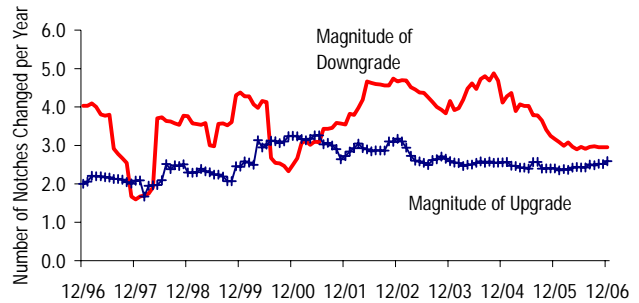


Figure 4c – Rating Drift and Rating Volatility

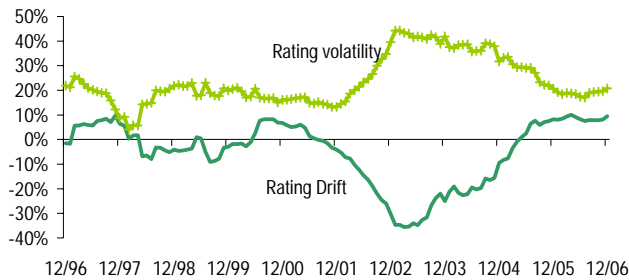
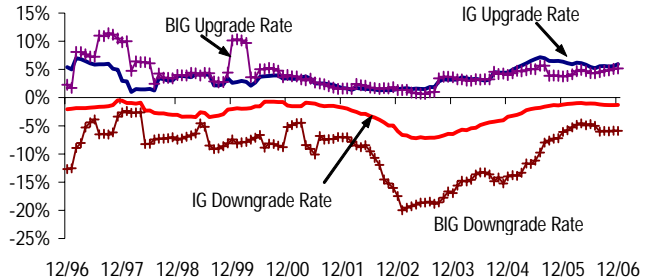


Figure 4d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

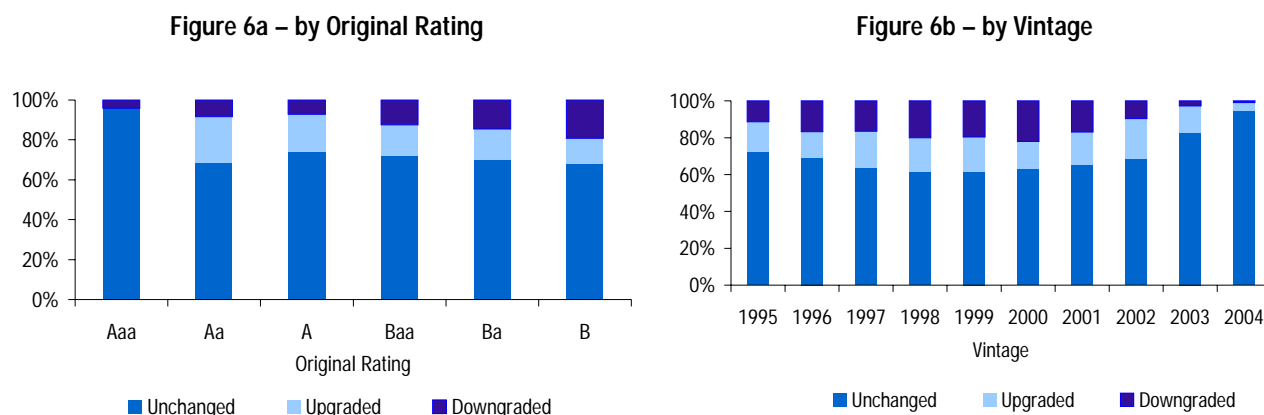
Figure 5 – Summary of 12-month Rating Transitions for Global Structured Finance

	2006	2005	1997-2006	1997-2005
Downgrade Rate	1.92%	1.95%	3.82%	4.44%
Upgrade Rate	5.84%	6.01%	4.13%	3.68%
Downgrade/Upgrade ratio	0.33	0.32	0.92	1.20
Downgrade Rate (notch weighted)	5.66%	6.18%	15.31%	18.37%
Upgrade Rate (notch weighted)	15.10%	14.41%	10.40%	9.40%
Downgrade/Upgrade ratio (notch weighted)	0.37	0.43	1.47	1.95
Rating Drift (notch weighted)	9.44%	8.23%	-4.91%	-8.97%
Rating Volatility (notch weighted)	20.76%	20.59%	25.71%	27.76%
Stability Rate	92.25%	92.04%	92.06%	91.87%
Withdrawal Rate	6.16%	9.52%	8.75%	8.95%
Notches per Downgrade per Year	2.95	3.17	3.68	3.89
Notches per Upgrade per Year	2.59	2.40	2.58	2.61

Lifetime cumulative downgrade rates were generally rank-ordered by original rating with Aaa-rated securities experiencing the lowest incidence of lifetime downgrades and single-B the greatest (Figure 6a). Moreover, cumulative upgrade rates were also rank-ordered by original rating with Aa-rated tranches experiencing the highest lifetime upgrade rate of 22.8%.

Credit performance has been disparate for deals issued in different years (Figure 6b). At the negative end of the spectrum, the lifetime downgrade-to-upgrade ratio for the 2000 vintage was 1.5 due to the relatively high proportion of poorly performing MH ABS, HY CBOs, and CMBS issued in that year. At the positive end of the spectrum, the lifetime downgrade-to-upgrade ratio for the 2002 vintage was 0.4 due mostly to the fact that US RMBS and CMBS transactions that closed in 2002 experienced a very strong housing market during the early years of their lives.

Figure 6 – Cumulative Rating Transition Rates for Global Structured Finance pre-2005 vintages, 1984-2006



COMPARISON TO CORPORATE RATING TRANSITIONS

Both the structured finance and corporate finance markets enjoyed historically low downgrade rates and historically high upgrade rates in 2006, leading to strongly positive rating drifts for both markets compared to their negative historical averages (Figure 7). It was still the case in 2006 that rating changes are much more common in the corporate sector leading to a much lower stability rate of 78.1% versus 92.3% for structured finance ratings. However, once a rating change did occur, the average magnitude of the rating movement for structured finance was almost two times larger than the average number of notches changed for corporate downgrades and upgrades.

Figure 7 – Global Structured Finance and Corporate 12-month Rating Transition Statistics

	Global Structured Finance		Global Corporate Finance	
	2006	1984-2006	2006	1984-2006
Downgrade Rate	1.92%	3.86%	8.91%	13.18%
Upgrade Rate	5.84%	4.19%	13.01%	8.95%
Downgrade/Upgrade ratio	0.33	0.92	0.69	1.47
Downgrade Rate (notch weighted)	5.66%	14.89%	12.88%	23.95%
Upgrade Rate (notch weighted)	15.10%	10.25%	18.77%	13.68%
Downgrade/Upgrade ratio (notch weighted)	0.37	1.45	0.69	1.75
Rating Drift (notch weighted)	9.44%	-4.64%	5.89%	-10.27%
Rating Volatility (notch weighted)	20.76%	25.14%	31.65%	37.62%
Stability Rate	92.25%	91.95%	78.08%	77.86%
Withdrawal Rate	6.16%	8.41%	7.25%	5.92%
Notches per Downgrade per Year	2.95	3.59	1.44	1.78
Notches per Upgrade per Year	2.59	2.49	1.44	1.54

Although both structured finance and corporate finance downgrade rates peaked in late 2002 to mid-2003, their paths have deviated since then. The structured finance downgrade rate has been on a prolonged decline over the last three years while the corporate downgrade rate has been creeping upwards in the last year (Figure 8a). On the other hand, upgrade rates for the structured finance and corporate sectors have followed a very similar pattern, cresting around mid-2005 and still fluctuating at historically high levels (Figure 8b).

Figure 8 – Comparison of Global Structured Finance and Corporate Finance Downgrade and Upgrade Rates

Figure 8a – Downgrade Rates

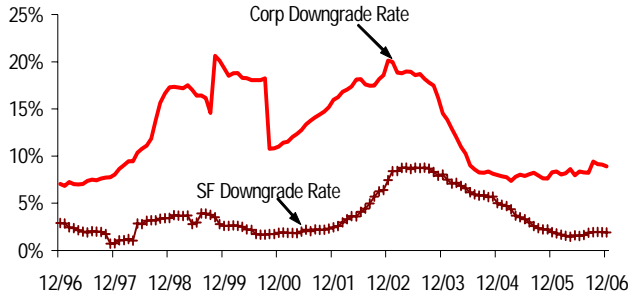
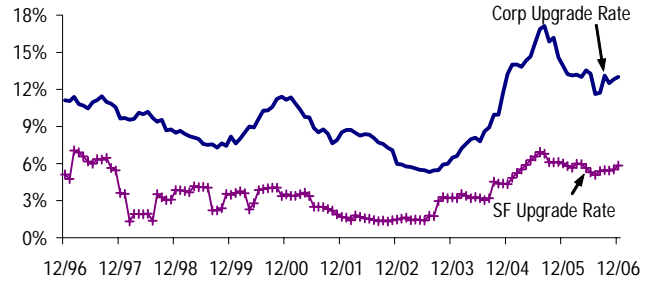


Figure 8b – Upgrade Rates



Note: The horizontal axis represents the cohort ending date.

Figure 9 compares the 12-month rating transition matrices for global structured finance and global corporate finance in 2006 and averaged over the period 1984 to 2006. For the 2006 cohort, Baa, Ba, and single-B corporate ratings were less stable than their structured counterparts because they had both higher downgrade and upgrade rates; Aa and single-A structured ratings were less stable due to higher upgrade frequencies. In addition, Aaa-rated structured finance securities were more stable than their corporate counterparts.

The same broad conclusions hold for the historical average rating transitions. However, migration rates into the Caa or below rating category were similar in 2006 for the structured finance and corporate sectors, unlike in the past when structured finance securities experienced higher downgrade rates into the lowest rating category.

Figure 9 – Global Structured Finance and Global Corporate Finance 12-month Rating Transition Matrices

Structured Finance in 2006							
Ratings to:							
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	99.80%	0.16%	0.02%	0.02%			
Aa	6.40%	93.01%	0.50%	0.06%	0.01%	0.01%	
A	2.02%	5.12%	91.79%	0.90%	0.11%	0.07%	
Baa	0.46%	0.81%	4.09%	92.26%	1.39%	0.73%	0.25%
Ba	0.32%	0.07%	0.63%	4.04%	92.34%	1.69%	0.91%
B		0.08%	0.34%	0.42%	3.37%	88.81%	6.98%
Caa or below				0.10%	0.10%	0.72%	99.07%
Structured Finance: 1984-2006 average							
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	98.95%	0.70%	0.20%	0.06%	0.03%	0.02%	0.03%
Aa	5.74%	91.56%	1.79%	0.56%	0.13%	0.08%	0.13%
A	1.28%	3.59%	92.38%	1.78%	0.52%	0.21%	0.24%
Baa	0.35%	0.57%	3.04%	91.66%	2.37%	1.01%	1.00%
Ba	0.10%	0.09%	0.55%	3.17%	88.74%	3.23%	4.11%
B	0.06%	0.04%	0.11%	0.41%	2.22%	87.39%	9.78%
Caa or below	0.02%			0.04%	0.09%	0.38%	99.47%
Corporate Finance in 2006							
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	97.95%	1.54%	0.51%				
Aa	1.35%	97.63%	1.01%				
A	0.47%	3.08%	93.16%	3.15%	0.13%		
Baa	0.08%	0.17%	6.09%	89.85%	2.71%	0.93%	0.17%
Ba		0.17%	0.17%	8.99%	80.81%	8.82%	1.04%
B			0.24%	0.12%	10.55%	80.47%	8.63%
Caa or below						22.86%	77.14%
Corporate Finance: 1984-2006 average							
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	92.76%	6.92%	0.29%		0.02%	0.00%	
Aa	0.88%	91.86%	6.90%	0.29%	0.05%	0.02%	0.01%
A	0.06%	2.59%	91.45%	5.18%	0.57%	0.12%	0.04%
Baa	0.05%	0.24%	5.21%	88.52%	4.47%	1.00%	0.52%
Ba	0.01%	0.07%	0.54%	6.08%	82.40%	8.88%	2.02%
B	0.01%	0.05%	0.19%	0.42%	6.01%	82.04%	11.27%
Caa or below		0.03%	0.04%	0.21%	0.67%	9.45%	89.59%

Sector Specific Analysis of US Rating Transitions

US ABS

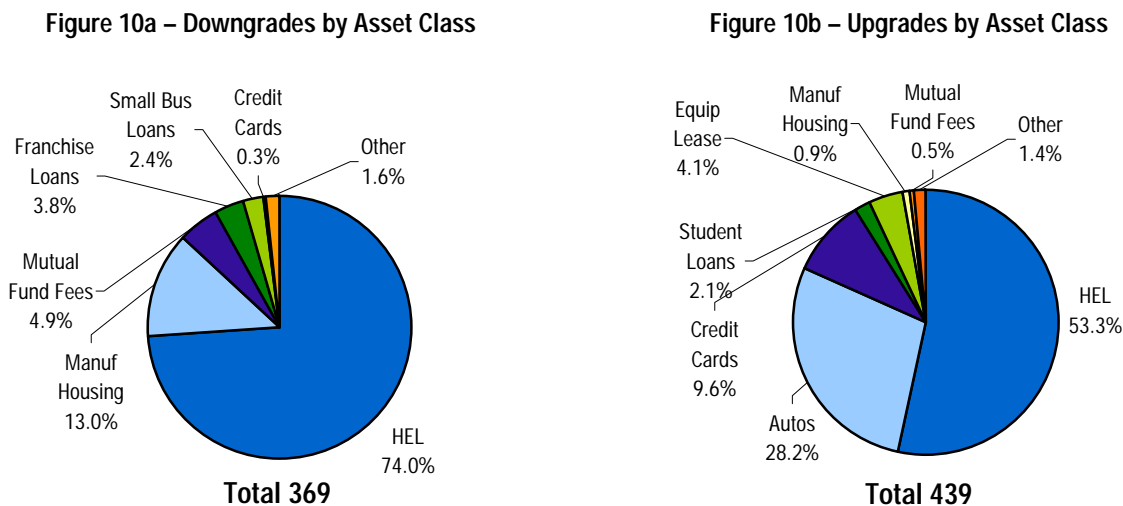
Out of a total universe of 14,700 US ABS ratings from 3,256 deals outstanding at the beginning of 2006, 369 ratings from 207 deals were downgraded and 439 ratings from 213 deals were upgraded in 2006. Given that the home equity sector accounted for 75% of US ABS ratings at the beginning of the year, it is not surprising that HEL rating actions dominated both the list of downgrades (74.0%) and upgrades (53.3%) (Figure 10).

After a relatively quiet 2005, the manufactured housing (MH) sector experienced an increase in downgrade activity in 2006, accounting for 13.0% of US ABS downgrades for the year. 41 of the 48 MH downgrades affected deals issued by Conseco/Green Tree and were caused by the continued poor performance of the pools and the resulting erosion in credit support.⁵ All but two of these tranches had been downgraded previously. Transactions backed by mutual fund fees accounted for the third largest percentage of downgrades at 5%. Some of these deals have experienced declines in cash flow as the mutual fund pools comprising the asset base for the transactions become more seasoned, and eventually graduate off of fee schedules.⁶

Transactions backed by franchise loans and small business loans also experienced a bump in downgrade activity in the latter half of the year due to weak collateral performance. Tranches issued out of Falcon Franchise Loan Trust 2000-1, a securitization of franchise automobile dealership loans, were downgraded for the first time in 2006.⁷ All other securities downgraded in 2006 in the franchise loan and small business loans sectors had also been downgraded in the past.

Auto loan securitizations experienced two rounds of rating upgrades in 2006 to take the second largest share of US ABS upgrades (28.2%) after HEL. These deals have benefited from a build-up of credit enhancement due in part to structural features such as the inclusion of non-declining enhancements and the initial trapping of excess spread.⁸ The credit card sector, also a strong performer historically, accounted for third largest proportion of upgrades (9.6%). Transactions backed by equipment leases also performed well in 2006 with 18 upgrades and no downgrades. Similarly, the student loan sector experienced 9 upgrades and zero downgrades. For both the equipment lease and student loan sectors, upgrades were triggered by better than expected performance of the underlying collateral and a build-up in credit enhancement.

Figure 10 - Distribution of US ABS Rating Changes in 2006



5. See the related Moody's press release, "Moody's confirms, upgrades and downgrades various manufactured housing certificates," August 2, 2006.

6. See the related Moody's press release, "Moody's Investors Service downgraded its ratings on several Constellation mutual fund fee deals," May 8, 2006.

7. See the related Moody's press release, "Moody's downgrades six classes and confirms two classes of Falcon Franchise Loan Trust Certificates, Series 2000-1," November 16, 2006.

8. See the related Moody's press releases, "Moody's upgrades and confirms 69 tranches from 45 auto loan-backed securitizations," March 31, 2006 and "Moody's upgrades numerous tranches from several auto loan-backed securitizations," November 28, 2006.

For the US ABS sector in 2006 (see Figures 11 and 12):

- The frequency of both downgrades and upgrades increased in 2006 relative to 2005, to 2.6% from 1.8% for downgrades and to 3.1% from 2.8% for upgrades. However, the downgrade rate was still well below its historical average of 5.9% and the upgrade rate was still higher than its historical average of 1.7%.
- The magnitudes of rating downgrades and upgrades changed little over the course of the year, falling slightly for downgrades from 3.5 notches in 2005 to 3.4 notches in 2006 and rising slightly for upgrades from 2.4 notches to 2.5 notches.
- After briefly rising above zero at the end of 2005, the rating drift turned negative in May 2006 where it has stayed for the rest of the year. Rating stability declined and rating volatility grew to 16.6% from 13.3% in 2005.
- The pattern of rating migration rates for investment-grade and below investment-grade US ABS was similar in 2006. The downgrade rates for investment-grade and speculative-grade securities increased moderately, while the upgrade rates increased around 10% on a year-over-year basis.⁹

Figure 11 – Rating Transition Trends for US ABS

Figure 11a – 12-month Downgrade Rates and Upgrade Rates

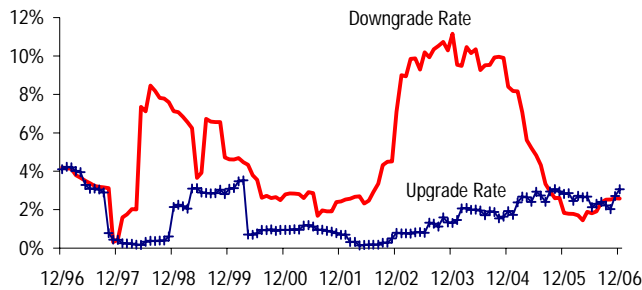


Figure 11b – Magnitude of Downgrades and Upgrades

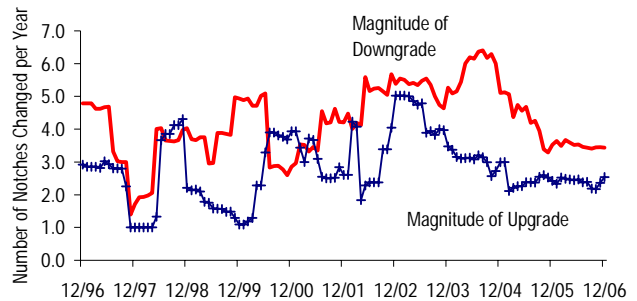


Figure 11c – Rating Drift and Rating Volatility

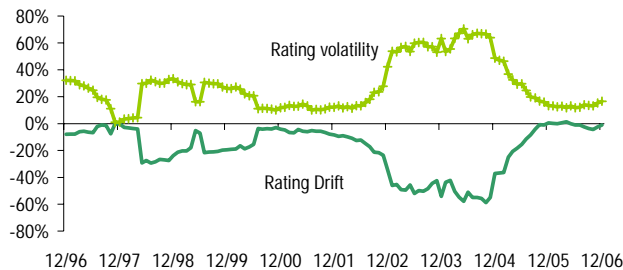
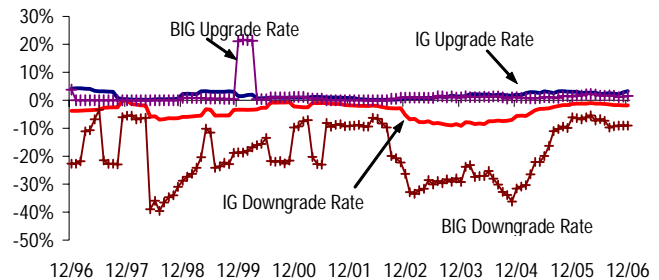


Figure 11d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

9. The spike in the below investment-grade upgrade rate in late 1999 was caused by the upgrades of the subordinate guaranteed tranches of several Conseco manufactured housing and home equity deals due to the upgrade of Conseco Finance Corp.'s rating.

Figure 12 – Summary of 12-month Rating Transitions for US ABS				
	2006	2005	1997-2006	1997-2005
Downgrade Rate	2.58%	1.83%	4.99%	5.90%
Upgrade Rate	3.06%	2.83%	1.86%	1.65%
Downgrade/Upgrade ratio	0.84	0.65	2.68	3.57
Downgrade Rate (notch weighted)	8.85%	6.43%	24.04%	29.30%
Upgrade Rate (notch weighted)	7.78%	6.85%	4.84%	4.46%
Downgrade/Upgrade ratio (notch weighted)	1.14	0.94	4.96	6.57
Rating Drift (notch weighted)	-1.07%	0.41%	-19.20%	-24.84%
Rating Volatility (notch weighted)	16.63%	13.28%	28.88%	33.76%
Stability Rate	94.36%	95.35%	93.15%	92.45%
Withdrawal Rate	5.07%	10.64%	8.84%	9.03%
Notches per Downgrade per Year	3.44	3.53	4.32	4.58
Notches per Upgrade per Year	2.54	2.42	2.82	2.96

US ABS that were originally rated below investment-grade had much higher rates of downgrades than those rated investment grade (Figure 13a). Although the ratio of cumulative downgrades to upgrades has changed from year to year, there have not been huge variations in performance among deals issued between 1995 and 2002 (Figure 13b). For all these vintages, downgrades have outnumbered upgrades, while the opposite is true for the 2003 and 2004 vintages.

Figure 13 – Cumulative Rating Transition Rates for US ABS pre-2005 vintages, 1984-2006

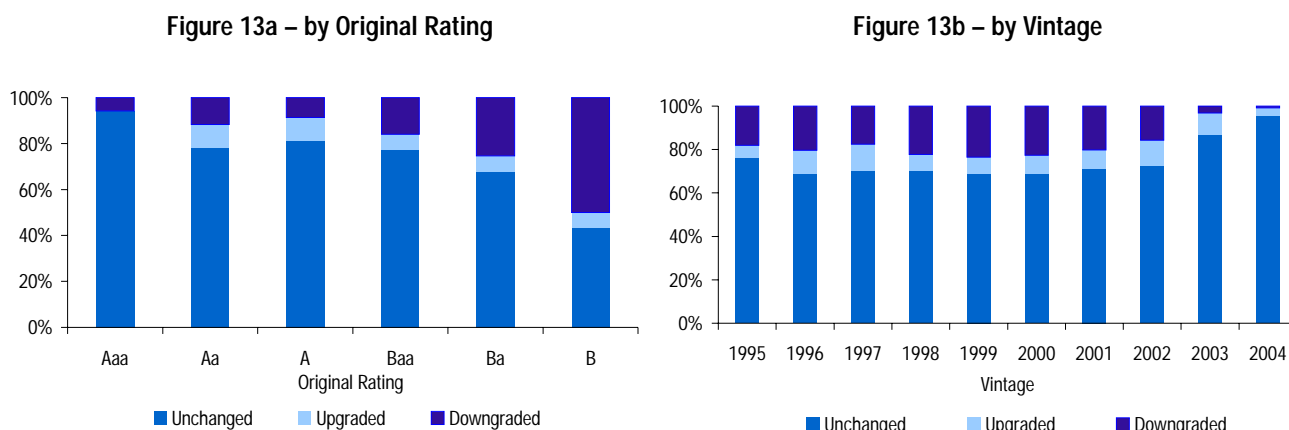


Figure 14 exhibits the 12-month downgrade and upgrades rates for a few select ABS asset classes. While downgrade rates for the MH, franchise loan, and small business loan sectors were clearly down from their highs of previous years, they all experienced an uptick in downgrade activity towards the end of 2006 (Figure 14a). Upgrade activity has also been low to non-existent for these three sectors (Figure 14c). ABS backed by equipment leases improved tremendously in 2006 with no downgrades and a jump in the upgrade rate.

No transactions backed by auto loans or student loans experienced a downgrade and only one security backed by credit card receivables was downgraded during the year (Figure 14b). In recent years, the auto loan sector has been the most upgraded major ABS asset type by a substantial margin (Figure 14d).

Figure 14 – 12-month Downgrade and Upgrade Rates for Select US ABS Asset Classes

Figure 14a – 12-month Downgrade Rates

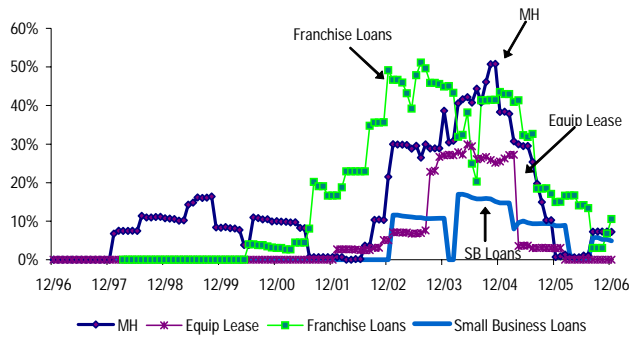


Figure 14b – 12-month Downgrade Rates

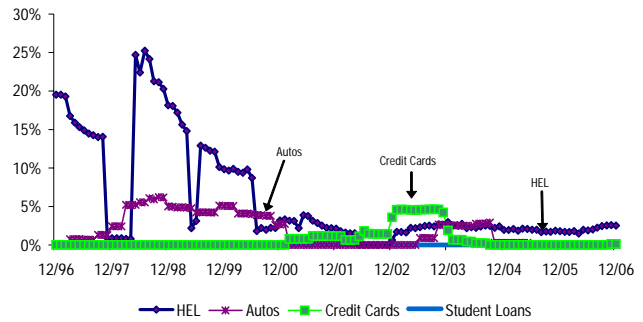


Figure 14c – 12-month Upgrade Rates

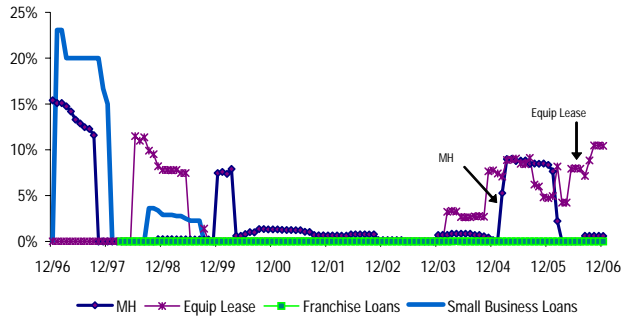
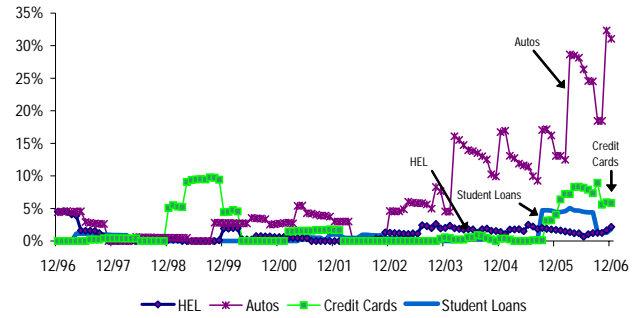


Figure 14d – 12-month Upgrade Rates



Note: The horizontal axis represents the cohort ending date.

The downgrade rate for non-mortgage US ABS, i.e. excluding MH and HEL, dropped in 2006 to 1.7% relative to its level of 2.2% in 2005 (Figure 15). In addition, the upgrade rate rose to 7.1% from 4.0% leading to a strongly positive rating drift of 13.3% and a higher rating volatility of 23.4%.

Figure 15 – Summary of 12-month Rating Transitions for non-mortgage US ABS

	2006	2005	1997-2006	1997-2005
Downgrade Rate	1.70%	2.18%	4.54%	4.98%
Upgrade Rate	7.12%	4.02%	2.40%	1.74%
Downgrade/Upgrade ratio	0.24	0.54	1.89	2.84
Downgrade Rate (notch weighted)	5.03%	5.42%	20.66%	23.19%
Upgrade Rate (notch weighted)	18.35%	11.36%	6.41%	4.80%
Downgrade/Upgrade ratio (notch weighted)	0.27	0.48	3.23	4.83
Rating Drift (notch weighted)	13.32%	5.94%	-14.25%	-18.39%
Rating Volatility (notch weighted)	23.38%	16.78%	27.08%	28.00%
Stability Rate	91.18%	93.80%	93.07%	93.28%
Withdrawal Rate	11.83%	17.16%	12.99%	12.63%
Notches per Downgrade per Year	2.96	2.49	4.31	4.56
Notches per Upgrade per Year	2.58	2.83	3.05	3.14

Note: Non-mortgage US ABS includes all US ABS excluding MH and HEL.

US ABS BACKED BY HOME EQUITY LOANS (HEL)

Out of a total universe of 11,022 US HEL ratings from 1688 deals outstanding at the beginning of 2006, 273 ratings from 155 deals were downgraded and 234 ratings from 84 deals were upgraded in 2006, resulting in a downgrade-to-upgrade ratio of 1.2, compared to 1.0 in 2005, and 2.4 historically.

Weaker than anticipated performance of the underlying pools was the recurring theme in most of the downgrades, but very often, other factors were also involved. These factors include weak performance triggers that allowed some transactions to “step down” and pay subordinated classes despite poor collateral performance and excess spread compression due to rising coupons on floating rate home equity tranches.¹⁰ In some cases, weak triggers and/or the reduction in excess spread were sufficient to prompt the downgrade even though collateral performance to date was in line with the original expectations. The most oft-cited reason for HEL upgrades in 2006 was the high level of credit enhancement provided by subordination, overcollateralization, excess spread, and, in some cases, mortgage insurance relative to projected losses for the pool.

The home equity downgrades in 2006 were clustered in the 2001 to 2003 vintages, with securities issued in 2002 accounting for 40.7% of downgrades, those issued in 2001 and 2003 accounting for 18% a piece, and all three vintages combined totaling 76.6% of all downgrades. Upgrade activity was concentrated in the 2002 to 2004 vintages with the 2003 vintage taking the lion's share of upgrades at 72.6%, the 2004 vintage the second largest share at 12.0%, and the 2002 vintage accounting for 10.3% of all upgrades.

For the US HEL sector in 2006 (see Figures 16 and 17)¹¹:

- The downgrade rate increased to 2.5% in 2006 from 1.8% at the end of 2005, although the rate was still beneath the historical average of 3.3%. The upgrade rate also increased from 1.7% to 2.2% and was above its historical average of 1.4%.
- The magnitude of rating downgrades trended lower to 3.7 notches in 2006 compared to its year-prior level of 4.1 notches and the historical average of 4.4 notches. Nevertheless, downgrade severity remained higher for US HEL than those in other sectors. The magnitude of rating upgrades rose slightly to 2.5 notches from 2.4 notches a year ago.
- The rating drift, which has been below zero since 2003, stayed negative and decreased slightly to -3.8% from -3.3% in 2005 as the increase in the notch-weighted downgrade rate more than offset the increase in the upgrade rate. The increase in rating change activity caused rating volatility to increase to 14.6% from 11.5%.
- Much of the increase in rating change activity can be attributed to investment-grade HEL where the frequency of downgrades increased from 1.4% in 2005 to 2.1% in 2006 and the frequency of upgrades increased from 1.8% to 2.3%. In contrast, the downgrade rate for below investment-grade HEL was flat at approximately 7.5% and the upgrade rate fell from 1.1% in 2005 to 0.7% in 2006.

10. See “Rating Changes in the U.S. Asset-Backed Securities Market: 2006 Third Quarter Update,” Moody’s Structured Finance Special Report, November 2, 2006 and “Excess Spread Crunch in Certain Residential ABS 2002 to Mid-2004 Originations: A Case Study,” Moody’s Structured Finance Special Report, October 25, 2006.

11. The historical rating transition trends for US HEL have changed from those presented in prior transition studies due to the reclassification of the DLJ/Quality mortgage deals to HEL from RMBS. The underlying mortgages in these deals were recently determined to be predominantly subprime. These deals performed very poorly and experienced both high downgrade and impairment rates. For more details, see “Deal Sponsor and Credit Risk of U.S. ABS and RMBS Securities,” Moody’s Special Comment, December 2006.

Figure 16 – Rating Transition Trends for US HEL

Figure 16a – 12-month Downgrade Rates and Upgrade Rates

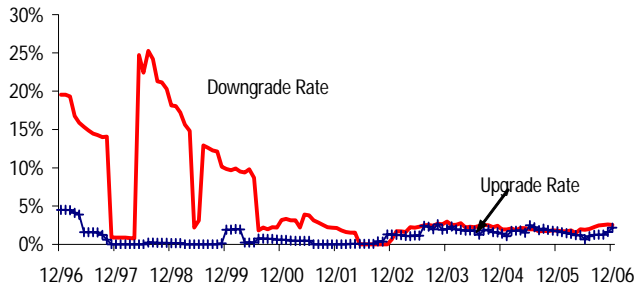


Figure 16b – Magnitude of Downgrades and Upgrades

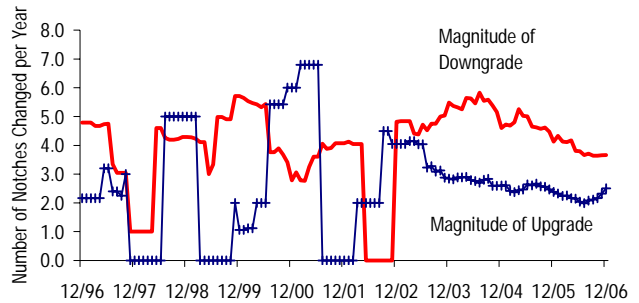


Figure 16c – Rating Drift and Rating Volatility

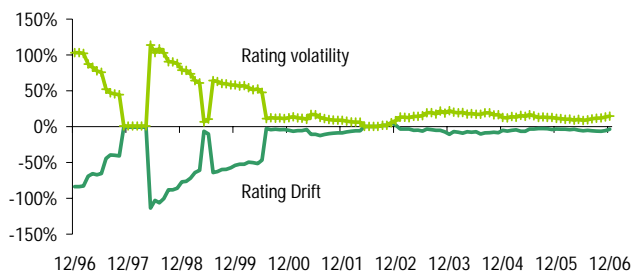
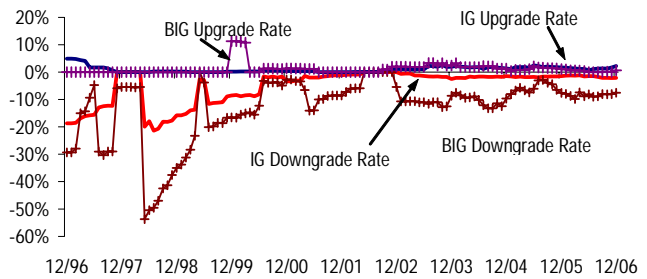


Figure 16d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

Figure 17 – Summary of 12-month Rating Transitions for US HEL

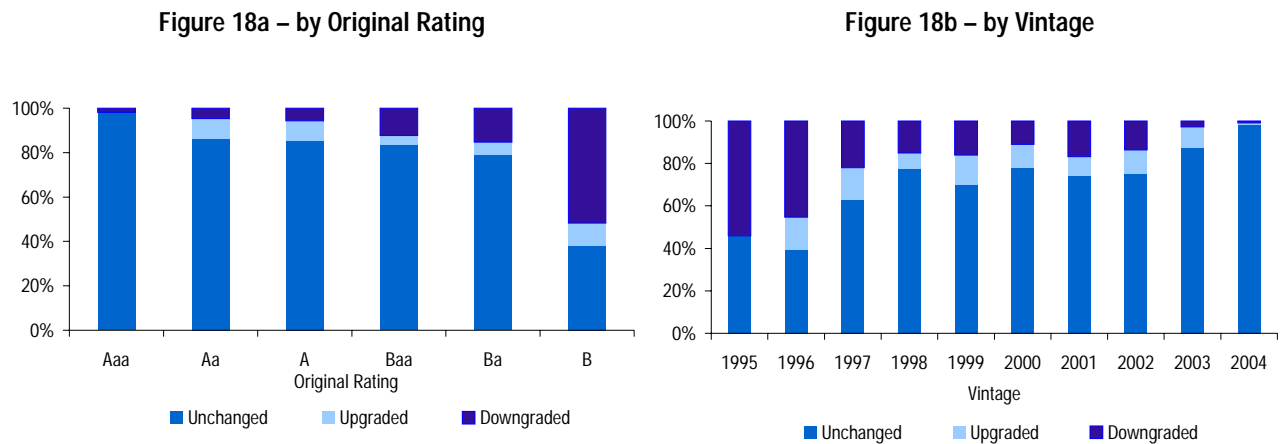
	2006	2005	1997-2006	1997-2005
Downgrade Rate	2.52%	1.79%	2.86%	3.26%
Upgrade Rate	2.16%	1.71%	1.36%	1.36%
Downgrade/Upgrade ratio	1.17	1.05	2.12	2.41
Downgrade Rate (notch weighted)	9.22%	7.41%	12.66%	15.20%
Upgrade Rate (notch weighted)	5.41%	4.08%	3.56%	3.86%
Downgrade/Upgrade ratio (notch weighted)	1.70	1.82	3.58	3.97
Rating Drift (notch weighted)	-3.81%	-3.33%	-9.11%	-11.34%
Rating Volatility (notch weighted)	14.64%	11.48%	16.22%	19.06%
Stability Rate	95.32%	96.49%	95.79%	95.38%
Withdrawal Rate	3.29%	8.30%	6.32%	6.45%
Notches per Downgrade per Year	3.66	4.13	4.20	4.40
Notches per Upgrade per Year	2.51	2.38	2.56	2.76

High investment-grade US HEL securities have exhibited strong performance (Figure 18a). Aaa-rated US home equity securities are very stable with a cumulative downgrade rate of only 1.9% and tranches that were originally rated Aa and single-A have experienced more positive than negative credit migration. Performance has been somewhat weaker for securities rated Baa or below as downgrades have outnumbered upgrades, although ratings remain relatively stable for these categories except for single-B which has a small sample size.

The 1995 to 1997 vintages experienced very high cumulative downgrade rates due to the poor performance of the DLJ/Quality mortgage deals and increased competition among subprime originators during those years which led to loosened underwriting standards (Figure 18b).¹² The 2003 vintage has been the best-performing so far with a low

cumulative downgrade rate and a very high cumulative upgrade rate, particularly in light of the age of the transactions. Deals that closed in 2003 have benefited from the low interest rate environment and strong housing market over much of the life of the transactions.

Figure 18 – Cumulative Rating Transition Rates for US HEL for pre-2005 vintages, 1989-2006



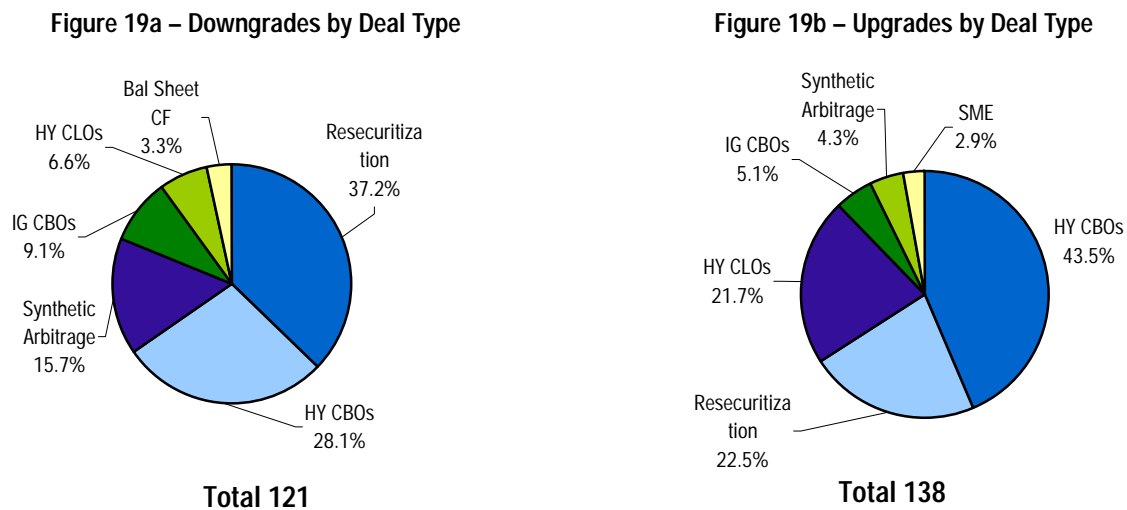
12. See "1998 Year in Review and 1999 Outlook Home Equity Asset-Backed Securities: To HEL in a Handbasket," Moody's Structured Finance Special Report, January 8, 1999.

US CDOS

Out of a total universe of 4,035 US CDO ratings from 1342 deals outstanding at the beginning of 2006, 121 ratings from 83 deals were downgraded and 138 ratings from 84 deals were upgraded in 2006. Resecuritization CDOs (37.2%), high-yield collateralized bond obligations (HY CBOs) (28.1%) and synthetic arbitrage CDOs (15.7%) together accounted for 81.0% of the downgrades in 2006 (Figure 19). All of the downgrades reflect deterioration in the credit quality of the transaction's underlying collateral portfolio and 59% of the securities had experienced prior downgrades.

HY CBOs were the leader in upgrades in 2006 with a 43.5% share of all US CDO upgrades. Resecuritization CDOs and high-yield collateralized loan obligations took second and third place for upgrade activity, respectively, with a 22% share each. Approximately 60% of the CDO upgrades cited delevering of the transaction and/or amortization of the notes as the major cause of the rating action, while around 40% pointed to improvement in the credit quality of the underlying deal portfolio, sometimes also accompanied with delevering of the transaction, as the primary motivation for the upgrade.

Figure 19 - Distribution of US CDO Rating Changes in 2006



For the US CDO sector in 2006 (see Figures 20 and 21):

- The downgrade rate was up slightly at 3.2% from its year-prior level of 3.0%, but still much lower than its historical average of 11.2% over the period 1997 to 2005. The upgrade rate continued its rising trend and reached a ten-year high of 3.6% in 2006.
- The average severity of rating downgrades fell to a five and a half-year low of 3.0 notches, down 1.5 notches from its level in 2005 and almost a full notch lower than its historical average prior to 2006. Conversely, the average severity of rating upgrades, which has been increasing since mid-2004, ended the year 2006 at 3.6 notches, up half a notch from its year-prior level and up almost 1.5 notches from the historical average.
- After crossing into positive territory in May 2006, a first since late 1998, the rating drift stayed above zero for the rest of the year due to the increasing frequency and size of upgrades. Rating volatility increased for the same reason from 18.7% in 2005 to 22.7% in 2006, but still remained much below the historical average of 47.3%.
- Much of the growth in rating change activity was due to below investment-grade securities, which have experienced both rising upgrade and downgrade rates. In contrast, the downgrade rate for investment-grade CDO securities has been mostly flat in 2006, while the upgrade rate increased, but more slowly than for speculative-grade CDOs.

Figure 20 – Rating Transition Trends for US CDOs

Figure 20a – 12-month Downgrade Rates and Upgrade Rates

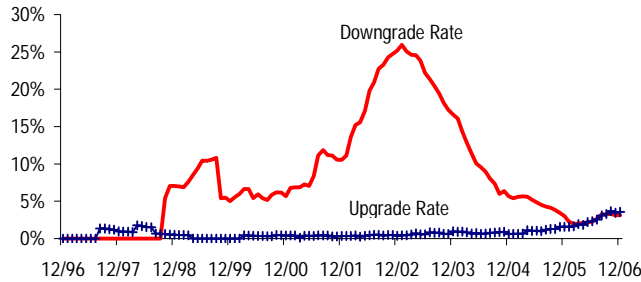


Figure 20b – Magnitude of Downgrades and Upgrades

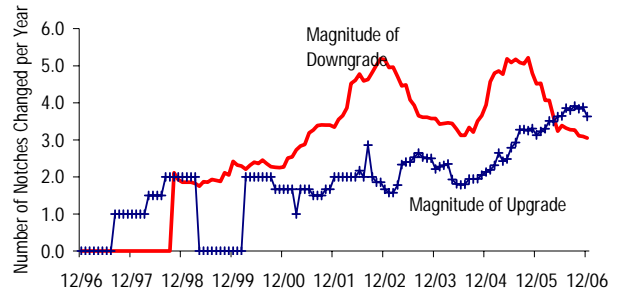


Figure 20c – Rating Drift and Rating Volatility

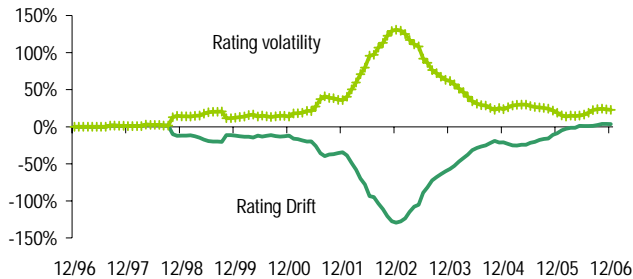
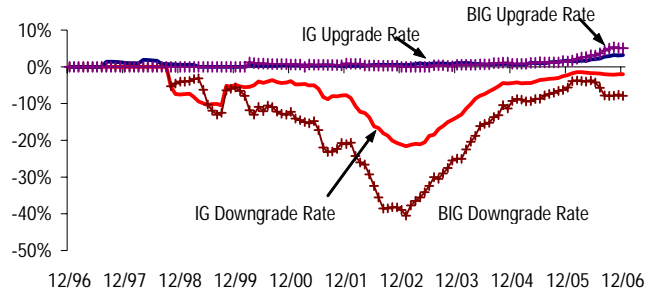


Figure 20d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

Figure 21 – Summary of 12-month Rating Transitions for US CDOs

	2006	2005	1997-2006	1997-2005
Downgrade Rate	3.15%	3.04%	9.03%	11.23%
Upgrade Rate	3.59%	1.59%	1.23%	0.73%
Downgrade/Upgrade ratio	0.88	1.91	7.47	15.50
Downgrade Rate (notch weighted)	9.61%	13.72%	36.13%	45.50%
Upgrade Rate (notch weighted)	13.05%	4.97%	3.85%	1.77%
Downgrade/Upgrade ratio (notch weighted)	0.74	2.76	9.55	25.89
Rating Drift (notch weighted)	3.44%	-8.75%	-32.28%	-43.73%
Rating Volatility (notch weighted)	22.65%	18.69%	39.99%	47.27%
Stability Rate	93.26%	95.37%	89.74%	88.04%
Withdrawal Rate	9.64%	7.92%	6.18%	5.02%
Notches per Downgrade per Year	3.05	4.51	3.80	3.91
Notches per Upgrade per Year	3.63	3.13	2.56	2.17

While lifetime downgrades have outnumbered upgrades among US CDOs for all rating categories (Figure 22a), some of this can be attributed to the fact that Moody's typically does not upgrade a CDO tranche just prior to its being called or redeemed.¹³ The cumulative downgrade rate was much higher for securities rated Baa or below relative to those rated Aaa, Aa, or single-A.

US CDO vintages from 1996 to 2001 experienced high lifetime downgrade rates due in part to high corporate default rates and low recovery rates during 2000 to 2002 (Figure 22b). However, performance has improved markedly since the 2002 vintage and upgrades have exceeded downgrades so far for the 2003 and 2004 vintages.

13. See "Credit Migration of CDO Notes, 1996-2005, for US and European Transactions," Moody's Structured Finance Special Report, March 17, 2006.

Figure 22 – Cumulative Rating Transition Rates for US CDOs for pre-2005 vintages, 1990-2006

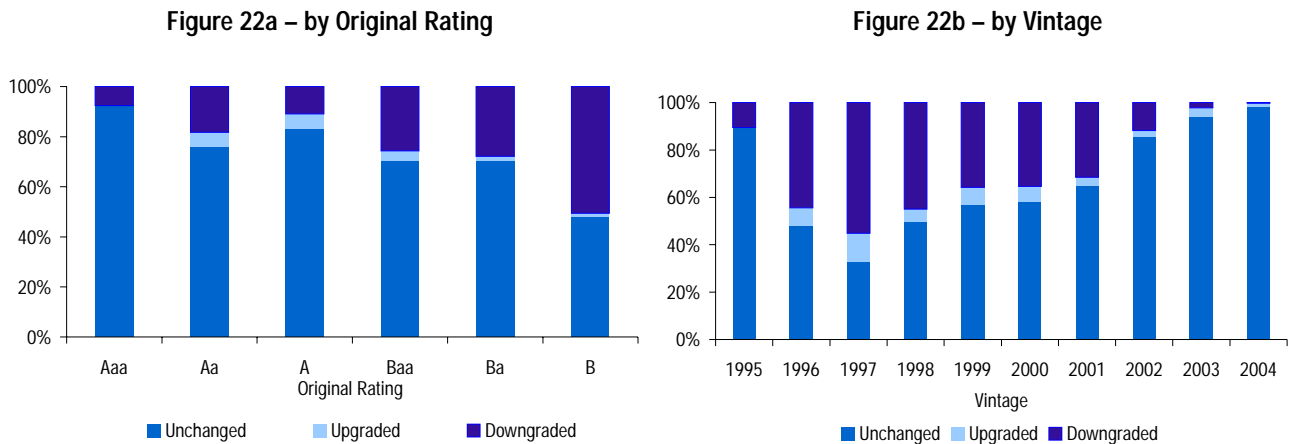
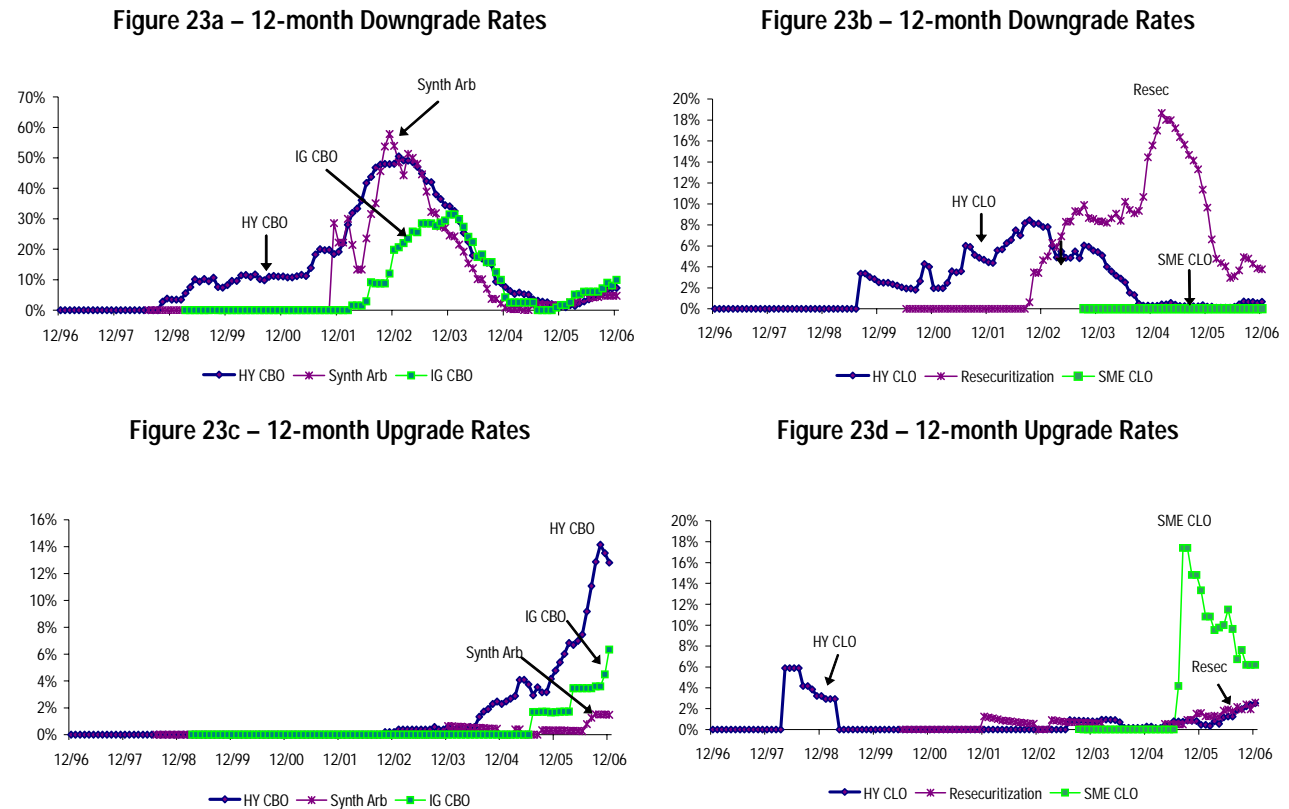


Figure 23 shows the 12-month downgrade and upgrade rates for a few CDO deal types. HY CBOs, IG CBOs, and synthetic arbitrage CDOs have all experienced much lower downgrade rates recently than they had during their peak levels in 2002 and 2003, although downgrade rates have increased since their lows in 2005 (Figure 23a). However, upgrade rates have also increased considerably in the last year, especially for HY CBOs (Figure 23c).

The frequency of downgrades for resecuritization CDOs has also decreased from a high in early 2005 and ended at 3.8% in 2006, while the frequency of upgrades was on an increasing trend (Figures 23b and 23d). HY CLOs continued to perform well with a very low downgrade rate and moderate upgrade rate. Although SME CLOs, collateralized loan obligations backed by small to medium size enterprises, are a relatively new and small deal type, they have enjoyed very good performance.¹⁴

Figure 23 – 12-month Downgrade and Upgrade Rates for Select US CDO Deal Types



Note: The horizontal axis represents the cohort ending date.

14. See "Update on the Market for U.S. SME CLOs," Moody's Structured Finance Special Report, August 25, 2006.

Unlike the past when HY CBOs were a drag on the performance of US CDOs¹⁵, HY CBOs were a net positive to the CDO sector in 2006. If HY CBOs are excluded from the calculation, then the frequency of both downgrades and upgrades declines, but the decrease in the upgrade rate is more severe leading to a downgrade-to-upgrade ratio that is greater than one and a negative rating drift (Figure 24).

	2006	2005	1997-2006	1997-2005
Downgrade Rate	2.58%	3.42%	5.57%	6.87%
Upgrade Rate	2.31%	0.94%	0.90%	0.64%
Downgrade/Upgrade ratio	1.12	3.65	6.26	10.76
Downgrade Rate (notch weighted)	8.30%	15.95%	22.66%	28.32%
Upgrade Rate (notch weighted)	7.77%	2.48%	2.47%	1.47%
Downgrade/Upgrade ratio (notch weighted)	1.07	6.43	9.26	19.30
Rating Drift (notch weighted)	-0.53%	-13.47%	-20.18%	-26.85%
Rating Volatility (notch weighted)	16.07%	18.44%	25.13%	29.79%
Stability Rate	95.11%	95.65%	93.53%	92.49%
Withdrawal Rate	8.92%	8.35%	7.01%	5.94%
Notches per Downgrade per Year	3.22	4.67	4.00	4.12
Notches per Upgrade per Year	3.36	2.65	2.42	2.12

US CMBS

In 2006, upgrades outnumbered downgrades in the US CMBS sector by more than 10 to 1. Out of a total universe of 4,434 US CMBS ratings from 515 deals outstanding at the beginning of 2006, 87 ratings from 40 deals were downgraded and 961 ratings from 242 deals were upgraded in 2006. Almost all the CMBS downgrades resulted from realized and anticipated losses from specially serviced loans and 61% of the securities had been downgraded previously. The vast majority of CMBS upgrades were caused by increased subordination levels and stable or improved pool performance. A high percentage of defeased loans was also cited as a contributing factor to many of the upgrades. The underlying cause of the strong performance of the CMBS pools was record levels of property price appreciation in recent years.

In addition, Moody's quantitative ("Q") tools such as Moody's Commercial Mortgage Metrics (CMMTM) and Moody's Surveillance Trend Scores (MOSTTM) have enabled CMBS analysts to efficiently identify and act on CMBS transactions with significant changes to their credit profile. In August 2006, Moody's made 85 Q tool based upgrades and in December 2006, another 110 classes were upgraded using Q tools.¹⁶

For the US CMBS sector in 2006 (see Figures 25 and 26):

- The upgrade rate rose to a record-breaking high of 22.3% in 2006 at the same time that the downgrade rate fell to a four-year low of 2.0%, further widening the gap between the downgrade and upgrade rates.
- Both the magnitude of downgrades and upgrades ticked upwards, increasing from 1.8 notches in 2005 to 1.9 notches in 2006 for downgrades and rising from 2.3 to 2.6 for upgrades. The severity of downgrades has been much lower in US CMBS than in other sectors.
- Both rating drift and rating volatility continued their upward climb due to the increase in CMBS upgrades.
- The main driver of upgrade activity was investment-grade CMBS, where the upgrade rate reached an impressive all-time high of 30.5% in 2006. The upgrade rate for below investment-grade securities has also been increasing and more than doubled over the past year from 2.9% in 2005 to 5.9% in 2006. However, the upgrade rate for investment-grade securities is still more than five times larger than that of speculative-grade CMBS.
- The investment-grade downgrade rate has been below 1% since September 2005 and stood at an extremely low 0.2% in December 2006. Downgrade activity also slowed for below investment-grade securities, with a rate of 5.7% in 2006 versus 9.2% in 2005.

15. See "U.S. High-Yield CBOs: Analyzing the Performance of a Beleaguered CDO Category," Moody's Structured Finance Special Report, January 21, 2003 and "Structured Finance Rating Transitions: 1983-2005," Moody's Special Comment, February 2006

16. See "US CMBS: Q Tool Based Portfolio Review Results in Numerous Upgrades," Moody's Structured Finance Special Report, August 2, 2006 and Moody's press release, "Moody's Investors Service Upgrades 110 Classes of 44 Securitizations," December 8, 2006.

Figure 25 – Rating Transition Trends for US CMBS

Figure 25a – 12-month Downgrade Rates and Upgrade Rates

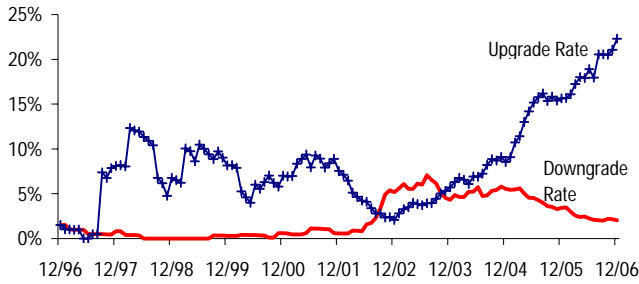


Figure 25b – Magnitude of Downgrades and Upgrades

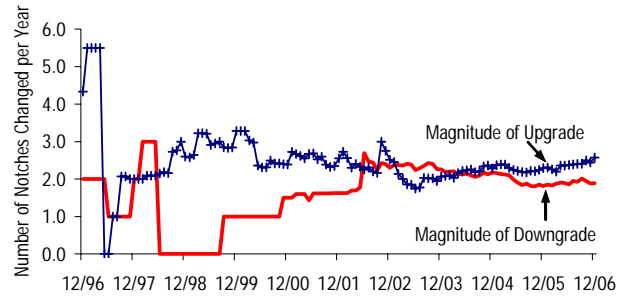


Figure 25c – Rating Drift and Rating Volatility

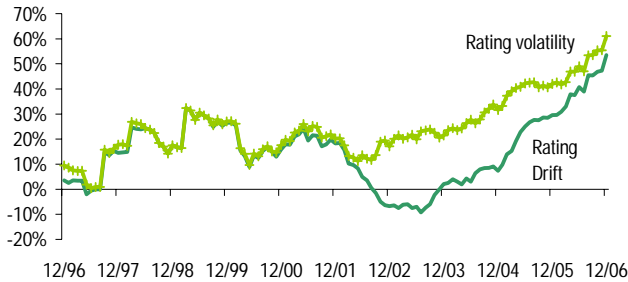
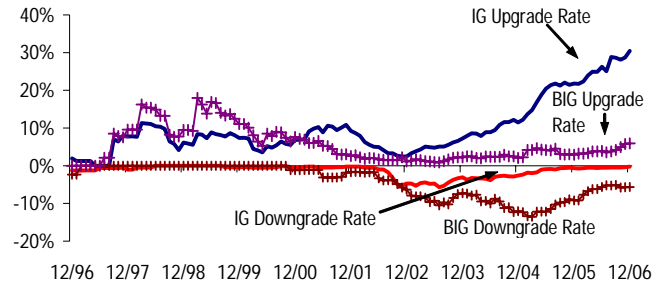


Figure 25d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

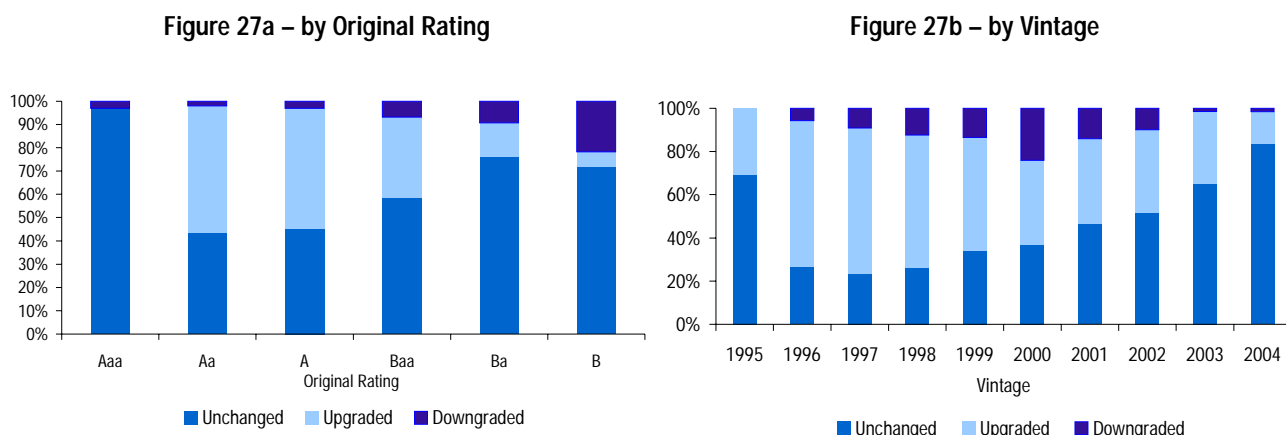
Figure 26 – Summary of 12-month Rating Transitions for US CMBS

	2006	2005	1997-2006	1997-2005
Downgrade Rate	2.02%	3.42%	3.34%	3.63%
Upgrade Rate	22.30%	15.66%	10.65%	8.15%
Downgrade/Upgrade ratio	0.09	0.22	0.31	0.45
Downgrade Rate (notch weighted)	3.81%	6.20%	7.00%	7.75%
Upgrade Rate (notch weighted)	57.35%	35.79%	24.99%	18.83%
Downgrade/Upgrade ratio (notch weighted)	0.07	0.17	0.28	0.41
Rating Drift (notch weighted)	53.55%	29.59%	17.99%	11.08%
Rating Volatility (notch weighted)	61.16%	42.00%	31.99%	26.59%
Stability Rate	75.68%	80.92%	86.01%	88.23%
Withdrawal Rate	5.66%	7.32%	7.13%	7.04%
Notches per Downgrade per Year	1.89	1.81	1.90	1.90
Notches per Upgrade per Year	2.57	2.29	2.33	2.31

The divergence in performance between investment-grade and speculative-grade securities can also be seen in their cumulative rating transition rates (Figure 27a). Securities that were originally rated Aa, single-A, or Baa were much more likely to be upgraded than downgraded. While the cumulative upgrade rate is still higher than the downgrade rate for Ba-rated securities, the difference is smaller, and B-rated securities are much more likely to be downgraded than upgraded.

Across all vintages, lifetime upgrade rates were higher than downgrade rates (Figure 27b). However, while upgrade rates generally increased with seasoning, downgrade rates varied according to the timing of the commercial real estate credit cycle, with loans underwritten in 2000 experiencing the most difficult market environment to date.

Figure 27 – Cumulative Rating Transition Rates for US CMBS pre-2005 vintages, 1987-2006



US RMBS

Unlike US HEL, the US RMBS sector continued to experience more positive than negative rating actions in 2006. Out of a total universe of 8,628 US RMBS ratings from 2,250 deals outstanding at the beginning of 2006, 36 ratings from 28 deals were downgraded and 329 ratings from 109 deals were upgraded in 2006. All the downgrades were caused by the weak performance of the underlying pools. In July 2006, Moody's upgraded 159 tranches from 60 jumbo prime RMBS deals citing the high prepayment rates and low or no losses experienced by the pools as the major reasons behind the upgrades.¹⁷ Moreover, the virtually standard jumbo RMBS shifting-interest structure had resulted in significant increases in senior tranche credit enhancement levels. All other RMBS upgrades in 2006 were also caused by strong collateral performance, a build-up of credit enhancement, or both.

For the US RMBS sector in 2006 (see Figures 28 and 29)¹⁸:

- The downgrade rate was 0.4%, less than half its already low level in 2005 of 0.9%. The upgrade rate also declined from 6.6% in 2005 to 3.8% in 2006.
- The average magnitude of rating downgrades fell from 4.8 notches in 2005 to 3.3 in 2006, a 1.5-notch decrease, while the magnitude of rating upgrades stayed steady at approximately 2.5 notches.
- The decrease in both the downgrade and upgrade rates caused rating volatility to decrease by almost half, to 10.8% in 2006 from 20.6% in 2005. The larger decrease in the notch-weighted upgrade rate relative to the downgrade rate caused the rating drift to fall to 8.0%, below both its year-prior level of 12.0% and its historical 10-year average of 11.6%.
- The rating transition rates for investment-grade and below investment-grade US RMBS followed the same general trend of US RMBS overall with both rating categories experiencing declining upgrade and downgrade activity.

17. See the related Moody's press release "Moody's upgrades 159 tranches of jumbo prime residential mortgage backed securities," July 17, 2006.

18. The historical rating transition trends for US RMBS have changed from those presented in prior transition studies due to the reclassification of the DLJ/Quality mortgage deals to HEL from RMBS. The underlying mortgages in these deals were recently determined to be predominantly subprime. These deals performed very poorly and experienced both high downgrade and impairment rates. For more details, see "Deal Sponsor and Credit Risk of U.S. ABS and RMBS Securities," Moody's Special Comment, December 2006.

Figure 28 – Rating Transition Trends for US RMBS

Figure 28a – 12-month Downgrade Rates and Upgrade Rates

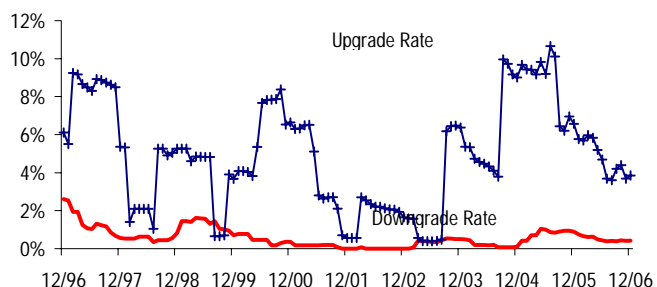


Figure 28b – Magnitude of Downgrades and Upgrades

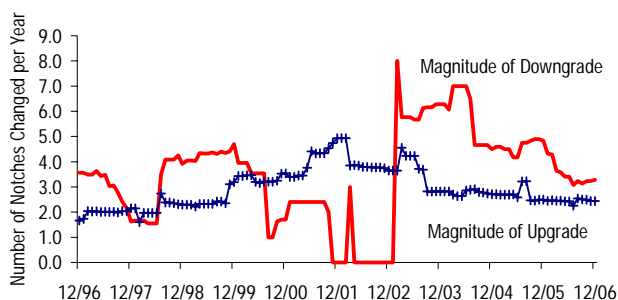


Figure 28c – Rating Drift and Rating Volatility

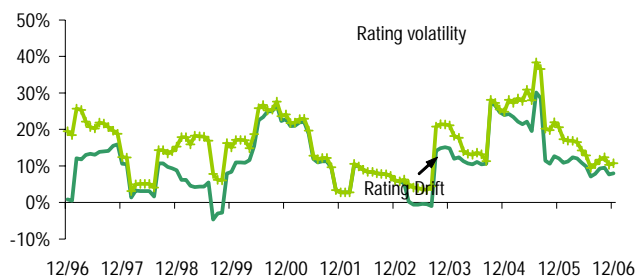
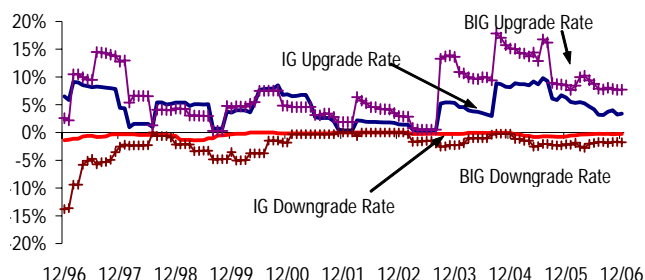


Figure 28d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

Figure 29 – Summary of 12-month Rating Transitions for US RMBS

	2006	2005	197-2006	197-2005
Downgrade Rate	0.42%	0.89%	0.55%	0.57%
Upgrade Rate	3.85%	6.56%	5.09%	5.20%
Downgrade/Upgrade ratio	0.11	0.14	0.11	0.11
Downgrade Rate (notch weighted)	1.38%	4.29%	2.22%	2.33%
Upgrade Rate (notch weighted)	9.38%	16.34%	13.80%	14.39%
Downgrade/Upgrade ratio (notch weighted)	0.15	0.26	0.16	0.16
Rating Drift (notch weighted)	8.00%	12.05%	11.59%	12.06%
Rating Volatility (notch weighted)	10.76%	20.63%	16.02%	16.72%
Stability Rate	95.73%	92.55%	94.36%	94.24%
Withdrawal Rate	1.76%	7.69%	9.67%	10.99%
Notches per Downgrade per Year	3.28	4.83	3.66	3.72
Notches per Upgrade per Year	2.44	2.49	2.88	2.99

The stellar performance of US RMBS can be seen in Figure 30. Aaa-rated US RMBS experienced a cumulative downgrade rate of only 1.5% and all other rating categories experienced much higher incidences of upgrades than downgrades. The strong performance applied to all vintages, but the 2001 to 2003 vintages have experienced especially high levels of upgrade activity due to the strong US housing market during this time period.

Figure 30 – Cumulative Rating Transition Rates for US RMBS pre-2005 vintages, 1984-2006

Figure 30a – by Original Rating

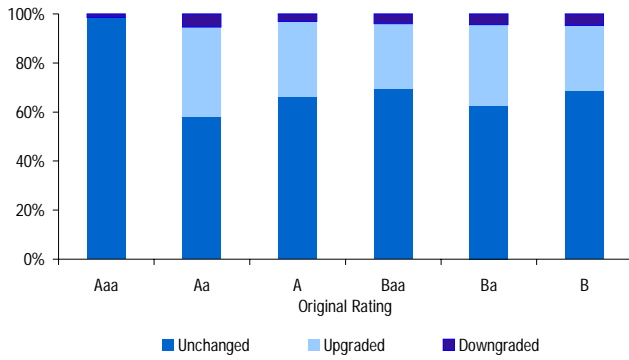
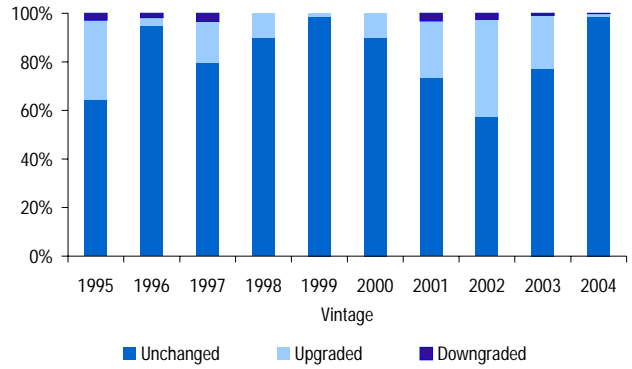


Figure 30b – by Vintage



Regional Comparisons of Rating Transitions

EMEA AND US RATING TRANSITION RATES¹⁹

Out of a total universe of 4,631 EMEA structured finance ratings from 1,934 deals outstanding at the beginning of 2006, 68 ratings from 56 deals were downgraded and 163 ratings from 83 deals were upgraded in 2006. CDOs dominated the list of downgrades, accounting for 88.2% of all structured finance downgrades in 2006; CMBS accounted for a 10.3% share and ABS made up the remaining 1.5%. Almost all the CDO downgrades involved synthetic arbitrage deals which experienced negative portfolio credit migration, while all the CMBS downgrades were caused by under-performance of the underlying collateral.

CDOs also took the largest share of upgrades in 2006, with a 43.6% share, followed by RMBS (30.1%), CMBS (16.6%) and ABS (9.8%). The reduced time to maturity, and thus lower credit exposure of the notes was a major factor in most CDO upgrades, while all RMBS and CMBS upgrades were caused by increased credit enhancement due to the pay-down of the notes, better than anticipated collateral performance, or both. In contrast, most ABS upgrades were prompted by the upgrade of a related third party.

The EMEA downgrade rate was in line with that of the US for most of 2006, but fell slightly towards the end of the year to 1.6%, below the US rate of 2.0% (Figures 31 and 32). The average magnitude of rating downgrades was flat for the year at 1.9 notches, the same level as in 2005, and 1.2 notches below the size of US downgrades in 2006.

The EMEA upgrade rate was on a declining trend in 2006, ending at 3.7% in December, much lower than the US rate of 6.0%. The average magnitude of EMEA upgrades also remained under that of the US in 2006 at 2.1 notches, half a notch below the US average of 2.6 notches.

Figure 31 – Comparison of Rating Transition Trends for EMEA and US Structured Finance

Figure 31a – 12-month Downgrade Rates

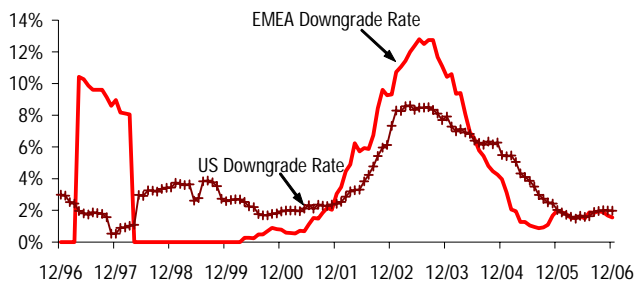


Figure 31b – Magnitude of Downgrades

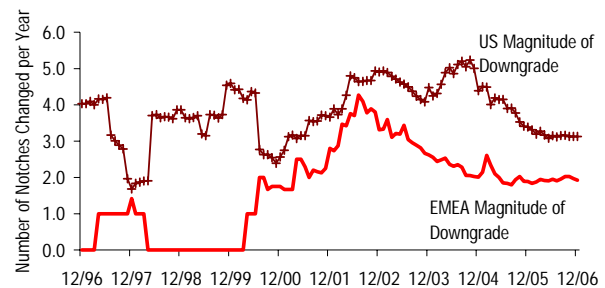


Figure 31c – 12-month Upgrade Rates

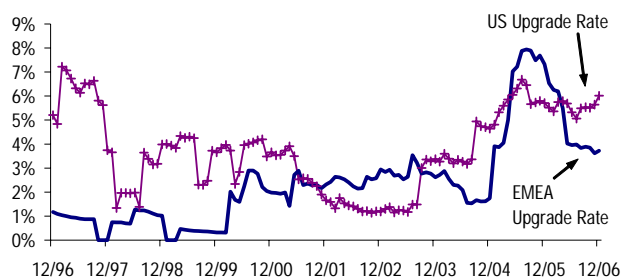
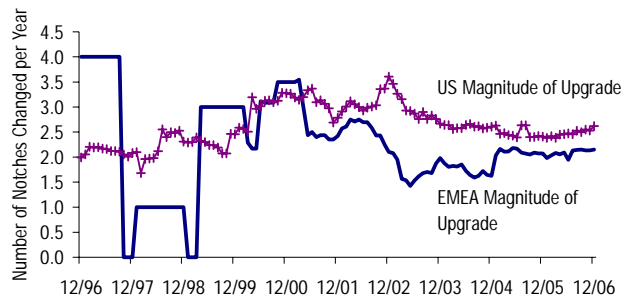


Figure 31d – Magnitude of Upgrades



Note: The horizontal axis represents the cohort ending date.

19. A separate study for EMEA structured finance rating transitions is forthcoming.

Figure 32 – Comparison of 12-month Rating Transitions for EMEA and US Structured Finance						
	EMEA			US		
	2006	2005	1997-2005	2006	2005	1997-2005
Downgrade Rate	1.55%	1.99%	5.00%	1.98%	2.03%	4.46%
Upgrade Rate	3.73%	7.34%	3.60%	6.02%	5.71%	3.64%
Downgrade/Upgrade ratio	0.42	0.27	1.39	0.33	0.35	1.22
Downgrade Rate (notch weighted)	2.99%	3.75%	13.74%	6.18%	6.87%	19.36%
Upgrade Rate (notch weighted)	8.00%	15.20%	7.47%	15.76%	13.75%	9.45%
Downgrade/Upgrade ratio (notch weighted)	0.37	0.25	1.85	0.39	0.50	2.04
Rating Drift (notch weighted)	5.01%	11.45%	-6.28%	9.57%	6.88%	-9.91%
Rating Volatility (notch weighted)	10.99%	18.96%	21.21%	21.94%	20.62%	28.81%
Stability Rate	94.72%	90.68%	91.40%	92.01%	92.26%	91.90%
Withdrawal Rate	11.06%	8.19%	7.03%	4.83%	9.00%	8.95%
Notches per Downgrade per Year	1.93	1.89	2.31	3.13	3.39	4.05
Notches per Upgrade per Year	2.15	2.07	2.06	2.62	2.41	2.69

Figure 33 compares the US and EMEA 12-month rating transition matrix for 2006. All but the single-B and Caa or below US structured finance rating categories experienced higher upgrade rates than their EMEA counterparts. However, all but the Aaa, Aa, and single-A US rating categories experienced higher downgrade rates. In addition, there were no EMEA downgrades into the Caa or below category in 2006.

Figure 33 – Comparison of EMEA and US Structured Finance 12-month Rating Transition Matrices							
EMEA in 2006	Ratings to:						
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	99.32%	0.53%	0.15%				
Aa	2.20%	96.93%	0.66%	0.22%			
A	0.30%	2.84%	95.54%	1.32%			
Baa	0.25%	0.61%	2.82%	95.58%	0.74%		
Ba			1.09%	3.64%	95.26%		
B					7.27%	92.73%	
Caa or below						4.82%	95.18%
US in 2006	Ratings to:						
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	99.86%	0.11%	0.03%				
Aa	7.15%	92.35%	0.43%	0.03%	0.02%	0.02%	
A	2.16%	5.48%	91.35%	0.80%	0.13%	0.08%	
Baa	0.42%	0.87%	4.03%	92.05%	1.51%	0.83%	0.29%
Ba	0.28%	0.04%	0.56%	3.94%	92.21%	1.93%	1.04%
B		0.09%	0.18%	0.36%	3.29%	88.72%	7.37%
Caa or below				0.11%	0.11%	0.55%	99.23%

ASIA-PACIFIC AND US RATING TRANSITION RATES²⁰

Out of a total universe of 1,619 Asia-Pacific structured finance ratings from 920 deals outstanding at the beginning of 2006, 23 ratings from 19 deals were downgraded and 101 ratings from 67 deals were upgraded in 2006. All but one downgrade were associated with CDOs experiencing deterioration in the credit quality of their underlying portfolios. In contrast, all sectors of the Asia-Pacific market experienced upgrades, with CMBS accounting for the largest share (33.7%) followed by RMBS (26.7%), ABS (19.8%) and CDOs (19.8%).

The most commonly cited reason for upgrades was increased credit enhancement due to pay-down of the notes, which was often accompanied by strong performance of the underlying pool. In addition, 17 of the 28 RMBS upgrades were due to a change in the mortgage insurer among Australian RMBS.

20. Two separate studies focusing on structured finance rating transitions in Japan and in the Asia-Pacific region ex Japan are forthcoming.

The Asia-Pacific structured finance downgrade rate increased to 1.5% in 2006 from its extremely low level of 0.4% in 2005 and was more in line with its historical average of 1.7% (Figures 34 and 35). At the same time, the upgrade rate decreased from 7.6% in 2005 to 6.8% in 2006. However, the frequency of Asia-Pacific downgrades remained below that of the US and the frequency of upgrades remained above the US upgrade rate. The average number of notches downgraded in the Asia-Pacific region fell slightly to 1.5 notches in 2006, 0.1 notches lower than its year-prior level and 1.6 notches lower than the US average. The average size of rating upgrades also declined from 3.3 notches in 2005 to 2.9 notches in 2006, but was still 0.3 notches higher than the average magnitude of US upgrades.

Figure 34 – Comparison of Rating Transition Trends for Asia-Pacific and US Structured Finance

Figure 34a – 12-month Downgrade Rates

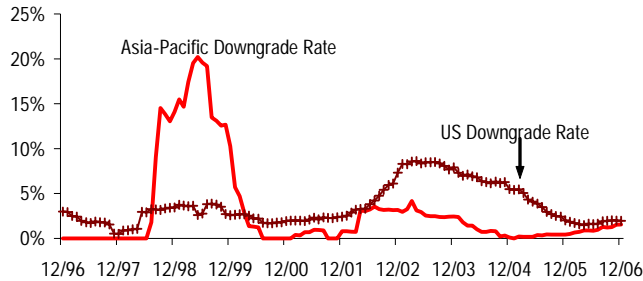


Figure 34b – Magnitude of Downgrades

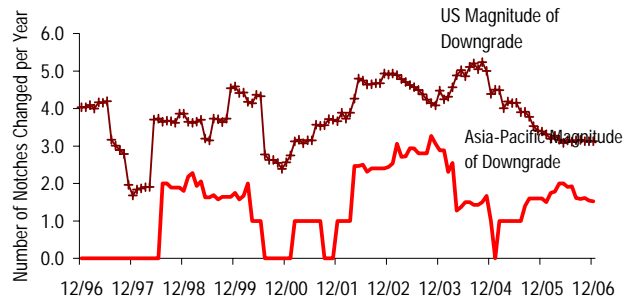


Figure 34c – 12-month Upgrade Rates

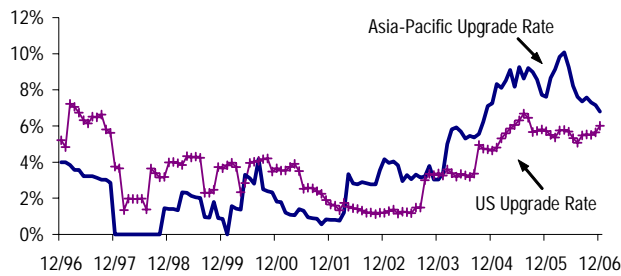
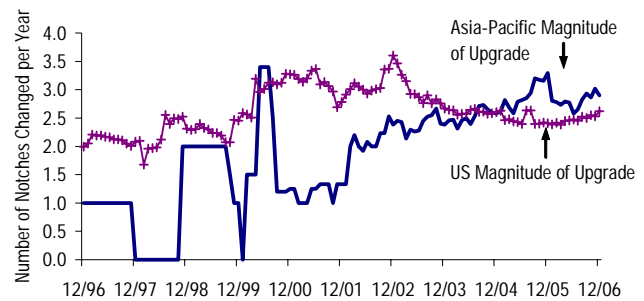


Figure 34d – Magnitude of Upgrades



Note: The horizontal axis represents the cohort ending date.

Figure 35 – Comparison of 12-month Rating Transitions for Asia-Pacific and US Structured Finance

	Asia-Pacific			US		
	2006	2005	1997-2005	2006	2005	1997-2005
Downgrade Rate	1.55%	0.43%	1.67%	1.98%	2.03%	4.46%
Upgrade Rate	6.81%	7.61%	5.08%	6.02%	5.71%	3.64%
Downgrade/Upgrade ratio	0.23	0.06	0.34	0.33	0.35	1.22
Downgrade Rate (notch weighted)	2.36%	0.68%	3.61%	6.18%	6.87%	19.36%
Upgrade Rate (notch weighted)	19.74%	25.06%	13.48%	15.76%	13.75%	9.45%
Downgrade/Upgrade ratio (notch weighted)	0.12	0.03	0.28	0.39	0.50	2.04
Rating Drift (notch weighted)	17.39%	24.38%	9.87%	9.57%	6.88%	-9.91%
Rating Volatility (notch weighted)	22.10%	25.75%	17.09%	21.94%	20.62%	28.81%
Stability Rate	91.64%	91.96%	93.25%	92.01%	92.26%	91.90%
Withdrawal Rate	16.68%	21.12%	14.36%	4.83%	9.00%	8.95%
Notches per Downgrade per Year	1.52	1.60	1.62	3.13	3.39	4.05
Notches per Upgrade per Year	2.90	3.29	2.38	2.62	2.41	2.69

Except for the Aa rating category, Asia-Pacific structured finance securities experienced higher upgrade rates in 2006 than US securities (Figure 36). Moreover, there were only two rating categories – Aa and single-A – in the Asia Pacific market that experienced any downgrades and none were to below investment-grade ratings.

Figure 36 – Comparison of Asia-Pacific and US Structured Finance 12-month Rating Transition Matrices

Asia-Pacific in 2006		Ratings to:					
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	100.00%						
Aa	4.70%	93.91%	1.38%				
A	5.45%	5.00%	87.73%	1.82%			
Baa	2.70%		7.03%	90.27%			
Ba	2.94%	1.47%	1.47%	4.41%	89.71%		
B			9.30%	4.65%		86.05%	
Caa or below							
US in 2006		Ratings to:					
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	99.86%	0.11%	0.03%				
Aa	7.15%	92.35%	0.43%	0.03%	0.02%	0.02%	
A	2.16%	5.48%	91.35%	0.80%	0.13%	0.08%	
Baa	0.42%	0.87%	4.03%	92.05%	1.51%	0.83%	0.29%
Ba	0.28%	0.04%	0.56%	3.94%	92.21%	1.93%	1.04%
B		0.09%	0.18%	0.36%	3.29%	88.72%	7.37%
Caa or below				0.11%	0.11%	0.55%	99.23%

LATIN AMERICA AND US RATING TRANSITION RATES

Out of a total universe of 140 Latin American structured finance ratings from 124 deals outstanding at the beginning of 2006, 5 ratings from 5 deals were downgraded and 30 ratings from 28 deals were upgraded in 2006.

All downgrades affected Brazilian structured finance transactions. Three of the downgrades involved ABS deals that were affected by the downgrade of a third party, one involved an ABS deal that was negatively affected by the elimination of political risk enhancement to the transaction, and the remaining downgrade involved a transaction backed by a pool of residential mortgages with weaker-than-expected performance.

23 of the 30 upgrades affected Brazilian ABS that benefited from the upgrade of a third party and five upgrades concerned several transactions backed by personal loans issued out of Argentina and reflected the sound performance of the securitized pools.

Because of the small size of the market, the downgrade and upgrade rates for Latin America can be somewhat volatile. Although only five downgrades were recorded for the year, the downgrade rate more than doubled from 1.9% in 2005 to 4.1% in 2006, but was still far below the historical average of 13.5% (Figures 37 and 38). Meanwhile, the upgrade rate climbed dramatically and reached an unprecedented high of 24.4%. The average size of rating downgrades dropped 50% from 4 to 2 notches over the year, while the average size of upgrades increased 0.6 notches to 1.9. The magnitudes of both Latin American downgrades and upgrades remained below that of US rating changes.

Figure 37 – Comparison of Rating Transition Trends for Structured Finance in the US and Latin America

Figure 37a – 12-month Downgrade Rates

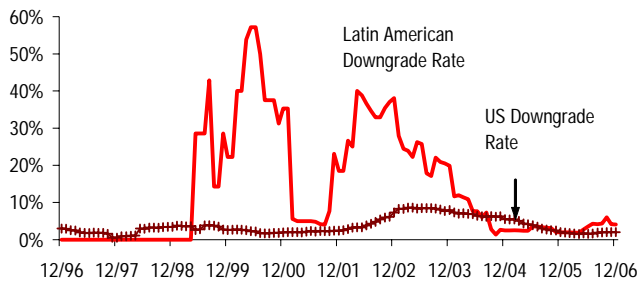


Figure 37b – Magnitude of Downgrades

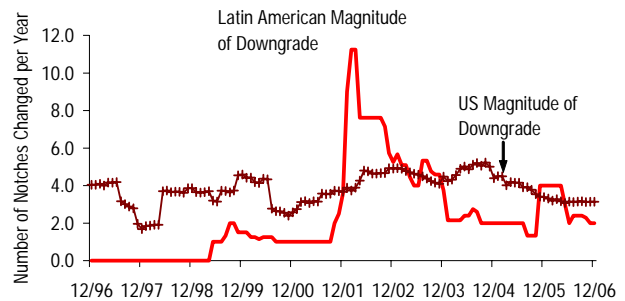


Figure 37c – 12-month Upgrade Rates

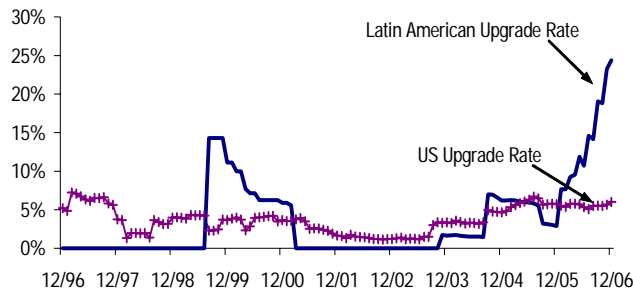
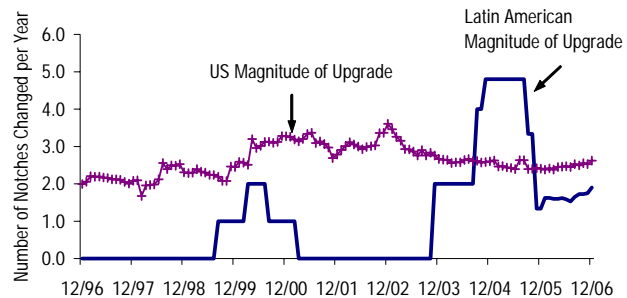


Figure 37d – Magnitude of Upgrades



Note: The horizontal axis represents the cohort ending date.

Figure 38 – Comparison of 12-month Rating Transitions for Structured Finance in the US and Latin America

	Latin America			US		
	2006	2005	1997-2005	2006	2005	1997-2005
Downgrade Rate	4.07%	1.91%	13.47%	1.98%	2.03%	4.46%
Upgrade Rate	24.39%	2.87%	2.90%	6.02%	5.71%	3.64%
Downgrade/Upgrade ratio	0.17	0.67	4.71	0.33	0.35	1.22
Downgrade Rate (notch weighted)	8.13%	7.66%	58.38%	6.18%	6.87%	19.36%
Upgrade Rate (notch weighted)	46.34%	3.83%	10.13%	15.76%	13.75%	9.45%
Downgrade/Upgrade ratio (notch weighted)	0.18	2.00	5.86	0.39	0.50	2.04
Rating Drift (notch weighted)	38.21%	-3.83%	-48.25%	9.57%	6.88%	-9.91%
Rating Volatility (notch weighted)	54.47%	11.48%	68.52%	21.94%	20.62%	28.81%
Stability Rate	71.54%	95.22%	83.63%	92.01%	92.26%	91.90%
Withdrawal Rate	24.29%	21.37%	6.41%	4.83%	9.00%	8.95%
Notches per Downgrade per Year	2.00	4.00	3.16	3.13	3.39	4.05
Notches per Upgrade per Year	1.90	1.33	2.02	2.62	2.41	2.69

The vast majority of Latin American structured finance securities were rated Baa or below, so any entries in the high investment-grade categories should be interpreted with caution. For the Latin American structured finance market in 2006, only Baa-rated securities experienced any downgrades and securities carrying Baa, Ba, and single-B ratings experienced higher frequencies of upgrade than the same rating categories in the US market (Figure 39).

Figure 39 – Comparison of 12-month Rating Transition Matrices for Latin America and US Structured Finance

Latin America in 2006							
Ratings from:	Ratings to:						
	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	100.00%						
Aa							
A			100.00%				
Baa	1.23%		14.72%	81.60%	1.23%	1.23%	
Ba				27.59%	72.41%		
B					7.14%	92.86%	
Caa or below							100.00%
US in 2006							
Ratings from:	Ratings to:						
	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	99.86%	0.11%	0.03%				
Aa	7.15%	92.35%	0.43%	0.03%	0.02%	0.02%	
A	2.16%	5.48%	91.35%	0.80%	0.13%	0.08%	
Baa	0.42%	0.87%	4.03%	92.05%	1.51%	0.83%	0.29%
Ba	0.28%	0.04%	0.56%	3.94%	92.21%	1.93%	1.04%
B		0.09%	0.18%	0.36%	3.29%	88.72%	7.37%
Caa or below				0.11%	0.11%	0.55%	99.23%

Rating Transitions in the Derivatives Sector

Out of a total universe of 1,839 global credit derivative ratings from 1,739 deals outstanding at the beginning of 2006, 40 ratings from 36 deals were downgraded and 60 ratings from 59 deals were upgraded in 2006. 37 of the 40 downgrades involved structured notes, while the remaining three involved repackaged securities. Structured notes and repackaged securities also made up the bulk of the upgrades in 2006, accounting for 53.3% and 30.0% of all upgrades respectively. Almost all the derivative rating changes were driven by changes in the rating of the underlying reference credit.

The downgrade rate in 2006 dropped to less than half its level the year prior and hit its lowest level (2.3%) since early 1997 (Figures 40 and 41). The upgrade rate declined moderately from 3.9% to 3.4%, falling further below the historical average. The average size of rating downgrades jumped to 2.6 notches in 2006 from 2 notches in 2005, while the average number of notches upgraded ended up flat relative to the previous year at 1.7 notches.

The downgrade rates for investment-grade and speculative-grade derivatives were roughly the same in 2005 at 4.9%, but went their separate ways in 2006. For investment-grade securities, the frequency of downgrades dropped to 1.4%, while for speculative-grade securities, the rate climbed to 13.7%.

Figure 40 – Rating Transition Trends for Global Derivatives

Figure 40a – 12-month Downgrade Rates and Upgrade Rates

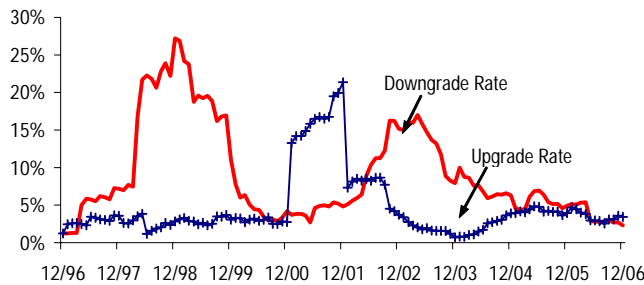


Figure 40b – Magnitude of Downgrades and Upgrades

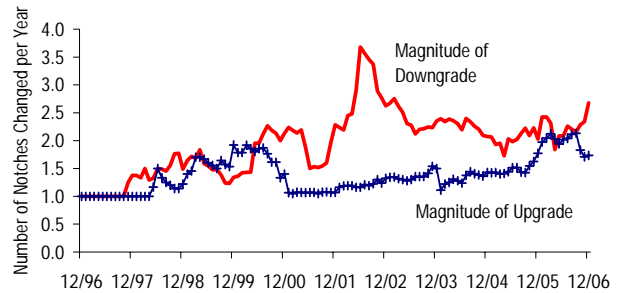


Figure 40c – Rating Drift and Rating Volatility

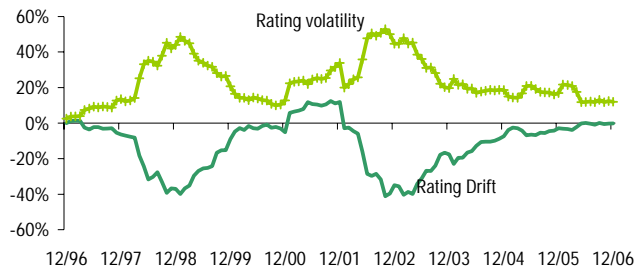
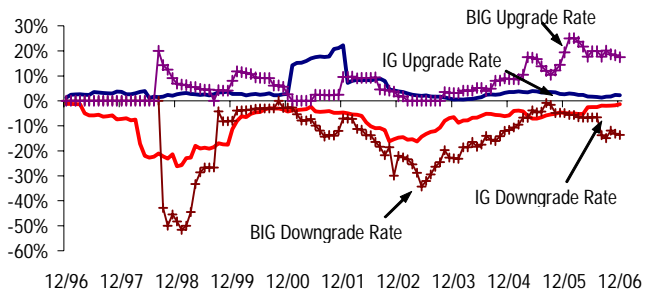


Figure 40d – Investment Grade (IG) and Below IG Downgrade and Upgrade Rates (downgrades marked negative)



Note: The horizontal axis represents the cohort ending date.

Figure 41 – Summary of 12-month Rating Transitions for Global Derivatives				
	2006	2005	1997-2006	1997-2005
Downgrade Rate	2.28%	4.90%	7.73%	8.83%
Upgrade Rate	3.42%	3.93%	4.47%	4.74%
Downgrade/Upgrade ratio	0.67	1.25	1.72	1.85
Downgrade Rate (notch weighted)	6.11%	9.93%	16.90%	19.26%
Upgrade Rate (notch weighted)	5.93%	6.96%	6.21%	6.06%
Downgrade/Upgrade ratio (notch weighted)	1.03	1.43	2.71	3.16
Rating Drift (notch weighted)	-0.17%	-2.97%	-10.69%	-13.20%
Rating Volatility (notch weighted)	12.04%	16.89%	23.11%	25.32%
Stability Rate	94.29%	91.17%	87.80%	86.43%
Withdrawal Rate	9.41%	8.52%	9.01%	9.22%
Notches per Downgrade per Year	2.68	2.03	2.18	2.16
Notches per Upgrade per Year	1.73	1.77	1.49	1.37

Because ratings in the derivatives sector are heavily linked to global corporate and sovereign ratings, it is more appropriate to compare derivative rating transitions with corporate rating transitions. In 2006, derivative ratings were more stable than their corporate counterparts except for Ba-rated securities (Figure 42). The higher rating volatility rate among derivatives for the Ba-rating category was due to rating changes for some corporate issuers such as Ford, whose senior unsecured rating was downgraded from Ba1 in the beginning of 2006 to Caa1 by the end of 2006.

Figure 42 – Comparison of Global Derivatives and Global Corporate 12-month Rating Transition Matrices							
Derivatives in 2006		Ratings to:					
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	99.79%	0.21%					
Aa	1.20%	98.12%	0.51%	0.17%			
A							
Baa	0.42%	0.42%	1.70%	95.33%	0.85%	1.27%	
Ba			3.70%	6.17%	77.78%	6.17%	6.17%
B					11.43%	88.57%	
Caa or below						6.45%	93.55%
Corporate in 2006		Ratings to:					
Ratings from:	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aaa	97.95%	1.54%	0.51%				
Aa	1.35%	97.63%	1.01%				
A	0.47%	3.08%	93.16%	3.15%	0.13%		
Baa	0.08%	0.17%	6.09%	89.85%	2.71%	0.93%	0.17%
Ba		0.17%	0.17%	8.99%	80.81%	8.82%	1.04%
B			0.24%	0.12%	10.55%	80.47%	8.63%
Caa or below						22.86%	77.14%

Appendix I: Description of Data Sample and Glossary

DESCRIPTION OF DATA SAMPLE

The data sample for the study covers all structured finance rating observations globally between 1983 and 2006 and uses the following set of criteria:

- Only securities carrying Moody's long-term bond ratings are included, whereas short-term ratings, foreign national ratings, provisional ratings, and rating estimates are excluded.
- Tranches wrapped by financial guarantors, government agencies, or government sponsored enterprises (GSEs) are excluded.
- Interest-only (IO) tranches and residual tranches are excluded.
- Deals whose credit quality are entirely dependent on a single corporate rating, such as single borrower credit tenant lease (CTL) deals in CMBS, are excluded. Derivative ratings, which are generally linked to the credit rating of a single entity, are also excluded from the overall structured finance statistics and are analyzed separately in the report.
- Tranches carrying the same rating from the same deal are collapsed into a single rating observation, with the following exception: if two or more tranches share the same rating in the same deal, but are collateralized by distinct groups of loan pools, then the tranches are not collapsed.

The corporate data set used to compare corporate rating transitions to structured finance rating transitions includes international corporate and sovereign issuers, but excludes US municipal ratings.

The structured finance data set used in this study is available through Moody's Structured Finance Default Risk Service (DRS) database and the corporate data set is available through Moody's Corporate Default Risk Service (DRS) database.

GLOSSARY

Broad Ratings and Refined Ratings

Broad ratings refer to the following Moody's long-term bond rating categories: Aaa, Aa, A, Baa, Ba, B, and Caa or below. Refined ratings or ratings with numeric modifiers refer to Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Baa3, Ba1, Ba2, Ba3, B1, B2, B3, Caa1, Caa2, Caa3, Ca, and C. The broad rating category Caa or below includes the following refined ratings: Caa1, Caa2, Caa3, Ca, and C.

Investment-Grade and Below Investment-Grade (or Speculative-Grade) Ratings

Investment-grade ratings refer to Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, and Baa3. Below investment-grade or speculative-grade ratings refer to Ba1, Ba2, Ba3, B1, B2, B3, Caa1, Caa2, Caa3, Ca, and C.

Downgrade (Upgrade) Rate

A security is considered to have been downgraded (upgraded) if its rating at the end of a pre-specified time period is lower (higher) than at the beginning of the time period on the basis of ratings with numeric modifiers (also known as refined ratings or modified ratings). The downgrade rate is the number of securities downgraded (or upgraded) divided by the total number of outstanding securities at the beginning of the time period, after excluding *half* of the ratings withdrawn during that time period. Note that in measuring downgrade rates and upgrade rates, only ratings at the beginning and the end of the time period are considered.

Average Number of Total Notches Downgraded (Upgraded) per Year

The number of total notches downgraded (upgraded) per year for a downgraded (upgraded) security is the difference in the rating of that security at the beginning and end of a 12-month period based on refined ratings. This term is also referred to as the magnitude, size, or severity of the rating change. The average number of total notches downgraded (upgraded) per year averages this quantity for all downgraded (upgraded) securities over the 12-month period. A security can experience multiple rating actions during a 12-month period, and therefore, this measure is different from the average number of notches changed per rating *action*. For example, if a security is downgraded from Baa1 to Baa2 and then Baa2 to Baa3 over 12 months, then the average number of notches changed *per rating action* would be one, but the average number of total notches changed *per year* would be two.

Weighted Downgrade (Upgrade) Rate

The weighted downgrade (upgrade) rate is computed as the number of securities downgraded (upgraded), weighted by the number of total notches changed per downgrade (upgrade) per year, divided by the total number of outstanding securities at the beginning of the 12-month period, after excluding *half* of the ratings withdrawn during that period. For example, a security downgraded from Baa1 to B1 over 12 months is counted as three downgrades in the calculation of a weighted downgrade rate, but counted as only one downgrade in the calculation of the unweighted downgrade rate.

Downgrade (Upgrade) Rate by Broad Rating

In calculating a downgrade (upgrade) rate by broad rating, a downgrade (upgrade) occurs only if the initial and end rating are in two different broad rating categories. For example, a rating change from Baa1 to Ba2 is considered a downgrade by broad rating, but a rating change from Baa1 to Baa3 is not. The latter case would still be considered to be a downgrade by refined rating, and therefore refined downgrade (upgrade) rates are always greater than or equal to broad downgrade (upgrade) rates.

Cumulative (or Lifetime) Downgrade (Upgrade) Rate

A security is considered to have experienced a cumulative or lifetime downgrade (upgrade), if its rating before withdrawal or rating at the end of the study period is lower (higher) than its original rating. The cumulative downgrade (upgrade) rate for a particular group of securities is computed as the number of securities to experience a cumulative downgrade (upgrade) divided by the total number of securities in the group.

Rating Stability Rate

The rating stability rate is a measure of the proportion of ratings that were unchanged over a pre-specified time period. It is calculated as one minus the sum of the downgrade rate and upgrade rate.

Withdrawal Rate

The withdrawal rate is computed as the total number of ratings withdrawn by the end of a pre-specified time period divided by the total number of ratings outstanding at the beginning of that time period.

Rating Drift

The rating drift is defined as the weighted upgrade rate minus the weighted downgrade rate.

Rating Volatility

The rating volatility is defined as the weighted upgrade rate plus the weighted downgrade rate.

Downgrade-to-Upgrade Ratio (weighted, lifetime)

The downgrade-to-upgrade ratio is calculated as the total number of downgraded ratings divided by the total number of upgraded ratings. The weighted downgrade-to-upgrade ratio, or downgrade-to-upgrade ratio weighted by the number of notches changed, computes the ratio of weighted downgrades to weighted upgrades. The lifetime downgrade-to-upgrade ratio is calculated as the number of ratings that have experienced a lifetime downgrade divided by the number of ratings that have experienced a lifetime upgrade.

ABS

ABS stand for asset-backed securities. This structured finance sector includes securities backed by home equity loans (HEL) and both traditional asset types such as auto loans, credit card receivables, student loans, and manufactured housing loans, and non-traditional asset types such as mutual fund fees, tax liens, tobacco settlement payments, and intellectual property.

Non-mortgage ABS

Non-mortgage ABS are asset-backed securities excluding both HEL and securities backed by manufactured housing (MH) loans.

HEL

The home equity loan or HEL sector include securities back by subprime (B&C) mortgage loans, home improvement loans, high loan-to-value (high LTV) loans, home equity lines of credit (HELOCs), and closed-end second-lien loans, as well as net interest margin (NIM) securitizations. It does not include securities backed by Alt-A mortgages, which are included in the RMBS sector. HEL is part of the ABS sector.

CDOs

CDOs stand for collateralized debt obligations. Derivative securities such as structured notes and repackaged securities are not considered to be part of this sector. Commercial real estate (CRE) CDOs, where 70% or more of the collateral is composed of CRE loans, are classified as CMBS. If the collateral backing the transaction contains less than 70% CRE loans, then the deal is classified as a CDO.

CMBS

CMBS stand for commercial mortgage-backed securities. Commercial real estate (CRE) CDOs, where 70% or more of the collateral is composed of CRE loans, are classified as CMBS. If the collateral backing the transaction contains less than 70% CRE loans, then the deal is classified as a CDO.

RMBS

RMBS stand for residential mortgage-backed securities. The large majority of these securities are backed by first-lien prime mortgages, but some are backed by Alt-A mortgages. In some older vintage RMBS transactions, subprime mortgages may also be included in the collateral. HEL is not considered to be part of this sector.

Derivatives

The derivatives sector contains structured notes, repackaged securities, and credit derivatives, as well as structured covered bonds, catastrophe-linked notes, and structured investment vehicles. This sector was denoted as “Others” in Moody’s first transition study in 2003.

Global structured finance

Global structured finance captures global structured securities in four major sectors: ABS, CDO, CMBS, and RMBS. The derivatives sector is excluded from this term to better summarize the rating transition experiences of core structured finance securities by removing the influence of securities that are wholly dependent on corporate credits.

U.S. Structured Finance Securities

U.S. structured finance securities are denominated in U.S. dollars and issued in the U.S. market or denominated in Canadian dollars and issued in Canada. In cases where the source of the underlying collateral and the denomination of the securities crossed multiple countries/regions, deals are classified by the location at which they are monitored.

EMEA Structured Finance Securities

EMEA is an abbreviation for Europe, the Middle East, and Africa. EMEA structured finance securities are denominated in a currency from or issued out of a country in the EMEA region. In cases where the source of the underlying collateral and the denomination of the securities crossed multiple countries/regions, deals are classified by the location at which they are monitored.

Asia-Pacific Structured Finance Securities

Asia-Pacific structured finance securities are denominated in the currency of a country in the Asia-Pacific region or issued in an Asia-Pacific country (including Japan and Australia). In cases where the source of the underlying collateral and the denomination of the securities crossed multiple countries/regions, deals are classified by the location at which they are monitored.

Latin American Structured Finance Securities

Latin American structured finance securities are denominated in a Latin American currency or issued in Latin America. In cases where the source of the underlying collateral and the denomination of the securities crossed multiple countries/regions, deals are classified by the location at which they are monitored.

Appendix II: Methodology

COMPUTATION OF RATING TRANSITION STATISTICS

Rating transition statistics can be reported by cohort rating or by original rating. For statistics calculated by cohort rating, *every month the rating migration of all outstanding securities are tracked over a pre-specified time period regardless of when the security was issued.* For statistics calculated by original rating, every month the rating migration of all securities issued in that month are tracked over a pre-specified time period, in which case each security carries its original rating at the start of the period.

Unless otherwise stated, transition statistics in the report are calculated by cohort rating and usually the pre-specified time period is one year, although multi-year statistics are also reported. In any case, the rating (including WR) must exist over the entire time period in order to be counted, e.g. a rating must be seasoned at least three years to be counted in a three-year downgrade rate, and only the rating outstanding at the beginning and end of the time period are used.

All average transition statistics (downgrade rates, upgrade rates, transition matrices, etc.) are calculated by averaging over the rates calculated on a monthly basis, where each month's contribution to the total is weighted by the number of ratings used in that month's computation. For example, the average 12-month downgrade rate over 1997 to 2006 is calculated by taking a weighted average of the 120 12-month downgrade rates calculated for each month in that 10-year period.

There are basically three reasons for differences in transition rates reported by original rating and cohort rating:

- First, grouping by original rating implies that all tranches are newly issued and have zero seasoning whereas grouping by cohort rating means that all tranches have different ages, with some being newly issued and some being highly seasoned. Because the likelihood of a rating change is different at different points in the life of the security²¹, the distribution of the ages of the securities in the group will influence the rating transition rate.
- Second, some of the securities that are grouped by cohort rating may have been downgraded or upgraded to that rating rather than having been issued with the rating. To the extent that there is rating change momentum, the tranche may be more or less likely to be downgraded or upgraded compared to a similarly-rated tranche that has not experienced a rating change.²²
- Third, securities and rating changes are weighted differently in the original rating and cohort rating calculations. For transition rates by original rating, each security is counted exactly once and contributes to either the total number of downgrades, upgrades, or stable ratings. In contrast, for transition rates by cohort rating, a tranche appears in many cohorts, one for every month that the rating is outstanding, which gives older securities more weight than newer securities. In addition, a tranche can contribute multiple times to the count of stable ratings during periods when its rating is constant, and can also contribute multiple times to the count of downgraded or upgraded ratings if it is downgraded or upgraded.

ADJUSTING FOR WITHDRAWN RATINGS (WR)

The rating downgrade and upgrade rates reported in this study have been adjusted for withdrawn ratings by deducting *half of the ratings withdrawn during the time period under consideration from the total number of outstanding ratings at the beginning of the time period.*²³

In the Appendix to follow, transition matrices of all time horizons (unless otherwise noted) are displayed with a final column labeled **WR** that contains the proportion of ratings in the category that were withdrawn by the end of the time period. This presents a complete account of rating transitions. Below is an example of how to adjust these transition matrices for withdrawals, i.e. how to remove the **WR** column.

The following table lists a sample row in a transition matrix with the **WR** column for the Aa rating category.

21. The effect of seasoning on downgrade and upgrade rates for structured finance securities was initially discussed in Moody's first global structured finance transition study, "Structured Finance Rating Transitions: 1983-2002," Moody's Special Comment, January 2003.

22. Rating change momentum was also documented in Moody's first global structured finance transition study.

23. In the structured finance transition studies published in 2003 and 2004, all withdrawn ratings were deducted from the population. However, the current method was adopted for the 2005 study and is used for all subsequent transition and default studies.

Sample Row from a Transition Matrix unadjusted for WR								
	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aa	5.62%	84.36%	1.90%	0.62%	0.16%	0.09%	0.12%	7.13%

To adjust the transitions rates for downgrades and upgrades, take the original rate and divide by one minus half the rate in the WR column. For example, for transitions from Aa to Aaa, the adjusted rate is $5.62\% / (1 - 7.13\%/2) = 5.82\%$. The single-A, Baa, Ba, B, and Caa or below categories should be similarly adjusted. The adjusted transition rates for the aforementioned categories are displayed in the table below.

Sample Row from a Transition Matrix adjusted for WR							
	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aa	5.82%	91.18%	1.97%	0.64%	0.16%	0.10%	0.13%

The adjusted stability rate, which appears in the diagonal entries in the matrix, uses a different calculation and is computed as one minus the adjusted rates of all the other categories. In this example, the Aa column is calculated as $1 - (5.82\% + 1.97\% + 0.64\% + 0.16\% + 0.10\% + 0.13\%) = 91.18\%$.

To summarize, first calculate the adjusted non-diagonal entries of the matrix by taking the original rate and dividing by one minus half the withdrawal rate, and then compute the adjusted diagonal entries by subtracting the sum of the other adjusted entries in the same row from one.

The rating transition experience of securities that were withdrawn five years after origination is shown in the “matrices by original rating” section of Appendix III.

COUNTING DOWNGRADES AND UPGRADES

A security is considered to have been downgraded (upgraded) if its rating at the end of a pre-specified time period is lower (higher) than at the beginning of the time period. There are several reasons why that the count of downgrades and upgrades reported in this study may differ from those in other Moody’s reports even when the same universe of securities is under consideration.

First, tranches carrying the same rating from the same deal, i.e. *pari passu* tranches, are collapsed into a single rating observation in this study, which may not be the practice in other reports.

Second, only the rating at the beginning and end of the time period are considered in counting rating changes. In particular, if a security is downgraded (upgraded) multiple times over the period under consideration, this will still be counted as one downgrade (upgrade). Moreover, if a tranche is downgraded and then upgraded (or upgraded and then downgraded) so that its start rating and end rating are the same, then no rating change will be considered as having occurred and neither the downgrade nor the upgrade will be counted. This is fairly uncommon as rating reversals are unusual, particularly over short time periods.

Third, if a security was rated after the cohort formation date and experienced a rating change over the time period under consideration, then the change will not be counted. For example, in counting downgrades for the year 2006, if a tranche was initially rated and then downgraded in 2006, then the downgrade would not be counted because the tranche was not part of the cohort that was formed in the beginning of the year as it did not exist then. This is also unusual because ratings are very stable in the first year of seasoning.

Fourth, if a security experienced a rating transition and the rating was subsequently withdrawn before the end of the year, then the rating change will not be counted. For example, in counting upgrades for the year 2006, if a tranche is upgraded in March and the rating is withdrawn in September then the rating at the end of the year is WR and the tranche will be considered to have transitioned into WR, not the upgraded rating. This has a more significant effect on upgrades than downgrades because often, securities that are upgraded are paid down soon after and have their ratings withdrawn.

To put this issue into perspective, if we had counted tranches that experienced a rating change in 2006, but whose rating was withdrawn by the end of the year, then the number of global structured finance downgrades would increase from 709 to 732, a 3.2% increase, and the number of upgrades would increase from 2161 to 2259, a 4.5% increase. The 12-month downgrade rate for 2006 would increase from 1.92% to 1.98% and the upgrade rate would increase from 5.84% to 6.10%. Therefore, while the exact statistics reported would be different, the general trends would not.

The number of rating transitions that are not counted due to withdrawals increases with the length of the time horizon under consideration because the longer the time period, the higher the withdrawal rate. While we believe that the withdrawal rate itself is an interesting statistic, many are interested in knowing about intermediate rating changes prior to the final transition into WR.

One way this information can be provided is through lifetime rating transition rates, which count downgrades and upgrades based on the rating before withdrawal. Figures with this data are included in the main body of the report for global structured finance and the major US asset types.

Another way this information can be supplied is through an examination of the original ratings and ratings before withdrawal of the securities with WR ratings. This will indicate what percentage of the withdrawn securities experienced migrations to other rating categories in their lifetime. This data is provided in the bottom-most transition matrix for the 5-year transition matrices by original rating in Appendix III.

Below is an excerpt from the transition matrix for withdrawn securities for the 5-yr cohort by original rating for global structured finance. The universe of securities under consideration in this row are those that were originally rated Aa, seasoned at least 5 years, and had WR ratings 5 years after issuance. For these tranches, 73.8% were still rated Aa immediately before withdrawal, 17.6% had been upgraded to Aaa, 3.7% had been downgraded to single-A, 1.6% had been downgraded to Baa, etc.

Sample Row from a Transition Matrix of Ratings prior to WR							
	Aaa	Aa	A	Baa	Ba	B	Caa or below
Aa	17.62%	73.82%	3.72%	1.61%	0.74%	0.62%	1.86%

However, note that while this transition matrix provides some information about rating history prior to withdrawal, it does not indicate the reason for the withdrawal, whether the security was impaired during its lifetime, or whether it was paid off. This will be the topic of future research.

Appendix III: Multi-Year Horizon Transition Matrices²⁴

MATRICES BY COHORT RATING

Figure 43 - Global Structured Finance Rating Transition Matrices by Cohort Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	87.66%	0.66%	0.19%	0.06%	0.03%	0.01%	0.03%	11.36%
Aa	5.53%	84.51%	1.72%	0.54%	0.13%	0.07%	0.13%	7.36%
A	1.23%	3.46%	84.95%	1.71%	0.50%	0.20%	0.23%	7.72%
Baa	0.34%	0.55%	2.94%	85.53%	2.30%	0.97%	0.97%	6.40%
Ba	0.10%	0.09%	0.54%	3.08%	83.36%	3.14%	3.99%	5.70%
B	0.05%	0.03%	0.11%	0.39%	2.16%	82.39%	9.52%	5.34%
Caa or below	0.02%	0.00%	0.00%	0.04%	0.08%	0.36%	89.60%	9.90%
2-year								
Aaa	74.21%	1.09%	0.40%	0.18%	0.10%	0.05%	0.09%	23.87%
Aa	10.07%	68.28%	2.89%	1.27%	0.43%	0.27%	0.43%	16.36%
A	2.70%	5.59%	69.01%	2.57%	1.02%	0.48%	0.85%	17.78%
Baa	0.83%	1.27%	5.08%	69.31%	3.58%	1.93%	3.02%	14.98%
Ba	0.19%	0.26%	1.45%	4.87%	67.02%	4.45%	8.95%	12.81%
B	0.08%	0.04%	0.21%	0.77%	3.52%	67.67%	15.91%	11.79%
Caa or below	0.00%	0.00%	0.00%	0.07%	0.20%	0.61%	80.05%	19.07%
3-year								
Aaa	61.17%	1.27%	0.57%	0.31%	0.17%	0.11%	0.17%	36.23%
Aa	13.30%	53.99%	3.53%	1.84%	0.79%	0.53%	0.84%	25.20%
A	3.74%	6.39%	54.49%	2.91%	1.27%	0.72%	1.64%	28.84%
Baa	1.25%	1.73%	6.03%	54.48%	4.23%	2.65%	5.72%	23.90%
Ba	0.35%	0.45%	2.13%	5.64%	53.08%	4.78%	13.36%	20.21%
B	0.11%	0.04%	0.25%	1.16%	3.45%	55.15%	20.84%	19.00%
Caa or below	0.00%	0.00%	0.00%	0.08%	0.28%	0.73%	70.65%	28.26%
4-year								
Aaa	50.67%	1.23%	0.60%	0.37%	0.21%	0.15%	0.25%	46.52%
Aa	15.68%	42.56%	3.74%	2.07%	0.91%	0.77%	1.23%	33.05%
A	4.43%	6.32%	43.25%	2.57%	1.28%	0.74%	2.16%	39.24%
Baa	1.72%	1.99%	6.36%	43.79%	4.37%	2.79%	8.01%	30.97%
Ba	0.46%	0.58%	2.41%	6.16%	42.27%	4.56%	16.42%	27.14%
B	0.15%	0.00%	0.25%	1.51%	2.50%	46.08%	23.21%	26.30%
Caa or below	0.00%	0.00%	0.00%	0.04%	0.39%	0.65%	62.84%	36.08%
5-year								
Aaa	42.16%	1.05%	0.55%	0.38%	0.18%	0.15%	0.24%	55.28%
Aa	17.64%	33.69%	3.41%	1.93%	0.79%	0.84%	1.44%	40.26%
A	5.17%	6.12%	33.84%	1.92%	0.99%	0.65%	2.28%	49.04%
Baa	2.25%	2.33%	6.78%	36.12%	3.65%	2.61%	9.67%	36.59%
Ba	0.59%	0.85%	2.84%	6.89%	33.55%	3.78%	16.68%	34.83%
B	0.26%	0.00%	0.22%	2.05%	1.84%	38.66%	23.17%	33.80%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.51%	0.84%	55.19%	43.46%

24. All the transition matrices presented in this section are unadjusted for withdrawn ratings. See Appendix II for instructions on how to adjust these matrices for withdrawals.

Figure 44 - US ABS Rating Transition Matrices by Cohort Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	85.48%	0.75%	0.29%	0.11%	0.07%	0.04%	0.09%	13.17%
Aa	2.40%	87.47%	1.95%	0.82%	0.25%	0.16%	0.39%	6.55%
A	0.62%	1.62%	86.55%	1.73%	0.62%	0.30%	0.37%	8.20%
Baa	0.21%	0.22%	1.07%	87.85%	2.76%	1.31%	1.50%	5.08%
Ba	0.14%	0.11%	0.21%	1.84%	77.51%	4.94%	9.97%	5.28%
B	0.00%	0.00%	0.13%	0.37%	0.28%	69.27%	25.30%	4.65%
Caa or below	0.00%	0.00%	0.00%	0.02%	0.03%	0.14%	87.93%	11.88%
2-year								
Aaa	69.86%	1.25%	0.58%	0.31%	0.23%	0.13%	0.25%	27.40%
Aa	4.50%	72.21%	3.51%	1.95%	0.79%	0.63%	1.33%	15.07%
A	1.28%	2.53%	70.98%	2.75%	1.12%	0.67%	1.31%	19.36%
Baa	0.49%	0.52%	1.74%	72.65%	4.81%	2.63%	4.75%	12.41%
Ba	0.31%	0.33%	0.46%	1.40%	56.18%	5.87%	22.52%	12.94%
B	0.15%	0.00%	0.33%	0.64%	0.52%	50.20%	35.95%	12.22%
Caa or below	0.00%	0.00%	0.00%	0.03%	0.02%	0.21%	76.17%	23.57%
3-year								
Aaa	54.60%	1.39%	0.77%	0.54%	0.37%	0.26%	0.45%	41.62%
Aa	6.03%	57.72%	4.56%	2.91%	1.23%	1.37%	2.58%	23.61%
A	1.58%	2.61%	55.87%	3.16%	1.40%	0.89%	2.46%	32.02%
Baa	0.64%	0.68%	2.05%	55.98%	6.16%	3.74%	9.32%	21.43%
Ba	0.56%	0.56%	0.53%	1.43%	40.43%	4.81%	31.78%	19.90%
B	0.41%	0.00%	0.64%	1.01%	0.89%	35.31%	39.32%	22.43%
Caa or below	0.00%	0.00%	0.00%	0.05%	0.00%	0.26%	63.21%	36.48%
4-year								
Aaa	42.06%	1.33%	0.77%	0.62%	0.41%	0.31%	0.67%	53.84%
Aa	6.28%	46.24%	5.24%	3.32%	1.18%	2.05%	3.64%	32.05%
A	1.68%	2.04%	44.38%	2.74%	1.43%	0.83%	2.95%	43.95%
Baa	0.69%	0.76%	1.97%	43.82%	6.92%	3.98%	13.13%	28.73%
Ba	0.78%	0.73%	0.66%	1.30%	28.87%	4.36%	37.68%	25.63%
B	1.04%	0.00%	0.82%	1.44%	1.25%	27.14%	33.95%	34.35%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	51.75%	48.17%
5-year								
Aaa	31.50%	1.25%	0.79%	0.63%	0.35%	0.29%	0.62%	64.57%
Aa	6.52%	37.84%	5.24%	3.40%	1.02%	2.51%	3.91%	39.56%
A	1.94%	1.66%	34.66%	2.05%	0.97%	0.71%	3.01%	55.00%
Baa	0.82%	0.94%	1.92%	35.98%	6.06%	3.60%	16.80%	33.86%
Ba	0.96%	0.80%	0.82%	1.16%	22.46%	3.83%	37.04%	32.94%
B	1.71%	0.00%	0.71%	1.95%	1.21%	21.55%	27.32%	45.55%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	43.67%	56.33%

Figure 45 - US HEL Rating Transition Matrices by Cohort Rating (1989-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	88.43%	0.37%	0.13%	0.04%	0.01%	0.00%	0.00%	11.02%
Aa	2.08%	90.91%	1.11%	0.28%	0.03%	0.02%	0.00%	5.56%
A	0.28%	1.67%	92.06%	1.43%	0.33%	0.08%	0.16%	3.99%
Baa	0.03%	0.12%	0.63%	91.24%	1.93%	0.99%	0.90%	4.15%
Ba	0.00%	0.12%	0.24%	1.07%	86.17%	2.62%	5.42%	4.35%
B	0.00%	0.00%	0.28%	0.56%	0.60%	75.36%	16.54%	6.66%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	80.95%	19.05%
2-year								
Aaa	75.11%	0.90%	0.27%	0.08%	0.03%	0.00%	0.15%	23.45%
Aa	4.66%	77.25%	2.66%	0.97%	0.14%	0.06%	0.04%	14.22%
A	0.72%	3.83%	79.30%	3.25%	0.98%	0.27%	0.59%	11.06%
Baa	0.10%	0.27%	1.49%	77.66%	4.00%	2.23%	3.36%	10.90%
Ba	0.12%	0.32%	0.64%	1.51%	68.02%	4.01%	12.43%	12.95%
B	0.30%	0.00%	0.66%	1.02%	1.04%	59.47%	20.15%	17.35%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	69.11%	30.89%
3-year								
Aaa	63.28%	1.53%	0.44%	0.15%	0.05%	0.00%	0.46%	34.09%
Aa	6.88%	62.69%	4.35%	1.94%	0.39%	0.15%	0.17%	23.44%
A	1.49%	5.70%	63.55%	5.12%	1.83%	0.57%	1.32%	20.41%
Baa	0.24%	0.50%	2.53%	59.76%	6.12%	3.63%	7.68%	19.54%
Ba	0.32%	0.59%	1.00%	2.01%	51.87%	4.67%	17.70%	21.85%
B	0.73%	0.00%	1.13%	1.54%	1.58%	44.55%	20.96%	29.51%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	60.79%	39.21%
4-year								
Aaa	54.81%	2.20%	0.57%	0.16%	0.02%	0.00%	0.92%	41.32%
Aa	6.76%	50.45%	6.14%	3.04%	0.44%	0.11%	0.58%	32.47%
A	2.29%	5.44%	50.39%	6.28%	2.64%	0.98%	1.83%	30.15%
Baa	0.39%	0.77%	3.11%	44.80%	7.22%	4.27%	12.63%	26.82%
Ba	0.78%	0.70%	1.48%	2.08%	40.42%	5.16%	20.44%	28.93%
B	1.61%	0.00%	1.28%	2.24%	1.94%	33.54%	19.65%	39.74%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	53.58%	46.42%
5-year								
Aaa	46.00%	2.92%	0.77%	0.14%	0.00%	0.00%	1.11%	49.07%
Aa	6.65%	39.66%	7.09%	4.32%	0.43%	0.10%	1.15%	40.61%
A	3.02%	4.79%	39.65%	6.49%	2.45%	1.40%	2.54%	39.67%
Baa	0.48%	0.94%	3.37%	35.36%	6.64%	3.50%	17.52%	32.17%
Ba	1.13%	0.54%	1.89%	1.48%	32.38%	5.37%	20.83%	36.37%
B	2.40%	0.00%	1.01%	2.75%	1.70%	24.08%	19.67%	48.38%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.01%	53.99%

Figure 46 - US Non-Mortgage ABS Rating Transition Matrices by Cohort Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	84.19%	0.67%	0.13%	0.06%	0.02%	0.02%	0.14%	14.77%
Aa	2.34%	79.33%	3.08%	1.36%	0.48%	0.14%	0.86%	12.41%
A	0.75%	1.57%	83.23%	1.84%	0.52%	0.17%	0.24%	11.68%
Baa	0.73%	0.44%	2.35%	80.46%	3.11%	1.24%	1.62%	10.05%
Ba	0.46%	0.00%	0.19%	2.30%	71.31%	7.06%	8.62%	10.06%
B	0.00%	0.00%	0.00%	0.35%	0.00%	67.25%	27.86%	4.54%
Caa or below	0.00%	0.00%	0.00%	0.07%	0.00%	0.45%	85.45%	14.04%
2-year								
Aaa	67.94%	0.96%	0.28%	0.17%	0.08%	0.05%	0.26%	30.26%
Aa	2.06%	61.75%	4.06%	3.21%	1.37%	0.41%	1.91%	25.23%
A	1.32%	1.82%	67.76%	2.38%	0.85%	0.51%	0.83%	24.54%
Baa	1.36%	0.94%	2.24%	62.97%	3.83%	2.28%	4.27%	22.11%
Ba	0.79%	0.00%	0.41%	1.63%	51.56%	6.35%	17.41%	21.85%
B	0.00%	0.00%	0.00%	0.47%	0.00%	48.33%	40.40%	10.79%
Caa or below	0.00%	0.00%	0.00%	0.10%	0.00%	0.67%	69.11%	30.12%
3-year								
Aaa	51.69%	0.86%	0.38%	0.26%	0.14%	0.08%	0.31%	46.28%
Aa	1.43%	46.30%	4.22%	4.18%	2.00%	1.20%	2.74%	37.93%
A	1.17%	1.38%	53.97%	2.40%	1.02%	0.63%	1.45%	37.98%
Baa	1.20%	0.74%	1.35%	46.46%	3.34%	2.67%	6.93%	37.31%
Ba	1.39%	0.00%	0.27%	0.98%	36.17%	5.06%	23.62%	32.51%
B	0.00%	0.00%	0.00%	0.54%	0.00%	31.72%	48.32%	19.42%
Caa or below	0.00%	0.00%	0.00%	0.17%	0.00%	0.88%	49.29%	49.66%
4-year								
Aaa	37.97%	0.60%	0.36%	0.29%	0.24%	0.10%	0.36%	60.07%
Aa	0.78%	34.53%	3.54%	3.82%	1.80%	2.02%	3.27%	50.23%
A	0.80%	0.90%	43.32%	1.64%	0.93%	0.56%	1.82%	50.02%
Baa	0.63%	0.20%	0.49%	34.83%	2.47%	2.30%	8.41%	50.66%
Ba	1.58%	0.00%	0.05%	0.05%	25.29%	4.12%	24.96%	43.94%
B	0.00%	0.00%	0.00%	0.00%	0.00%	21.64%	40.17%	38.19%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.37%	31.04%	68.59%
5-year								
Aaa	26.99%	0.41%	0.25%	0.23%	0.25%	0.10%	0.32%	71.46%
Aa	0.50%	28.29%	2.89%	2.61%	1.05%	2.03%	3.24%	59.38%
A	0.68%	0.77%	33.89%	0.91%	0.56%	0.39%	1.78%	61.01%
Baa	0.43%	0.17%	0.10%	27.00%	1.84%	1.63%	8.57%	60.26%
Ba	1.75%	0.00%	0.00%	0.00%	16.01%	3.35%	19.67%	59.22%
B	0.00%	0.00%	0.00%	0.00%	0.00%	23.50%	18.17%	58.33%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.86%	87.14%

Figure 47 - US CDO Rating Transition Matrices by Cohort Rating (1990-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	89.84%	2.15%	0.62%	0.23%	0.04%	0.01%	0.00%	7.11%
Aa	1.28%	85.87%	4.17%	1.77%	0.55%	0.25%	0.05%	6.06%
A	0.72%	1.17%	86.22%	2.96%	1.20%	0.56%	0.42%	6.74%
Baa	0.10%	0.28%	0.61%	84.55%	4.07%	2.49%	2.08%	5.83%
Ba	0.02%	0.09%	0.17%	0.65%	81.45%	4.49%	6.92%	6.22%
B	0.00%	0.08%	0.18%	0.45%	1.59%	71.10%	21.40%	5.19%
Caa or below	0.00%	0.00%	0.00%	0.12%	0.11%	0.33%	94.52%	4.91%
2-year								
Aaa	77.94%	4.58%	1.84%	0.80%	0.25%	0.13%	0.02%	14.45%
Aa	1.96%	69.84%	7.38%	4.44%	1.93%	1.02%	0.47%	12.96%
A	1.15%	2.16%	71.31%	4.28%	2.53%	1.43%	1.91%	15.24%
Baa	0.17%	0.42%	0.98%	67.21%	6.46%	4.83%	7.53%	12.40%
Ba	0.00%	0.12%	0.20%	1.15%	63.82%	6.82%	16.28%	11.60%
B	0.07%	0.10%	0.31%	0.55%	2.51%	53.01%	33.31%	10.14%
Caa or below	0.00%	0.00%	0.00%	0.18%	0.19%	0.47%	89.43%	9.74%
3-year								
Aaa	63.90%	6.93%	3.48%	1.64%	0.56%	0.41%	0.09%	22.99%
Aa	2.01%	54.26%	9.53%	7.06%	3.83%	1.82%	1.45%	20.04%
A	1.32%	2.45%	54.59%	5.00%	3.79%	2.52%	4.18%	26.16%
Baa	0.25%	0.36%	0.96%	49.06%	7.66%	6.78%	14.97%	19.96%
Ba	0.01%	0.14%	0.15%	1.49%	46.75%	7.67%	25.89%	17.91%
B	0.07%	0.13%	0.40%	0.66%	2.29%	38.52%	43.59%	14.34%
Caa or below	0.00%	0.00%	0.00%	0.16%	0.07%	0.53%	84.38%	14.86%
4-year								
Aaa	50.16%	8.02%	4.66%	2.46%	0.93%	0.85%	0.16%	32.76%
Aa	2.26%	39.95%	9.87%	9.13%	5.71%	2.58%	2.89%	27.61%
A	0.81%	2.46%	38.90%	4.69%	4.38%	3.05%	6.96%	38.75%
Baa	0.20%	0.38%	0.76%	33.78%	7.53%	7.40%	22.11%	27.84%
Ba	0.02%	0.00%	0.09%	1.37%	33.28%	6.90%	33.51%	24.82%
B	0.00%	0.00%	0.32%	0.09%	0.82%	28.29%	51.39%	19.08%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	83.16%	16.84%
5-year								
Aaa	37.80%	7.13%	3.69%	3.10%	1.19%	1.21%	0.24%	45.63%
Aa	2.48%	29.30%	9.15%	9.03%	6.06%	2.41%	4.67%	36.89%
A	0.50%	2.58%	25.71%	2.83%	3.86%	3.20%	8.00%	53.33%
Baa	0.15%	0.24%	0.75%	22.15%	6.78%	6.93%	26.32%	36.67%
Ba	0.00%	0.00%	0.33%	1.09%	21.75%	4.89%	38.32%	33.62%
B	0.00%	0.00%	0.00%	0.00%	0.57%	21.41%	55.29%	22.72%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	85.38%	14.62%

Figure 48 - US CDO (excl. HY CBOs) Rating Transition Matrices by Cohort Rating (1990-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	90.69%	1.29%	0.42%	0.08%	0.03%	0.01%	0.00%	7.47%
Aa	0.99%	87.89%	2.91%	0.82%	0.40%	0.21%	0.05%	6.72%
A	0.34%	1.02%	88.22%	1.97%	0.76%	0.36%	0.34%	7.00%
Baa	0.04%	0.24%	0.47%	87.37%	2.47%	1.59%	1.39%	6.42%
Ba	0.00%	0.00%	0.09%	0.60%	85.58%	2.59%	3.75%	7.39%
B	0.00%	0.00%	0.00%	0.03%	0.86%	74.60%	16.71%	7.79%
Caa or below	0.00%	0.00%	0.00%	0.19%	0.00%	0.28%	88.11%	11.41%
2-year								
Aaa	79.75%	2.69%	1.11%	0.35%	0.20%	0.09%	0.02%	15.78%
Aa	1.58%	73.92%	5.51%	1.95%	1.14%	0.70%	0.31%	14.89%
A	0.60%	1.98%	74.61%	2.91%	1.50%	0.93%	1.34%	16.13%
Baa	0.06%	0.35%	0.80%	72.67%	4.12%	2.97%	4.87%	14.16%
Ba	0.00%	0.00%	0.12%	1.27%	71.28%	4.07%	8.75%	14.50%
B	0.00%	0.00%	0.00%	0.04%	1.39%	61.36%	21.94%	15.27%
Caa or below	0.00%	0.00%	0.00%	0.31%	0.00%	0.41%	74.11%	25.17%
3-year								
Aaa	66.54%	4.16%	1.95%	0.74%	0.40%	0.22%	0.12%	25.85%
Aa	1.68%	60.68%	7.30%	2.80%	1.91%	1.16%	0.61%	23.85%
A	0.69%	2.37%	58.22%	3.72%	2.32%	1.33%	2.69%	28.65%
Baa	0.08%	0.24%	0.85%	55.94%	5.33%	4.36%	9.12%	24.08%
Ba	0.00%	0.00%	0.09%	1.77%	56.46%	4.90%	13.14%	23.63%
B	0.00%	0.00%	0.00%	0.00%	1.45%	52.22%	24.20%	22.13%
Caa or below	0.00%	0.00%	0.00%	0.56%	0.00%	0.56%	56.61%	42.27%
4-year								
Aaa	51.67%	5.05%	2.74%	1.15%	0.61%	0.34%	0.22%	38.21%
Aa	2.03%	48.05%	7.40%	3.32%	2.65%	1.39%	0.90%	34.25%
A	0.59%	2.35%	41.71%	3.57%	2.21%	1.51%	4.27%	43.77%
Baa	0.06%	0.23%	0.75%	40.50%	5.83%	4.98%	12.66%	34.99%
Ba	0.00%	0.00%	0.02%	2.12%	43.34%	4.42%	14.67%	35.43%
B	0.00%	0.00%	0.00%	0.00%	0.93%	45.50%	21.89%	31.68%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.47%	53.53%
5-year								
Aaa	36.83%	3.76%	2.00%	1.32%	0.63%	0.33%	0.37%	54.76%
Aa	2.47%	37.54%	6.44%	2.39%	1.72%	0.60%	1.21%	47.63%
A	0.62%	2.22%	27.66%	1.89%	1.10%	1.65%	3.70%	61.15%
Baa	0.08%	0.28%	0.74%	28.21%	5.94%	5.03%	11.85%	47.87%
Ba	0.00%	0.00%	0.44%	1.91%	29.85%	3.69%	13.88%	50.22%
B	0.00%	0.00%	0.00%	0.00%	1.33%	37.07%	21.20%	40.40%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	59.62%	40.38%

Figure 49 - US CMBS Rating Transition Matrices by Cohort Rating (1987-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	87.18%	0.78%	0.05%	0.00%	0.00%	0.00%	0.00%	11.99%
Aa	13.79%	77.30%	0.58%	0.08%	0.02%	0.04%	0.03%	8.17%
A	3.26%	8.59%	81.17%	1.00%	0.09%	0.01%	0.00%	5.87%
Baa	0.62%	1.30%	5.83%	81.92%	1.93%	0.25%	0.07%	8.07%
Ba	0.08%	0.04%	0.44%	2.84%	89.89%	2.49%	0.24%	3.97%
B	0.11%	0.03%	0.03%	0.21%	0.95%	90.22%	5.80%	2.65%
Caa or below	0.16%	0.00%	0.00%	0.00%	0.11%	0.71%	90.12%	8.89%
2-year								
Aaa	76.98%	1.35%	0.19%	0.00%	0.00%	0.00%	0.00%	21.48%
Aa	21.27%	59.69%	0.95%	0.17%	0.12%	0.04%	0.09%	17.67%
A	6.03%	12.78%	66.26%	1.56%	0.42%	0.01%	0.04%	12.91%
Baa	1.55%	2.49%	9.30%	65.08%	2.75%	0.51%	0.16%	18.16%
Ba	0.11%	0.29%	0.84%	4.81%	79.59%	4.86%	0.76%	8.74%
B	0.07%	0.03%	0.11%	0.46%	1.50%	78.80%	12.75%	6.26%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.28%	1.90%	80.50%	17.32%
3-year								
Aaa	68.34%	1.51%	0.44%	0.00%	0.00%	0.00%	0.00%	29.71%
Aa	25.87%	45.98%	0.98%	0.34%	0.27%	0.04%	0.23%	26.29%
A	8.66%	15.10%	54.14%	1.79%	0.74%	0.00%	0.02%	19.56%
Baa	2.30%	3.44%	11.53%	53.07%	2.87%	0.56%	0.21%	26.03%
Ba	0.20%	0.76%	1.00%	6.15%	69.63%	7.01%	1.57%	13.68%
B	0.03%	0.03%	0.19%	0.65%	1.73%	66.81%	19.73%	10.82%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.27%	3.72%	74.41%	21.60%
4-year								
Aaa	60.61%	1.66%	0.68%	0.03%	0.00%	0.00%	0.00%	37.02%
Aa	29.00%	34.34%	1.01%	0.22%	0.44%	0.01%	0.34%	34.64%
A	11.25%	16.82%	43.48%	1.97%	0.63%	0.00%	0.00%	25.85%
Baa	3.57%	4.21%	13.58%	44.49%	2.99%	0.36%	0.27%	30.53%
Ba	0.25%	1.24%	1.16%	7.14%	59.08%	8.71%	2.77%	19.64%
B	0.00%	0.00%	0.22%	0.88%	2.15%	55.15%	25.41%	16.19%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	6.16%	73.16%	20.68%
5-year								
Aaa	52.90%	1.72%	0.92%	0.15%	0.00%	0.00%	0.00%	44.31%
Aa	31.75%	22.89%	1.14%	0.17%	0.57%	0.00%	0.38%	43.10%
A	14.21%	18.64%	32.32%	1.69%	0.64%	0.00%	0.00%	32.49%
Baa	5.29%	5.45%	16.20%	36.69%	2.39%	0.35%	0.40%	33.24%
Ba	0.30%	2.11%	1.53%	8.33%	46.71%	9.19%	3.53%	28.30%
B	0.00%	0.00%	0.33%	1.24%	2.60%	43.88%	27.86%	24.09%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	8.17%	67.82%	24.01%

Figure 50 - US RMBS Rating Transition Matrices by Cohort Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	89.20%	0.26%	0.09%	0.01%	0.00%	0.00%	0.00%	10.45%
Aa	7.30%	84.06%	1.26%	0.22%	0.01%	0.01%	0.01%	7.13%
A	1.81%	5.74%	83.51%	1.17%	0.15%	0.05%	0.06%	7.51%
Baa	0.50%	0.76%	4.96%	85.22%	0.88%	0.38%	0.33%	6.98%
Ba	0.15%	0.15%	1.19%	5.62%	84.48%	1.13%	1.30%	5.99%
B	0.00%	0.03%	0.12%	0.55%	4.59%	85.51%	2.60%	6.62%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.22%	0.00%	89.59%	10.19%
2-year								
Aaa	76.62%	0.42%	0.16%	0.03%	0.00%	0.00%	0.00%	22.77%
Aa	13.72%	67.39%	2.25%	0.61%	0.08%	0.02%	0.05%	15.89%
A	5.08%	9.38%	65.05%	1.76%	0.64%	0.15%	0.23%	17.72%
Baa	1.26%	2.20%	8.54%	68.32%	1.03%	0.90%	0.98%	16.77%
Ba	0.31%	0.34%	3.68%	9.46%	67.80%	1.47%	2.67%	14.26%
B	0.00%	0.03%	0.18%	1.24%	7.58%	70.42%	4.25%	16.30%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.50%	0.00%	80.58%	18.92%
3-year								
Aaa	65.07%	0.51%	0.18%	0.05%	0.01%	0.00%	0.00%	34.17%
Aa	17.89%	53.31%	2.81%	0.93%	0.26%	0.06%	0.10%	24.63%
A	7.63%	10.53%	50.85%	1.89%	0.59%	0.40%	0.53%	27.57%
Baa	2.11%	2.97%	9.18%	55.91%	1.13%	1.21%	1.70%	25.80%
Ba	0.56%	0.42%	5.51%	10.37%	55.22%	1.59%	3.78%	22.55%
B	0.08%	0.04%	0.09%	1.94%	6.86%	58.97%	6.07%	25.94%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.84%	0.00%	72.33%	26.83%
4-year								
Aaa	56.68%	0.51%	0.20%	0.06%	0.03%	0.01%	0.00%	42.51%
Aa	20.71%	42.37%	2.97%	1.10%	0.33%	0.17%	0.26%	32.10%
A	8.98%	10.51%	41.54%	1.82%	0.54%	0.49%	0.84%	35.28%
Baa	2.84%	3.17%	8.90%	48.41%	1.09%	1.35%	2.26%	31.98%
Ba	0.63%	0.46%	5.65%	10.73%	47.08%	1.49%	4.57%	29.37%
B	0.00%	0.00%	0.00%	2.66%	3.98%	52.33%	7.69%	33.35%
Caa or below	0.00%	0.00%	0.00%	0.00%	1.07%	0.00%	65.78%	33.15%
5-year								
Aaa	50.23%	0.49%	0.21%	0.10%	0.02%	0.02%	0.00%	48.93%
Aa	22.51%	33.77%	2.70%	1.09%	0.30%	0.25%	0.47%	38.92%
A	9.88%	10.10%	34.18%	1.70%	0.54%	0.50%	1.11%	41.98%
Baa	3.42%	3.29%	9.40%	41.89%	0.93%	1.53%	2.58%	36.97%
Ba	0.76%	0.70%	5.77%	11.31%	39.58%	1.22%	5.32%	35.34%
B	0.00%	0.00%	0.00%	3.38%	1.88%	46.83%	8.76%	39.16%
Caa or below	0.00%	0.00%	0.00%	0.00%	1.23%	0.00%	59.59%	39.17%

Figure 51 - One-Year Rating Transition Matrices by Cohort Rating by Sector (1997-2006)

Global Structured Finance	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	87.03%	0.56%	0.20%	0.07%	0.03%	0.02%	0.04%	12.05%
Aa	5.33%	84.07%	1.46%	0.56%	0.16%	0.09%	0.16%	8.17%
A	1.25%	3.32%	84.75%	1.67%	0.52%	0.22%	0.25%	8.02%
Baa	0.35%	0.56%	2.89%	85.33%	2.23%	0.99%	0.96%	6.69%
Ba	0.09%	0.10%	0.55%	3.00%	83.21%	3.09%	4.04%	5.92%
B	0.06%	0.04%	0.11%	0.40%	2.24%	82.04%	9.70%	5.41%
Caa or below	0.02%	0.00%	0.00%	0.04%	0.06%	0.37%	89.68%	9.83%
US ABS								
Aaa	85.19%	0.68%	0.34%	0.13%	0.08%	0.04%	0.11%	13.42%
Aa	2.05%	87.99%	1.89%	0.83%	0.28%	0.17%	0.44%	6.35%
A	0.54%	1.55%	86.29%	1.84%	0.68%	0.32%	0.40%	8.38%
Baa	0.20%	0.22%	1.05%	87.79%	2.69%	1.33%	1.50%	5.23%
Ba	0.05%	0.12%	0.18%	1.82%	77.40%	5.01%	10.19%	5.23%
B	0.00%	0.00%	0.13%	0.38%	0.29%	68.75%	26.04%	4.40%
Caa or below	0.00%	0.00%	0.00%	0.02%	0.03%	0.14%	88.01%	11.80%
US HEL								
Aaa	87.93%	0.36%	0.14%	0.04%	0.01%	0.00%	0.00%	11.51%
Aa	2.11%	91.08%	0.87%	0.18%	0.03%	0.02%	0.00%	5.70%
A	0.27%	1.57%	92.11%	1.44%	0.34%	0.08%	0.16%	4.03%
Baa	0.03%	0.13%	0.62%	91.47%	1.72%	0.97%	0.83%	4.23%
Ba	0.00%	0.12%	0.16%	1.09%	86.25%	2.56%	5.41%	4.40%
B	0.00%	0.00%	0.30%	0.60%	0.65%	74.68%	17.25%	6.52%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	81.15%	18.85%
US Non-Mortgage ABS								
Aaa	83.97%	0.50%	0.16%	0.08%	0.02%	0.03%	0.18%	15.06%
Aa	2.59%	79.40%	3.41%	1.65%	0.58%	0.16%	1.03%	11.18%
A	0.79%	1.58%	82.28%	2.03%	0.59%	0.19%	0.27%	12.27%
Baa	0.74%	0.42%	2.37%	80.11%	3.13%	1.29%	1.69%	10.25%
Ba	0.18%	0.00%	0.20%	2.39%	71.06%	7.32%	8.98%	9.87%
B	0.00%	0.00%	0.00%	0.36%	0.00%	67.22%	28.25%	4.17%
Caa or below	0.00%	0.00%	0.00%	0.07%	0.00%	0.45%	85.45%	14.04%
US CDOs								
Aaa	90.03%	2.19%	0.63%	0.23%	0.04%	0.01%	0.00%	6.87%
Aa	1.33%	85.54%	4.30%	1.84%	0.57%	0.27%	0.06%	6.11%
A	0.74%	1.10%	86.47%	3.04%	1.24%	0.58%	0.43%	6.39%
Baa	0.10%	0.28%	0.62%	84.45%	4.16%	2.55%	2.12%	5.72%
Ba	0.02%	0.09%	0.17%	0.65%	81.41%	4.50%	6.93%	6.23%
B	0.00%	0.09%	0.19%	0.46%	1.60%	70.92%	21.54%	5.23%
Caa or below	0.00%	0.00%	0.00%	0.12%	0.11%	0.33%	94.52%	4.91%
US CDOs excl. HY CBOs								
Aaa	90.96%	1.31%	0.43%	0.09%	0.03%	0.01%	0.00%	7.16%
Aa	1.04%	87.64%	2.99%	0.86%	0.42%	0.22%	0.05%	6.78%
A	0.35%	0.93%	88.57%	2.03%	0.79%	0.37%	0.35%	6.61%
Baa	0.04%	0.25%	0.48%	87.36%	2.53%	1.63%	1.42%	6.28%
Ba	0.00%	0.00%	0.09%	0.60%	85.54%	2.60%	3.76%	7.41%
B	0.00%	0.00%	0.00%	0.03%	0.87%	74.31%	16.90%	7.88%
Caa or below	0.00%	0.00%	0.00%	0.19%	0.00%	0.28%	88.11%	11.41%
US CMBS								
Aaa	87.26%	0.56%	0.00%	0.00%	0.00%	0.00%	0.00%	12.18%
Aa	14.97%	76.28%	0.48%	0.00%	0.00%	0.00%	0.00%	8.28%
A	3.38%	8.91%	80.68%	0.97%	0.07%	0.01%	0.00%	5.99%
Baa	0.64%	1.31%	5.94%	81.74%	1.95%	0.26%	0.03%	8.14%
Ba	0.09%	0.04%	0.45%	2.91%	89.78%	2.53%	0.24%	3.97%
B	0.12%	0.03%	0.03%	0.22%	0.97%	90.17%	5.91%	2.56%
Caa or below	0.16%	0.00%	0.00%	0.00%	0.12%	0.73%	90.59%	8.40%
US RMBS								
Aaa	87.85%	0.01%	0.06%	0.01%	0.00%	0.00%	0.00%	12.07%
Aa	7.69%	82.34%	0.07%	0.06%	0.00%	0.00%	0.02%	9.83%
A	2.08%	5.28%	83.24%	0.47%	0.05%	0.04%	0.05%	8.78%
Baa	0.59%	0.85%	4.96%	84.53%	0.34%	0.27%	0.20%	8.27%
Ba	0.17%	0.18%	1.37%	5.59%	84.46%	0.43%	0.83%	6.98%
B	0.00%	0.03%	0.13%	0.56%	5.01%	85.04%	1.99%	7.24%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.04%	0.00%	89.55%	10.40%

Figure 52 - Global Structured Finance One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR		
Aaa	9740	91.1%	0.0%	0.1%	0.0%	0.0%		0.0%	0.0%	0.0%													8.7%		
Aa1	1567	7.3%	87.0%	0.3%	0.3%		0.1%																	5.0%	
Aa2	4207	6.1%	1.9%	86.3%	0.3%	0.2%	0.1%	0.2%	0.0%						0.0%									4.9%	
Aa3	1548	5.6%	2.4%	3.2%	81.3%	0.4%	0.3%	0.2%	0.1%	0.1%			0.1%											6.5%	
A1	1384	4.1%	1.7%	2.0%	2.0%	82.0%	0.2%	0.2%	0.1%	0.1%	0.1%						0.1%							7.3%	
A2	4390	1.5%	1.0%	2.2%	1.8%	1.7%	85.5%	0.2%	0.4%	0.3%	0.3%	0.1%	0.0%											5.1%	
A3	2023	1.5%	0.7%	1.6%	2.3%	1.8%	1.9%	84.6%	0.2%	0.5%	0.3%	0.0%	0.0%		0.1%	0.0%								4.3%	
Baa1	1816	0.7%	0.3%	0.3%	0.8%	1.9%	2.1%	1.9%	86.6%	0.4%	0.7%	0.2%	0.2%	0.1%	0.1%										3.9%
Baa2	4101	0.4%	0.1%	0.2%	0.4%	0.6%	1.8%	1.6%	1.8%	85.7%	0.6%	0.6%	0.6%	0.3%	0.3%	0.2%	0.1%	0.0%	0.0%	0.1%		0.0%		4.7%	
Baa3	2251	0.3%	0.0%	0.1%	0.3%	0.4%	0.6%	1.5%	1.6%	2.6%	83.0%	0.5%	0.6%	0.8%	1.0%	0.2%	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%		5.5%	
Ba1	888	0.5%		0.1%	0.1%	0.1%	0.3%	0.7%	0.9%	0.9%	2.1%	1.6%	85.5%	0.6%	0.5%	1.1%	0.5%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	5.4%	
Ba2	1467	0.2%				0.1%		0.1%	0.5%	2.1%	1.6%	1.9%	86.4%	0.3%	0.5%	0.4%	0.3%	0.1%	0.3%	0.1%	0.3%	0.1%	0.1%	4.8%	
Ba3	566	0.4%					0.4%	0.4%	0.4%	0.2%	2.5%	1.6%	1.4%	82.7%	0.7%	0.7%	0.7%	0.9%	0.5%	0.5%	0.7%	0.7%		5.5%	
B1	301							0.3%		0.3%	0.3%		1.0%	1.0%	78.4%	1.7%	2.0%	1.0%	1.7%	1.0%	0.7%			10.6%	
B2	591		0.2%				0.2%				0.5%	0.5%	1.9%	2.5%	0.7%	84.8%	1.4%	0.8%	1.9%	0.7%	0.8%	0.3%	2.9%		
B3	331					0.6%					0.3%	1.2%	0.6%			78.2%	3.3%	5.1%	2.7%	1.5%	0.3%	6.0%			
Caa1	135													0.7%	1.5%		0.7%	74.8%	5.2%	2.2%	5.9%	3.0%	5.9%		
Caa2	131															0.8%	0.8%	2.3%	58.0%	5.3%	13.7%	10.7%	8.4%		
Caa3	107									0.9%				0.9%		0.9%				55.1%	10.3%	12.1%	19.6%		
Ca	241																	0.4%			76.8%	9.1%	13.7%		
C	402																					93.5%	6.5%		

Figure 53 - US ABS One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	2844	89.2%	0.0%	0.1%		0.0%																	10.6%	
Aa1	587	1.4%	96.6%																					2.0%
Aa2	1611	4.0%	1.6%	89.2%	0.1%	0.2%	0.2%	0.4%							0.1%									4.2%
Aa3	636	1.1%	2.0%	0.5%	93.1%	0.2%			0.2%															3.0%
A1	666	1.2%	1.5%	0.6%	0.6%	90.1%		0.2%	0.2%	0.2%							0.2%							5.4%
A2	1958	0.6%	0.7%	1.8%	1.5%	0.9%	88.0%	0.2%	0.5%	0.5%	0.4%	0.2%	0.1%											4.7%
A3	969	0.2%	0.1%	0.6%	1.2%	0.9%	0.3%	94.4%	0.1%	0.3%	0.1%	0.1%			0.1%									1.4%
Baa1	1064				0.4%	1.1%	0.3%	0.6%	94.7%	0.1%	0.3%	0.3%	0.4%	0.1%	0.1%									1.7%
Baa2	1663	0.2%		0.2%	0.1%	0.5%	1.3%	0.7%	0.7%	87.9%	1.0%	0.8%	1.0%	0.6%	0.7%	0.4%	0.1%	0.1%	0.1%	0.2%				3.4%
Baa3	1170			0.1%	0.1%	0.2%	0.4%	1.1%	0.8%	0.8%	86.2%	0.8%	0.6%	1.1%	1.6%	0.3%	0.5%	0.3%	0.2%		0.2%	0.3%		4.5%
Ba1	407									0.7%	0.2%	90.7%	0.5%	0.5%	1.7%	0.7%	0.7%		0.2%		0.2%	0.2%		3.4%
Ba2	381									1.3%	1.0%	0.5%	88.7%	0.3%	1.6%	0.5%	1.0%	0.3%	0.8%		0.3%	0.3%		3.7%
Ba3	83						1.2%	1.2%			4.8%	1.2%		69.9%	2.4%	1.2%	2.4%	4.8%	2.4%	3.6%	2.4%			2.4%
B1	35														71.4%		8.6%	5.7%	5.7%	5.7%	2.9%			
B2	72															76.4%	2.8%	2.8%	8.3%	1.4%	2.8%	1.4%		4.2%
B3	56																53.6%	7.1%	21.4%	7.1%	7.1%			3.6%
Caa1	42													2.4%				81.0%	2.4%		9.5%			4.8%
Caa2	37																		64.9%		16.2%	16.2%		2.7%
Caa3	43																			67.4%	2.3%	16.3%	14.0%	
Ca	117																				79.5%	6.8%		13.7%
C	259																					93.8%		6.2%

Figure 54 - US HEL One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR
Aaa	1706	90.7%		0.1%		0.1%																	9.2%
Aa1	485	0.6%	98.1%																				1.2%
Aa2	1416	3.5%	1.1%	91.0%	0.1%	0.2%	0.2%	0.4%							0.1%								3.5%
Aa3	510		0.2%		98.4%	0.2%			0.2%														1.0%
A1	477	0.4%	0.6%		0.2%	97.5%				0.2%							0.2%						0.8%
A2	1406	0.5%	0.4%	1.7%	1.1%	0.6%	90.8%	0.2%	0.7%	0.6%	0.5%	0.2%	0.1%										2.6%
A3	867		0.1%	0.6%	1.2%	0.5%	0.1%	96.0%	0.1%	0.3%	0.1%	0.1%			0.1%								0.8%
Baa1	936				0.4%	0.9%	0.3%	0.2%	95.9%	0.1%	0.3%	0.3%	0.3%	0.1%	0.1%								1.0%
Baa2	1354				0.1%	0.4%	1.1%	0.5%	0.4%	89.5%	1.2%	0.9%	1.2%	0.6%	0.8%	0.4%	0.1%	0.1%	0.1%	0.2%			2.3%
Baa3	1021					0.1%	0.1%	1.1%	0.5%	0.2%	89.3%	0.5%	0.6%	1.2%	1.9%	0.4%	0.6%	0.4%	0.2%		0.2%	0.3%	2.5%
Ba1	357											96.9%	0.3%	0.3%	0.8%	0.3%			0.3%			0.3%	0.8%
Ba2	298									1.3%	0.7%		91.6%	0.3%	1.7%		1.0%	0.3%	1.0%		0.3%		1.7%
Ba3	42													66.7%	2.4%	2.4%	4.8%	9.5%	2.4%	7.1%	2.4%		2.4%
B1	13														53.8%			15.4%	15.4%	7.7%	7.7%		
B2	31															83.9%	3.2%		9.7%				3.2%
B3	14																21.4%	7.1%	50.0%	14.3%	7.1%		
Caa1	8																	62.5%			12.5%		25.0%
Caa2	13																		92.3%			7.7%	
Caa3	15																			60.0%	6.7%		33.3%
Ca	40																				57.5%	7.5%	35.0%
C	13																					92.3%	7.7%

Figure 55 - US Non-Mortgage ABS One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR		
Aaa	1055	87.2%	0.1%																				12.7%		
Aa1	89	5.6%	88.8%																					5.6%	
Aa2	153	10.5%	6.5%	69.9%		0.7%	0.7%																	11.8%	
Aa3	91	7.7%	13.2%	3.3%	63.7%																			12.1%	
A1	180	3.3%	3.9%	2.2%	1.7%	71.1%		0.6%																17.2%	
A2	508	0.8%	1.6%	2.4%	2.6%	1.8%	79.5%				0.2%	0.2%												11.0%	
A3	93	2.2%		1.1%	2.2%	5.4%	2.2%	79.6%																7.5%	
Baa1	79					5.1%		5.1%	78.5%				1.3%												10.1%
Baa2	268	1.5%		1.5%		1.1%	2.6%	1.5%	2.6%	79.1%		0.4%		0.4%			0.4%								9.0%
Baa3	133			0.8%	0.8%	0.8%	3.0%	1.5%	2.3%	5.3%	64.7%	0.8%													20.3%
Ba1	31									3.2%	3.2%	48.4%		3.2%	3.2%	3.2%						3.2%			32.3%
Ba2	77									1.3%	2.6%	2.6%	77.9%		1.3%	2.6%	1.3%								10.4%
Ba3	35							2.9%	2.9%		11.4%	2.9%				71.4%	2.9%								2.9%
B1	11														81.8%		9.1%				9.1%				
B2	30															66.7%	3.3%	6.7%	6.7%	3.3%	6.7%				6.7%
B3	17																70.6%	5.9%			17.6%				5.9%
Caa1	17																	88.2%	5.9%		5.9%				
Caa2	13																		69.2%		15.4%	7.7%	7.7%		
Caa3	23																			69.6%		26.1%	4.3%		
Ca	37																				89.2%	5.4%	5.4%		
C	61																					86.9%	13.1%		

Figure 56 - US CDO One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR
Aaa	916	88.8%		0.2%	0.1%			0.1%															10.8%
Aa1	117	4.3%	82.1%	0.9%	0.9%		0.9%																11.1%
Aa2	495	2.2%	1.4%	90.3%			0.4%																5.7%
Aa3	89	10.1%	1.1%		64.0%	2.2%	2.2%	2.2%	1.1%				1.1%										15.7%
A1	102	5.9%	1.0%	2.0%		77.5%		2.0%	1.0%		1.0%						1.0%						8.8%
A2	427	0.9%	0.5%		0.7%		90.2%	0.2%	0.2%	0.2%	0.5%	0.2%											6.3%
A3	259	2.3%	1.2%	1.2%	1.2%	0.4%		79.9%		1.2%	0.8%		0.4%		0.4%	0.4%							10.8%
Baa1	78	5.1%				1.3%	2.6%		78.2%	1.3%	2.6%												9.0%
Baa2	572		0.2%	0.2%	0.9%	0.3%	0.3%	0.3%	0.3%	88.3%	0.3%	0.7%	0.7%				0.3%					0.2%	6.8%
Baa3	179	1.1%	0.6%		1.7%		1.7%	1.1%			78.2%	0.6%	1.1%	1.1%	1.7%	0.6%				0.6%			10.1%
Ba1	79	1.3%			1.3%		1.3%		2.5%	1.3%	1.3%	67.1%		1.3%	1.3%						1.3%		20.3%
Ba2	244					0.4%		0.4%	0.4%		1.2%		84.0%	0.4%	0.4%	0.4%	0.4%					0.4%	11.5%
Ba3	99						2.0%	1.0%			3.0%	2.0%	1.0%	70.7%		1.0%	1.0%	1.0%	1.0%		1.0%	1.0%	15.2%
B1	37									2.7%	2.7%			48.6%	8.1%					5.4%		2.7%	29.7%
B2	35										5.7%			5.7%	2.9%	57.1%		2.9%	8.6%	2.9%			14.3%
B3	30											3.3%	3.3%				60.0%		3.3%	10.0%	3.3%	3.3%	13.3%
Caa1	19														5.3%		5.3%	63.2%			10.5%	5.3%	10.5%
Caa2	30															3.3%	3.3%		43.3%	3.3%	23.3%	6.7%	16.7%
Caa3	32										3.1%			3.1%						46.9%	21.9%	6.3%	18.8%
Ca	88																	1.1%			79.5%	8.0%	11.4%
C	108																					95.4%	4.6%

Figure 57 - US CDO (excl. HY CBOs) One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR
Aaa	846	90.2%		0.2%	0.1%			0.1%															9.3%
Aa1	109	2.8%	83.5%	0.9%	0.9%		0.9%																11.0%
Aa2	475	1.5%	1.1%	92.0%			0.4%																5.1%
Aa3	75	5.3%	1.3%		66.7%	2.7%	2.7%	2.7%	1.3%				1.3%										16.0%
A1	92	2.2%	1.1%	2.2%		84.8%		1.1%	1.1%		1.1%												6.5%
A2	414	0.2%	0.5%		0.7%		90.8%	0.2%	0.2%	0.2%	0.5%	0.2%											6.3%
A3	236	1.7%	0.8%	1.3%	1.3%	0.4%		80.9%		1.3%	0.8%		0.4%		0.4%	0.4%							10.2%
Baa1	68	1.5%				1.5%	2.9%		80.9%	1.5%	2.9%												8.8%
Baa2	541			0.2%	0.9%	0.4%	0.4%	0.2%	0.4%	89.1%	0.2%	0.7%	0.7%				0.4%					0.2%	6.3%
Baa3	154	0.6%	0.6%		0.6%		0.6%	0.6%			82.5%	0.6%	0.6%	1.3%	1.9%				0.6%				9.1%
Ba1	59									1.7%		78.0%		1.7%									18.6%
Ba2	215					0.5%			0.5%			87.0%	0.5%		0.5%							0.5%	10.7%
Ba3	77						1.3%				2.6%	1.3%		76.6%		1.3%		1.3%			1.3%		14.3%
B1	17									5.9%					41.2%	5.9%				5.9%		5.9%	35.3%
B2	22													4.5%	4.5%	59.1%				4.5%	4.5%		22.7%
B3	21																66.7%			9.5%	4.8%	4.8%	14.3%
Caa1	8																12.5%	37.5%			25.0%		25.0%
Caa2	15																		46.7%		13.3%	13.3%	26.7%
Caa3	21													4.8%						52.4%	19.0%	9.5%	14.3%
Ca	36																				72.2%	5.6%	22.2%
C	29																					93.1%	6.9%

Figure 58 - US CMBS One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	690	87.8%																					12.2%	
Aa1	136	50.7%	36.0%																					13.2%
Aa2	309	35.0%	5.8%	52.4%																				6.8%
Aa3	210	24.8%	5.2%	9.0%	54.3%																			6.7%
A1	140	28.6%	5.7%	10.0%	11.4%	35.7%																		8.6%
A2	320	11.3%	6.9%	6.9%	7.2%	8.4%	52.8%																	6.6%
A3	280	7.1%	3.6%	7.9%	7.1%	7.5%	7.5%	55.0%																4.3%
Baa1	249	2.4%	1.2%	2.4%	3.6%	5.6%	8.0%	10.0%	62.2%	0.4%														4.0%
Baa2	328	2.1%	0.6%	1.5%	1.8%	2.4%	5.8%	9.5%	11.3%	60.4%	0.3%													4.3%
Baa3	327	0.9%		0.3%	0.9%	2.1%	1.5%	1.5%	6.4%	10.4%	69.1%	0.3%	0.6%	0.3%										5.5%
Ba1	236	0.8%				0.4%		2.1%	1.3%	1.7%	5.5%	83.9%	0.8%		0.8%									2.5%
Ba2	263	0.4%				0.4%			0.4%	2.7%	1.9%	5.7%	85.6%	0.4%		0.4%				0.4%				1.9%
Ba3	232	0.4%									1.7%	1.7%	2.2%	90.9%	0.9%	0.4%	0.4%							1.3%
B1	187												1.1%	1.1%	93.6%	1.1%	1.1%			0.5%				1.6%
B2	207												1.0%	1.4%	1.0%	92.3%	2.4%			0.5%		0.5%	0.5%	0.5%
B3	190													0.5%	0.5%		91.1%	3.7%	2.1%	1.1%				1.1%
Caa1	38																	60.5%	15.8%	7.9%	5.3%	7.9%		2.6%
Caa2	43																		60.5%	14.0%	11.6%	11.6%		2.3%
Caa3	16																			50.0%	18.8%	25.0%		6.3%
Ca	15																				40.0%	46.7%		13.3%
C	18																					88.9%		11.1%

Figure 59 - US RMBS One-Year Refined-Rating Transition Matrix by Cohort Rating in 2006

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	3197	97.5%	0.0%																				2.5%	
Aa1	495	4.4%	95.4%																					0.2%
Aa2	1053	5.0%	1.6%	90.9%				0.1%																2.4%
Aa3	237	4.2%	0.8%	0.8%	92.4%																			1.7%
A1	135		2.2%	2.2%	1.5%	93.3%																		0.7%
A2	956	0.3%	0.1%	3.0%	1.2%	1.9%	91.7%	0.1%	0.1%	0.1%	0.2%													1.3%
A3	306	0.7%			3.6%	1.0%	2.0%	90.8%	0.3%		0.3%													1.3%
Baa1	175	0.6%				1.7%	1.1%	0.6%	94.9%			0.6%												0.6%
Baa2	898	0.1%	0.1%		0.1%	0.3%	2.0%	1.0%	1.0%	92.9%		0.3%	0.2%	0.1%										1.8%
Baa3	317	0.3%						3.5%	0.6%	0.6%	92.7%		0.6%	0.3%					0.6%					0.6%
Ba1	54										1.9%	98.1%												
Ba2	393	0.3%							0.8%	4.8%	1.5%	1.0%	90.3%		0.3%	0.5%								0.5%
Ba3	71	1.4%									4.2%	1.4%		88.7%		1.4%						1.4%		1.4%
B1	11														81.8%			9.1%		9.1%				
B2	250		0.4%									1.2%	3.6%	3.6%	0.4%	87.2%		0.8%	0.4%	0.8%	0.8%			0.8%
B3	32					6.3%								6.3%			87.5%							
Caa1	25																	100.0%						
Caa2	7																		85.7%				14.3%	
Caa3	1																			100.0%				
Ca	6																				100.0%			
C	9																					77.8%	22.2%	

Figure 60 - Global Structured Finance One-Year Refined-Rating Transition Matrix by Cohort Rating (1984-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR
Aaa	595711	87.7%	0.3%	0.2%	0.2%	0.1%	0.0%	0.1%	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%	11.4%
Aa1	55708	9.2%	78.4%	0.9%	0.6%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.8%
Aa2	221033	5.2%	1.6%	83.9%	0.8%	0.6%	0.4%	0.4%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.6%
Aa3	73651	3.8%	2.0%	2.2%	78.6%	1.5%	1.0%	1.1%	0.6%	0.4%	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	7.7%
A1	65302	2.1%	0.9%	1.8%	1.6%	78.8%	1.2%	1.0%	0.6%	0.8%	0.4%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	10.2%
A2	214172	1.0%	0.5%	1.8%	1.2%	1.7%	84.3%	0.4%	0.4%	0.4%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	7.3%
A3	75445	1.1%	0.4%	0.7%	1.5%	1.4%	1.5%	81.5%	0.8%	1.2%	1.1%	0.5%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	6.7%
Baa1	54715	0.5%	0.1%	0.3%	0.3%	1.1%	1.4%	1.5%	83.2%	1.0%	1.7%	0.9%	0.4%	0.3%	0.4%	0.2%	0.1%	0.2%	0.1%	0.0%	0.1%	0.2%	5.9%
Baa2	174306	0.3%	0.1%	0.3%	0.3%	0.4%	1.7%	1.3%	1.4%	83.7%	0.9%	0.8%	0.6%	0.5%	0.3%	0.3%	0.3%	0.1%	0.2%	0.1%	0.2%	0.2%	6.1%
Baa3	100929	0.3%	0.0%	0.2%	0.1%	0.3%	0.5%	0.8%	1.0%	1.4%	82.2%	1.2%	1.0%	1.1%	0.6%	0.4%	0.4%	0.2%	0.2%	0.2%	0.4%	0.2%	7.2%
Ba1	27696	0.2%	0.0%	0.1%	0.0%	0.0%	0.3%	0.5%	0.7%	1.2%	2.7%	79.3%	1.4%	2.0%	1.2%	0.9%	1.0%	0.3%	0.8%	0.2%	0.7%	0.4%	5.9%
Ba2	64374	0.1%	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	0.4%	1.6%	1.1%	1.3%	82.7%	0.8%	0.9%	0.9%	0.8%	0.6%	0.6%	0.5%	0.7%	1.1%	5.6%
Ba3	31879	0.0%			0.0%	0.1%	0.2%	0.2%	0.2%	0.3%	1.3%	0.9%	0.8%	79.3%	1.5%	1.2%	1.7%	1.1%	1.3%	1.0%	1.3%	1.8%	5.8%
B1	14489	0.1%	0.0%		0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.2%	0.3%	0.8%	0.8%	77.2%	1.7%	3.3%	1.7%	1.3%	1.2%	1.8%	3.1%	6.3%
B2	30374	0.1%	0.0%			0.0%	0.1%	0.0%	0.1%	0.1%	0.3%	0.5%	1.5%	1.2%	0.5%	82.6%	1.6%	1.7%	1.6%	0.5%	1.5%	1.3%	4.8%
B3	19316	0.0%		0.0%		0.1%			0.1%		0.2%	0.0%	0.3%	0.5%	0.6%	0.6%	77.8%	3.0%	4.0%	1.9%	3.2%	2.4%	5.4%
Caa1	6473	0.1%									0.2%		0.2%	0.1%	0.8%		0.0%	72.8%	3.1%	4.3%	6.5%	6.6%	5.4%
Caa2	7449												0.2%			0.1%	0.6%	3.7%	66.2%	4.1%	8.8%	7.6%	8.8%
Caa3	4954										0.1%			0.1%	0.2%	0.2%	0.5%		67.6%	7.3%	10.8%	13.3%	
Ca	10891												0.0%		0.1%		0.1%			0.1%	78.1%	10.7%	10.6%
C	12601								0.0%													89.1%	10.9%

Figure 61 - US ABS One-Year Refined-Rating Transition Matrix by Cohort Rating (1984-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	207775	85.5%	0.2%	0.2%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%		13.2%	
Aa1	10797	2.1%	84.9%	1.1%	1.5%	0.6%	0.3%	0.2%	0.1%	0.1%	0.3%			0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%		8.6%
Aa2	69232	2.8%	0.5%	87.9%	0.3%	0.5%	0.5%	0.6%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%		6.1%
Aa3	22776	1.4%	0.9%	0.6%	82.3%	0.7%	1.1%	1.8%	1.0%	0.9%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	1.0%	0.1%		6.9%
A1	29852	1.1%	0.5%	0.7%	0.9%	81.1%	0.4%	0.7%	0.6%	1.1%	0.5%	0.1%	0.2%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%		11.6%
A2	110974	0.5%	0.3%	0.8%	0.6%	1.2%	86.7%	0.2%	0.5%	0.4%	0.3%	0.2%	0.2%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%		7.4%
A3	26339	0.5%	0.1%	0.4%	0.4%	0.6%	0.5%	83.9%	0.6%	1.2%	1.3%	0.7%	0.2%	0.3%	0.2%	0.2%	0.3%	0.1%	0.2%	0.2%	0.2%	0.3%		7.7%
Baa1	25259	0.2%	0.1%	0.0%	0.1%	0.2%	0.2%	0.4%	89.1%	1.0%	2.2%	0.9%	0.4%	0.5%	0.7%	0.3%	0.2%	0.2%	0.1%	0.0%	0.2%	0.3%		2.9%
Baa2	67531	0.1%	0.0%	0.1%	0.1%	0.3%	0.7%	0.5%	0.9%	86.1%	0.9%	0.8%	1.0%	0.7%	0.4%	0.4%	0.3%	0.2%	0.2%	0.1%	0.4%	0.4%		5.1%
Baa3	36300	0.4%	0.0%	0.1%	0.1%	0.1%	0.3%	0.2%	0.4%	0.3%	84.0%	1.9%	0.9%	1.2%	0.5%	0.6%	0.5%	0.3%	0.2%	0.4%	0.8%	0.3%		6.6%
Ba1	7901							0.2%		0.2%	2.8%	75.8%	2.1%	4.1%	1.3%	1.6%	1.8%	0.6%	1.8%	0.3%	1.5%	1.4%		4.5%
Ba2	15494	0.3%	0.1%	0.1%	0.0%	0.1%	0.2%		0.2%	0.2%	0.7%	0.3%	78.9%	0.4%	1.5%	1.8%	1.4%	1.3%	1.5%	0.9%	1.7%	3.7%		4.8%
Ba3	5328							0.1%	0.6%	0.2%	1.4%	0.6%		63.9%	1.2%	1.8%	3.2%	2.9%	2.1%	3.4%	3.6%	6.9%		7.9%
B1	1618														54.1%	2.2%	9.5%	4.4%	2.2%	3.4%	2.9%	15.8%		5.6%
B2	5282					0.2%			0.2%	0.2%				0.5%		75.5%	1.0%	3.0%	2.8%	1.2%	5.7%	6.6%		3.1%
B3	2365										0.4%						55.6%	3.4%	8.5%	3.3%	10.4%	10.9%		7.6%
Caa1	1678										0.2%			0.3%				60.6%	2.9%	5.1%	11.1%	12.9%		6.8%
Caa2	2099																0.6%	60.8%	1.3%	13.0%	12.6%	11.7%		11.7%
Caa3	2374																		71.1%	3.9%	11.7%	13.3%		13.3%
Ca	6099																0.2%				76.9%	10.6%		12.2%
C	7509																					87.7%		12.3%

Figure 62 - US HEL One-Year Refined-Rating Transition Matrix by Cohort Rating (1989-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	64138	88.4%	0.1%	0.2%	0.1%	0.1%		0.1%			0.0%			0.0%									11.0%	
Aa1	5193	1.4%	93.0%	0.2%	0.4%		0.4%	0.5%		0.2%	0.2%												3.9%	
Aa2	50875	2.4%	0.3%	90.2%	0.1%	0.3%	0.4%	0.4%	0.1%	0.0%	0.1%	0.0%		0.0%	0.0%								5.6%	
Aa3	6826	0.4%	0.2%	0.2%	90.1%	0.2%	0.4%	1.1%	0.4%		0.2%												6.9%	
A1	5697	0.3%	0.4%	0.3%	0.2%	93.6%	0.2%	0.2%		0.1%	0.2%						0.1%		0.4%		0.2%		3.8%	
A2	49200	0.4%	0.2%	1.2%	0.8%	0.3%	90.8%	0.1%	0.8%	0.5%	0.4%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%				4.3%	
A3	13990		0.0%	0.2%	0.3%	0.1%	0.0%	94.1%	0.1%	0.4%	0.8%	0.3%	0.2%	0.2%	0.0%		0.0%		0.1%	0.1%	0.2%		3.0%	
Baa1	14957				0.1%	0.1%	0.1%	0.2%	95.4%	0.1%	0.5%	0.6%	0.3%	0.1%	0.2%	0.2%		0.1%	0.1%		0.2%		1.8%	
Baa2	41442	0.1%	0.1%	0.1%	0.0%	0.1%	0.5%	0.3%	0.2%	90.5%	0.4%	0.5%	0.9%	0.6%	0.3%	0.3%	0.2%	0.1%	0.2%	0.1%	0.2%	0.1%	4.3%	
Baa3	25715		0.0%		0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	88.5%	1.0%	0.6%	0.9%	0.6%	0.6%	0.5%	0.2%	0.1%	0.5%	0.7%	0.2%	5.2%	
Ba1	5135							0.2%			1.2%	87.8%	0.5%	1.0%	0.6%	1.0%	0.8%	0.5%	1.1%	0.4%	1.4%	0.1%	3.3%	
Ba2	8333			0.2%		0.1%	0.1%		0.1%	0.3%	0.6%	0.1%	86.1%	0.3%	1.1%	0.3%	0.7%	0.7%	1.3%	0.9%	0.9%	1.4%	4.6%	
Ba3	1410								0.9%							72.1%	0.8%	1.5%	3.8%	2.8%	0.7%	5.5%	7.0%	
B1	386														64.5%			0.8%	5.4%	6.2%	1.8%	6.7%	3.1%	11.4%
B2	3193					0.4%			0.4%	0.4%				0.8%		82.4%	0.5%	0.4%	2.3%	1.0%	3.7%	3.5%	4.2%	
B3	731																47.7%	0.5%	12.7%	2.5%	9.4%	12.3%	14.8%	
Caa1	423																	77.5%			1.9%	3.5%	17.0%	
Caa2	877																		73.3%	2.1%	2.6%	3.6%	18.4%	
Caa3	1210																			78.4%	2.6%	5.0%	14.0%	
Ca	2979																				84.6%	1.0%	14.4%	
C	825																					54.8%	45.2%	

Figure 63 - US Non-Mortgage ABS One-Year Refined-Rating Transition Matrix by Cohort Rating (1984-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	125721	84.2%	0.3%	0.2%	0.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.1%	0.0%		14.8%	
Aa1	4892	1.9%	76.9%	2.3%	2.9%	1.2%	0.1%				0.4%			0.0%					0.0%					14.1%
Aa2	11273	2.8%	1.6%	78.4%	0.8%	1.3%	1.1%	1.3%	0.0%	0.5%	0.3%	0.2%	0.0%	0.0%	0.1%		0.0%	0.0%	0.1%	0.1%	0.0%			11.0%
Aa3	7447	1.9%	1.3%	1.4%	72.6%	0.8%	0.5%	2.0%	1.5%	1.1%	0.1%	0.3%	0.1%	0.3%	0.1%	0.1%		0.1%	0.0%	0.1%	1.9%	0.1%		13.4%
A1	23516	1.1%	0.5%	0.9%	1.0%	78.7%	0.3%	0.9%	0.8%	1.3%	0.5%	0.1%	0.2%	0.1%	0.1%		0.0%	0.1%	0.0%	0.0%	0.1%	0.0%		13.5%
A2	57683	0.6%	0.3%	0.4%	0.5%	2.2%	83.6%	0.2%	0.2%	0.4%	0.3%	0.2%	0.2%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%		10.5%
A3	10988	0.8%	0.2%	0.6%	0.7%	1.3%	1.0%	73.8%	0.8%	2.3%	2.0%	0.9%	0.2%	0.3%	0.0%	0.2%	0.1%	0.3%	0.1%	0.1%	0.0%	0.1%		14.1%
Baa1	4152	0.2%	0.6%			0.4%	0.1%	1.5%	78.8%	4.4%	2.4%	0.3%	0.8%	0.6%	0.5%	0.2%		0.3%	0.0%	0.2%	0.4%	0.2%		8.2%
Baa2	16532	0.5%		0.3%	0.1%	0.8%	1.2%	1.0%	0.7%	77.3%	2.5%	1.7%	1.3%	0.6%	0.6%	0.4%	0.2%	0.4%	0.1%	0.2%	0.4%	0.3%		9.4%
Baa3	8442	1.5%		0.2%	0.2%	0.1%	0.8%	0.5%	0.7%	1.1%	76.1%	0.7%	1.1%	1.0%	0.3%	0.7%	0.4%	0.8%	0.2%	0.3%	0.6%	0.3%		12.3%
Ba1	1264									0.2%	0.8%	56.6%	2.5%	1.4%	3.3%	4.2%	5.1%	1.7%	5.8%	0.5%	2.9%	0.8%		14.4%
Ba2	4804	0.8%				0.2%			0.1%	0.1%	1.3%	0.8%	73.9%	0.4%	1.5%	3.4%	2.3%	2.0%	1.9%	0.8%	0.9%	2.2%		7.3%
Ba3	2459							0.2%	0.9%	0.5%	3.1%	1.4%		68.0%	1.4%	0.5%	2.0%	2.3%	0.4%	2.4%	1.6%	2.2%		13.2%
B1	612														54.1%	1.0%	13.1%	5.7%	1.8%	7.4%	2.9%	6.5%		7.5%
B2	1322															71.0%	0.4%	4.8%	3.6%	2.2%	10.4%	6.3%		1.4%
B3	887										1.1%						60.4%	4.6%	4.5%	4.4%	9.0%	8.7%		7.2%
Caa1	746										0.5%							48.4%	5.0%	10.3%	14.3%	15.8%		5.6%
Caa2	719																1.7%		55.8%	1.4%	20.3%	9.0%		11.8%
Caa3	975																			68.2%	2.9%	13.8%		15.1%
Ca	1768																0.8%				72.3%	9.7%		17.1%
C	1841																					85.2%		14.8%

Figure 64 - US CDO One-Year Refined-Rating Transition Matrix by Cohort Rating (1990-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR
Aaa	35033	89.8%	0.8%	0.8%	0.6%	0.3%	0.1%	0.2%	0.1%	0.1%	0.1%	0.0%		0.0%		0.0%							7.1%
Aa1	4246	2.3%	84.2%	1.8%	1.1%	0.8%	1.2%	0.8%	0.1%	0.1%	0.4%	0.2%		0.1%	0.0%	0.1%							6.8%
Aa2	17837	0.9%	0.5%	85.7%	2.0%	1.7%	0.7%	0.9%	0.6%	0.3%	0.6%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%		0.0%	0.0%		5.5%
Aa3	5792	1.7%	0.1%	0.3%	77.2%	3.4%	2.1%	2.5%	1.3%	0.4%	1.7%	0.6%	0.6%	0.5%	0.2%		0.2%	0.0%					7.2%
A1	4264	1.8%	0.6%	1.9%	1.0%	79.0%	1.1%	1.2%	1.2%	1.4%	1.5%	0.6%	0.0%	0.1%	0.1%		0.4%	0.1%				0.0%	7.9%
A2	11326	0.7%	0.1%	0.3%	0.3%	0.8%	86.1%	1.3%	0.5%	0.6%	0.7%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%		0.1%	0.1%		0.0%	7.6%
A3	11335	0.4%	0.1%	0.3%	0.4%	0.1%	0.1%	86.0%	0.9%	1.3%	1.4%	0.8%	0.6%	0.4%	0.6%	0.3%	0.1%	0.2%	0.1%	0.2%	0.2%	0.1%	5.5%
Baa1	3761	0.5%			0.1%	1.0%	0.6%	0.3%	80.4%	0.6%	2.0%	2.0%	0.3%	0.7%	0.6%	0.2%	0.3%	0.1%	0.5%	0.1%	0.2%	0.1%	9.4%
Baa2	22583	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.3%	0.1%	86.1%	1.3%	1.4%	0.8%	0.8%	0.8%	0.5%	0.8%	0.2%	0.5%	0.5%	0.4%	0.2%	4.8%
Baa3	11257	0.1%	0.2%		0.1%	0.0%	0.2%	0.2%	0.2%	0.1%	78.9%	1.9%	2.1%	2.5%	2.3%	0.8%	0.8%	0.5%	0.5%	0.6%	0.8%	0.4%	6.7%
Ba1	2751	0.1%	0.4%		0.2%		0.1%	0.1%	0.9%	0.8%	0.4%	72.7%	2.9%	1.1%	3.4%	2.2%	1.1%	0.7%	2.6%	1.1%	1.6%	0.1%	7.3%
Ba2	10194					0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.2%	83.1%	1.2%	1.4%	1.2%	1.1%	1.0%	0.9%	1.1%	1.2%	1.2%	5.8%
Ba3	6918						0.2%	0.1%		0.0%	0.2%	0.3%	0.2%	78.3%	2.1%	1.0%	1.7%	1.4%	1.9%	0.9%	2.7%	2.5%	6.4%
B1	2713				0.2%	0.4%	0.0%		0.1%	0.0%	0.4%	0.9%	0.4%		63.8%	2.1%	3.5%	3.8%	3.8%	3.8%	6.5%	6.5%	3.7%
B2	2185										0.8%		1.1%	0.5%	0.0%	76.3%	0.3%	2.8%	3.3%	1.7%	4.2%	1.3%	7.6%
B3	2168												1.3%	0.6%		0.6%	67.1%	1.8%	4.9%	5.1%	8.1%	6.0%	4.7%
Caa1	963										0.6%		1.2%		0.3%		0.1%	58.3%	1.0%	8.0%	14.3%	13.4%	2.7%
Caa2	1352															0.3%	0.7%		60.9%	5.2%	12.9%	11.7%	8.4%
Caa3	1344										0.4%				0.4%	0.7%	0.2%	1.7%		61.3%	14.4%	12.8%	8.0%
Ca	3063																	0.2%			85.6%	10.4%	3.9%
C	3845								0.0%													96.0%	4.0%

Figure 65 - US CDO (excl. HY CBOs) One-Year Refined-Rating Transition Matrix by Cohort Rating (1990-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	28679	90.7%	0.5%	0.5%	0.3%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%				0.0%							7.5%	
Aa1	3667	1.8%	86.2%	1.8%	0.4%	0.9%	1.0%	0.5%	0.1%	0.1%	0.1%					0.2%								7.1%
Aa2	14816	0.9%	0.4%	87.9%	1.4%	1.2%	0.5%	0.6%	0.2%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%			0.0%	0.0%			5.9%
Aa3	4359	0.8%	0.2%	0.4%	80.7%	2.6%	1.8%	0.7%	0.9%	0.4%	0.5%	0.5%	0.6%	0.4%			0.2%	0.0%						9.2%
A1	3685	0.5%	0.4%	1.9%	1.2%	82.0%	0.9%	1.0%	0.8%	1.0%	0.6%	0.4%	0.0%	0.1%	0.1%		0.3%						0.0%	8.7%
A2	10480	0.4%	0.1%	0.2%	0.3%	0.7%	87.2%	1.3%	0.5%	0.6%	0.4%	0.2%	0.2%	0.0%	0.1%		0.1%		0.1%	0.1%		0.0%		7.4%
A3	9223	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	88.7%	0.5%	0.9%	1.0%	0.5%	0.5%	0.2%	0.3%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%		5.8%
Baa1	3019	0.2%			0.1%	0.7%	0.7%		83.5%	0.6%	1.6%	0.6%	0.1%	0.2%	0.3%	0.2%	0.4%			0.1%	0.2%	0.2%		10.3%
Baa2	18604	0.0%	0.0%	0.1%	0.2%	0.1%	0.1%	0.3%	0.1%	88.7%	0.8%	1.1%	0.4%	0.4%	0.3%	0.3%	0.6%	0.2%	0.4%	0.2%	0.2%	0.2%		5.2%
Baa3	7352	0.1%	0.1%		0.0%	0.0%	0.1%	0.0%	0.3%		82.2%	1.1%	1.1%	2.1%	1.7%	0.6%	0.5%	0.2%	0.3%	0.5%	0.5%	0.4%		8.0%
Ba1	1843								0.7%	1.1%		76.2%	3.2%	0.5%	2.3%	0.3%	0.7%	0.3%	2.8%	1.5%	1.8%	0.2%		8.5%
Ba2	7801					0.0%			0.1%	0.2%	0.3%	0.2%	87.1%	1.1%	0.7%	0.6%	1.0%	0.4%	0.3%	0.7%	0.3%	0.6%		6.4%
Ba3	4447						0.2%			0.1%	0.1%	0.2%			82.8%	0.7%	0.8%	1.4%	0.8%	0.8%	0.4%	1.7%	1.5%	8.6%
B1	796								0.1%						69.2%	0.6%	2.1%	0.8%	4.8%	0.9%	7.2%	7.7%		6.7%
B2	1414												0.8%	0.4%	0.1%	80.2%		0.7%	3.7%	2.4%	1.9%	1.1%		8.6%
B3	1267												0.9%			0.9%	69.0%	2.1%	3.2%	6.0%	5.0%	5.3%		7.6%
Caa1	309										1.9%						0.3%	63.4%		10.0%	7.1%	8.7%		8.4%
Caa2	593																		62.2%	6.2%	7.6%	6.4%		17.5%
Caa3	655													0.8%		0.5%				70.1%	13.1%	7.5%		8.1%
Ca	817																				86.9%	3.5%		9.5%
C	798																					87.3%		12.7%

Figure 66 - US CMBS One-Year Refined-Rating Transition Matrix by Cohort Rating (1987-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	31530	87.2%	0.5%	0.2%	0.1%	0.0%																	12.0%	
Aa1	4614	23.5%	61.1%	0.3%	0.3%	0.4%	0.0%		0.0%		0.2%			0.1%										14.0%
Aa2	22947	12.3%	4.1%	75.4%	0.6%	0.2%	0.1%			0.0%	0.0%			0.0%			0.0%		0.0%					7.1%
Aa3	6281	12.0%	3.9%	5.8%	68.8%	0.7%		0.8%			0.0%				0.1%				0.0%					7.8%
A1	5201	9.2%	3.2%	4.7%	5.3%	63.9%	0.2%	1.1%	0.4%	0.2%	0.3%	0.1%		0.2%	0.0%									11.3%
A2	20582	2.6%	1.8%	3.6%	3.8%	5.2%	76.8%	0.6%	0.3%	0.3%	0.1%	0.0%	0.1%	0.0%										4.9%
A3	12342	1.8%	1.2%	1.5%	2.9%	4.4%	5.0%	76.3%	0.4%	0.5%	0.8%		0.1%	0.0%		0.0%								5.2%
Baa1	9525	1.5%	0.3%	1.2%	1.0%	2.5%	3.7%	4.9%	70.9%	0.6%	0.8%	1.1%	0.1%	0.2%	0.3%					0.1%				10.8%
Baa2	22911	0.6%	0.2%	0.7%	0.5%	0.9%	2.4%	3.5%	4.4%	77.2%	0.8%	0.8%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.2%
Baa3	20106	0.3%		0.3%	0.2%	0.6%	0.5%	1.2%	3.0%	4.8%	78.2%	0.9%	0.9%	0.9%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%
Ba1	8424	0.3%		0.1%		0.0%	0.2%	0.8%	0.5%	1.3%	3.9%	85.3%	1.1%	1.0%	0.6%	0.1%	0.2%	0.1%	0.0%	0.0%				4.5%
Ba2	12700	0.0%				0.0%	0.1%	0.2%	0.2%	1.0%	1.2%	2.5%	87.0%	1.5%	1.1%	0.5%	0.6%	0.0%	0.0%					4.1%
Ba3	9607	0.0%					0.1%	0.0%	0.1%	0.0%	0.9%	0.9%	1.4%	88.3%	2.2%	1.2%	0.9%	0.4%	0.1%			0.0%		3.4%
B1	6741	0.1%								0.0%	0.3%	0.1%	0.6%	0.7%	89.8%	1.8%	2.2%	0.8%	0.3%	0.0%	0.2%			3.2%
B2	11116	0.2%					0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.6%	0.6%	0.7%	87.0%	3.4%	2.5%	1.8%	0.2%	0.1%	0.1%	0.1%	2.4%
B3	8730	0.0%		0.1%							0.1%	0.0%	0.0%	0.1%	0.6%	0.9%	84.9%	4.0%	3.8%	1.2%	1.3%	0.4%	0.4%	2.6%
Caa1	1010	0.7%													0.6%			64.6%	9.0%	8.7%	4.4%	6.1%	5.9%	
Caa2	2262												0.2%				0.8%	1.1%	75.6%	5.9%	6.9%	4.9%	4.7%	
Caa3	308																		54.5%	14.6%	19.8%	11.0%		
Ca	418														1.4%			1.4%			48.8%	35.2%	13.2%	
C	356																					62.9%	37.1%	

Figure 67 - US RMBS One-Year Refined-Rating Transition Matrix by Cohort Rating (1984-2006)

	Total	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	WR	
Aaa	232663	89.2%	0.2%	0.1%	0.0%	0.0%	0.1%	0.0%		0.0%													10.4%	
Aa1	27455	11.4%	78.0%	0.2%	0.0%	0.1%		0.1%		0.1%	0.1%		0.0%	0.0%		0.0%	0.0%		0.0%					10.1%
Aa2	87457	6.6%	1.9%	83.4%	0.7%	0.4%	0.4%	0.2%	0.0%	0.1%	0.0%		0.0%		0.0%	0.0%		0.0%						6.3%
Aa3	25141	5.3%	2.7%	2.0%	78.9%	1.9%	1.0%	0.6%	0.3%	0.1%	0.2%	0.0%						0.0%						7.0%
A1	12579	2.9%	0.9%	2.8%	1.3%	77.1%	3.3%	1.3%	0.5%	0.4%	0.2%	0.0%												9.3%
A2	42049	1.2%	0.6%	4.6%	1.4%	1.1%	82.3%	0.1%	0.2%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%			0.0%		7.7%
A3	16489	2.5%	0.3%	0.8%	3.1%	1.4%	1.2%	82.3%	0.4%	1.2%	0.6%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.1%	0.1%					5.6%
Baa1	7215	0.9%		0.3%	0.3%	2.1%	2.3%	1.6%	82.6%	0.7%	1.2%	0.6%	0.2%	0.2%				0.2%	0.1%		0.2%			6.4%
Baa2	37561	0.5%	0.1%	0.4%	0.5%	0.6%	3.9%	1.5%	0.9%	83.2%	0.3%	0.4%	0.2%	0.2%	0.1%	0.1%	0.1%		0.1%		0.0%			7.0%
Baa3	24648	0.3%	0.1%	0.3%	0.1%	0.6%	0.8%	1.7%	0.6%	0.4%	85.8%	0.2%	0.4%	0.6%	0.2%	0.1%	0.3%	0.2%	0.4%	0.0%	0.0%	0.0%		7.1%
Ba1	4666	0.5%				0.0%	1.5%	0.4%	1.2%	2.3%	1.9%	80.2%	0.4%	0.8%	0.8%	0.1%	1.3%	0.3%	0.2%		0.1%			7.9%
Ba2	19675	0.1%	0.0%	0.1%	0.1%	0.0%	0.3%	0.5%	0.7%	4.1%	1.4%	1.9%	83.7%	0.1%	0.1%	0.2%	0.5%	0.1%	0.2%		0.2%	0.1%		5.6%
Ba3	7117	0.1%			0.2%	0.6%	0.5%	0.6%	0.3%	1.1%	2.7%	1.5%	0.5%	81.1%	0.1%	0.5%	0.9%	0.3%	2.0%	0.5%	0.4%	0.4%		5.8%
B1	2475											0.5%		1.4%	0.8%	83.4%	0.5%	1.9%	0.1%	0.9%	0.1%	0.5%		9.9%
B2	10920		0.0%				0.1%			0.1%	0.4%	1.2%	3.3%	2.0%	0.5%	84.7%	0.3%	0.2%	0.4%	0.1%	0.3%	0.1%		6.1%
B3	5164					0.2%			0.2%		0.5%		0.2%	1.5%	0.5%	0.2%	84.5%	1.4%	2.2%	0.7%	1.2%	0.7%		6.1%
Caa1	2346																	95.5%			1.0%	0.3%		3.2%
Caa2	1318												0.9%					14.1%	67.4%		1.5%	2.7%		9.9%
Caa3	482																			77.6%				22.4%
Ca	721																				75.9%	2.9%		21.2%
C	540																					84.4%		15.6%

MATRICES BY ORIGINAL RATING²⁵

Figure 68 - Global Structured Finance Rating Transition Matrices by Original Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	98.39%	0.54%	0.06%	0.01%	0.00%	0.01%	0.07%	0.91%
Aa	0.62%	97.19%	0.89%	0.14%	0.02%	0.00%	0.09%	1.05%
A	0.11%	0.54%	97.31%	1.05%	0.17%	0.04%	0.04%	0.75%
Baa	0.04%	0.03%	0.36%	97.95%	0.66%	0.16%	0.12%	0.68%
Ba	0.00%	0.00%	0.00%	0.53%	98.15%	0.48%	0.22%	0.62%
B	0.00%	0.00%	0.00%	0.00%	0.56%	96.15%	0.42%	2.87%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	86.89%	13.11%
2-year								
Aaa	93.81%	1.28%	0.19%	0.13%	0.05%	0.02%	0.13%	4.39%
Aa	3.87%	88.65%	2.33%	0.52%	0.10%	0.07%	0.27%	4.18%
A	0.89%	3.14%	89.41%	2.34%	0.42%	0.22%	0.32%	3.26%
Baa	0.27%	0.27%	2.78%	88.57%	1.97%	0.50%	0.60%	5.03%
Ba	0.00%	0.12%	0.20%	3.48%	89.51%	1.98%	1.82%	2.88%
B	0.09%	0.00%	0.09%	0.43%	3.46%	90.40%	1.47%	4.07%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	73.91%	26.09%
3-year								
Aaa	81.72%	2.09%	0.50%	0.26%	0.15%	0.07%	0.13%	15.08%
Aa	7.62%	74.97%	3.82%	1.59%	0.54%	0.11%	0.41%	10.95%
A	2.46%	5.44%	75.99%	3.61%	1.24%	0.49%	0.99%	9.79%
Baa	0.72%	1.15%	4.67%	72.71%	3.66%	1.89%	2.44%	12.75%
Ba	0.00%	0.21%	1.94%	5.24%	73.79%	4.04%	6.45%	8.33%
B	0.11%	0.11%	0.22%	0.43%	5.86%	77.31%	7.17%	8.79%
Caa or below	0.00%	0.00%	0.00%	0.00%	2.70%	0.00%	81.08%	16.22%
4-year								
Aaa	68.50%	2.50%	0.91%	0.40%	0.38%	0.16%	0.28%	26.87%
Aa	11.49%	60.93%	4.79%	2.47%	1.22%	0.54%	1.01%	17.55%
A	2.80%	6.90%	60.51%	4.54%	1.74%	0.83%	2.28%	20.40%
Baa	0.77%	1.39%	5.68%	55.97%	5.54%	2.76%	6.35%	21.53%
Ba	0.06%	0.45%	2.57%	6.03%	59.44%	5.26%	11.75%	14.44%
B	0.00%	0.00%	0.14%	0.68%	5.98%	63.99%	14.81%	14.40%
Caa or below	0.00%	0.00%	0.00%	0.00%	2.86%	0.00%	77.14%	20.00%
5-year								
Aaa	56.05%	2.11%	0.77%	0.48%	0.39%	0.27%	0.50%	39.43%
Aa	14.79%	48.80%	5.81%	2.82%	1.30%	0.83%	1.75%	23.90%
A	2.75%	6.16%	50.76%	3.02%	2.06%	0.81%	2.96%	31.48%
Baa	1.02%	1.22%	5.42%	47.79%	5.25%	2.58%	9.12%	27.59%
Ba	0.09%	0.35%	1.59%	6.18%	53.05%	4.94%	14.03%	19.77%
B	0.00%	0.00%	0.18%	0.73%	3.29%	58.68%	20.48%	16.64%
Caa or below	0.00%	0.00%	0.00%	0.00%	3.57%	3.57%	75.00%	17.86%
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	95.43%	3.03%	0.82%	0.23%	0.09%	0.00%	0.41%	0.00%
Aa	17.62%	73.82%	3.72%	1.61%	0.74%	0.62%	1.86%	0.00%
A	7.03%	9.21%	75.69%	3.89%	1.80%	0.76%	1.61%	0.00%
Baa	5.63%	3.95%	8.38%	68.26%	5.51%	2.51%	5.75%	0.00%
Ba	0.89%	1.79%	4.46%	9.38%	63.84%	8.48%	11.16%	0.00%
B	0.00%	0.00%	1.10%	10.99%	10.99%	46.15%	30.77%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	80.00%	0.00%

25. The bottom-most matrix in the matrices by original rating contains information about the withdrawn ratings (last column) from the 5-year cohort. The row represents the original rating of the withdrawn security and the column shows the rating prior to withdrawal. See Appendix II for more details.

Figure 69 - US ABS Rating Transition Matrices by Original Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	99.26%	0.21%	0.00%	0.02%	0.00%	0.02%	0.19%	0.31%
Aa	0.26%	98.76%	0.26%	0.06%	0.03%	0.00%	0.26%	0.37%
A	0.04%	0.22%	98.74%	0.66%	0.04%	0.04%	0.02%	0.24%
Baa	0.00%	0.00%	0.15%	99.01%	0.47%	0.09%	0.04%	0.24%
Ba	0.00%	0.00%	0.00%	0.83%	97.62%	0.72%	0.21%	0.62%
B	0.00%	0.00%	0.00%	0.00%	0.00%	97.85%	2.15%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
2-year								
Aaa	94.34%	1.09%	0.17%	0.02%	0.10%	0.02%	0.35%	3.90%
Aa	0.97%	93.79%	1.15%	0.74%	0.05%	0.05%	0.83%	2.44%
A	0.42%	1.73%	93.32%	2.10%	0.31%	0.17%	0.36%	1.59%
Baa	0.13%	0.03%	1.37%	92.25%	1.81%	0.63%	0.57%	3.21%
Ba	0.00%	0.00%	0.00%	2.00%	85.83%	3.59%	4.79%	3.79%
B	0.00%	0.00%	0.00%	0.00%	0.00%	93.98%	4.82%	1.20%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
3-year								
Aaa	81.24%	2.07%	0.65%	0.12%	0.27%	0.15%	0.33%	15.18%
Aa	4.30%	81.02%	2.91%	2.45%	0.73%	0.13%	1.39%	7.08%
A	1.99%	3.46%	80.56%	4.06%	1.13%	0.49%	1.28%	7.03%
Baa	1.02%	0.68%	2.29%	79.08%	4.23%	2.34%	3.26%	7.10%
Ba	0.00%	0.00%	0.59%	1.48%	64.50%	5.03%	17.46%	10.95%
B	0.00%	0.00%	0.00%	0.00%	0.00%	67.53%	24.68%	7.79%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
4-year								
Aaa	66.17%	2.06%	0.77%	0.35%	0.63%	0.28%	0.66%	29.09%
Aa	5.74%	65.30%	4.46%	3.17%	1.71%	0.86%	3.17%	15.60%
A	1.23%	3.56%	64.56%	5.17%	1.90%	0.95%	2.89%	19.73%
Baa	0.64%	0.57%	2.12%	57.86%	8.92%	3.90%	8.92%	17.07%
Ba	0.00%	1.00%	0.33%	2.33%	48.00%	4.67%	25.67%	18.00%
B	0.00%	0.00%	1.39%	0.00%	1.39%	48.61%	23.61%	25.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
5-year								
Aaa	49.61%	1.46%	0.53%	0.57%	0.53%	0.41%	1.14%	45.76%
Aa	5.05%	50.44%	6.37%	4.18%	1.21%	1.43%	4.51%	26.81%
A	1.68%	2.44%	50.93%	2.85%	2.44%	0.99%	3.72%	34.96%
Baa	0.58%	0.48%	1.84%	46.62%	7.93%	3.58%	12.86%	26.11%
Ba	0.00%	0.89%	0.44%	3.11%	36.44%	4.44%	31.11%	23.56%
B	0.00%	0.00%	1.47%	1.47%	4.41%	38.24%	16.18%	38.24%
Caa or below								
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	96.01%	2.48%	0.53%	0.18%	0.09%	0.00%	0.71%	0.00%
Aa	13.52%	76.64%	3.28%	1.23%	0.00%	0.41%	4.92%	0.00%
A	6.31%	5.81%	82.56%	2.99%	0.33%	0.33%	1.66%	0.00%
Baa	9.26%	2.96%	5.93%	71.11%	1.48%	1.11%	8.15%	0.00%
Ba	0.00%	1.89%	1.89%	1.89%	73.58%	5.66%	15.09%	0.00%
B	0.00%	0.00%	0.00%	0.00%	0.00%	19.23%	80.77%	0.00%
Caa or below								

Figure 70 - US HEL Rating Transition Matrices by Original Rating (1989-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	99.67%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.29%
Aa	0.07%	99.60%	0.07%	0.00%	0.00%	0.00%	0.00%	0.26%
A	0.00%	0.07%	99.83%	0.00%	0.00%	0.00%	0.00%	0.10%
Baa	0.00%	0.00%	0.05%	99.62%	0.11%	0.00%	0.00%	0.22%
Ba	0.00%	0.00%	0.00%	0.14%	99.58%	0.00%	0.00%	0.28%
B	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
Caa or below								
2-year								
Aaa	93.80%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	6.13%
Aa	0.47%	97.05%	0.47%	0.07%	0.00%	0.00%	0.00%	1.94%
A	0.00%	0.29%	98.46%	0.29%	0.00%	0.00%	0.00%	0.97%
Baa	0.00%	0.00%	0.13%	95.10%	0.83%	0.22%	0.04%	3.67%
Ba	0.00%	0.00%	0.00%	0.36%	94.91%	1.09%	1.82%	1.82%
B	0.00%	0.00%	0.00%	0.00%	0.00%	94.55%	3.64%	1.82%
Caa or below								
3-year								
Aaa	74.80%	0.79%	0.40%	0.00%	0.10%	0.00%	0.00%	23.91%
Aa	4.67%	86.11%	1.22%	0.78%	0.22%	0.11%	0.00%	6.89%
A	0.00%	4.26%	89.55%	1.62%	0.41%	0.00%	0.20%	3.96%
Baa	0.00%	0.15%	2.01%	84.85%	2.86%	1.39%	1.16%	7.57%
Ba	0.00%	0.00%	0.00%	0.74%	83.70%	2.22%	5.93%	7.41%
B	0.00%	0.00%	0.00%	0.00%	0.00%	74.07%	14.81%	11.11%
Caa or below								
4-year								
Aaa	70.82%	1.43%	0.57%	0.43%	0.14%	0.00%	0.43%	26.18%
Aa	7.58%	73.06%	4.35%	1.45%	0.48%	0.32%	0.65%	12.10%
A	0.33%	6.51%	73.79%	5.68%	2.17%	0.67%	0.83%	10.02%
Baa	0.14%	0.27%	2.45%	59.67%	10.22%	4.50%	6.95%	15.80%
Ba	0.00%	1.68%	0.00%	3.36%	62.18%	5.04%	12.61%	15.13%
B	0.00%	0.00%	1.92%	0.00%	1.92%	55.77%	15.38%	25.00%
Caa or below								
5-year								
Aaa	64.53%	2.00%	0.60%	0.20%	0.00%	0.00%	1.40%	31.26%
Aa	5.36%	56.41%	7.69%	3.26%	0.70%	0.00%	0.70%	25.87%
A	1.73%	6.44%	57.67%	5.20%	4.21%	1.73%	1.49%	21.53%
Baa	0.22%	0.22%	3.36%	48.10%	8.72%	3.58%	12.75%	23.04%
Ba	0.00%	1.03%	1.03%	5.15%	51.55%	3.09%	15.46%	22.68%
B	0.00%	0.00%	2.00%	2.00%	6.00%	44.00%	6.00%	40.00%
Caa or below								
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	99.36%	0.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	18.02%	77.48%	0.00%	0.00%	0.00%	0.90%	3.60%	0.00%
A	1.15%	9.20%	85.06%	2.30%	1.15%	0.00%	1.15%	0.00%
Baa	0.97%	2.91%	8.74%	66.99%	2.91%	2.91%	14.56%	0.00%
Ba	0.00%	4.55%	0.00%	4.55%	54.55%	13.64%	22.73%	0.00%
B	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	90.00%	0.00%
Caa or below								

Figure 71 - US Non-Mortgage ABS Rating Transition Matrices by Original Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	98.89%	0.36%	0.00%	0.04%	0.00%	0.04%	0.36%	0.32%
Aa	1.29%	94.28%	1.11%	0.37%	0.18%	0.00%	1.66%	1.11%
A	0.05%	0.43%	97.12%	1.66%	0.11%	0.11%	0.05%	0.48%
Baa	0.00%	0.00%	0.71%	97.00%	1.43%	0.14%	0.29%	0.43%
Ba	0.00%	0.00%	0.00%	2.55%	91.33%	3.06%	1.02%	2.04%
B	0.00%	0.00%	0.00%	0.00%	0.00%	96.55%	3.45%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
2-year								
Aaa	95.29%	1.47%	0.09%	0.04%	0.04%	0.04%	0.61%	2.42%
Aa	3.03%	83.98%	2.38%	2.16%	0.22%	0.22%	3.25%	4.76%
A	0.81%	3.23%	88.45%	3.93%	0.46%	0.23%	0.58%	2.31%
Baa	0.67%	0.17%	6.66%	83.53%	3.16%	1.16%	1.83%	2.83%
Ba	0.00%	0.00%	0.00%	4.60%	77.59%	5.17%	4.60%	8.05%
B	0.00%	0.00%	0.00%	0.00%	0.00%	96.15%	3.85%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
3-year								
Aaa	85.16%	2.21%	0.23%	0.14%	0.05%	0.14%	0.47%	11.60%
Aa	3.80%	70.63%	5.32%	5.82%	0.76%	0.25%	3.04%	10.38%
A	3.03%	3.03%	76.11%	5.50%	1.07%	0.63%	1.33%	9.29%
Baa	4.21%	2.40%	3.41%	67.54%	3.81%	3.41%	5.81%	9.42%
Ba	0.00%	0.00%	0.66%	1.99%	57.62%	5.30%	17.22%	17.22%
B	0.00%	0.00%	0.00%	0.00%	0.00%	57.14%	42.86%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
4-year								
Aaa	65.11%	1.66%	0.67%	0.31%	0.16%	0.10%	0.57%	31.42%
Aa	2.10%	47.90%	3.59%	6.29%	3.89%	1.80%	4.19%	30.24%
A	1.34%	2.18%	61.93%	4.93%	1.41%	0.99%	2.39%	24.84%
Baa	1.90%	0.95%	1.90%	51.42%	3.32%	2.61%	9.95%	27.96%
Ba	0.00%	0.00%	0.78%	0.78%	44.96%	3.88%	22.48%	27.13%
B	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	38.89%	27.78%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
5-year								
Aaa	44.28%	0.80%	0.51%	0.51%	0.34%	0.17%	0.57%	52.80%
Aa	0.35%	33.57%	4.24%	5.65%	2.12%	3.89%	5.65%	44.52%
A	1.04%	0.88%	49.84%	2.09%	1.61%	0.80%	2.97%	40.77%
Baa	0.57%	0.29%	0.57%	37.82%	1.72%	2.58%	10.32%	46.13%
Ba	0.00%	0.00%	0.00%	0.00%	26.74%	4.65%	32.56%	36.05%
B	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	37.50%	37.50%
Caa or below								
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	96.10%	2.49%	0.22%	0.22%	0.11%	0.00%	0.87%	0.00%
Aa	8.73%	76.19%	6.35%	2.38%	0.00%	0.00%	6.35%	0.00%
A	7.28%	5.31%	82.68%	3.15%	0.20%	0.39%	0.98%	0.00%
Baa	14.91%	3.11%	4.35%	73.91%	0.62%	0.00%	3.11%	0.00%
Ba	0.00%	0.00%	3.23%	0.00%	87.10%	0.00%	9.68%	0.00%
B	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%
Caa or below								

Figure 72 - US CDO Rating Transition Matrices by Original Rating (1990-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	98.42%	0.70%	0.09%	0.00%	0.00%	0.00%	0.00%	0.79%
Aa	0.00%	98.66%	0.56%	0.22%	0.00%	0.00%	0.00%	0.56%
A	0.00%	0.00%	97.82%	1.20%	0.33%	0.00%	0.00%	0.66%
Baa	0.00%	0.00%	0.09%	97.73%	1.13%	0.35%	0.00%	0.70%
Ba	0.00%	0.00%	0.00%	0.00%	97.69%	0.38%	0.77%	1.15%
B	0.00%	0.00%	0.00%	0.00%	0.00%	94.12%	2.35%	3.53%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
2-year								
Aaa	94.35%	1.29%	0.35%	0.35%	0.00%	0.00%	0.00%	3.65%
Aa	0.32%	92.97%	2.24%	0.96%	0.32%	0.16%	0.00%	3.04%
A	0.00%	0.46%	92.04%	3.22%	0.61%	0.46%	0.31%	2.91%
Baa	0.00%	0.23%	0.34%	91.27%	3.51%	0.79%	1.36%	2.49%
Ba	0.00%	0.00%	0.00%	0.24%	91.44%	2.44%	3.18%	2.69%
B	0.00%	0.00%	0.00%	0.00%	0.00%	85.00%	8.75%	6.25%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
3-year								
Aaa	85.28%	4.91%	0.77%	0.92%	0.15%	0.00%	0.00%	7.98%
Aa	1.63%	78.46%	8.13%	4.07%	1.22%	0.41%	0.00%	6.10%
A	0.83%	1.66%	78.26%	4.76%	2.90%	1.24%	1.24%	9.11%
Baa	0.00%	0.42%	0.85%	73.94%	6.94%	4.67%	6.66%	6.52%
Ba	0.00%	0.00%	0.00%	1.15%	72.62%	7.78%	13.83%	4.61%
B	0.00%	0.00%	0.00%	0.00%	0.00%	58.67%	30.67%	10.67%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
4-year								
Aaa	69.83%	8.51%	4.84%	1.16%	0.77%	0.39%	0.00%	14.51%
Aa	0.53%	62.17%	9.79%	8.73%	4.23%	2.38%	1.06%	11.11%
A	0.28%	1.94%	58.89%	6.11%	4.44%	1.94%	5.00%	21.39%
Baa	0.00%	0.00%	0.69%	54.12%	6.53%	7.04%	17.87%	13.75%
Ba	0.00%	0.00%	0.00%	0.67%	52.19%	8.08%	26.26%	12.79%
B	0.00%	0.00%	0.00%	0.00%	0.00%	47.30%	40.54%	12.16%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
5-year								
Aaa	54.31%	8.62%	5.74%	2.35%	1.31%	1.04%	0.00%	26.63%
Aa	1.39%	45.99%	11.50%	10.45%	6.27%	3.48%	3.83%	17.07%
A	0.00%	1.22%	44.31%	5.69%	4.07%	3.25%	6.91%	34.55%
Baa	0.00%	0.00%	0.00%	38.56%	7.63%	7.63%	25.05%	21.13%
Ba	0.00%	0.00%	0.00%	0.84%	40.59%	5.86%	29.71%	23.01%
B	0.00%	0.00%	0.00%	0.00%	0.00%	39.44%	50.70%	9.86%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	87.25%	6.86%	4.90%	0.98%	0.00%	0.00%	0.00%	0.00%
Aa	2.04%	77.55%	8.16%	6.12%	4.08%	0.00%	2.04%	0.00%
A	1.18%	7.06%	80.00%	3.53%	7.06%	0.00%	1.18%	0.00%
Baa	1.03%	1.03%	4.12%	75.26%	7.22%	3.09%	8.25%	0.00%
Ba	0.00%	0.00%	0.00%	5.45%	67.27%	10.91%	16.36%	0.00%
B	0.00%	0.00%	0.00%	0.00%	0.00%	71.43%	28.57%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%

Figure 73 - US CDO (excl. HY CBOs) Rating Transition Matrices by Original Rating (1990-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	98.22%	0.79%	0.10%	0.00%	0.00%	0.00%	0.00%	0.89%
Aa	0.00%	98.51%	0.62%	0.25%	0.00%	0.00%	0.00%	0.62%
A	0.00%	0.00%	97.67%	1.28%	0.35%	0.00%	0.00%	0.70%
Baa	0.00%	0.00%	0.10%	97.73%	0.93%	0.41%	0.00%	0.83%
Ba	0.00%	0.00%	0.00%	0.00%	97.12%	0.48%	0.96%	1.44%
B	0.00%	0.00%	0.00%	0.00%	0.00%	91.11%	2.22%	6.67%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
2-year								
Aaa	93.96%	1.10%	0.41%	0.27%	0.00%	0.00%	0.00%	4.26%
Aa	0.37%	92.36%	2.23%	0.93%	0.37%	0.19%	0.00%	3.54%
A	0.00%	0.50%	91.67%	3.33%	0.50%	0.50%	0.33%	3.17%
Baa	0.00%	0.28%	0.42%	91.81%	2.54%	0.56%	1.41%	2.97%
Ba	0.00%	0.00%	0.00%	0.32%	92.90%	1.61%	1.61%	3.55%
B	0.00%	0.00%	0.00%	0.00%	0.00%	82.50%	5.00%	12.50%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
3-year								
Aaa	87.01%	2.07%	0.75%	0.19%	0.19%	0.00%	0.00%	9.79%
Aa	1.99%	80.40%	7.44%	1.99%	0.74%	0.25%	0.00%	7.20%
A	0.93%	1.86%	79.58%	4.18%	1.86%	0.93%	1.16%	9.51%
Baa	0.00%	0.56%	1.13%	79.55%	3.94%	2.63%	4.50%	7.69%
Ba	0.00%	0.00%	0.00%	1.61%	81.85%	4.84%	6.05%	5.65%
B	0.00%	0.00%	0.00%	0.00%	0.00%	74.29%	11.43%	14.29%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
4-year								
Aaa	72.86%	5.53%	3.27%	0.50%	0.25%	0.25%	0.00%	17.34%
Aa	0.69%	66.67%	8.59%	4.81%	3.09%	2.41%	0.00%	13.75%
A	0.32%	2.25%	61.09%	6.11%	2.89%	1.29%	3.54%	22.51%
Baa	0.00%	0.00%	0.97%	60.63%	4.83%	4.35%	12.32%	16.91%
Ba	0.00%	0.00%	0.00%	1.00%	61.69%	4.98%	15.42%	16.92%
B	0.00%	0.00%	0.00%	0.00%	0.00%	67.65%	14.71%	17.65%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
5-year								
Aaa	54.68%	5.62%	3.37%	0.75%	1.50%	0.37%	0.00%	33.71%
Aa	1.99%	53.73%	8.46%	4.48%	4.98%	2.49%	1.99%	21.89%
A	0.00%	1.49%	45.54%	5.45%	1.98%	1.49%	4.95%	39.11%
Baa	0.00%	0.00%	0.00%	45.76%	5.76%	5.08%	15.59%	27.80%
Ba	0.00%	0.00%	0.00%	1.38%	49.66%	2.07%	13.10%	33.79%
B	0.00%	0.00%	0.00%	0.00%	0.00%	65.63%	21.88%	12.50%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	85.56%	7.78%	5.56%	1.11%	0.00%	0.00%	0.00%	0.00%
Aa	2.27%	77.27%	9.09%	4.55%	4.55%	0.00%	2.27%	0.00%
A	1.27%	7.59%	79.75%	3.80%	6.33%	0.00%	1.27%	0.00%
Baa	1.22%	1.22%	4.88%	70.73%	8.54%	3.66%	9.76%	0.00%
Ba	0.00%	0.00%	0.00%	6.12%	67.35%	8.16%	18.37%	0.00%
B	0.00%	0.00%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%

Figure 74 - US CMBS Rating Transition Matrices by Original Rating (1987-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	98.70%	0.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.98%
Aa	1.33%	97.22%	0.33%	0.00%	0.00%	0.00%	0.00%	1.11%
A	0.10%	0.72%	98.46%	0.31%	0.00%	0.00%	0.00%	0.41%
Baa	0.00%	0.07%	0.13%	97.85%	0.67%	0.07%	0.00%	1.21%
Ba	0.00%	0.00%	0.00%	0.00%	99.29%	0.35%	0.00%	0.35%
B	0.00%	0.00%	0.00%	0.00%	0.14%	99.30%	0.28%	0.28%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	96.55%	3.45%
2-year								
Aaa	89.66%	1.15%	0.00%	0.00%	0.00%	0.00%	0.00%	9.20%
Aa	9.09%	81.68%	0.96%	0.00%	0.00%	0.14%	0.00%	8.13%
A	1.85%	5.54%	85.10%	1.11%	0.12%	0.00%	0.00%	6.28%
Baa	0.24%	0.64%	3.26%	81.46%	2.23%	0.16%	0.08%	11.93%
Ba	0.00%	0.00%	0.30%	1.50%	94.61%	1.35%	0.00%	2.25%
B	0.17%	0.00%	0.00%	0.35%	0.69%	96.02%	1.04%	1.73%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	93.10%	6.90%
3-year								
Aaa	80.18%	2.03%	0.23%	0.00%	0.00%	0.00%	0.00%	17.57%
Aa	9.97%	70.28%	1.22%	1.05%	0.00%	0.00%	0.00%	17.48%
A	2.91%	5.52%	76.07%	1.23%	1.38%	0.15%	0.00%	12.73%
Baa	0.47%	1.23%	3.89%	64.77%	2.56%	0.85%	0.19%	26.02%
Ba	0.00%	0.19%	0.96%	1.54%	88.44%	3.28%	0.19%	5.39%
B	0.22%	0.22%	0.22%	0.44%	1.09%	88.24%	4.58%	5.01%
Caa or below	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	89.66%	6.90%
4-year								
Aaa	74.73%	1.34%	0.27%	0.00%	0.00%	0.00%	0.00%	23.66%
Aa	17.28%	55.72%	0.65%	0.43%	0.43%	0.00%	0.22%	25.27%
A	3.45%	12.07%	62.26%	2.49%	0.77%	0.00%	0.00%	18.97%
Baa	0.93%	1.28%	7.44%	52.91%	3.49%	0.35%	0.00%	33.60%
Ba	0.24%	0.49%	0.24%	4.85%	76.21%	7.52%	1.46%	8.98%
B	0.00%	0.00%	0.00%	0.27%	1.90%	73.64%	15.76%	8.42%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	88.89%	11.11%
5-year								
Aaa	67.43%	1.64%	0.66%	0.00%	0.00%	0.00%	0.00%	30.26%
Aa	18.82%	46.24%	0.81%	0.27%	0.54%	0.00%	0.54%	32.80%
A	4.46%	10.89%	56.44%	2.23%	1.24%	0.00%	0.00%	24.75%
Baa	1.70%	1.39%	7.11%	49.92%	3.40%	0.15%	0.31%	36.01%
Ba	0.00%	0.69%	0.35%	2.78%	68.75%	9.38%	2.43%	15.63%
B	0.00%	0.00%	0.00%	0.00%	2.22%	62.59%	22.22%	12.96%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	4.17%	83.33%	12.50%
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	96.74%	2.17%	1.09%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	36.89%	58.20%	0.82%	2.46%	0.00%	0.82%	0.82%	0.00%
A	19.00%	22.00%	49.00%	2.00%	7.00%	0.00%	1.00%	0.00%
Baa	8.15%	6.01%	10.30%	60.09%	9.01%	4.29%	2.15%	0.00%
Ba	4.44%	6.67%	15.56%	15.56%	48.89%	6.67%	2.22%	0.00%
B	0.00%	0.00%	2.86%	20.00%	20.00%	45.71%	11.43%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%

Figure 75 - US RMBS Rating Transition Matrices by Original Rating (1984-2006)

1-year	Aaa	Aa	A	Baa	Ba	B	Caa or below	WR
Aaa	99.37%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.35%
Aa	0.69%	97.91%	0.78%	0.00%	0.00%	0.00%	0.00%	0.62%
A	0.00%	0.59%	99.19%	0.05%	0.00%	0.00%	0.00%	0.16%
Baa	0.05%	0.00%	0.51%	99.14%	0.00%	0.00%	0.00%	0.30%
Ba	0.00%	0.00%	0.00%	1.02%	98.60%	0.00%	0.00%	0.38%
B	0.00%	0.00%	0.00%	0.00%	0.90%	99.10%	0.00%	0.00%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
2-year								
Aaa	96.14%	0.77%	0.03%	0.00%	0.00%	0.00%	0.00%	3.05%
Aa	6.07%	89.29%	2.56%	0.04%	0.00%	0.00%	0.00%	2.04%
A	0.66%	8.07%	88.71%	0.41%	0.00%	0.00%	0.00%	2.14%
Baa	0.32%	0.39%	7.27%	89.34%	0.08%	0.08%	0.00%	2.53%
Ba	0.00%	0.50%	0.50%	9.30%	87.54%	0.17%	0.00%	1.99%
B	0.00%	0.00%	0.28%	0.55%	9.39%	87.57%	0.00%	2.21%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
3-year								
Aaa	83.38%	0.97%	0.16%	0.12%	0.00%	0.00%	0.00%	15.38%
Aa	12.09%	75.35%	4.45%	0.26%	0.16%	0.00%	0.00%	7.69%
A	5.37%	14.16%	67.24%	1.48%	0.23%	0.00%	0.34%	11.19%
Baa	0.76%	3.14%	13.96%	68.07%	0.97%	0.54%	0.11%	12.45%
Ba	0.00%	0.63%	6.25%	15.83%	66.88%	0.63%	0.83%	8.96%
B	0.00%	0.00%	0.35%	0.70%	17.19%	69.12%	1.05%	11.58%
Caa or below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
4-year								
Aaa	70.53%	1.27%	0.29%	0.10%	0.10%	0.00%	0.00%	27.72%
Aa	18.32%	61.39%	5.23%	1.07%	0.36%	0.12%	0.00%	13.50%
A	8.66%	15.12%	52.28%	2.06%	0.88%	0.15%	0.59%	20.26%
Baa	1.77%	4.91%	12.01%	57.71%	1.09%	0.95%	1.77%	19.78%
Ba	0.00%	0.52%	9.42%	14.40%	58.64%	0.79%	2.09%	14.14%
B	0.00%	0.00%	0.00%	1.44%	17.22%	60.29%	1.91%	19.14%
Caa or below	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
5-year								
Aaa	65.81%	1.75%	0.25%	0.19%	0.13%	0.06%	0.00%	31.81%
Aa	24.71%	50.79%	6.30%	1.37%	0.82%	0.34%	0.27%	15.40%
A	7.07%	15.20%	57.17%	2.57%	1.07%	0.21%	0.64%	16.06%
Baa	2.42%	3.72%	12.10%	60.89%	1.68%	0.56%	2.79%	15.83%
Ba	0.37%	0.00%	5.51%	16.18%	66.91%	0.74%	1.84%	8.46%
B	0.00%	0.00%	0.00%	2.27%	6.82%	72.73%	3.79%	14.39%
Caa or below	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
For WR ratings in the 5-year cohort								
Rating before WR								
Aaa	96.65%	2.95%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	18.67%	76.44%	4.00%	0.44%	0.00%	0.00%	0.44%	0.00%
A	5.33%	22.67%	69.33%	2.67%	0.00%	0.00%	0.00%	0.00%
Baa	1.18%	7.06%	12.94%	76.47%	1.18%	1.18%	0.00%	0.00%
Ba	0.00%	0.00%	8.70%	21.74%	56.52%	0.00%	13.04%	0.00%
B	0.00%	0.00%	0.00%	10.53%	15.79%	68.42%	5.26%	0.00%
Caa or below								

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