Special Comment

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The Performance of Structured Finance Ratings: Full-Year 2007 Report

Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of December 2007. The highlights of this report are:

- Overall, 2,090 structured finance securities became impaired in 2007: 20 in US ABS excluding HEL, 1,384 in US HEL, 112 in US RMBS, 13 in US CMBS, 537 in global CDOs, one in the international structured finance sector excluding CDOs and Other SF, and 21 in Other SF. Of these, 1,780 were principal impairments (suffered principal losses or were downgraded to Ca or C), while the remaining 310 were interest impairments (experienced interest shortfalls only).

- The one-year accuracy ratio for the most recent cohort was 77.2%, which is 13.1 percentage points lower than its six months-prior level and 9.0 percentage points lower than the historical average.[1] The decline in performance can be attributed to the US housing crisis and its negative impact on securities with exposure to US subprime mortgages.

- The five-year accuracy ratio, which is a lagged indicator of performance, was 80.1%, 3.3 percentage points higher than its level of 76.8% six months ago.

- The one-year investment-grade loss rate jumped to 0.59% for the cohort ending December 2007, a historical high and a more than five-fold increase from the historical average of 0.11%.

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[1] These performance metrics should be interpreted with caution. Some statistics are based on small samples, as the number of impairments in any given year and any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors. Moreover, variations in rating performance over time may reflect either changes in the quality of the rating process or changes in the environment that make losses more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

Moody's Investors Service

- The average rating during the three years prior to impairment of all securities that were impaired for the cohort ending in December 2007 rose to Baa3, three notches above the average rating prior to impairment for the cohort ending six months earlier, and a notch above the historical average.

- The one-year rating action rate more than doubled in the most recent cohort to 9.6% compared to its six months-prior level. Meanwhile, the frequency of large rating actions (rating changes of three notches or more) more than tripled over the same time period. Both increases were caused by an upsurge in the downgrade rate, particularly for US HEL.

- Performance was mixed among the various sectors of structured finance (Figure 2). US HEL, US RMBS, and global CDOs all experienced lower than average one-year accuracy ratios and higher than average one-year investment-grade loss rates compared to the historical experience. The reverse was true for US ABS excluding HEL, US CMBS, and the international structured finance sector excluding CDOs and Other SF, all of which exhibited one-year accuracy ratios above 95% and one-year investment-grade loss rates at or below 0.1%.

Figure 1 – Summary of All Structured Finance Rating Performance as of December 2007[2]

Cohort Ending Date	Number of New Impair- ments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Invest- ment- Grade Loss Rate	36- Month- Average Rating Before Impair- ment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
December 2007	2090	77.2%	80.1%	0.59%	Baa3	9.6%	6.4%
June 2007	187	90.3%	76.8%	0.04%	Ba3	4.6%	2.1%
December 2006	108	96.4%	78.4%	0.01%	B2	4.8%	2.1%
June 2006	90	97.2%	79.7%	0.00%	B2	4.2%	1.7%
Average (1993-Most Recent)	220	86.2%	84.1%	0.11%	Ba1	4.9%	2.4%

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[2] A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment shortfalls can be cured and past remittance or trustee reports may be revised. In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using loss-given-default (LGD) from principal impaired securities alone. For more details, see the entry for LGD in the glossary. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer unless rounding results in zero.

Figure 2 – Summary of Structured Finance Rating Performance by Sector as of December 2007

	Number of New Impairments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Invest-ment-Grade Loss Rate	36-Month-Average Rating Before Impair-ment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending December 2007							
US ABS ex HEL	20	96.2%	82.2%	0.01%	B3	2.9%	0.9%
US HEL (includes subprime)	1384	74.7%	88.0%	1.81%	Ba1	19.1%	14.9%
US RMBS (includes Alt-A)	112	93.3%	90.9%	0.06%	Ba1	5.4%	3.5%
US CMBS	13	95.7%	90.4%	0.00%	B3	11.0%	3.4%
Global CDOs	537	61.7%	61.8%	0.66%	Baa2	9.9%	6.8%
Int'l SF ex CDO & Other SF	3	99.9%	95.3%	0.00%	Caa3	3.4%	1.1%
Other SF	21	57.5%	73.3%	2.83%	Baa1	7.0%	5.8%
Historical Averages Since 1993							
US ABS ex HEL	33	86.2%	80.2%	0.22%	Ba1	5.7%	3.3%
US HEL (includes subprime)	108	88.5%	91.4%	0.19%	Ba1	3.8%	2.6%
US RMBS (includes Alt-A)	11	94.8%	96.1%	0.01%	Ba2	2.8%	1.1%
US CMBS	8	92.5%	87.9%	0.01%	B3	12.3%	4.2%
Global CDOs	58	76.8%	64.0%	0.33%	Baa3	8.6%	4.6%
Int'l SF ex CDO & Other SF	1	70.4%	83.2%	0.01%	Ba1	4.1%	1.3%
Other SF	1	59.3%	81.5%	0.09%	Baa1	1.7%	0.3%

Introduction

In a Special Comment published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[3] Moody's corporate rating performance report is now updated on a quarterly basis.[4] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 Special Comment "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. In computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. In other words, Moody's structured rating performance metrics weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[5] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 Special Comment, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) – the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

Note that the criteria used to create the data set for this report have changed from prior performance studies. The most notable changes are that pari-passu tranches are no longer collapsed and wrapped tranches are included. For a more detailed description of the data sample, please see the Appendix.

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[3] See "Measuring the Performance of Corporate Bond Ratings," *Moody's Special Comment*, April 2003.
[4] For the latest performance report, see "The Performance of Moody's Corporate Bond Ratings: March 2008 Quarterly Update," *Moody's Special Comment*, May 2008.
[5] The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004. The concept of accuracy ratio is also described in the glossary at the end of this report.

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

- For global structured finance, the one-year accuracy ratio decreased to 77.2% from its level six months ago of 90.3% due to an increase in the number of material impairments in the second half of 2007 within the US HEL sector, composed mostly of securities backed by subprime mortgages, and within global CDOs, composed mostly of securities backed by a portfolio of other structured finance securities.

- Global CDOs experienced the steepest decline in the one-year accuracy ratio, dropping to 61.7% for the cohort ending December 2007, a 32 percentage point decrease from its level six months prior, and a 35 percentage point decrease from its level 12 months ago. The one-year accuracy ratio for US HEL also fell dramatically to 74.7%, a 15 percentage point decline from the cohort ending June 2007 and a 18 percentage point decline from the cohort ending December 2006.

- In contrast, the one-year accuracy ratios for US ABS excluding HEL, US RMBS, US CMBS, and international structured finance excluding CDOs and Other SF were essentially unchanged from their six months-prior levels and were all above 93%.

- Unlike their one-year counterparts, there were no dramatic movements in the five-year accuracy ratios between the July 2002 cohort and the January 2003 cohort for global structured finance or any of its sub-sectors. This statistic demonstrates performance on a lagged basis and the effects of the recent dramatic increase in material impairments have not been incorporated yet.

Figure 3 – One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios

Global Structured Finance

US ABS ex HEL

US HEL

US RMBS

US CMBS

Global CDOs

**Int'l SF ex CDO & Other SF**

Other SF
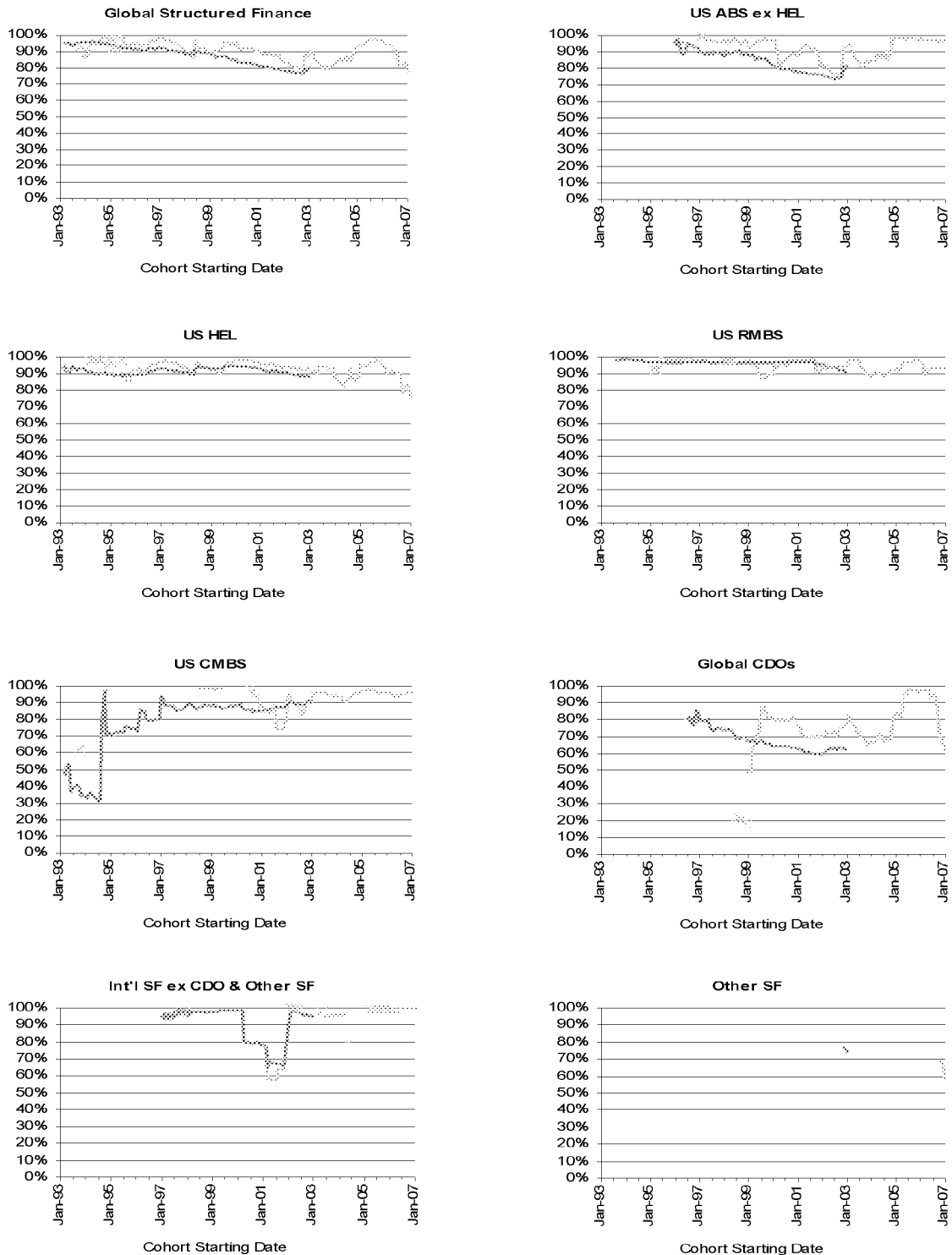
Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on January 1, 2007 and January 1, 2003. Breaks in the accuracy ratio series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

■ For global structured finance, the one-year investment-grade loss rate reached an all-time high of 0.59% for the cohort ending December 2007, up precipitously from 0.04% six months prior and 5 times higher than the historical average of 0.11%.

■ The one-year investment-grade loss rate also rose to record-breaking highs for US HEL and RMBS, increasing to an unprecedented 1.8% for HEL and 0.1% for RMBS. The loss rate for global CDOs also increased dramatically, but was still lower than the peak of 2.1% for the cohort formed in May 2001.

■ For the cohort formed in January 2007, the one-year investment-grade loss rate was zero for US CMBS and the international structured finance sector excluding CDOs and Other SF as it has been for the last 2 years. For US ABS excluding HEL, the rate was a very low 0.01%.

■ The five-year investment-grade loss rate for US HEL, US RMBS, and the Other SF sector all showed a pattern of increase over the last six months. For all other sectors, including overall structured finance, the five-year investment-grade loss rate exhibited a declining trend.

Figure 4 – One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates
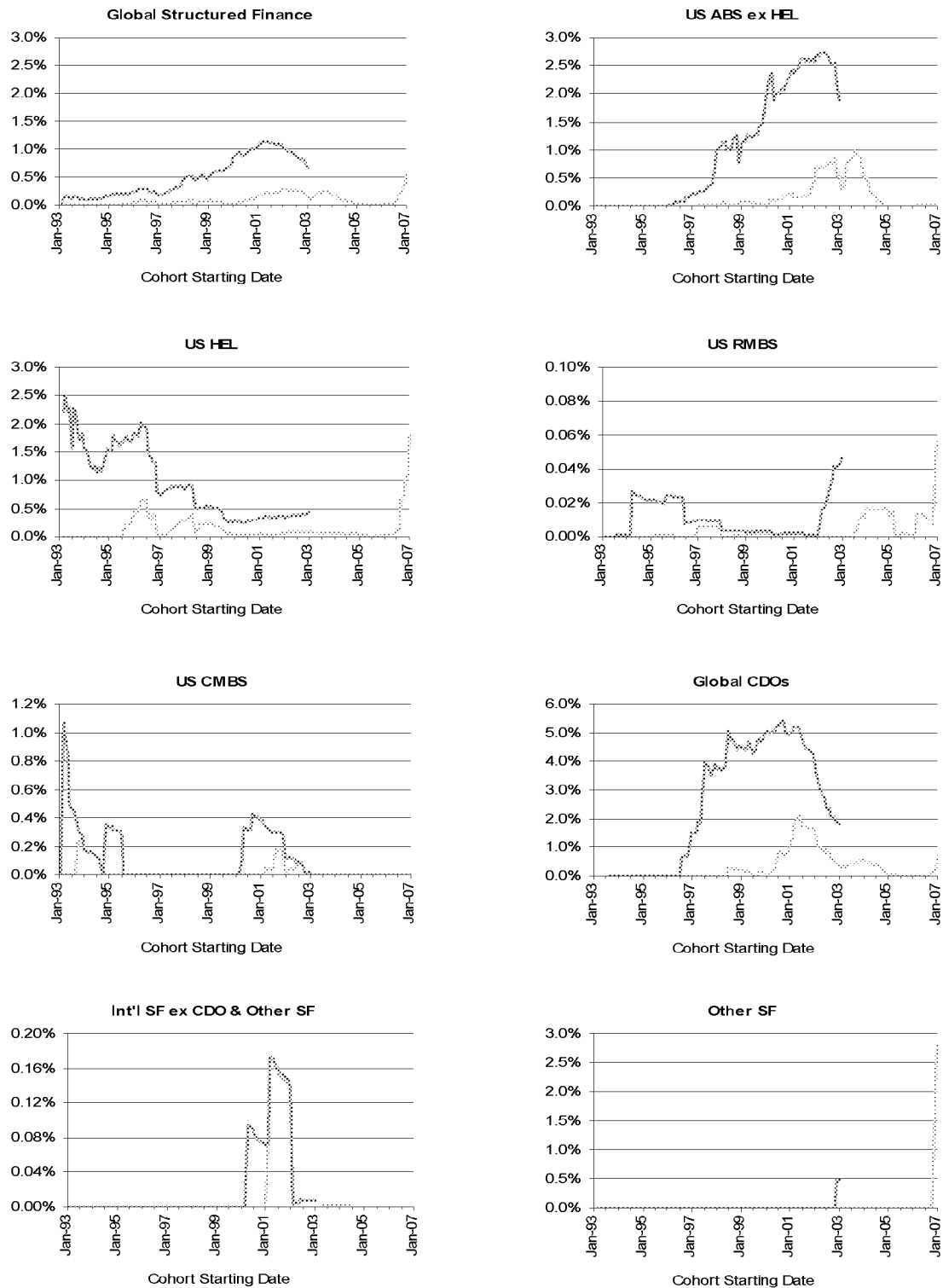
Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on January 1, 2007 and January 1, 2002.

Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

- The 36-month average rating before impairment for global structured finance rose to Baa3 for the most recent cohort, three notches up from Ba3 six months prior, and one notch above its historical average of Ba1. The increase can be attributed to increases for US HEL, US RMBS, and global CDOs.

- The average rating prior to impairment for global CDOs increased six notches to Baa2 for the cohort ending December 2007 from B2 for the cohort ending June 2007. Those of US HEL and US RMBS rose one notch and two notches, respectively, over the same time period.

- The average ratings before impairment for US ABS excluding HEL, US CMBS, and international structured finance excluding CDOs and Other SF were unchanged from their levels six months prior at B3, B3, and Caa3, respectively. In addition, all were at or below their historical averages.

Figure 5 – 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)
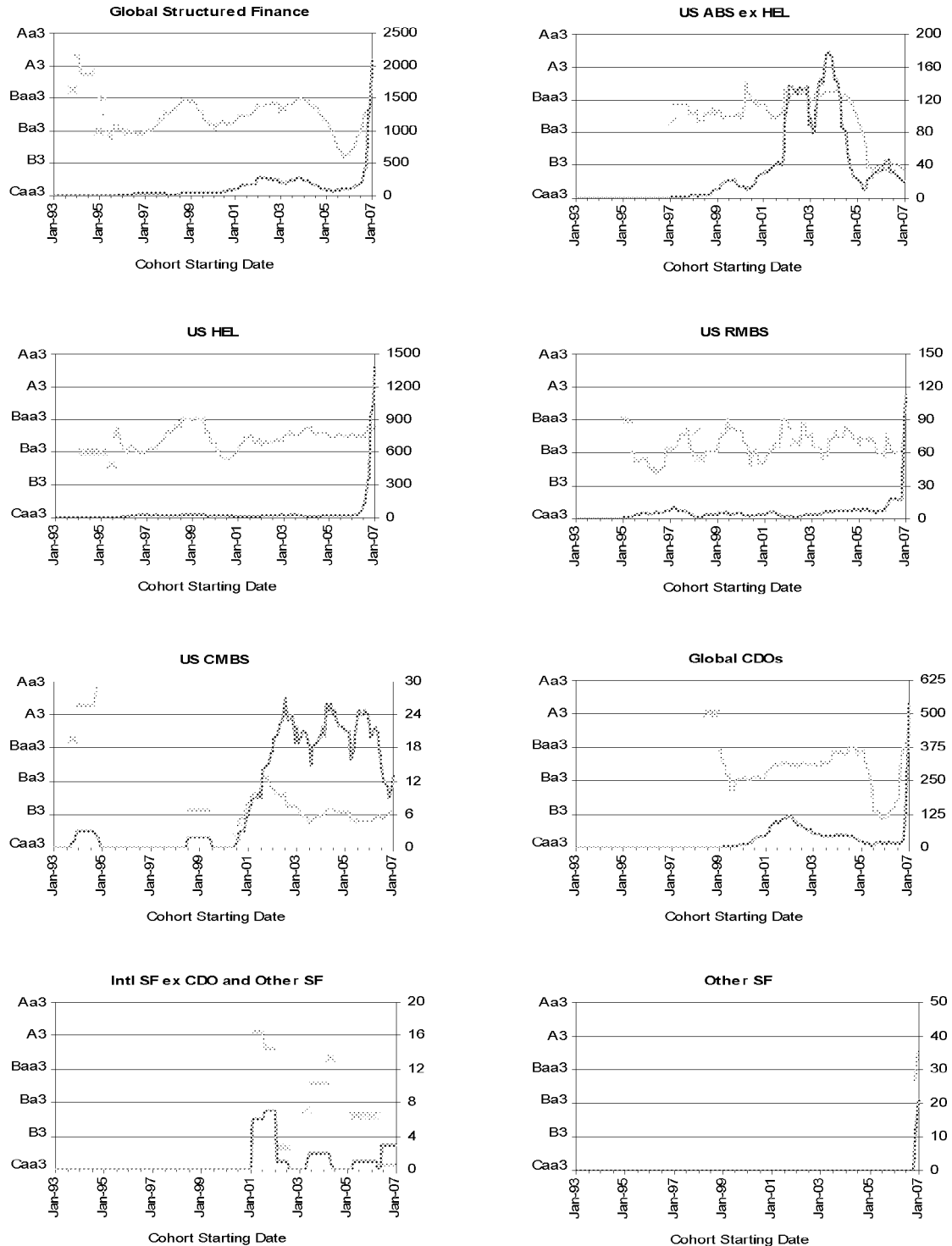
Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on January 1, 2007. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.

Rating Action Rates and Large Rating Action Rates

Figure 6 reports 12-month rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[6] Key observations include:

- The 12-month rating action rate in the global structured finance category was 9.6% for the January 2007 cohort, up roughly twofold from the rate of 4.6% six months prior and the historical level of 4.9%. The large rating action rate also increased significantly to 6.4%, from 2.1% six months ago and 2.4% historically.

- The global structured finance downgrade rate increased dramatically to a historical high of 7.4% from 1.4% six months earlier. The large downgrade rate also rose from 0.8% to 5.7% over the same period. The major contributor of structured finance downgrades was US HEL. In fact, US HEL experienced the largest increase in the downgrade rate and in the frequency of large downgrades. Downgrade rates for US RMBS, global CDOs, and Other SF also experienced large increases in the latter half of 2007. In contrast, US ABS excluding HEL, US CMBS, and the international structured finance excluding CDOs and Other SF exhibited frequencies of downgrades that were low both in absolute and historical terms.

- The overall upgrade rate for the most recent cohort was 2.2%, a decrease from both the upgrade rate of 3.2% six months ago and the rate of 3.6% twelve months ago. The frequency of large upgrades also experienced a corresponding decline of 0.7% from 1.3% six months prior and 1.5% twelve months prior. All the sectors of structured finance, with the exception of the Other SF category, displayed a declining trend in the frequency of upgrades.

- The proportion of downgrades and upgrades that were placed on review prior to the rating action fell to 22% and 23%, respectively, for the cohort ending December 2007. The decline in the overall percentage of reviewed downgrades was led by corresponding decreases among US HEL and US RMBS, where the percentage fell to 19% and 9%, respectively. The proportion of upgrades reviewed before the rating action decreased for most sectors, falling below 4% for US ABS excluding HEL and below 1% for US CMBS. US HEL and global CDOs were the only two sectors for which the percentage of reviewed upgrades remained relatively high at approximately 75%.
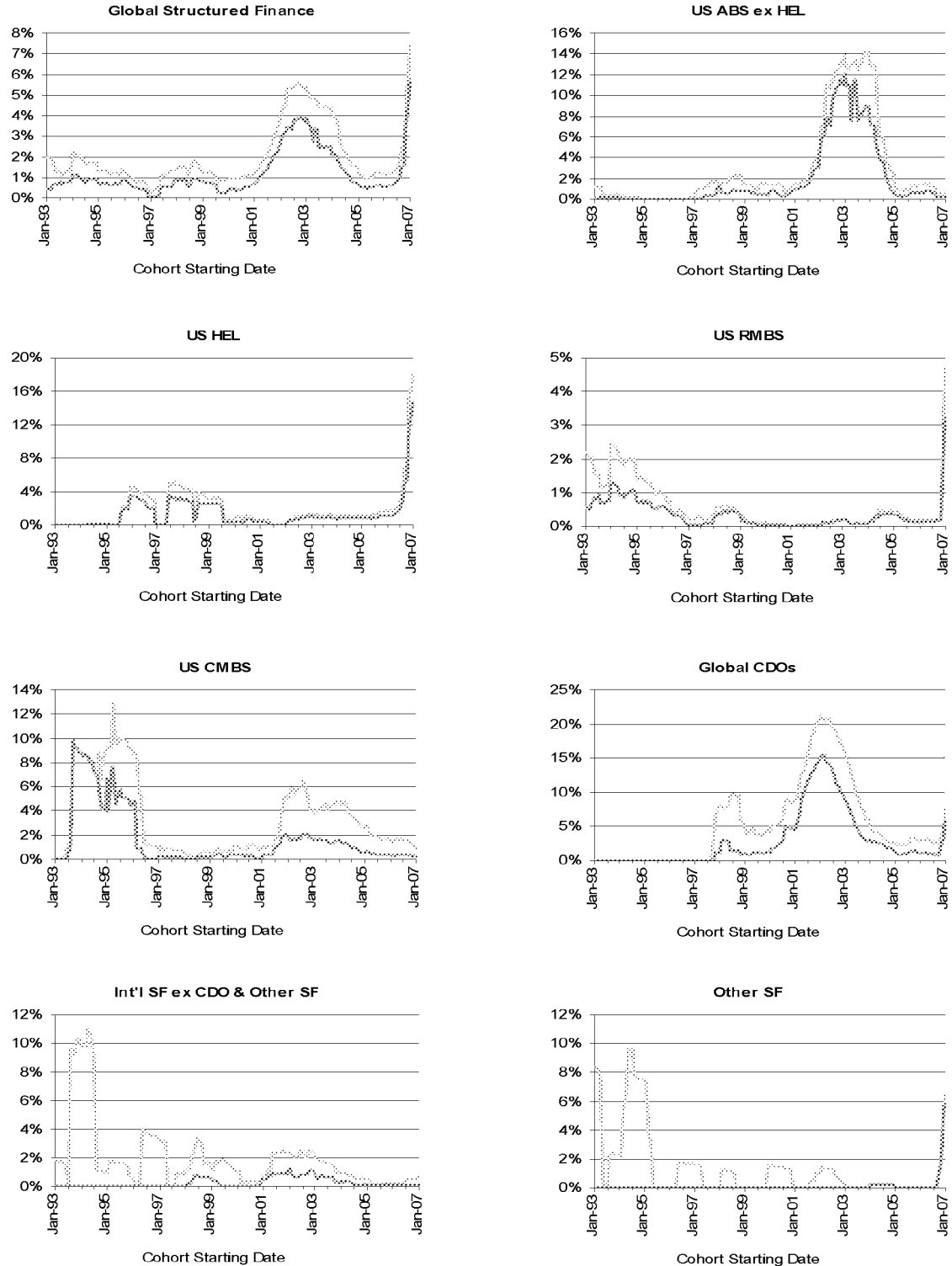
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[6] Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.

Figure 6 – 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)
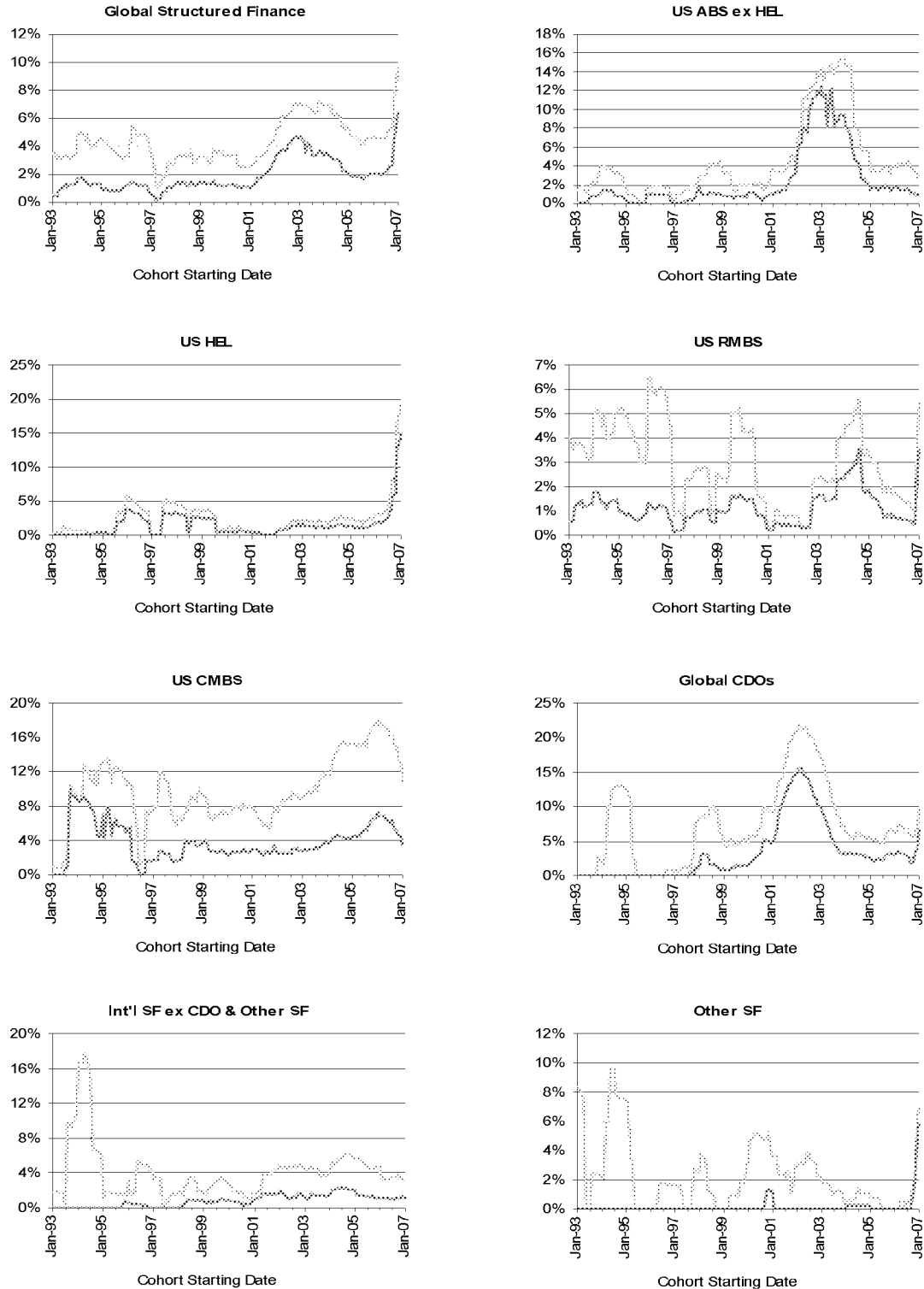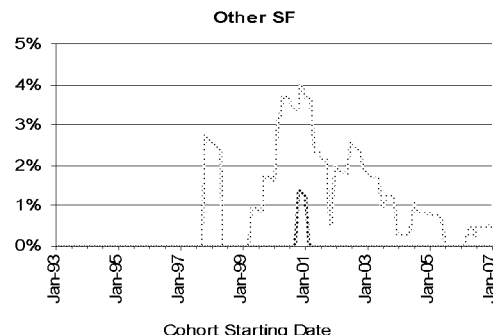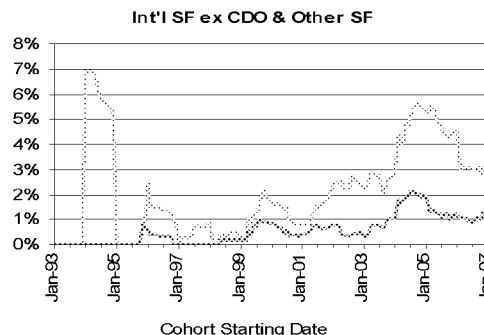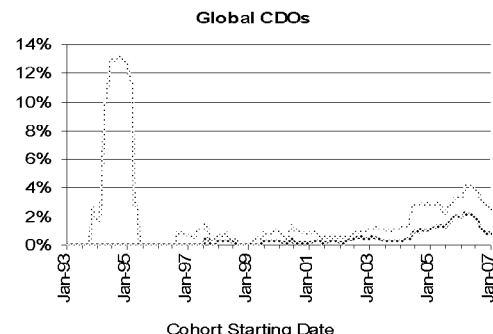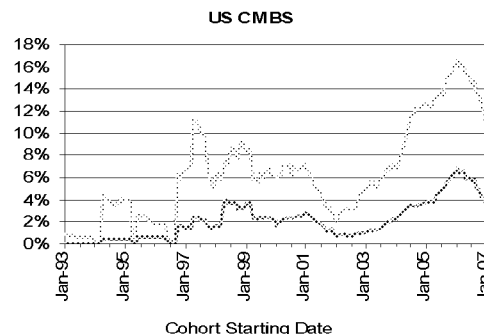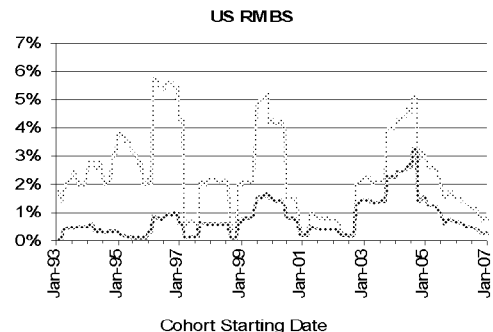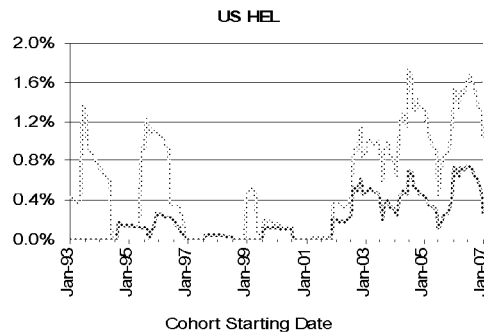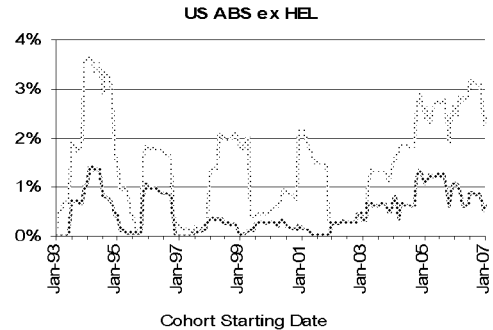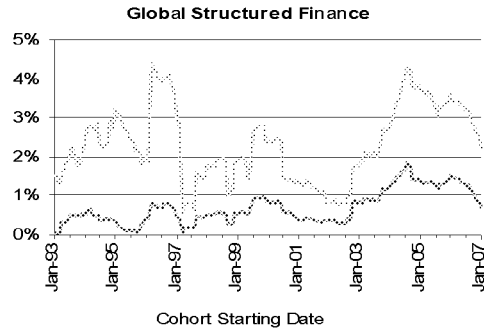

Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 2007.

Figure 7 – 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

Global Structured Finance

US ABS ex HEL

US HEL

US RMBS

US CMBS

Global CDOs

Int'l SF ex CDO & Other SF

Other SF

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 2007.

Figure 8 – 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 2007.

Figure 9 – Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction
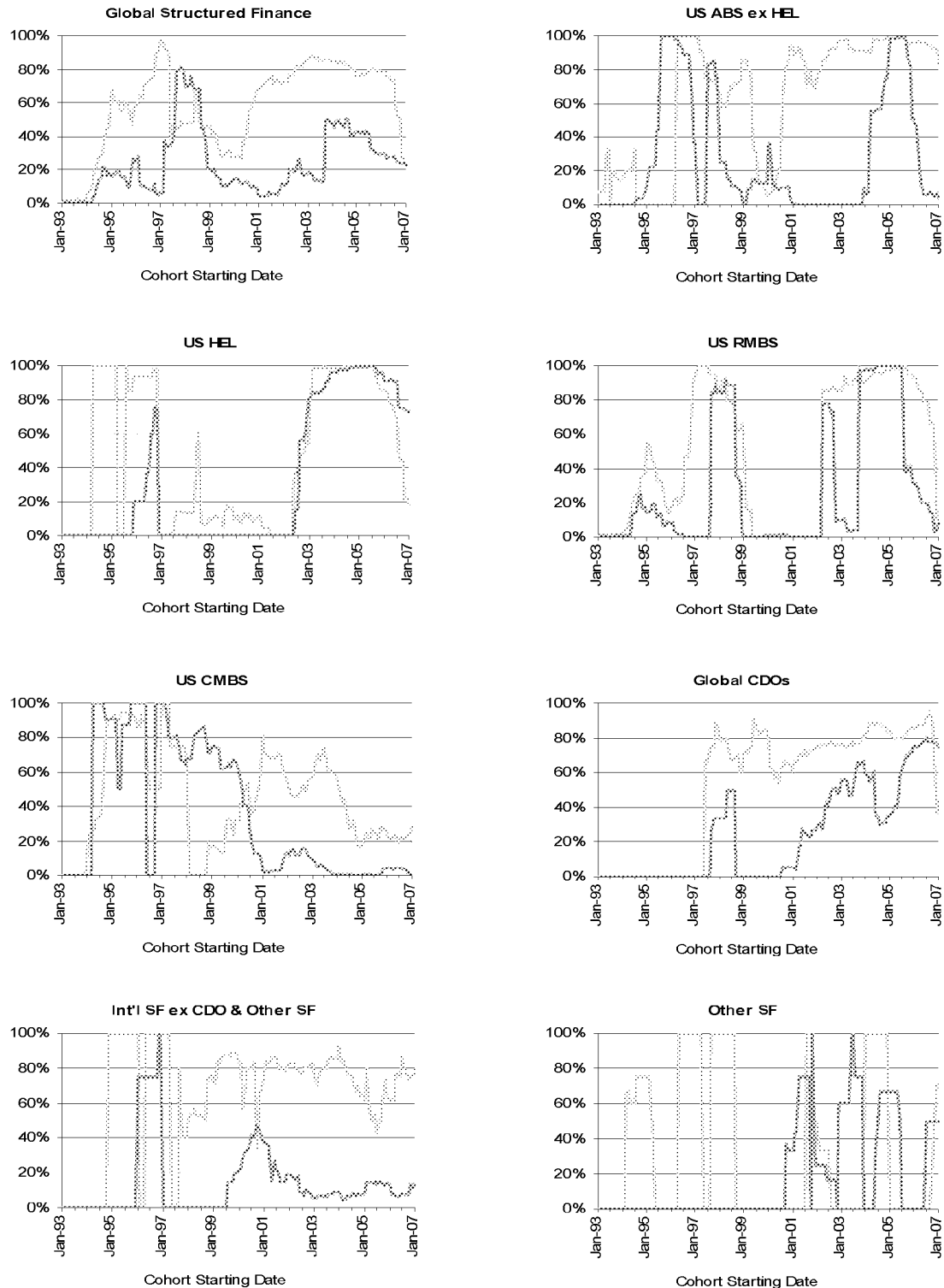
Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on January 1, 2007. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

Appendix: Description of Data Sample and Glossary

The data sample used in this report includes all public, 144A, and private tranches with a published Moody's long-term global debt rating among global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS), collateralized debt obligations (CDOs), and other structured finance, including asset backed commercial paper (ABCP), structured investment vehicles (SIVs), structured covered bonds, catastrophe bonds, and derivative product companies. Provisional ratings, credit estimates or evaluations, short-term ratings, and national scale ratings are not included. The following types of securities are excluded from the definition of global structured finance and therefore are not included in the data sample: repackaged securities, structured notes, and other credit derivatives which are basically pass-throughs of the rating of another entity.

This data set is an expansion of the data set that was used in prior structured finance performance studies.[7] Unlike the data set from previous years, this data sample:

- Includes tranches wrapped by financial guarantors, government agencies, and government sponsored enterprises (GSEs);

- Includes interest-only (IO) and residual tranches;

- Includes some transactions outside of the four major sectors (ABS, CDO, CMBS, RMBS) of structured finance, such as ABCP, SIVs, structured covered bonds, catastrophe bonds and derivative product companies;

- Does not collapse tranches with the same rating from the same deal, i.e. all pari-passu tranches are counted in the data sample. The exceptions to this are notes with the same rating issued out of the same program for ABCP, SIVs and structured covered bonds, in which case only the rating of the program and not each individual security is counted.

The data used to create this report are commercially available via Moody's Structured Finance Default Risk service. For more information, please email DefaultResearch@moodys.com.

Glossary

Material Impairment

Structured finance securities are defined as being in material impairment if they have:

- Sustained a payment shortfall that remained uncured, or

- Been downgraded to Ca or C.

Prepayment-related and AFC-related interest shortfalls are not considered to be material impairments, but PIKing tranches are. Explicit principal write-downs are included whereas implicit principal write-downs or under-collateralizations are not.

The impairment status of a security may change as it goes from cured (i.e. all outstanding shortfalls and losses were repaid in full) to uncured (i.e. positive interest shortfalls or principal losses outstanding), or vice versa. If any securities rated Ca or C but not in payment shortfall are upgraded, they are considered to be no longer in material impairment. Securities rated Ca or C that were not upgraded are in material impairment even if their payment shortfalls have been cured. Finally, securities with very minor shortfalls or losses are excluded.

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[7] The expanded data sample was first introduced in our 2007 structured finance rating transitions studies that were published this year. The data sample in this study was extracted following similar guidelines.

Payment Shortfall

Structured finance securities are defined as being in payment shortfall (previously called "payment default") if they have suffered either one of the following:

■ Interest shortfall

■ Principal write-down.

Principal Impairment

This refers to materially impaired securities that have suffered principal write-downs or principal losses, or have been downgraded to Ca or C even though a principal write-down or loss has not yet been observed. In particular, if a security had experienced principal write-down/loss or was downgraded to Ca or C, it is called a principal impairment regardless of whether it had experienced interest shortfalls.

Interest Impairment

This refers to materially impaired securities that have experienced only interest shortfalls, no principal losses, and were not downgraded to Ca or C.

Investment-Grade (IG) and Speculative-Grade (SG) 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.

Loss Severity or LGD

The LGD rate of an impaired structured finance security is measured by the sum of the present values of net losses, including both interest shortfalls and principal losses, discounted by the security's coupon rate and expressed as a percentage of a given principal balance such as the principal balance at origination, at the impairment date, or at any given cohort date.

Accuracy Ratio (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[8]

To calculate accuracy ratios, rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted. Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

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[8] For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004.

Investment-Grade Loss Rate

The one-year investment-grade loss rate is calculated as follows. First, for a given cohort, we calculate the LGD as a share of the tranche balance at the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these LGD rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the LGD rate is not weighted by the total dollar volume of outstanding securities in the cohort. Also note that only LGD for principal impaired securities are used in the calculation. The five-year investment-grade loss rate is calculated similarly.

Average Rating Before Impairment

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that became impaired within 12 months after the cohort formation date, where the weight for each security is the LGD rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher LGD over impaired tranches with lower LGD.[9] Note that only LGD for principal impaired securities are used in the calculation.

Rating Action Rate

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scale and are based on comparing the rating at the beginning and end of the time period under consideration. However, if a rating was withdrawn by the end of the time period, then the rating prior to withdrawal is used as the end rating. Note that a security will only be counted if it was outstanding as of the cohort formation date. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

Large Rating Action Rate

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

Percentage of Downgrades (Upgrades) Preceded by Watchlist Actions in the Same Direction

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

ABS ex HEL

ABS stands for asset-backed securities. This structured finance sector includes securities backed by 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. Home equity loans (HEL) are excluded from this sector.

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[9] We began using LGD rates as weights in computing an average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make any material difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

HEL

The home equity loan or HEL sector includes securities backed 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.

Prior to 1998, RMBS collateral was generally defined as first-lien residential mortgages, regardless of the credit quality of the borrower. HEL collateral generally included junior liens such as HELOCs or closed-end seconds. However, as subprime lending became more prevalent, the market shifted its definition such that HEL encompassed subprime first-lien residential mortgages while RMBS included first-lien mortgages made to higher quality borrowers. Since 1998, a deal classified as RMBS by Moody's is generally backed by prime or Alt-A quality first-lien residential mortgages, while a deal classified as HEL is generally backed by subprime first-lien mortgages or junior liens. Therefore, a subprime deal which would be classified as HEL today may have been classified as RMBS in the past.

RMBS

RMBS stands for residential mortgage-backed securities. The vast majority of these securities are backed by first-lien prime mortgages or by Alt-A mortgages.

CMBS

CMBS stands for commercial mortgage-backed securities. Commercial real estate (CRE) CDOs, where 70% or more of the collateral is comprised 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.

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 comprised 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.

Other Structured Finance

Other structured finance consists of structured finance securities not categorized in the five major sectors (ABS, HEL, CDO, CMBS, and RMBS) including asset-backed commercial paper (ABCP) programs, structured investment vehicles (SIVs), structured covered bonds, insurance-linked securities such as catastrophe bonds, and derivative product companies. However, notes carrying only short-term ratings such as commercial paper are excluded.

Global Structured Finance

Global structured finance captures securities issued around the world in the five major sectors - ABS, HEL, CDO, CMBS, and RMBS – and in the other structured finance category.

U.S. Structured Finance

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.

Intl SF ex CDO and Other SF

This refers to securities that are not denominated in U.S. dollars and issued in the U.S. market and not denominated in Canadian dollars and issued in Canada. The majority of the securities in this sector are issued in Europe, the Middle East, and Africa (EMEA); the rest are issued in the Asia Pacific region and Latin America. CDOs and Other SF are excluded.

Related Research

- The Performance of Structured Finance Ratings: Mid-Year 2007 Report, October 2007 (105390)

- The Performance of Structured Finance Ratings: Full-Year 2006 Report, May 2007 (103017)

- The Performance of Structured Finance Ratings: Mid-Year 2006 Report, September 2006 (99034)

- The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

- The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

- Default & Loss Rates of Structured Finance Securities: 1993-2007, July 2008 (109707)

- Measuring Loss-Given-Default for Structured Finance Securities: An Update, December 2006 (101284)

- Structured Finance Rating Transitions: 1983-2007, February 2008 (107444)

- Japanese Structured Finance Rating Transitions: 1994-2007, March 2008 (107833 / SF125229)

- Asia-Pacific (ex-Japan) Structured Finance Rating Transitions: 1990-2007, March 2008 (107947)

- EMEA Structured Finance Rating Transitions: 1988-2007, March 2008 (107977)

- Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities, December 2006 (100872)

- The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

- Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

- The Performance of Moody's Corporate Bond Ratings: March 2008 Quarterly Update, May 2008 (108855)

- Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

- Guide to Moody's Default Research: March 2008 Update, March 2008 (108157)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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The Performance of Structured Finance Ratings: Mid-Year 2005 Report

Highlights

This Special Comment updates Moody's structured finance rating performance metrics, both with respect to rating accuracy and rating stability.

As indicated in Figure 1, the performance of the most recent rating cohort was similar to the historical average for previous cohorts across a number of metrics; however, recent performance has been weaker with respect to the 5-year horizon accuracy ratio (AR). Please see the Glossary at the end of this report for a definition of terms used. Highlights of this report include:

- The most recent cohort's 1-year AR is 74.3%, up sharply from its level six months ago and roughly equal to its long-run historical average.
- The 5-year horizon AR for the most recent cohort is 66.3%, below both its level six months ago and its historical average.
- The 1-year investment-grade loss rate is 0.26%, down substantially from its levels six months ago and slightly below its historical average.
- The 36-month average rating of all securities that become impaired over a 12-month period is Ba1, the same as its recent past and its long-term historical average.
- The rating action rate is 9.3%, higher than both its levels six and twelve months ago and its historical average, as a sharp increase in the upgrade rate more than offset a concurrent decline in the downgrade rate.
- The large rating action rate (rating changes of three notches or more) is 4.3%, slightly lower than the rates observed in the recent past but still above its historical average.

Figure 1 - Summary of All Structured Finance Rating Performance

Cohort Ending Date	Number of Newly Impaired Tranches over Prior 12 Months	Accuracy Measures				Stability Measures	
		1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
June 2005	NA	NA	NA	NA	NA	9.3%	4.3%
December 2004	236	74.3%	66.3%	0.26%	Ba1	8.8%	4.4%
June 2004	252	68.9%	69.1%	0.41%	Ba1	8.8%	4.6%
December 2003	260	75.4%	69.1%	0.44%	Ba1	10.6%	6.5%
Average (1993-Most Recent)	88	74.7%	71.5%	0.35%	Ba1	7.7%	3.9%

Across the major asset classes (see Figure 2):

- US ABS one-year rating accuracy ratio was 74.2% for the most recent cohort, slightly lower than its historical average of 76.4%. The rating action rate stood at 7.7%, roughly the same as its historical average of 7.2%.
- US CMBS one-year rating accuracy ratio for the latest cohort was 87.4%, about six percentage points higher than its historical average, as all newly impaired US CMBS tranches in 2004 were rated below investment grade at origination. Meanwhile, an increase in upgrade activity caused the rating action rate to reach 18.4%, far above its historical average of 9.8%.
- US RMBS one-year rating accuracy ratio was 61.7% for the most recent cohort, substantially lower than its historical average of 81.9%. It should be noted that the most recent cohort had only eight tranches that were newly impaired, whereas historically the total number of impaired tranches is 141. The latest rating action rate was 8.5% in this sector, higher than its historical average of 6.2%. The majority of the latest rating actions were upgrades, but the number of downgrades also increased.
- Global CDO one-year rating accuracy ratio was 67.9% for the most recent cohort, slightly below its historical average of 69.5%. The sector's latest rating action rate was 7.5%, substantially lower than its historical average of 13.6%. Furthermore, for the first time since 1998, the CDO sector saw the upgrade rate surpass the downgrade rate in the most recent cohort.
- International Structured Finance one-year rating accuracy ratio was 88.0% for the most recent cohort, which had only two newly impaired securities. Overall, the number of impaired securities in this sector is too small for any meaningful comparisons over time and across sectors. The latest rating action rate of the sector stood at 2.9%, which was above its historical average level of 1.8%; and the number of upgrades significantly outweighed the number of downgrades.

Figure 2 - Summary of Structured Finance Rating Performance by Sector

	Number of Newly Impaired Tranches over Prior 12 Months	Accuracy Measures				Stability Measures	
		1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
		Cohorts Ending December 2004				Cohorts Ending June 2005	
US ABS	143	74.2%	66.7%	0.46%	Baa2	7.7%	4.2%
US CMBS	42	87.4%	87.1%	0.00%	B2	18.4%	5.2%
US RMBS	8	61.7%	87.7%	0.05%	Baa3	8.5%	5.1%
Global CDOs	41	67.9%	55.3%	0.46%	Ba1	7.5%	3.7%
Int'l SF excluding CDOs*	2	88.0%	95.4%	0.02%	Ba1	7.4%	2.9%
		Historical Averages Since 1993				Historical Averages Since 1993	
US ABS	43	76.4%	74.9%	0.49%	Baa3	7.2%	4.6%
US CMBS	7	81.6%	86.8%	0.07%	B1	9.8%	3.2%
US RMBS	12	81.9%	74.7%	0.11%	Ba1	6.2%	2.9%
Global CDOs	26	69.5%	58.4%	1.07%	Ba2	13.6%	7.5%
Int'l SF excluding CDOs*	0	62.1%	94.4%	0.02%	Baa2	5.2%	1.8%

* International structured finance excluding CDOs

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Introduction

In a Special Comment published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[1] Moody's corporate rating performance report has since been updated on a quarterly basis.[2] Although these metrics have also been reported for structured finance ratings in various prior studies,[3] this Special Comment groups them together for the first time in a single document.

This report is similar in design in many respects to the corporate rating performance report. The basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month, and the metrics compare the performance of different rating cohorts over time. Ratings on individual tranches are all given equal weight in the analysis, independent of the tranche size.[4] This report differs, however, from the corporate report in that:

- The structured finance metrics on rating accuracy lag those for corporate finance by six months due to the need to identify defaults and estimate losses from periodic payment reports.
- Structured finance rating accuracy metrics are based on structured securities' impairment experiences and their estimated final loss severity rates, because Moody's ratings are intended to rank order expected loss rates, not simply expected impairment rates.[5]
- The performance of structured ratings are not compared to the performance of ratings implied by bond market credit spreads because secondary market price data are not as commonly available for structured finance securities as for corporate securities.
- Data are presented on a disaggregated basis primarily by asset class for deals issued in the United States. International structured finance securities outside of collateralized debt obligations are presented as a separate category.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between security ratings and their realized loss rates.[6] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 Special Comment, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we will regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

Measures of cardinal rating accuracy can also be found in Moody's default and loss studies for structured finance securities. In particular, we have compared realized and "idealized" loss rates over various investment horizons by rating category. The idealized loss rates are used as "targets" in the structured finance rating process. Because realized loss rates are highly volatile, semi-annual comparisons between realized loss rates and idealized rates are not statistically meaningful, and hence not tracked in our rating performance reports.

We employ two measures of rating stability (or rating volatility) - the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions.

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1. "Measuring the Performance of Corporate Bond Ratings," Moody's Special Comment, April 2003.
2. For the latest performance report, see "The Performance of Moody's Corporate Bond Ratings: June 2005 Quarterly Update," Moody's Special Comment, July 2005.
3. Moody's first introduced and examined its structured finance ratings' performance metrics in "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004.
4. Rating cohorts consist of all outstanding security ratings, both newly issued and seasoned securities. In our annual rating transition and default and loss studies, we report selected accuracy and stability measures on both cohort and vintage bases, and on equal-weighted and volume-weighted bases.
5. As reported in our July 2005 Special Comment entitled, "Default & Loss Rates of Structured Finance Securities: 1993-2004," loss-given-impairment rates vary sharply by rating category in structured finance, with higher rated issues suffering much lower average loss severity upon impairment than lower rated issues. In contrast, as reported in our January 2005 Special Comment "Default and Recovery Rates of Corporate Bond Issuers: 1920-2004," loss-given-default rates do not vary strongly by issuer rating categories prior to default in the corporate sector. For this reason, and because we lack loss severity data for many defaulted corporate securities, our reported corporate rating performance statistics are based simply on default rates, rather than loss rates.
6. The required adjustments to convert the standard default-based AR measure to a loss rate-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004. The accuracy ratio is also described in the Glossary at the end of this report.

We calculate accuracy statistics based on the data from Moody's latest structured finance default and loss study (1993-2004).[7] For the measurement of stability and volatility, we incorporate the most recent rating actions observed in the first half of 2005 into the data sample used in Moody's latest structured finance rating transition study.[8] The data sample of this report includes all public, 144A, and private tranches with a Moody's long-term global debt rating in the global asset-backed securities, commercial and residential mortgage-backed securities and collateralized debt obligations sectors. Prospective ratings, credit evaluations, and national scale ratings are not included. Pari passu tranches are collapsed into a single tranche. In addition, the following tranches are excluded: (1) Tranches guaranteed by financial guarantors or government-sponsored-enterprises (GSEs); (2) Interest-only (IO) or residual tranches; (3) Repackaged securities, structured notes, structured investment vehicles, structured covered bonds, and other credit derivative securities; (4) Deals that have all their tranche ratings linked to a single corporate or sovereign rating.

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7. *"Default & Loss Rates of Structured Finance Securities: 1993-2004," Moody's Special Comment, July 2005.*
8. *"Structured Finance Rating Transitions: 1983-2004," Moody's Special Comment, February 2005.*

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time:

- The one-year and five-year accuracy ratios in the all structured finance category have generally trended down over the past ten years, primarily as a result of the severe credit distress in two structured finance segments: ABS securities backed by manufactured housing loans and CDOs backed by high yield corporate bonds. A substantial portion of the rated tranches in these two segments (some of them highly rated) were impaired and are expected to sustain high loss-given-default. Figure 3 shows, however, that the one-year accuracy ratio has showed material improvement in the latest cohorts.

- For most of the study period, the accuracy ratios in the US CMBS and US RMBS were at high levels between 80% and 90%. The one-year accuracy ratio of US RMBS ratings in the recent cohorts, however, saw a steep decline primarily because three (out of a total of eight in 2004) newly impaired tranches (securitized by Alt-A mortgages) carried single-A ratings at the time of impairment.[9]

- The one-year accuracy ratio of US ABS ratings recently improved slightly, but remained lower than its historical average of 76.4%; whereas, the one-year accuracy ratio of Global CDOs has remained flat at a level slightly below 70%.

Figure 3 - One-Year (solid line) and Five-Year (dashed line) Accuracy Ratios (ARs) By Cohort Date
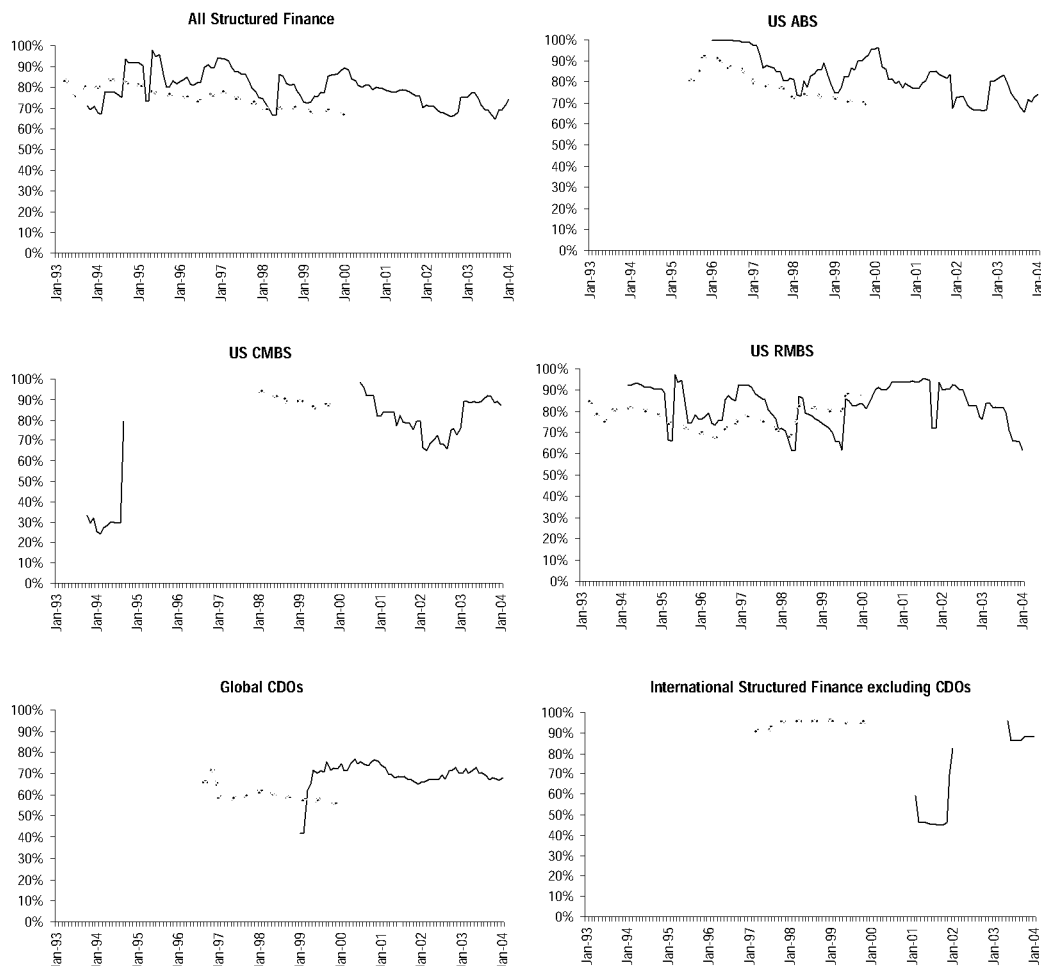
Notes:

- *At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on January 1, 2004 and January 1, 2000.*
- *The gaps in the US CMBS and International Structured Finance accuracy ratio series were resulted from zero impairments in those periods. In addition, the accuracy ratios tend not to be meaningful when the number of impaired securities is very small (in single digits). For example, the five-year accuracy ratio for international structured finance is based on a single impaired security that was rated Ba2 in 1996 and then impaired in 2002. This structured finance sector had just five impaired tranches, four of which were rated after January 1, 2000. The impairment experiences of these four tranches are reflected in the one-year accuracy ratios. Finally, only one CMBS security was impaired in 1994, and it was rated Baa2 before impairment.*

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9. *Due to the small number of impaired securities in the latest cohort, the decline in the accuracy ratio does not represent a trend in the performance of RMBS ratings.*

Investment-Grade Loss Rates

Figure 4 shows that the one-year loss rates of investment-grade securities have declined significantly in the latest cohorts.

- In the all structured finance category, the investment-grade loss rate dropped to 0.26% in the latest annual cohort from 0.44% a year prior. This rate is below its historical average of 0.35% and much lower than the peak of 0.75% observed in the January 2002 cohort.[10]
- The US ABS and Global CDO sectors saw the most significant improvement, but their investment-grade loss rates remained higher than those in the US CMBS, US RMBS, and international structured finance sectors.

Figure 4 - One-Year Investment-Grade Loss Rates By Cohort Date
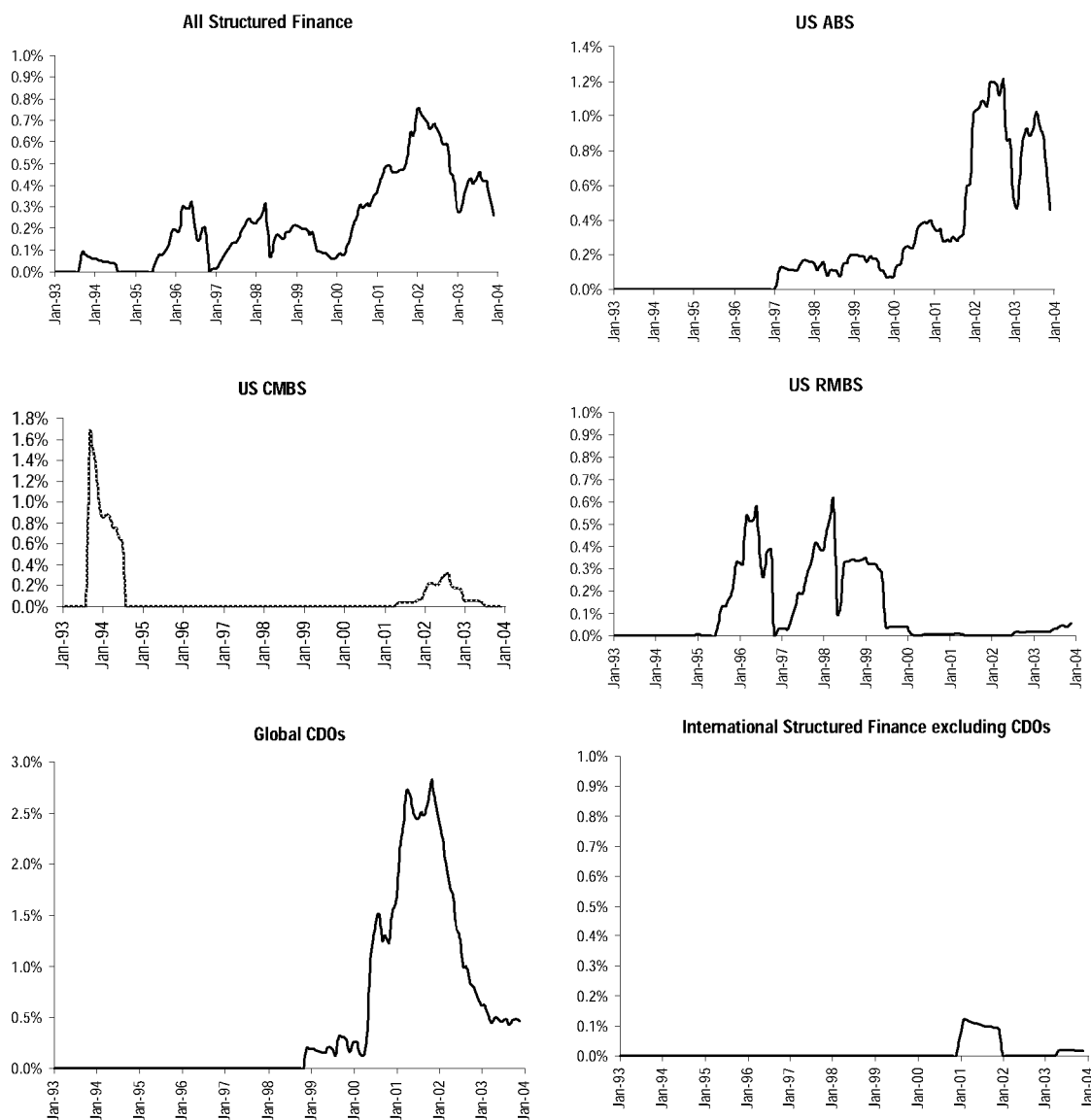
Note: At the beginning of each month, securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest rating cohort is formed on January 1, 2004.

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10. We note that these loss rates are not weighted by dollar volume. In addition, like-rated tranches in the same deal are collapsed into a single tranche. The average rating of investment-grade securities in structured finance has not changed much historically and currently is in between Aa3 and A1.

Average Rating Before Impairment

Figure 5 presents the 36-month average rating before impairment over time. The figure also contains the number of impaired securities used to calculate the average ratings over time. The following observations are noteworthy:

- The average rating before impairment in the all structured finance category has increased in the last four years, from roughly Ba2 for the cohorts formed in the beginning of 2000, to somewhere between Ba1 and Baa3 for the latest cohorts.[11]
- The average rating before impairment in US CMBS is the lowest among all sectors; in fact, it is often significantly lower than those in the other sectors. Furthermore, the sector's average rating before impairment has been improving, and reached B2 for the most recent cohort.
- The average rating before impairment in the Global CDO sector has slightly increased from roughly Ba3 for the cohorts formed in 1999 to Ba1 for the most recent cohorts.
- The average ratings before impairment in the US ABS and RMBS sectors have been volatile historically, especially during periods in which the number of newly impaired securities was small. The average rating before impairment in the US ABS sector has trended up and approached Baa2 in the most recent cohorts, as a result of more investment-grade tranches backed by manufactured housing (MH) loans being impaired in 2004. For the RMBS sector, the average rating also trended up in the latest cohort. Of the eight impaired tranches, five were rated investment-grade, and that was only 0.15% of roughly 3,500 investment-grade RMBS tranches in the cohort.

Figure 5 - 36-Month-Average Ratings Before Impairment (solid line, left axis) and Number of Newly Impaired Securities (dashed line, right axis) By Cohort Date
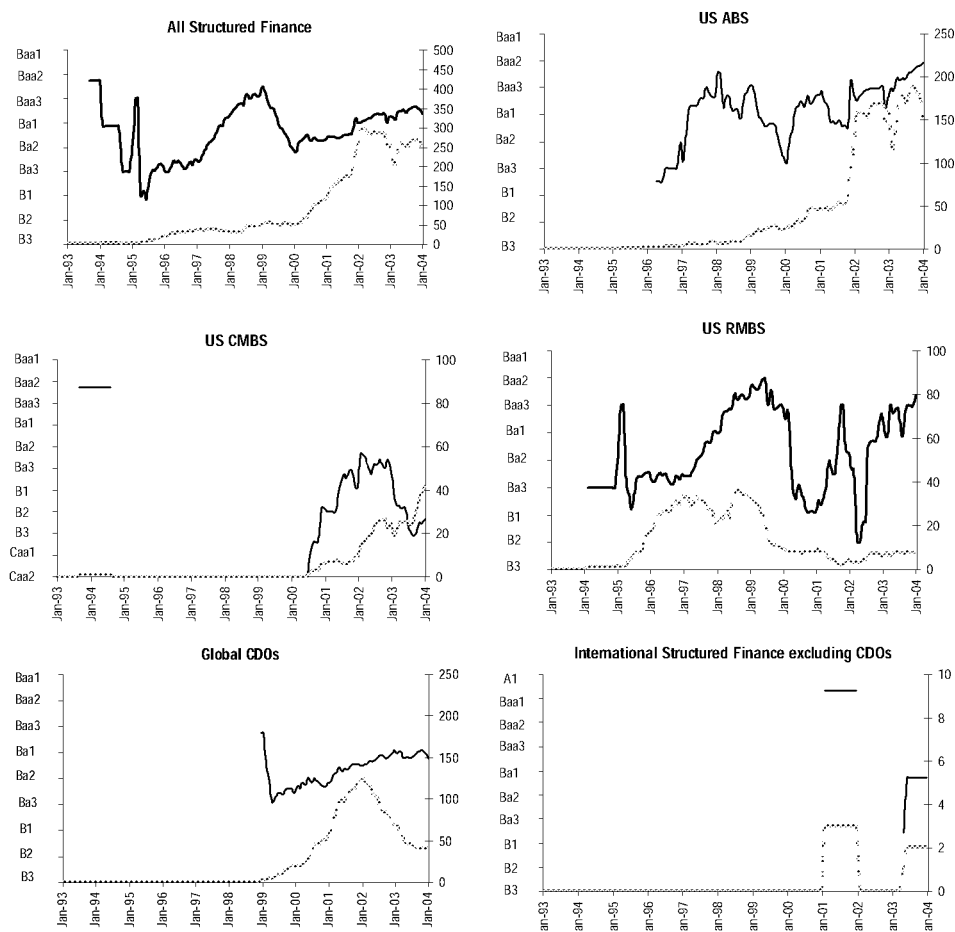
Notes:
- *At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest cohort is formed on January 1, 2004.*
- *The number of newly impaired securities in the latest annual cohort is eight in the US RMBS sector, and two in the International Structured Finance sector. The international structured finance sector had three impaired securities in 2001, all of which were from deals issued in Latin America.*

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11. *The average rating before impairment of Ba1 in the structured finance has historically averaged four notches higher than the comparable statistic for corporate finance sector of B2. While this metric indicates lower rating accuracy for structured finance, other accuracy metrics (investment-grade loss rates and accuracy ratios) suggest the relative rating accuracy of the two sectors is closer. Moreover, the validity of rating accuracy comparisons across sectors (as opposed to comparisons over time within sector) is unclear, particularly in light of the very different overall rating distributions of the two sectors. In particular, the average rating in structured finance of A1 is also four notches higher than the average rating in corporate finance of Baa2.*

Rating Action Rates Large Rating Action Rates, and Watchlist Actions

Figure 6 reports rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions.[12] Key observations include:

- Rating action rates in the all structured finance category increased in the first half of 2005, as a sharp increase in upgrades in the US CMBS and US RMBS sectors more than offset a concurrent decline in downgrades in US ABS and global CDO sectors. As a result, the upgrade-to-downgrade ratio rose to 2.5-to-1 in the first half of 2005, a significant improvement over the ratio of 1-to-1 in 2004.
- The downgrade rate has declined substantially to 3.1% in the latest one-year cohort ending June 2005, from 5.8% a year prior. About 92% of the downgrades in the first half of 2005 were the result of weaker collateral performance, roughly the same as that in 2004.
- The upgrade rate is twice as high, at 6.2%, in the latest annual cohort, as its level a year earlier. Most of the upgrades were observed in US CMBS and US RMBS sectors. About 93% of upgrades stemmed from a build up in credit enhancement thanks to deal seasoning and/or stronger collateral performance.
- Downgrades have frequently been anticipated by rating reviews, especially in recent annual cohorts, for which 80% of all downgrades were preceded by watchlist actions. Upgrades, however, have been less commonly preceded by watchlist actions, although the percentage of upgrades anticipated by review has increased in the recent cohorts.

Figure 6 - Annual Rating Action Rates (dashed line) and Large (Three Notches or More) Rating Action Rates (solid line) By Cohort Date
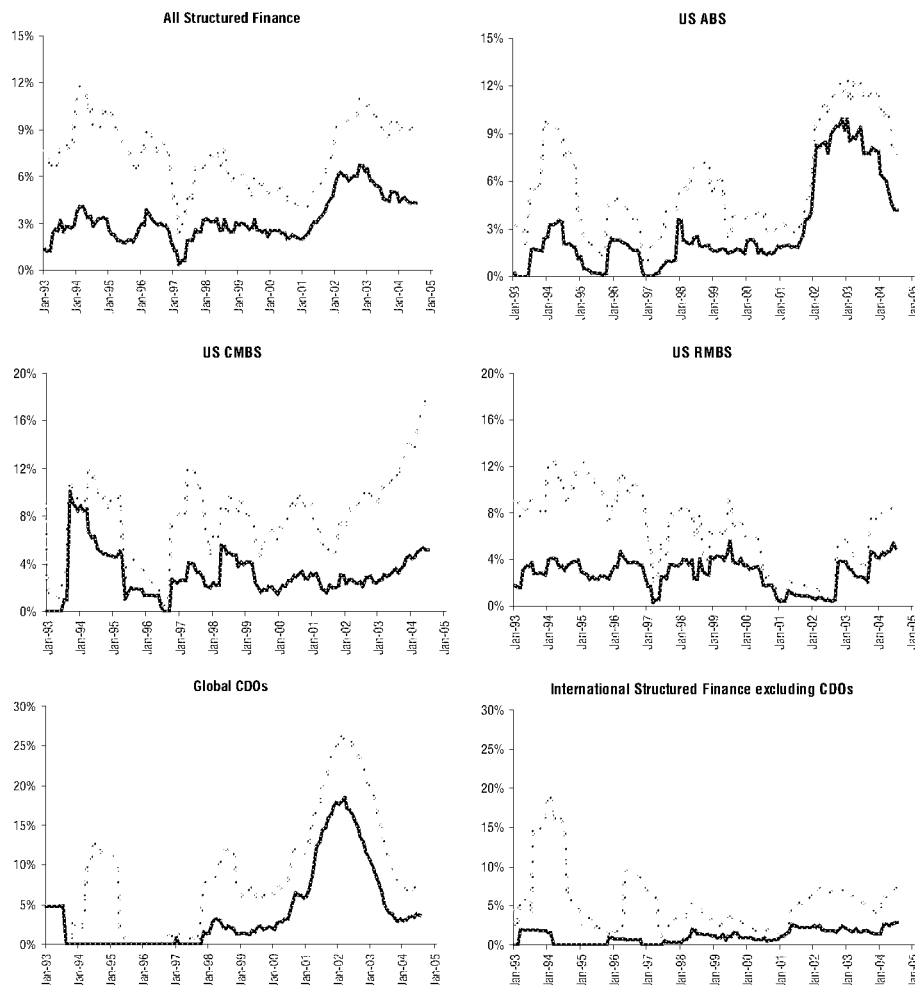
12. For the latest rating transition statistics of structured finance securities worldwide, see "Structured Finance Rating Transitions: 1983-2004," Moody's Special Comment, February 2005. Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.

Figure 7 – Annual Downgrade Rates (dashed line) **and Annual Large (Three Notches or More) Downgrade Rates** (solid line) **By Cohort Date**
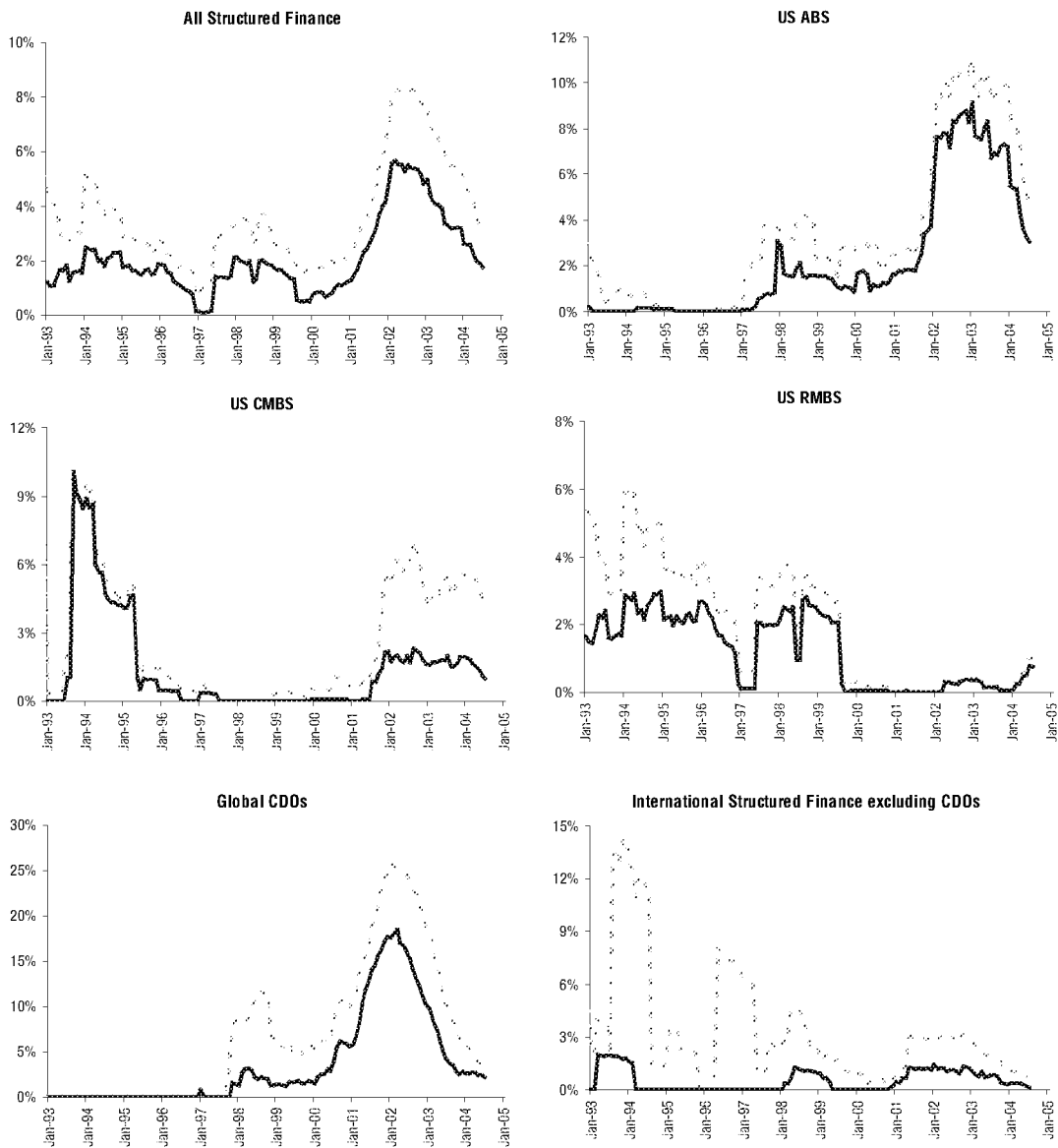

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

International Structured Finance excluding CDOs

Figure 8 – Annual Upgrade Rates (dashed line) **and Annual Large (Three Notches or More) Upgrade Rates** (solid line) **By Cohort Date**
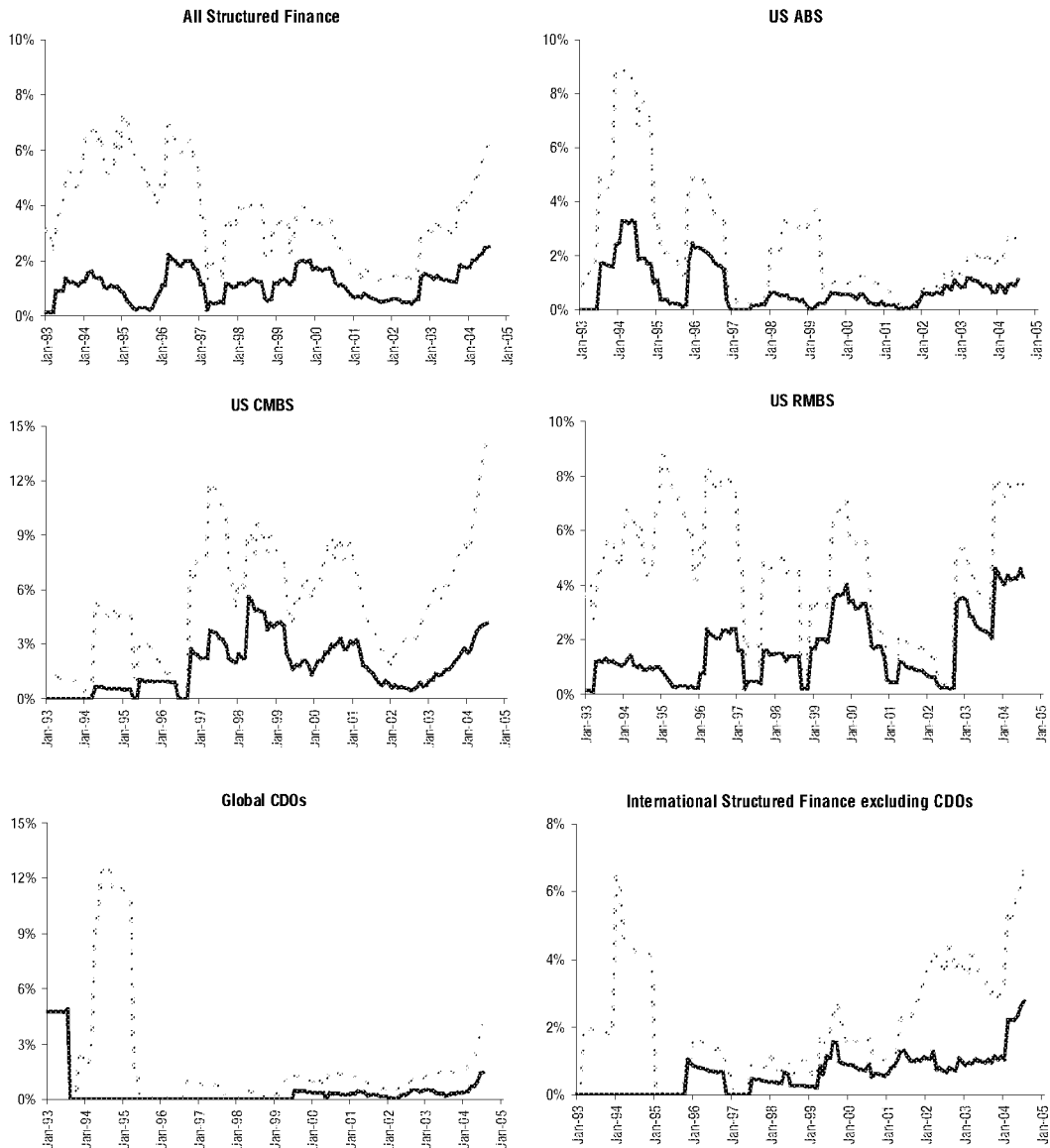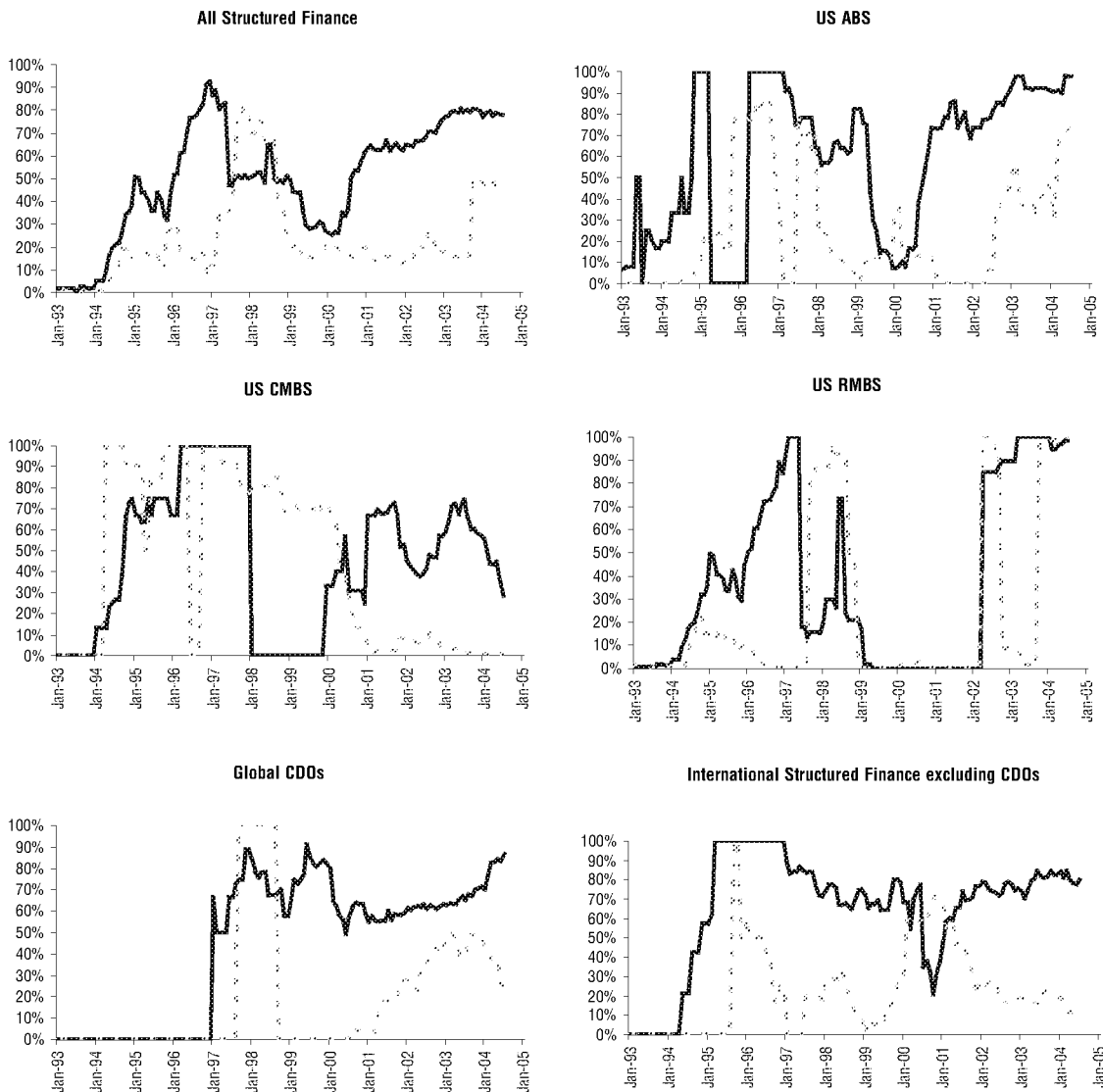
Figure 9 - Percentages of Downgrades (solid line) **and Upgrades** (dashed line) **Preceded by Watchlist Actions By Cohort Date**

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

International Structured Finance excluding CDOs

Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest cohort is formed on July 1, 2004.

Glossary

MATERIAL IMPAIRMENT

Material impairment, or for simplicity, impairment, is a concept adopted in Moody's structured finance default and loss study. Material impairment includes uncured payment defaults and securities downgraded to Ca or C, where payment defaults include shortfalls of interest and losses of principal on individual tranches of structured finance transactions. A security is called "newly impaired" in a given period if it had no outstanding interest shortfalls, no principal losses, and was not rated Ca or C in the prior period, but experienced at least one of these three credit events in the given period for the first time.

LOSS-GIVEN-DEFAULT (LGD)

Loss-given-default, also known as LGD or loss severity rate, is the total amount of lifetime losses as a share of a tranche's principal balance on a certain reference date. The losses in each payment period are discounted by a discount rate, which is typically the stated coupon rate on the tranche. There are three types of principal balances used in the calculation of LGD: the principal balance at origination, at the time of impairment, and at a cohort formation date. Depending on the reference principal balance (and the reference date), the calculated LGD can be significantly different due to principal amortization and discounting.

Final LGD on impaired securities with no outstanding principal balances are typically known. For impaired securities with positive principal balances or impaired securities with incomplete loss data, their LGD need to be estimated. Detailed discussions on the estimation of those final LGD are provided in several Moody's Special Comments including, in particular, "Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities," Moody's Special Comment, April 2004.

ACCURACY RATIO (AR)

An accuracy ratio based on structured securities' loss experiences (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[13]

To calculate accuracy ratios, we use the same data sample that is used in the latest structured finance default and loss study (1993-2004), and form rating cohorts of different horizons for each calendar month during 1993-2004, i.e. all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. We then do the same (group by ratings in each calendar month) for securities that became impaired within one, three or five years from that month. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted.

The CAP curve-adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low losses or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to ratings.

Because we use only data observations that span the time horizon under consideration, the latest cohort for a one-year horizon is formed on January 1, 2004, while for a five-year horizon the latest cohort is formed on January 1, 2000.

INVESTMENT-GRADE LOSS RATE

The one-year investment-grade (Aaa through Baa3) loss rate is calculated as follows. First, for each impaired security, we calculate a loss rate, given impairment, as a share of its tranche balance at the cohort date. Then, we sum up these loss rates to get a total loss value for all securities that become impaired within a 12-month period after the cohort formation date. We divide this total loss value by the total number of securities in the rating cohort to obtain the investment-grade loss rate. Note that this loss rate is not weighted by the total dollar volume of outstanding securities in the cohort.

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13. For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004.

AVERAGE RATING BEFORE IMPAIRMENT

The rating of an impaired security is measured every month for 36 months prior to impairment as well as immediately prior to impairment. These 37 rating measurements are averaged together to create one representative number for each impaired security that becomes impaired within 12 months after the month of cohort formation. These representative numbers are then averaged together to create the reported average rating each month.

RATING ACTION RATE

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scales. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

LARGE RATING ACTION RATE

A security that had its rating changed by three notches or more within a year after cohort formation is said to have experienced a large rating action. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

PERCENTAGE OF DOWNGRADES (UPGRADES) PRECEDED BY WATCHLIST ACTIONS

This metric is defined as the number of securities that were placed on watchlist before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

ABS

This refers to Asset-Backed-Securities. This structured finance sector includes securities backed by home equity loans (HEL) in addition to both traditional (autos, credit cards, leases, manufactured housing, student loans, etc.) and non-traditional (mutual fund fees, tax liens, tobacco settlement, whole business securitizations (WBS), etc.) asset classes.

HELS

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

CDOS

This refers to collateralized debt obligations. Credit derivative securities such as repackaged securities and structured notes are not considered to be part of this sector.

CMBS

This refers to commercial mortgage-backed securities.

RMBS

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

U.S. STRUCTURED FINANCE SECURITIES

This refers to structured finance securities denominated in U.S. dollars and issued in the U.S. market.

INTERNATIONAL STRUCTURED FINANCE EXCLUDING CDOS

This refers to non-CDO structured finance securities that are not denominated in U.S. dollars or not issued in the U.S. market. The majority of the securities in this sector are in Europe; the rest comes from the Asia Pacific region, Canada, and Latin America.

Related Research

Special Comments:

Default & Loss Rates of Structured Finance Securities: 1993-2004, July 2005 (93653)

Default & Loss Rates of U.S. CDOs: 1993-2003, March 2005 (91692)

Default & Loss Rates of Structured Finance Securities: 2004 First Half Update, January 2005 (90843)

Default & Loss Rates of Structured Finance Securities: 1993-2003, September 2004 (88692)

Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities, April 2004 (86769)

Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002, December 2003 (80247)

Structured Finance Rating Transitions: 1983-2004, February 2005 (91392)

Structured Finance Rating Transitions: 1983-2003, February 2004 (81239)

Structured Finance Rating Transitions: 1983-2002, Comparisons with Corporate Ratings and Across Sectors, January 2003 (77291)

Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

Guide to Moody's Default Research: June 2005 Update (93075)

The Performance of Moody's Corporate Bond Ratings: June 2005 Quarterly Update, July 2005 (93560)

Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 94463

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Special Comment

May 2006

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The Performance of Structured Finance Ratings: Full-Year 2005 Report

Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of year-end 2005, both with respect to rating accuracy and rating stability.

As indicated in Figure 1, the performance of the most recent annual rating cohort ending December 2005 improved sharply by almost all measures, relative to six and twelve months prior and the historical average. The highlights of this report show that:

- The most recent cohort's one-year accuracy ratio (AR) was 88.7%, up sharply from its level six months prior and much higher than its long-run historical average.
- The five-year horizon AR for the most recent cohort was 64.1%, below both its level six months earlier and its historical average.
- The one-year investment-grade loss rate was 0.03%, down substantially from its levels six months prior and significantly below its historical average.
- The 36-month average rating of all securities that become impaired over a 12-month period was Ba3, two notches lower than the average rating six months prior and its long-term historical average.
- The rating action rate was 8.1%, about the same as the long-term historical average and lower than both its levels six and twelve months prior, as increases in upgrade activity continued to offset declines in downgrade activity.
- The large rating action rate (rating changes of three notches or more) was 3.3%, considerably lower than the rates observed in the recent past and its historical average.
- Improvements in rating performance were broadly based, resulting in rating accuracy in all sectors during the last year that exceeded their respective long-term historical averages.

These performance metrics should, however, be interpreted with caution.

- Some statistics are based on small samples, as the number of impairments in any given year and particularly within any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors.
- Variation in ratings performance over time may reflect either changes in the quality of the ratings process or changes in the environment that make defaults more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

Moody's Investors Service
Global Credit Research

Figure 1 – Summary of All Structured Finance Rating Performance as of Year-end 2005*

Cohort Ending Date	Number of Newly Impaired Tranches over Prior 12 Months	Accuracy Measures				Stability Measures	
		1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
December 2005	98	88.7%	64.1%	0.03%	Ba3	8.1%	3.3%
June 2005	143	76.3%	65.5%	0.10%	Ba1	9.9%	4.5%
December 2004	213	73.0%	67.8%	0.24%	Baa3	9.4%	4.7%
June 2004	239	71.5%	71.0%	0.35%	Ba1	9.4%	4.9%
Average (1993-Most Recent)	84	75.5%	70.7%	0.27%	Ba1	8.2%	4.1%

Figure 2 – Summary of Structured Finance Rating Performance by Sector as of Year-End 2005*

	Number of Newly Impaired Tranches over Prior 12 Months	Accuracy Measures				Stability Measures	
		1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending December 2005							
US ABS	40	96.0%	62.7%	0.01%	Ba2	4.8%	2.3%
US CMBS	32	87.5%	82.5%	0.00%	B2	19.9%	5.6%
US RMBS	11	87.0%	90.6%	0.02%	Ba3	7.7%	4.1%
Global CDOs	15	72.5%	56.7%	0.10%	Ba1	7.2%	3.1%
Int'l SF ex. CDOs	0	na	59.1%	0.00%	na	7.4%	2.8%
Historical Averages Since 1993							
US ABS	42	76.7%	72.1%	0.37%	Baa3	7.1%	4.4%
US CMBS	7	86.5%	86.8%	0.04%	B2	11.7%	3.7%
US RMBS	12	82.0%	75.1%	0.09%	Ba2	7.1%	3.4%
Global CDOs	23	71.0%	61.6%	0.82%	Ba2	12.9%	7.1%
Int'l SF ex. CDOs	0*	61.9%	83.4%	0.01%	Baa2	5.6%	1.9%

*A glossary appears at the end of this report. The historical average of the number of newly impaired tranches over prior 12 months is the total number of impairments divided by the number of years in the sample, and has been rounded to integers. For the international structured finance excluding CDOs (Int'l SF ex. CDOs) sector, there are just five impairments in the entire sample, resulting in an average of 0.4 new impairments per year.

Table of Contents

Introduction

In a *Special Comment* published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[1] Moody's corporate rating performance report is now updated on a quarterly basis.[2] Moody's first introduced and examined its structured finance ratings performance metrics in "Default & Loss Rates of Structured Finance Securities: 1993-2003," a *Special Comment*, dated September 2004. In September 2005, Moody's reported comprehensive rating performance metrics for the first time in a single document. This *Special Comment* is the second such comprehensive rating performance report for structured finance globally.

As was the case in the September-2005 report, the basic unit of observation in this report is a monthly cohort of ratings, i.e., all outstanding ratings at the beginning of a month, and the metrics compare the performance of different rating cohorts over time. Furthermore, we adjust the performance metrics by loss severity because Moody's structured ratings are intended to rank order expected loss rates, not simply expected default rates. In other words, in computing rating performance metrics for structured finance, we intend to weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between security ratings and their realized loss rates.[3] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 *Special Comment*, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we will regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) — the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions.

We calculate accuracy statistics based on the data from Moody's latest structured finance default and loss study (1993-2005).[4] For the measurement of stability and volatility, we incorporate the most recent rating action data from Moody's latest structured finance rating transition study.[5] In particular, the data sample of this report includes all public, 144A, and private tranches with a Moody's long-term global debt rating in the global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS), and collateralized debt obligations (CDO) sectors. Prospective ratings, credit evaluations, and national scale ratings are not included. Pari passu tranches are collapsed into a single tranche. In addition, the following tranches are excluded: (1) tranches guaranteed by financial guarantors or government-sponsored-enterprises (GSEs); (2) interest-only (IO) or residual tranches; (3) repackaged securities, structured notes, structured investment vehicles, structured covered bonds, and other credit derivative securities; and (4) deals that have all their tranche ratings linked to a single corporate or sovereign rating.

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1. See "Measuring the Performance of Corporate Bond Ratings," Moody's Special Comment, April 2003.
2. For the latest performance report, see "The Performance of Moody's Corporate Bond Ratings: March 2006 Quarterly Update," Moody's Special Comment, April 2006.
3. The required adjustments to convert the standard default-based AR measure to a loss rate-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004. The accuracy ratio is also described in the Glossary at the end of this report.
4. See "Default & Loss Rates of Structured Finance Securities: 1993-2005," Moody's Special Comment, April 2006.
5. See "Structured Finance Rating Transitions: 1983-2005," Moody's Special Comment, February 2006.

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

- The one-year accuracy ratio in the all structured finance category trended up significantly in 2005, led primarily by the dramatic improvement in the US ABS and US RMBS sectors. In the US ABS sector, the one-year accuracy ratio jumped to 96.0% in the latest annual cohort ending December 2005, from 80.3% six months prior and 75.2% twelve months prior. Similarly in the US RMBS sector, the one-year accuracy ratio jumped to 87.0% from 76.1% and 62.5%.
- The accuracy ratio in the US CMBS sector remained high and was above its historical average of 86.5% in the most recent annual cohort.
- The one-year accuracy ratio of Global CDOs also improved substantially to 72.5% in the latest annual cohort, from 62.8% and 67.2% six and twelve months earlier.

Figure 3 – One-Year (solid line) and Five-Year (dotted line) Accuracy Ratios
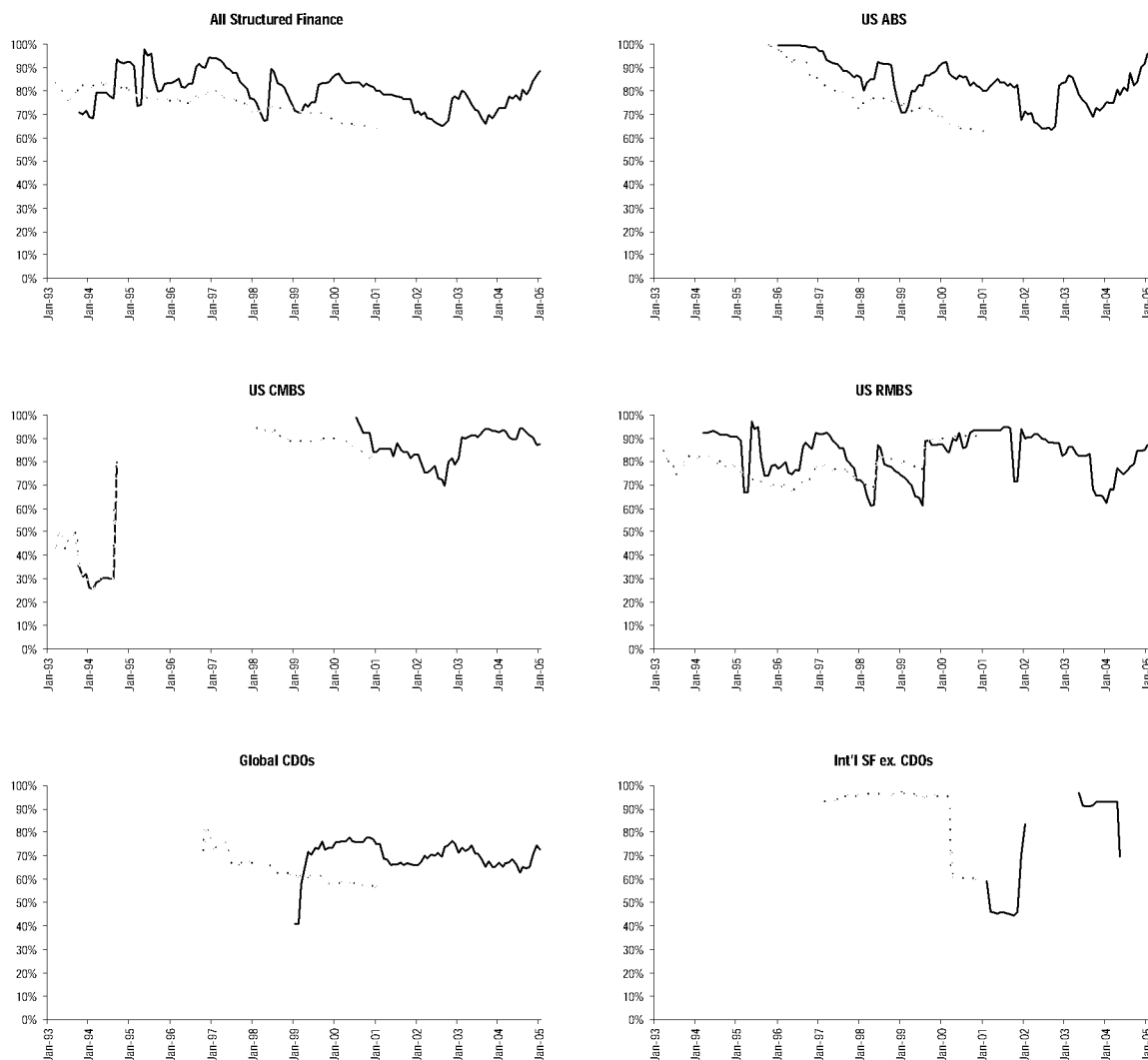
Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on January 1, 2005 and January 1, 2001.

The gaps in the US CMBS and International Structured Finance accuracy ratio series resulted from zero impairment in those periods. In addition, the accuracy ratios tend not to be meaningful when the number of impaired securities is very small (in single digits). For example, the five-year accuracy ratio for international structured finance is based on a single impaired security that was rated Ba2 in 1996 and impaired in 2002. This structured finance sector had just five impaired tranches, four of which were rated after January 1, 2000. The impairment experiences of these four tranches are reflected in the one-year accuracy ratios. In addition, only one CMBS security was impaired in 1994, and was rated Baa2 before it became impaired.

Investment-Grade Loss Rates

Figure 4 shows that the loss rates of investment-grade securities have declined significantly across all sectors in the latest annual cohort ending December 2005,[6] whereas the loss rate in the latest five-year cohort ending December 2005 was still at its historical high in the all structured finance category as well as in the US ABS and Global CDOs sectors.[7] In addition,

- In the all structured finance category, the investment-grade loss rate dropped to 0.03% in the latest annual cohort from 0.10% and 0.24% six and twelve months prior.
- The US ABS and Global CDO sectors experienced significant declines in the loss rates, with the one-year US ABS investment-grade loss rate decreasing to 0.01% in the latest annual cohort from 0.38% one year prior, and to 0.10% from 0.58% over the same one-year period for Global CDOs.
- The investment-grade loss rates remained very low in the US CMBS and RMBS sectors. In particular, the US CMBS investment-grade loss rate has been at 0% since August 2003 and during most of the sample period, and during 2000-2002 for US RMBS.

Figure 4 – One-Year (solid line) and Five-Year (dotted line) Investment-Grade Loss Rates
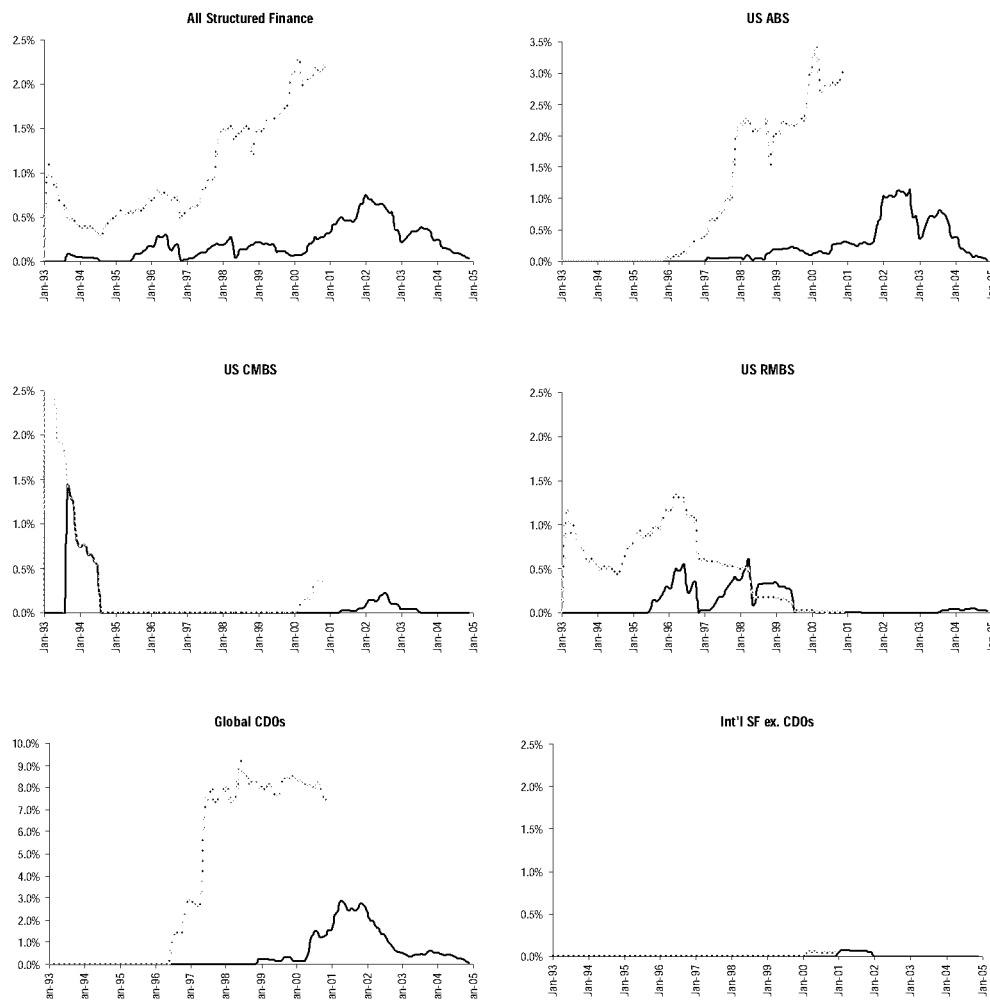
Note: At the beginning of each month, securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one-year rating cohort is formed on January 1, 2005 and the latest five-year rating cohort is formed on January 1, 2001.

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6. These loss rates are based on number of securities, not dollar volume of issuance. Loss rates weighted by dollar volume are substantially lower.
7. Differences in rating distribution within the investment-grade category may contribute to the differences of investment-grade loss rates across sectors. For more details about the impairment and loss rates of structured finance securities by rating and sector, please see "Default & Loss Rates of Structured Finance Securities: 1993-2005," Moody's Special Comment, April 2006.

Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time.[8] To provide the context of this metric, the figure also contains the number of newly impaired securities used to calculate the average ratings over time. The following observations are noteworthy:

- The average rating before impairment in the all structured finance category dropped sharply by three notches over the past year, to roughly Ba3 in the most recent cohort from Baa3 twelve months prior. This was led primarily by the declines in the average ratings before impairment in the US ABS and US RMBS sectors.
- The average rating before impairment in US CMBS continued to be the lowest at B2 among all sectors in the latest annual cohort, only slight higher than B3 one year earlier.
- The average rating before impairment in the Global CDO sector was at Ba1 in the most recent annual cohort, about the same as those six and twelve months prior, and one notch higher than the historical average of Ba2.
- The average ratings before impairment in the US ABS and RMBS sectors have been volatile historically, especially during periods in which the number of newly impaired securities was small. Within cohorts ending in 2005, the average rating before impairment in the US ABS sector has declined significantly and approached Ba2 in the most recent cohort. The Ba2 rating was three notches lower compared to one year earlier. In addition, the decline in the average rating before impairment for US RMBS was equally impressive, falling to Ba3 in the latest annual cohort from Baa2 twelve months prior.

Figure 5 – 36-Month-Average Ratings before Impairment (solid line) and Number of Newly Impaired Securities (dotted line)

All Structured Finance

US ABS

US CMBS

US RMBS

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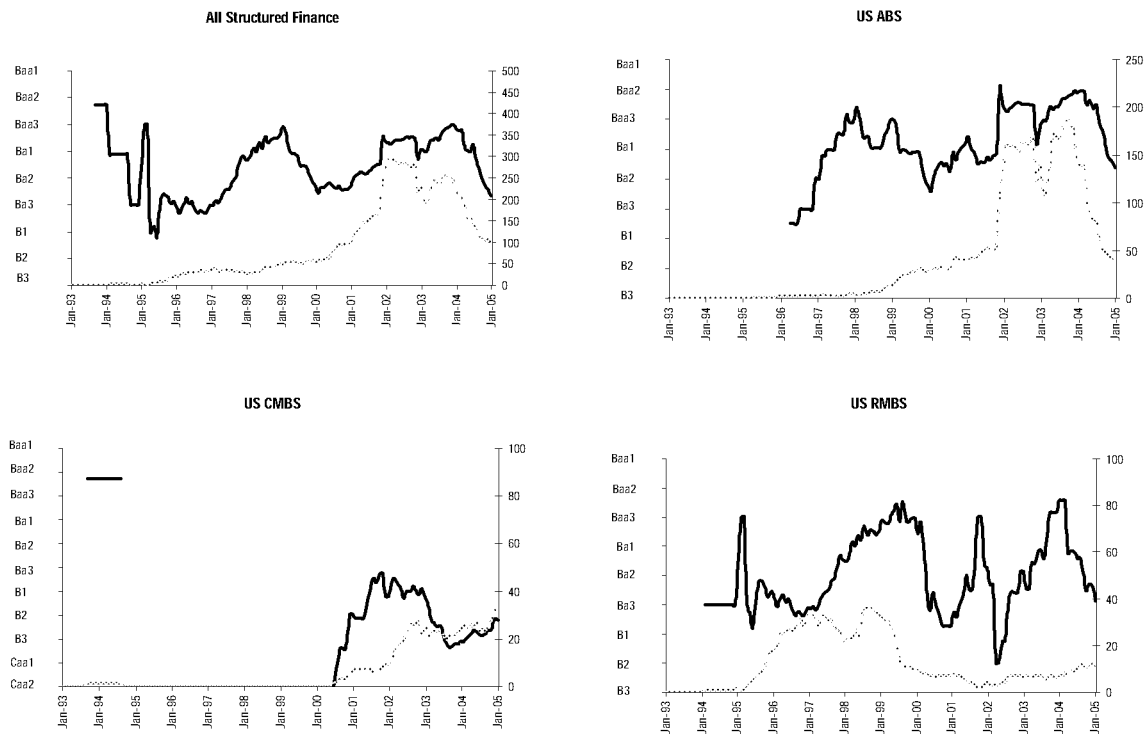
8. We have adjusted this metric by the differences in loss severity across impaired tranches. There are a large number of non-matured tranches, the loss severity of which have to be estimated, and may be subject to revisions once more data become available.

Figure 5 – 36-Month-Average Ratings before Impairment (solid line) and Number of Newly Impaired Securities (dotted line)

Global CDOs

Int'l SF ex. CDOs
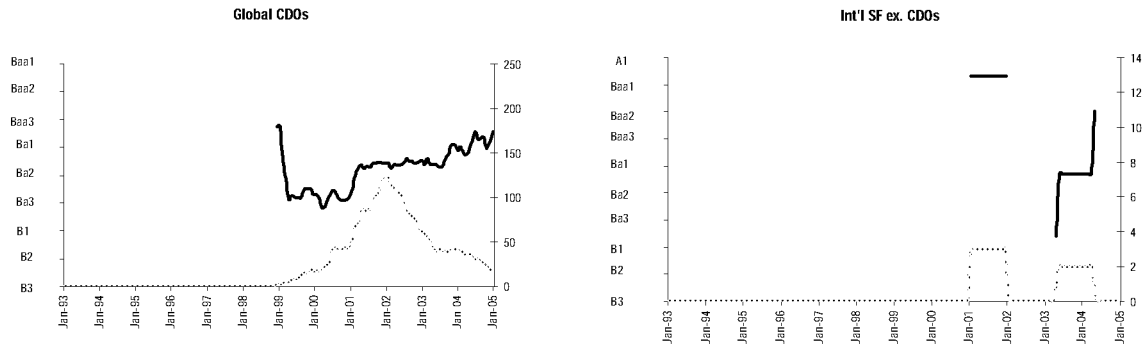
Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest cohort is formed on January 1, 2005.

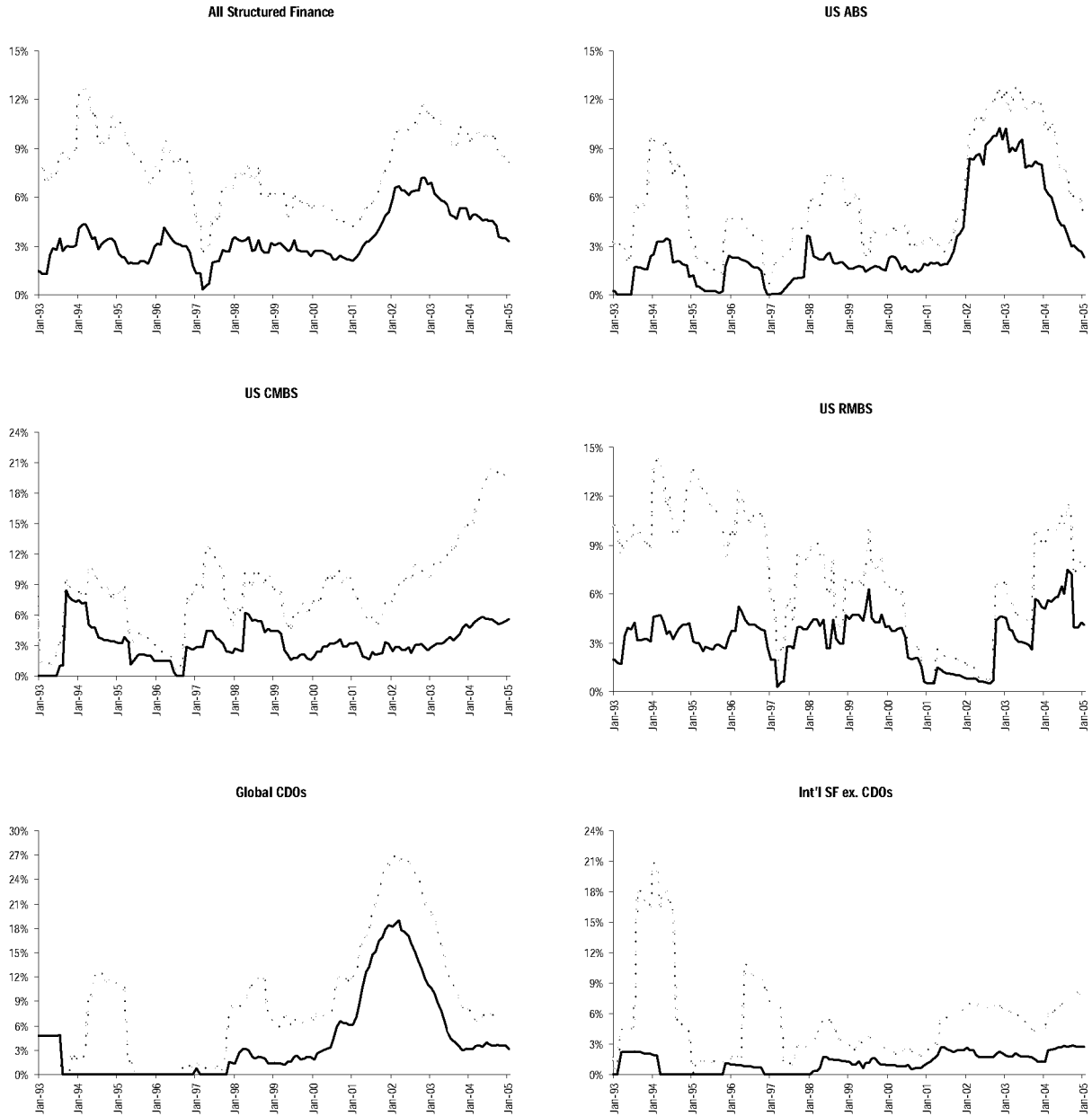# Rating Action Rates and Large Rating Action Rates

Figure 6 reports annual rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[9] Key observations include:

- The annual rating action rate in the all structured finance category decreased in the second half of 2005 to 8.1% in the most recent annual cohort, from 9.9% six months earlier and 9.4% twelve months earlier, as downgrade rates continued to decline and upgrade rates started to taper off in 2005. Additionally, the number of large rating actions as a share of all rating actions shrank to 41% in the latest cohort from 49% a year earlier.

- The downgrade rate has declined substantially to 1.9% in the latest one-year cohort ending December 2005, from 3.3% and 5.0% half-a-year and a year prior, respectively. In addition, the large downgrade rate — downgrades of three notches or more — was halved to 0.9% in the most recent annual cohort, from 1.8% six months earlier.

- The upgrade rate was at 6.2%, in the latest annual cohort, slightly lower than the 6.6% level six months earlier, but much higher than the historical average upgrade rate of 3.9%.

- Most downgrades have been anticipated by negative rating reviews, although in recent annual cohorts that ended in 2005, the frequency of reviews prior to downgrades has declined;[10] in the most recent annual cohort, that frequency was 72.7%, compared to 78.7% a year prior. Additionally, most upgrades were not reviewed prior to a rating action as only about 41% of all upgrades in the most recent annual cohort were anticipated by a positive review, marking a slight decline from 46% a year earlier.

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9. *Different rating distributions may contribute to the differences in rating actions rates across sectors. For more details about structured finance rating transitions by rating and sector, please see "Structured Finance Rating Transitions: 1983-2005," Moody's Special Comment, February 2006. Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.*

10. *Almost all 2005 downgrades in the US CMBS sector occurred in the speculative-grade category, most of which were not placed on review before their downgrades.*

Figure 6 – Annual Rating Action Rates (dotted line) and Large (three notches or more, solid line) Rating Action Rates

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs
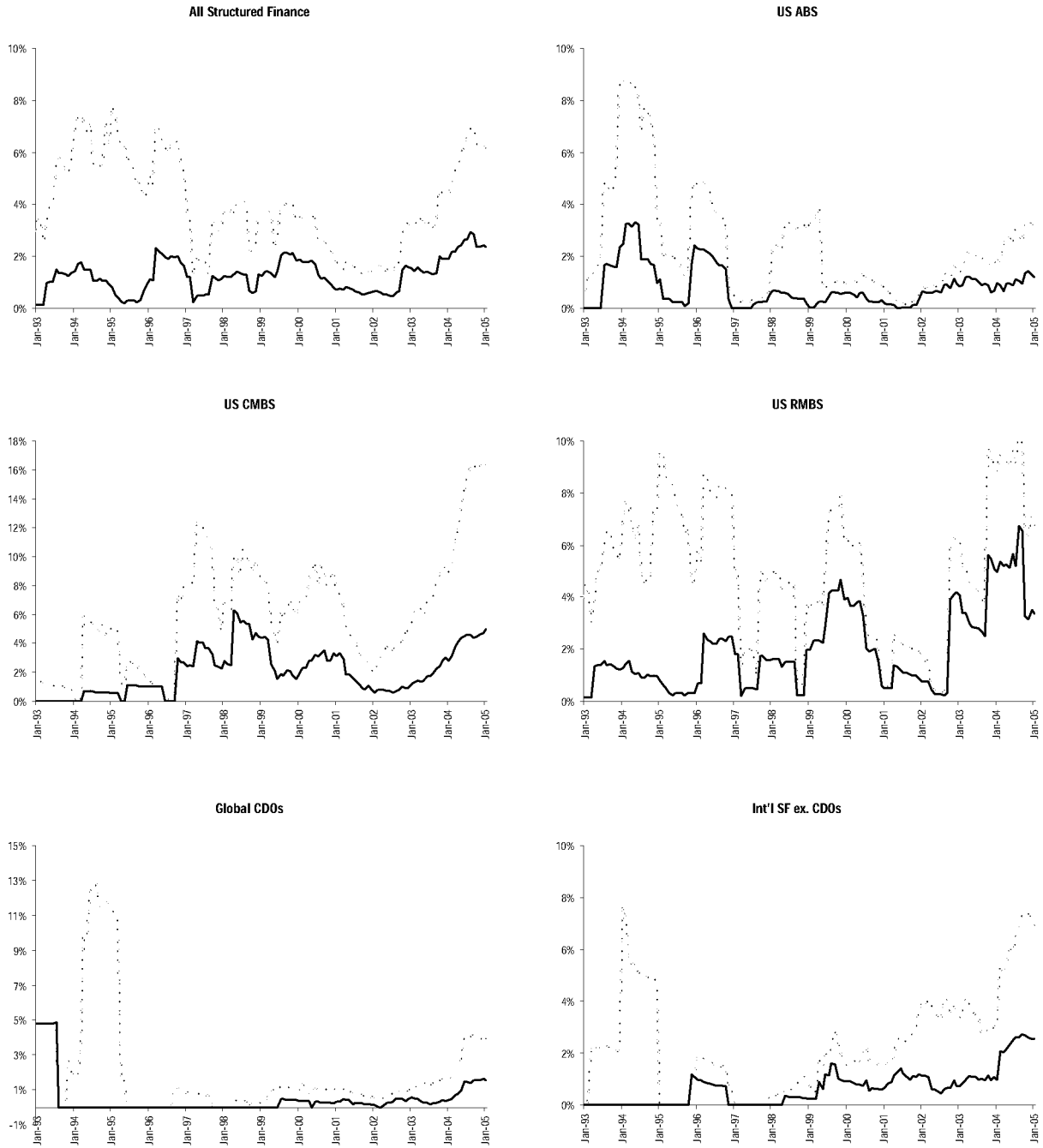

Int'l SF ex. CDOs


Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month. The latest annual cohort is formed on January 1, 2005.

Figure 7 – Annual Downgrade Rates (dotted line) and
Annual Large (three notches or more, solid line) Downgrade Rates
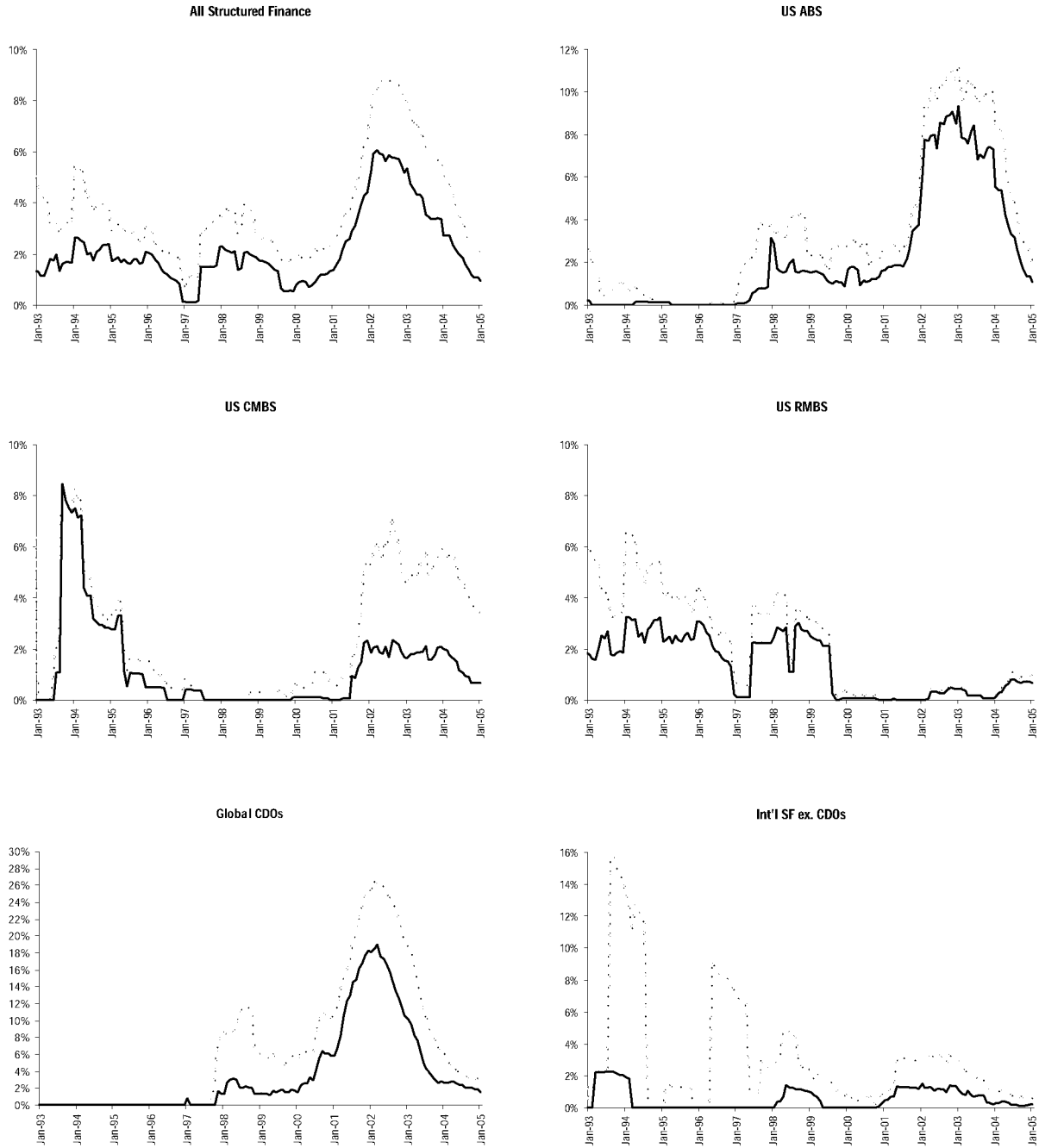
All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

Int'l SF ex. CDOs

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month. The latest annual cohort is formed on January 1, 2005.

Figure 8 – Annual Upgrade Rates (dotted line) and
Annual Large (three notches or more, solid line) Upgrade Rates

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

Int'l SF ex. CDOs

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month. The latest annual cohort is formed on January 1, 2005.

Figure 9 – Percentages of Downgrades (solid line) and
Upgrades (dotted line) Preceded by Watchlist Actions in the Same Direction

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

Int'l SF ex. CDOs
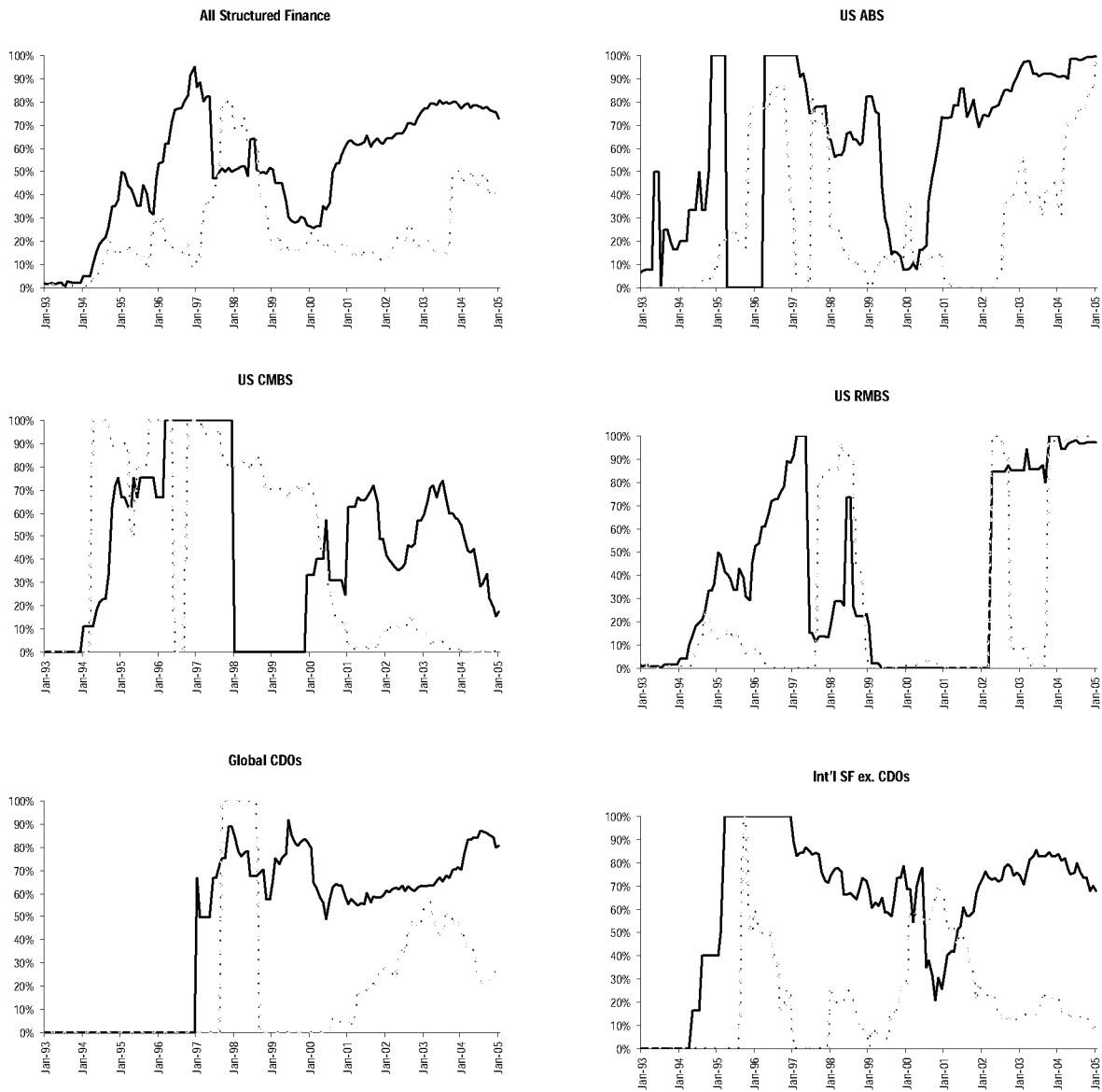
Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest annual cohort is formed on January 1, 2005.

Glossary

MATERIAL IMPAIRMENT

Material impairment, or for simplicity, impairment, is a concept adopted in Moody's structured finance default and loss studies. Material impairment includes uncured payment defaults and securities downgraded to Ca or C, where payment defaults include shortfalls of interest and losses of principal on individual tranches of structured finance transactions. A security is called "newly impaired" in a given period if it had no outstanding interest shortfalls, no principal losses, and was not rated Ca or C in the prior period, but experienced at least one of these three credit events in the given period for the first time.

LOSS-GIVEN-DEFAULT (LGD)

Loss-given-default, also known as LGD or loss severity rate, is the total amount of lifetime losses as a share of a tranche's principal balance on a certain reference date. The losses in each payment period are discounted by a discount rate, which is typically the stated coupon rate on the tranche. There are three types of principal balances used in the calculation of LGD: the principal balanced at origination, at the time of impairment, and at a cohort formation date. Depending on the reference principal balance (and the reference date), the calculated LGD can be significantly different due to principal amortization and discounting.

Final LGD on impaired securities with no outstanding principal balances are typically known. For impaired securities with positive principal balances or impaired securities with incomplete loss data, their LGD need to be estimated. Detailed discussions on the estimation of those final LGD are provided in several Moody's Special Comments including, in particular, "Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities," Moody's Special Comment, April 2004, and "Default & Loss Rates of Structured Finance Securities: 1993-2005," Moody's Special Comment, April 2006.

ACCURACY RATIO

An accuracy ratio (AR) based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[11]

To calculate accuracy ratios, we use the same data sample that is used in the latest structured finance default and loss study (1993-2005), and form rating cohorts of different horizons for each calendar month during 1993-2005, i.e. all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. We then do the same (group by ratings in each calendar month) for securities that became impaired within one, three, or five years from that month. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low losses or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to ratings.

Because we use only data observations that span the time horizon under consideration, the latest cohort for a one-year horizon is formed on January 1, 2004, while for a five-year horizon the latest cohort is formed on January 1, 2000.

INVESTMENT-GRADE LOSS RATE

The one-year investment-grade (Aaa through Baa3) loss rate is calculated as follows. First, for each impaired security, we calculate a loss rate, given impairment, as a share of its tranche balance at the cohort date. Then, we sum up these loss rates to get a total loss value for all securities that become impaired within a 12-month period after the cohort formation date. We divide this total loss value by the total number of securities in the rating cohort to obtain the invest-

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11. For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004.

ment-grade loss rate. Note that this loss rate is not weighted by the total dollar volume of outstanding securities in the cohort. The five-year investment-grade loss rate is calculated similarly.

AVERAGE RATING BEFORE IMPAIRMENT

The rating of an impaired security is measured every month for 36 months prior to impairment as well as immediately prior to impairment. These 37 rating measurements are averaged together to create one representative number for each impaired security that becomes impaired within 12 months after the month of cohort formation. This average is weighted by each impaired tranche's loss severity rate as a share of original balance so that the rating on an impaired tranche with higher loss severity rate is weighted more than the rating on a tranche with lower loss severity rate.[12] These representative numbers are then averaged together to create the reported average rating each month.

RATING ACTION RATE

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scale. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

LARGE RATING ACTION RATE

A security that had its rating changed by three notches or more within a year after cohort formation is said to have experienced a large rating action. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

PERCENTAGE OF DOWNGRADES (UPGRADES) PRECEDED BY WATCHLIST ACTIONS

This metric is defined as the number of securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

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This refers to Asset-Backed-Securities. This structured finance sector includes securities backed by home equity loans (HEL) in addition to both traditional (autos, credit cards, leases, manufactured housing, student loans, etc.) and non-traditional (mutual fund fees, tax liens, tobacco settlement, whole business securitizations (ABS), etc) asset classes.

HELS

HELs include securities collateralized by subprime (B&C) mortgage loans, home improvement loans, high loan-to-value (high LTV) loans, home equity lines of credit (HELOs), closed-end second-lien loans, and net interest margin (NIM) securitizations. It does not include "Alt-A" mortgages, which are part of the RMBS sector. HEL is part of the ABS sector.

CDOS

This refers to collateralized debt obligations. Credit derivative securities such as repackaged securities and structured notes are not considered to be part of this sector.

CMBS

This refers to commercial mortgage-backed securities.

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12. *In a simplified example of two impairments: one with a loss severity rate of LGD(1) and an average rating number of RN(1), and the other with a LGD(2) and RN(2), the average rating is calculated as (LGD(1)*RN(1)+LGD(2)*RN(2))/(LGD(1)+LGD(2)). This is the first time we introduce LGD rates as weights in computing an average rating before impairment. Ideally, LGD rates should be calculated for each monthly principal balance in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make any material difference in the average rating number, whether we use LGD rates as a share of impairment-date balance or original balance or the monthly LGD rates. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.*

RMBS

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

U.S. STRUCTURED FINANCE SECURITIES

This refers to structured finance securities denominated in U.S. dollars and issued in the U.S. market.

INTERNATIONAL STRUCTURED FINANCE EXCLUDING CDOS

This refers to non-CDO structured finance securities that are not denominated in U.S. dollars or not issued in the U.S. market. The majority of the securities in this sector are in Europe; the rest comes from the Asia Pacific region, Canada, and Latin America.

Related Research

Special Comments:

The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

Default & Loss Rates of Structured Finance Securities: 1993-2005, April 2006 (97234)

Default & Loss Rates of Structured Finance Securities: 1993-2004, July 2005 (93653)

Default & Loss Rates of U.S. CDOs: 1993-2003, March 2005 (91692)

Default & Loss Rates of Structured Finance Securities: 2004 First Half Update, January 2005 (90843)

Default & Loss Rates of Structured Finance Securities: 1993-2003, September 2004 (88692)

Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities, April 2004 (86769)

Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002, December 2003 (80247)

Structured Finance Rating Transitions: 1983-2005, February 2006 (96533)

Structured Finance Rating Transitions: 1983-2004, February 2005 (91392)

Structured Finance Rating Transitions: 1983-2003, February 2004 (81239)

Structured Finance Rating Transitions: 1983-2002, Comparisons with Corporate Ratings and Across Sectors, January 2003 (77291)

Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

Guide to Moody's Default Research: Febuary 2006 Update, March 2006 (96841)

The Performance of Moody's Corporate Bond Ratings: March 2006 Quarterly Update, April 2006 (97222)

Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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Report Number: 97346

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The Performance of Structured Finance Ratings: Mid-Year 2006 Report

Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of June 2006, both with respect to rating accuracy and rating stability.

As indicated in Figure 1, the one-year rating accuracy and stability of the most recent rating cohort (ending June 2006) was greater compared to the performance of cohorts formed six and twelve months prior and compared to the long-term average performance of all prior cohorts. The highlights of this report are:

- Overall, 72 structured finance securities became impaired in the first half of 2006: 31 in US ABS, 29 in US CMBS, 3 in US RMBS, 8 in global CDOs, and one in the international structured finance sector excluding CDOs.
- The one-year accuracy ratio for the most recent cohort was 95.2%, which is 5.6 percentage points higher than its six months-prior level and a dramatic 18.6 percentage points higher than the long-run historical average.
- The five-year accuracy ratio for the most recent five-year cohort, formed in July 2001, was 64.3% -- below its level of 66.3% six months earlier and its historical average of 70.9% -- as this statistic has not yet captured the more recent improvements in performance.
- Almost all newly impaired securities over the past year were rated speculative-grade well in advance of impairment. As a result, the one-year investment-grade loss rate was 0.01%, lower than its level of 0.02% six months ago and a steep decline from its long-term historical average of 0.22%.
- The average rating during the three years prior to impairment of all securities that became impaired over the past year dropped to an all-time low of B2, two notches below the average rating prior to impairment six months prior and four notches below the historical average.
- The one-year rating action rate declined to 6.9% in the most recent cohort from its six months-prior level of 8.0% and its historical average of 8.1%, as the frequencies of both upgrades and downgrades declined.
- The one-year large rating action rate (rating changes of three notches or more) was 2.8%, lower than the six months-prior level of 3.2%, and significantly lower than the historical average of 3.9%.
- Improvements in the one-year accuracy ratios, investment-grade loss rates and average ratings before impairment were observed across all sectors of structured finance, with global CDOs and US RMBS exhibiting the most dramatic improvements relative to recent historical performance.[1]

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1. These performance metrics should be interpreted with caution. Some statistics are based on small samples, as the number of impairments in any given year and any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors. Moreover, variations in rating performance over time may reflect either changes in the quality of the rating process or changes in the environment that make defaults more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

Figure 1 - Summary of All Structured Finance Rating Performance as of June 2006*

| | Number of New Impairments over Prior 12 | Accuracy Measures | | | Stability Measures | | |
Cohort Ending Date	Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
June 2006	106	95.2%	64.3%	0.01%	B2	6.9%	2.8%
December 2005	90	89.6%	66.3%	0.02%	Ba3	8.0%	3.2%
June 2005	142	77.6%	68.0%	0.12%	Ba1	9.9%	4.5%
December 2004	208	75.4%	69.9%	0.21%	Baa3	9.4%	4.6%
Average (1993-Most Recent)	85	76.6%	70.9%	0.22%	Ba1	8.1%	3.9%

Figure 2 - Summary of Structured Finance Rating Performance by Sector as of June 2006*

| | Number of New Impairments over Prior 12 | Accuracy Measures | | | Stability Measures | | |
	Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending June 2006							
US ABS	47	96.2%	63.3%	0.01%	B1	4.0%	2.1%
US CMBS	40	89.7%	83.6%	0.00%	B3	21.4%	7.2%
US RMBS	6	95.7%	92.3%	0.00%	Ba2	5.1%	2.5%
Global CDOs	12	93.5%	57.1%	0.02%	B3	5.9%	2.7%
Int'l SF ex. CDOs	1	99.6%	56.6%	0.00%	B1	5.5%	1.5%
Historical Averages Since 1993							
US ABS	42	77.7%	72.7%	0.29%	Baa3	6.8%	4.1%
US CMBS	8	87.4%	85.9%	0.03%	B2	12.6%	4.0%
US RMBS	11	82.6%	73.9%	0.08%	Ba2	7.0%	3.4%
Global CDOs	23	72.6%	61.3%	0.64%	Ba2	12.0%	6.5%
Int'l SF ex. CDOs	1	59.1%	74.6%	0.01%	Baa2	5.7%	1.8%

*A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment defaults can be cured and past remittance or trustee reports may be revised. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer.

Table of Contents

Introduction

In a *Special Comment* published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability. [2] Moody's corporate rating performance report is now updated on a quarterly basis.[3] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 *Special Comment* "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. In computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. In other words, Moody's structured rating performance metrics weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[4] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 *Special Comment*, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we will regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) - the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

Accuracy statistics are calculated based on the data from Moody's latest annual structured finance default and loss study (1993-2005)[5] supplemented with default and loss data from the first half of 2006. For the measurement of stability and volatility, we incorporate the most recent rating action data from Moody's latest structured finance rating transition study.[6] In particular, the data sample of this report includes all public, 144A, and private tranches with a Moody's long-term global debt rating in the global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS) and collateralized debt obligations (CDO) sectors. Provisional ratings, credit evaluations, and national scale ratings are not included. Pari passu tranches are collapsed into a single tranche. In addition, the following tranches are excluded: (1) tranches guaranteed by financial guarantors or government-sponsored enterprises (GSEs); (2) interest-only (IO) or residual tranches; (3) repackaged securities, structured notes, structured investment vehicles, structured covered bonds, and other credit derivative securities; and (4) deals that have all their tranche ratings linked to a single corporate or sovereign rating.

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2. See "Measuring the Performance of Corporate Bond Ratings," Moody's Special Comment, April 2003.
3. For the latest performance report, see "The Performance of Moody's Corporate Bond Ratings: June 2006 Quarterly Update," Moody's Special Comment, August 2006.
4. The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004. The concept of accuracy ratio is also described in the Glossary at the end of this report.
5. See "Default & Loss Rates of Structured Finance Securities: 1993-2005," Moody's Special Comment, April 2006.
6. See "Structured Finance Rating Transitions: 1983-2006 H1," Moody's Special Comment, August 2006.

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

- The one-year accuracy ratio for the overall structured finance category continued to trend upward, reaching 95.2% for the latest annual cohort, a remarkable 18.6 percentage points higher than the historical average.
- Both the US RMBS and global CDO sectors experienced dramatic increases in their one-year accuracy ratios relative to six months ago, jumping 8.3 percentage points to 95.7% for US RMBS and 18.6 percentage points to 93.5% for global CDOs. The US ABS and US CMBS sectors also exhibited good performance, with accuracy ratios of 96.2% and 89.7% respectively for the most recent annual cohort.
- Conversely, the five-year accuracy ratios for all sectors are still on a declining trend, as the most recent five-year cohort ending June 2006 was formed in July 2001 in the middle of the last recession, and significant improvements in the more recent cohorts have not yet been captured.

Figure 3 – One-Year (solid line) and Five-Year (dotted line) Accuracy Ratios
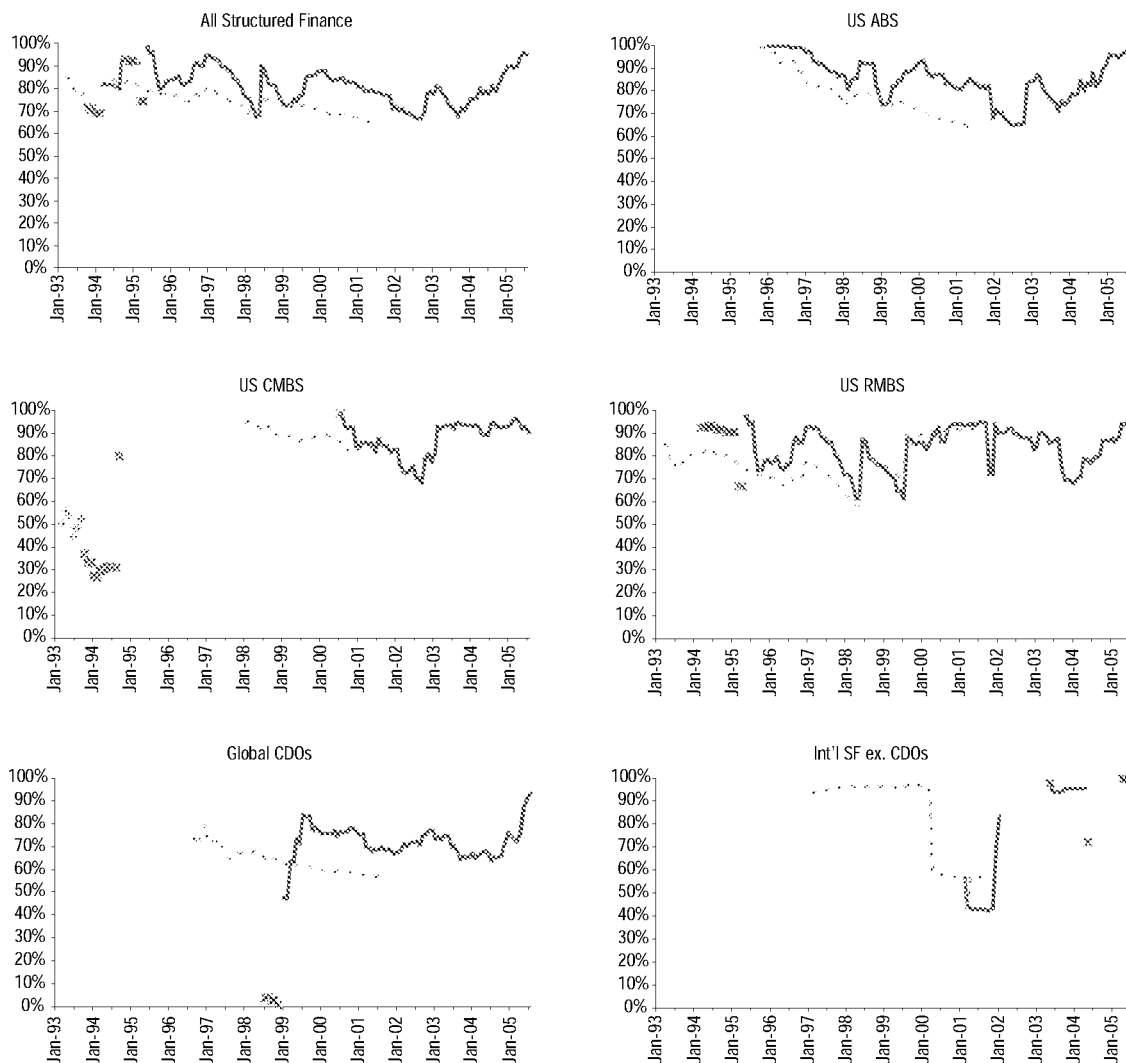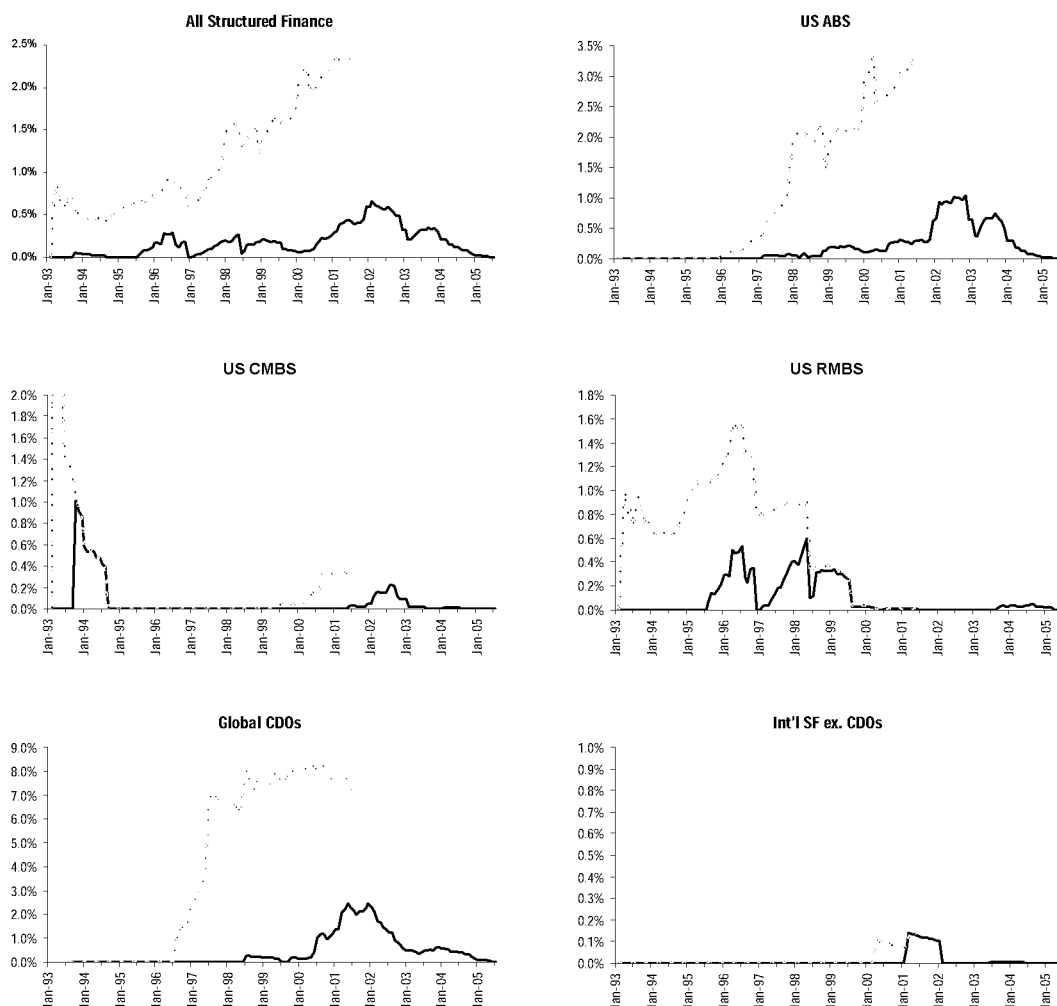

Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on July 1, 2005 and July 1, 2001. Breaks in the accuracy ratio series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

- For global structured finance, the one-year investment-grade loss rate was a negligible 0.005% for the most recent annual cohort, compared to 0.02% and 0.12% six and twelve months prior, respectively.
- For the cohort ending June 2006, the one-year investment-grade loss rate was zero for both US CMBS and the international structured finance sector excluding CDOs, and has been zero for these two sectors for at least the last nine months. US RMBS also experienced a zero percent investment-grade loss rate for its four most recent annual cohorts.
- The one-year investment-grade loss rates fell significantly for US ABS and global CDOs, dropping to 0.005% in the latest annual cohort versus 0.01% six months ago for US ABS and to 0.02% versus 0.09% over the same period for global CDOs.
- The five-year investment-grade loss rates in the latest cohorts remained at their historical highs across all sectors except US RMBS. The five-year loss rate is expected to drop once the more recent cohorts reach five years of seasoning as the rate has not yet captured the more recent improvements. Additionally, the five-year investment-grade loss rate in the US RMBS sector was under 0.01% and the lowest among all sectors since April 2000.

Figure 4 – One-Year (solid line) and Five-Year (dotted line) Investment-Grade Loss Rates

Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on July 1, 2005 and July 1, 2001.

Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

- The average rating before impairment for global structured finance dropped to B2 for the most recent cohort, two notches down from Ba3 six months prior and a remarkable four notches lower than the historical average. Furthermore, almost all sectors of structured finance experienced declines in their average ratings before impairment.
- The US ABS and global CDO sectors exhibited the sharpest decreases. The US ABS average rating before impairment was B1 for the most recent cohort versus Ba2 six months prior, while for global CDOs, the average rating fell to a record low of B3 versus Baa3 six months ago.
- The average rating before impairment in the US CMBS sector was B3 for the latest annual cohort, the same as its six months-prior level and one notch lower than its historical average. The average rating before impairment for US RMBS for the most recent cohort was Ba2, one notch higher than its six month-prior level and in line with its historical average.

Figure 5 – 36-Month-Average Ratings before Impairment (solid line) and Number of Newly Impaired Securities (dotted line)
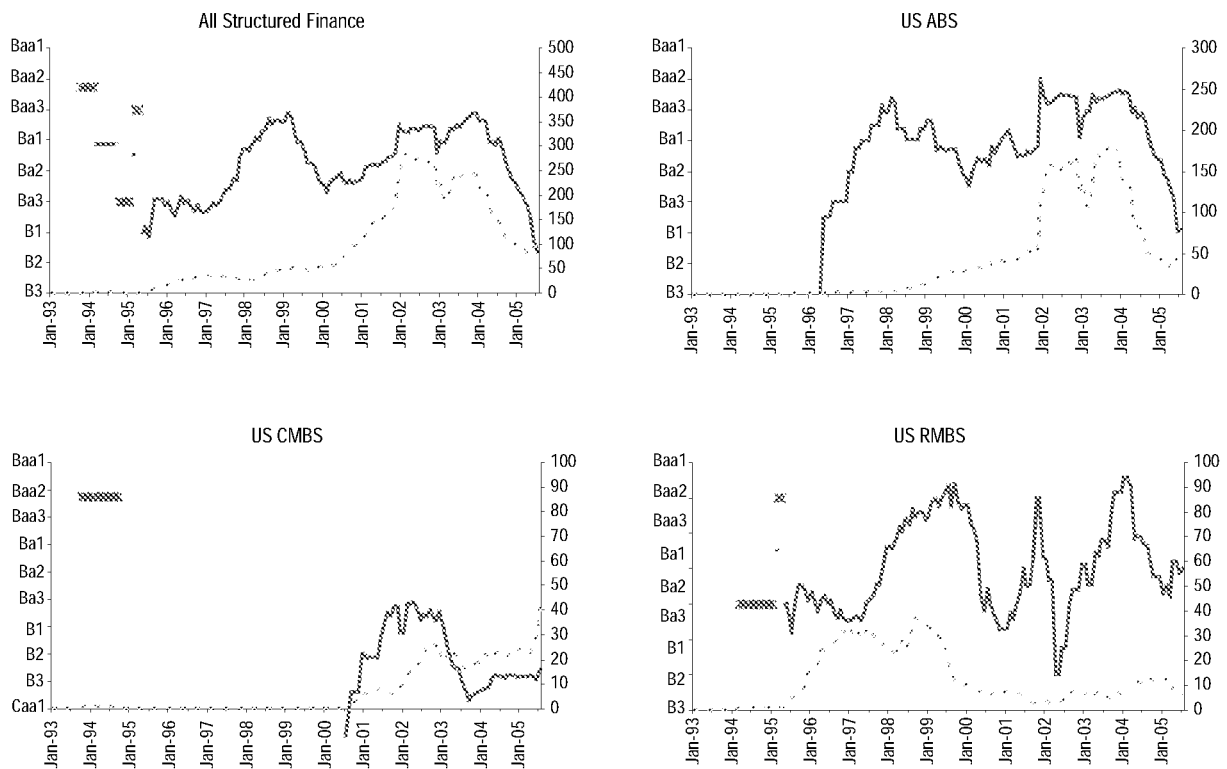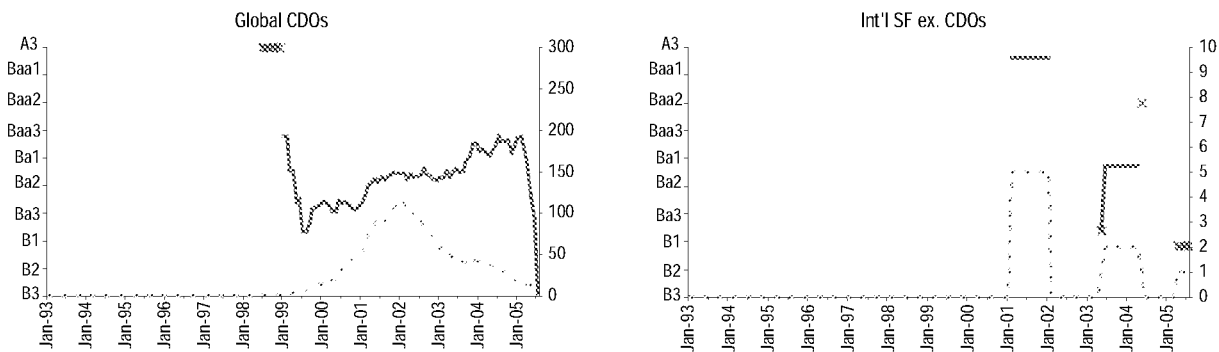
Figure 5 – 36-Month-Average Ratings before Impairment (solid line) and Number of Newly Impaired Securities (dotted line)

Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on July 1, 2005. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.
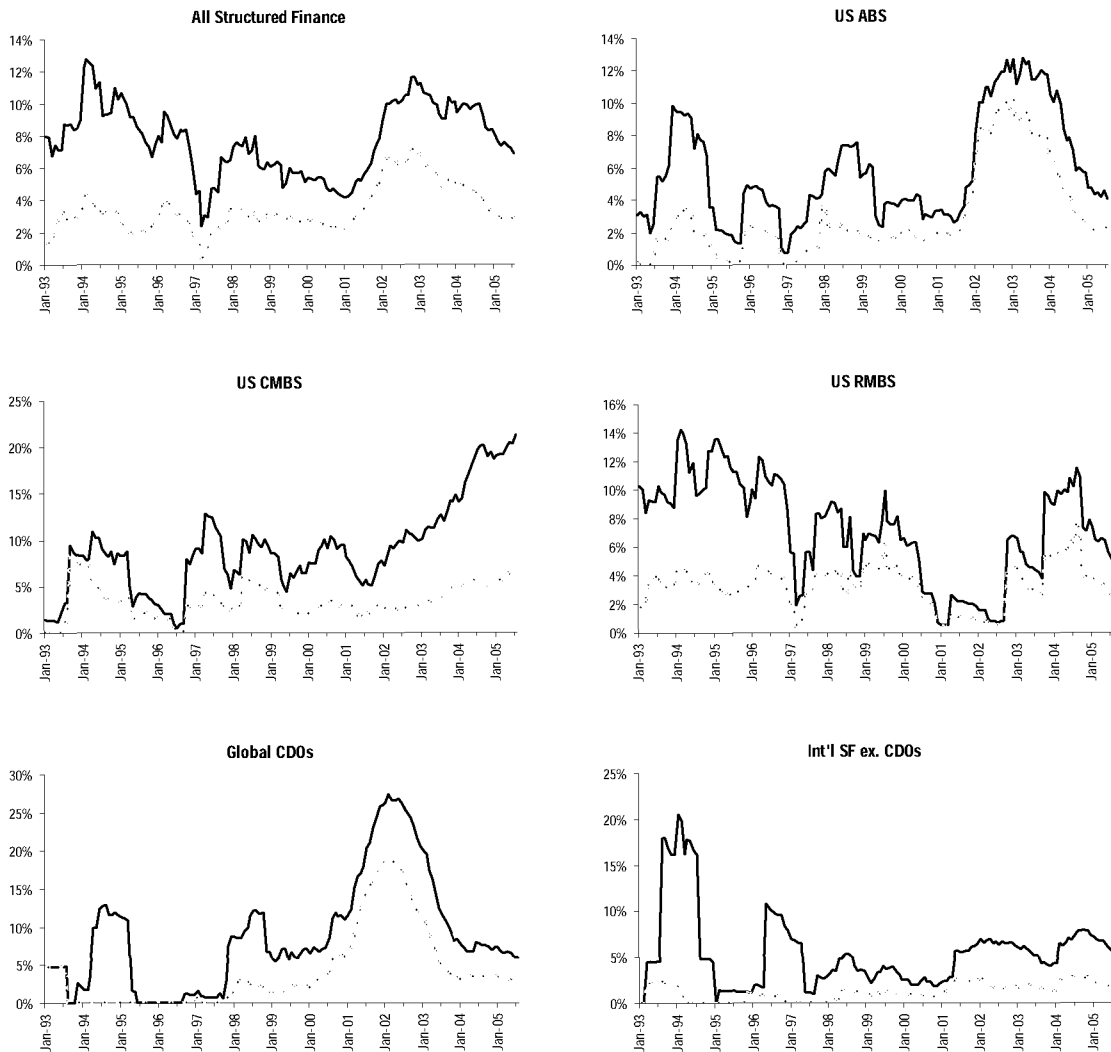
Rating Action Rates and Large Rating Action Rates

Figure 6 reports annual rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[7] Key observations include:

- The annual rating action rate in the all structured finance category decreased to its lowest level in almost four years to 6.9% for the cohort ending June 2006 from 8.0% six months prior and 9.9% twelve months prior. The large rating action rate also fell to a four-year low of 2.8% in mid-2006 from 3.2% six months prior and 4.5% a year earlier. The decrease in the rate of rating changes was caused by declines in the frequencies of both downgrades and upgrades over the last year.

- The global structured finance downgrade rate declined to 1.5%, its lowest level since mid-1997 and a moderate decrease from the rate of 2.0% six months earlier, and a marked decrease from 3.3% one year prior. The large downgrade rate also remained at low levels at 0.8% in the annual cohort ending June 2006, a marginal decrease from the rate of 0.9% six months prior, but less than half the year-prior rate of 1.9%. In addition, the pattern of declining downgrade rates was observed in all sectors of structured finance.

- The overall upgrade rate declined to 5.3%, lower than the upgrade rate of 6.0% six months ago and the rate of 6.6% 12 months ago, but still higher than the historical average of 4.1%. Meanwhile, the large rating upgrade rate was 2.0% in mid-2006, which was lower than the rates six and twelve months prior, but still higher than the historical average of 1.5%. The upgrade rate was flat or declining for all sectors of structured finance except for US CMBS where the annual frequency of upgrades jumped to a new high of 19.2% in June 2006.

- The large majority (76.0%) of structured finance downgrades that occurred in the latest annual cohort were on review for downgrade prior to being downgraded. While this percentage is lower than the proportion of reviewed downgrades six months prior, it is higher than the historical average. In contrast, only 40.4% of upgrades in the 12 months preceding June 2006 were on review for upgrade prior to being upgraded, but this percentage is still greater than the historical average.
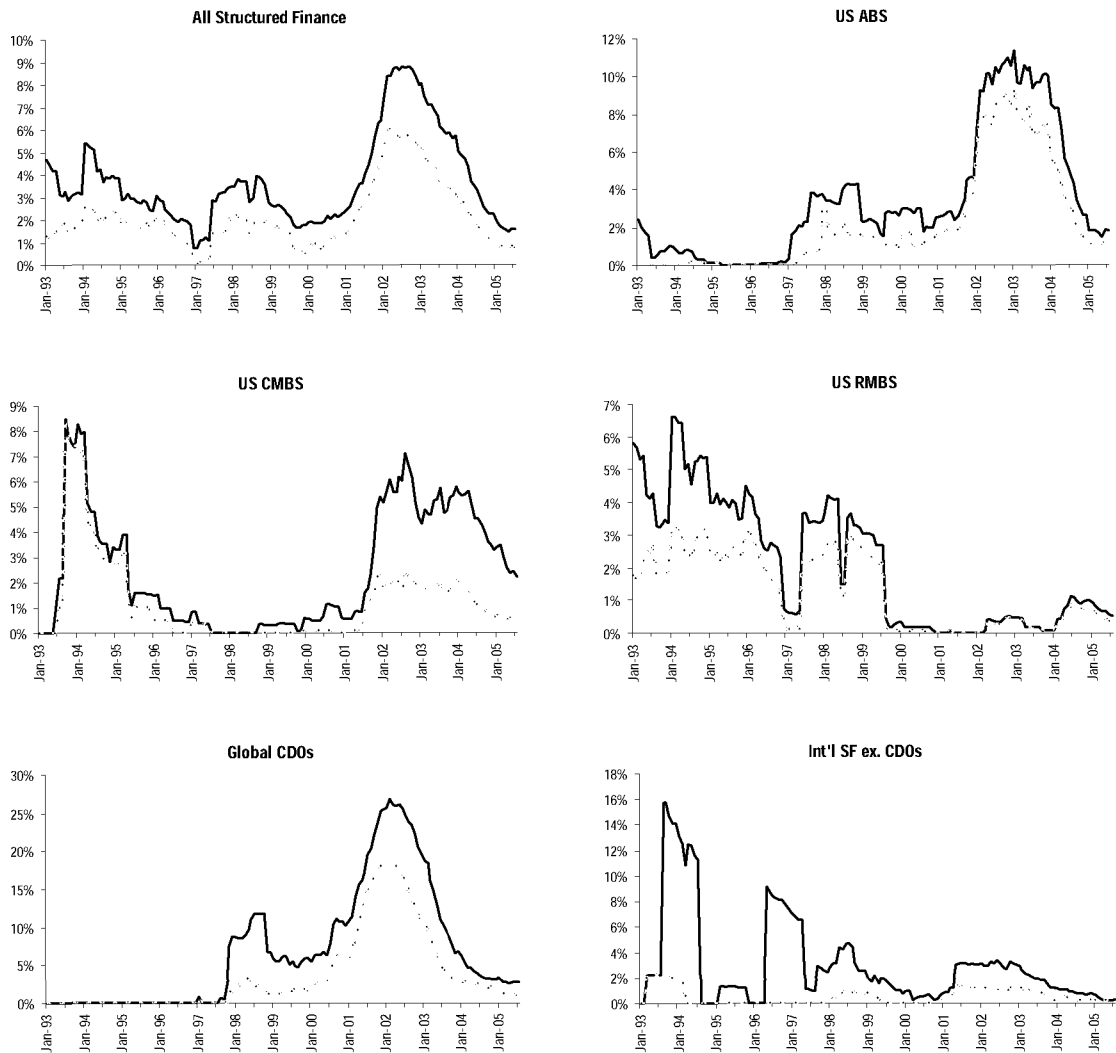
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7. For the latest rating transition statistics of structured finance securities worldwide, see "Structured Finance Rating Transitions: 1983-2006 H1," Moody's Special Comment, August 2006. Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.

Figure 6 – Annual Rating Action Rates (solid line) and Annual Large (three notches or more) Rating Action Rates (dotted line)

All Structured Finance

US ABS

US CMBS

US RMBS
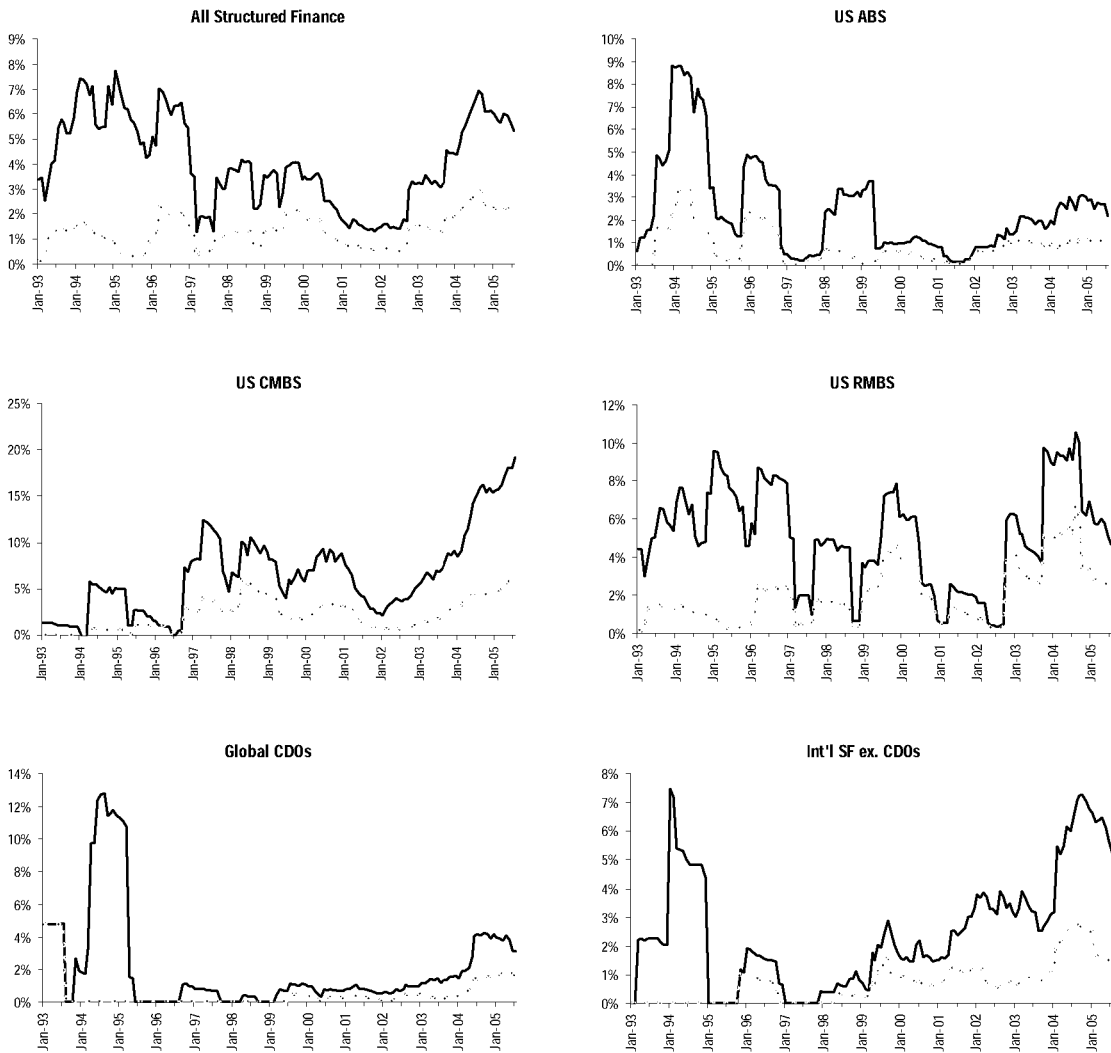

Global CDOs

Int'l SF ex. CDOs

Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2005.

Figure 7 – Annual Downgrade Rates (solid line) and Annual Large (three notches or more) Downgrade Rates (dotted line)

All Structured Finance

US ABS

US CMBS

US RMBS

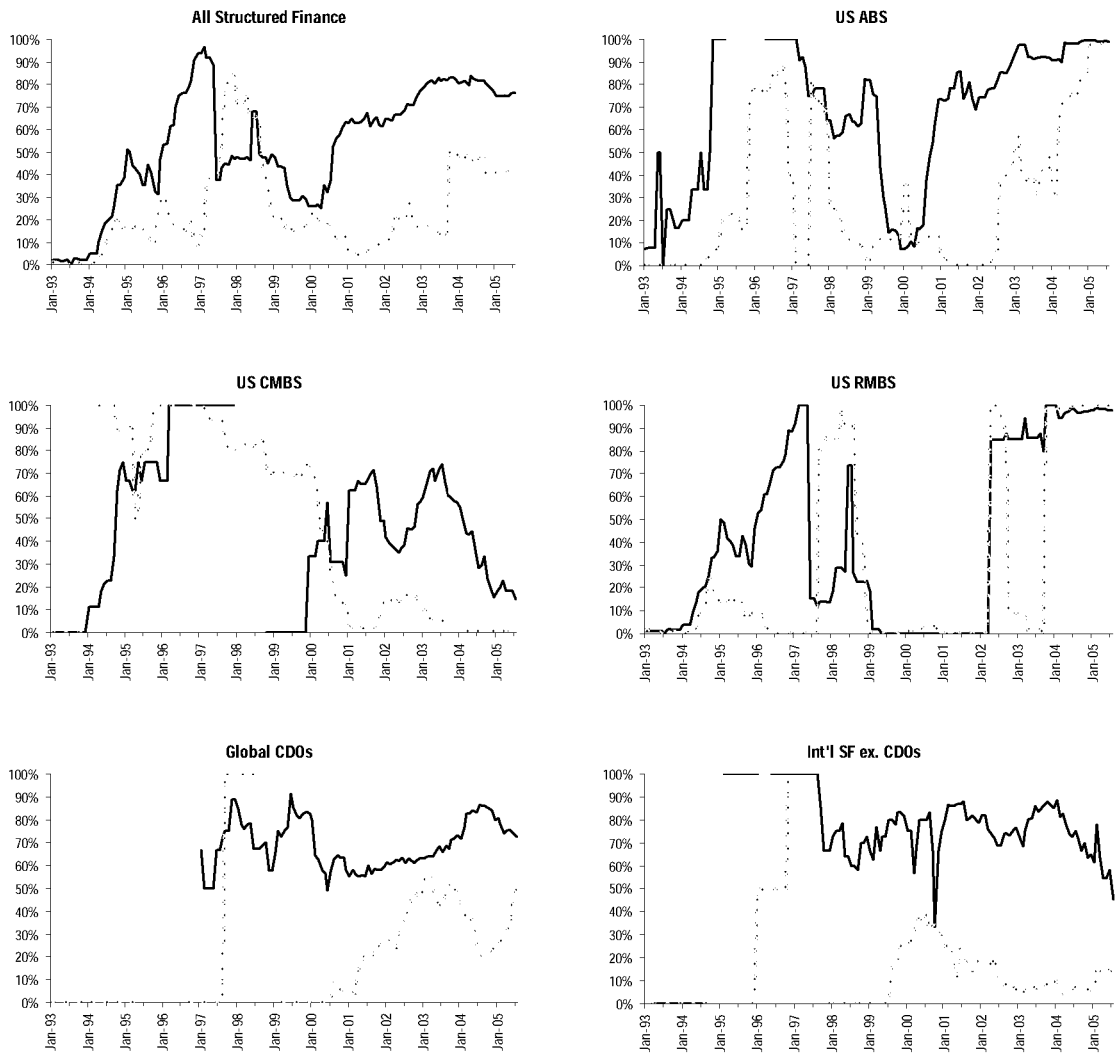Global CDOs

Int'l SF ex. CDOs

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2005.

Figure 8 – Annual Upgrade Rates (solid line) and Annual Large (three notches or more) Upgrade Rates (dotted line)

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

Int'l SF ex. CDOs

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2005.

Figure 9 – Percentages of Downgrades (solid line) and
Upgrades (dotted line) Preceded by Watchlist Actions in the Same Direction

Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on July 1, 2005. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

Glossary

MATERIAL IMPAIRMENT

Material impairment, or for simplicity, impairment, is a concept adopted in Moody's structured finance default and loss studies. Material impairment includes uncured payment defaults and securities downgraded to Ca or C, where payment defaults include shortfalls of interest and losses of principal on individual tranches of structured finance transactions. A security is called "newly impaired" in a given period if it had no outstanding interest shortfalls, no principal losses, and was not rated Ca or C in the prior period, but experienced at least one of these three credit events in the given period for the first time.

LOSS-GIVEN-DEFAULT (LGD)

Loss-given-default, also known as LGD or loss severity rate, is the total amount of lifetime losses as a share of a tranche's principal balance on a certain reference date. The losses in each payment period are discounted by a discount rate, which is typically the stated coupon rate on the tranche. There are three types of principal balances used in the calculation of LGD: the principal balance at origination, at the time of impairment, and at a cohort formation date. Depending on the reference principal balance (and the reference date), the calculated LGD can be significantly different due to principal amortization and discounting.

Final LGD on impaired securities with a zero outstanding principal balance are typically known. For impaired securities with positive principal balances or impaired securities with incomplete loss data, their LGD need to be estimated. Detailed discussions on the estimation of those final LGD are provided in several Moody's Special Comments including, in particular, "Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities," *Moody's Special Comment*, April 2004, and "Default & Loss Rates of Structured Finance Securities: 1993-2005," *Moody's Special Comment*, April 2006.

ACCURACY RATIO (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[8]

To calculate accuracy ratios, we use the same data sample that is used in the latest structured finance default and loss study (1993-2005) supplemented with default and loss data from the first half of 2006. Rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

Because we use only data observations that span the time horizon under consideration, the latest cohort for a one-year horizon is formed on July 1, 2005, while for a five-year horizon the latest cohort is formed on July 1, 2001.

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8. For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004.

INVESTMENT-GRADE LOSS RATE

The one-year investment-grade (Aaa through Baa3) loss rate is calculated as follows. First, for a given cohort, we calculate the loss severity as a share of the tranche balance at the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these loss rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the loss rate is not weighted by the total dollar volume of outstanding securities in the cohort. The five-year investment-grade loss rate is calculated similarly.

AVERAGE RATING BEFORE IMPAIRMENT

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that becomes impaired within 12 months after the cohort formation date, where the weight for each security is the loss severity rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher loss severity rates over impaired tranches with lower loss severity rates.[9]

RATING ACTION RATE

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scale. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

LARGE RATING ACTION RATE

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

PERCENTAGE OF DOWNGRADES (UPGRADES) PRECEDED BY WATCHLIST ACTIONS IN THE SAME DIRECTION

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

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.

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.

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9. We began using LGD rates as weights in computing an average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make any material difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

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.

CMBS

CMBS stand for commercial mortgage-backed securities.

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.

U.S. STRUCTURED FINANCE SECURITIES

U.S. structured finance securities are denominated in U.S. dollars and issued in the U.S. market.

INTERNATIONAL STRUCTURED FINANCE EXCLUDING CDOS

This refers to non-CDO structured finance securities that are not denominated in U.S. dollars or not issued in the U.S. market. The majority of the securities in this sector are from Europe; the rest comes from the Asia Pacific region, Canada, and Latin America.

Related Research

Special Comments:

The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

Default & Loss Rates of Structured Finance Securities: 1993-2005, April 2006 (97234)

Default & Loss Rates of Structured Finance Securities: 1993-2004, July 2005 (93653)

Default & Loss Rates of U.S. CDOs: 1993-2003, March 2005 (91692)

Default & Loss Rates of Structured Finance Securities: 2004 First Half Update, January 2005 (90843)

Default & Loss Rates of Structured Finance Securities: 1993-2003, September 2004 (88692)

Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities, April 2004 (86769)

Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002, December 2003 (80247)

Structured Finance Rating Transitions: 1983-2006 H1, August 2006 (98577)

Structured Finance Rating Transitions: 1983-2005, February 2006 (96533)

Structured Finance Rating Transitions: 1983-2004, February 2005 (91392)

Structured Finance Rating Transitions: 1983-2003, February 2004 (81239)

Structured Finance Rating Transitions: 1983-2002, Comparisons with Corporate Ratings and Across Sectors, January 2003 (77291)

European Structured Finance Rating Transitions: 1988-2005, February 2006 (96706)

The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

The Performance of Moody's Corporate Bond Ratings: June 2006 Quarterly Update, August 2006 (98459)

Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

Guide to Moody's Default Research: February 2006 Update, March 2006 (96841)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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The Performance of Structured Finance Ratings: Full-Year 2006 Report

Highlights

This Special Comment updates Moody's structured finance rating performance metrics as of December 2006, both with respect to rating accuracy and rating stability.

As indicated in Figure 1, the one-year rating accuracy and stability of the most recent rating cohort (ending December 2006) was lower than that of the cohort formed six months ago, but higher compared to the performance of the cohort formed twelve months prior and significantly higher compared to the long-term average performance of all prior cohorts. The highlights of this report are:

- Overall, 111 structured finance securities became impaired in 2006: 55 in US ABS, 35 in US CMBS, 8 in US RMBS, 12 in global CDOs, and one in the international structured finance sector excluding CDOs. Of these, 89 were principal impairments (suffered principal losses or were downgraded to Ca or C), while the remaining 22 were interest impairments (experienced interest shortfalls only).
- The one-year accuracy ratio for the most recent cohort was 93.5%, which is 1.9 percentage points lower than its six months-prior level, but 2.0 percentage points higher than its twelve months-prior level.
- The five-year accuracy ratio for the most recent five-year cohort, formed in January 2002, was 60.1% -- below its level of 61.1% six months earlier and its historical average of 68.3% -- as this statistic has not yet captured the more recent improvements in performance.
- Almost all newly impaired securities over the past year were rated speculative-grade well in advance of impairment. As a result, the one-year investment-grade loss rate was a low 0.02%, less than the loss rate for the cohort ending December 2005.
- The average rating during the three years prior to impairment of all securities that were impaired for the cohort ending in December 2006 dropped to an all-time low of B2, one notch below the average rating prior to impairment for the cohort ending six months earlier and three notches below the average for the cohort ending twelve months earlier.
- The one-year rating action rate rose to 7.8% in the most recent cohort from its six months-prior level of 6.8%, but was in line with the historical average of 8.0%. The increase was fueled by increases in the frequencies of both downgrades and upgrades over the last six months.
- The one-year large rating action rate (rating changes of three notches or more) was 3.4%, somewhat higher than the six months-prior level of 2.8% and the twelve months-prior level of 3.2%.
- The one-year accuracy ratios for all individual sectors of structured finance remained well above their historical averages, while investment-grade loss rates and average ratings before impairment were lower than their long-term averages (Figure 2). US ABS and global CDOs have shown the most improvement relative to the past.[1]

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1. These performance metrics should be interpreted with caution. Some statistics are based on small samples, as the number of impairments in any given year and any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors. Moreover, variations in rating performance over time may reflect either changes in the quality of the rating process or changes in the environment that make losses more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

Figure 1 - Summary of All Structured Finance Rating Performance as of December 2006[2]

| | Number of New Impairments over Prior 12 Months | ----------Accuracy Measures---------- | | | | --Stability Measures-- | |
		1-Year Accuracy Ratio	5-Year Accuracy Ratio[3]	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-YearRating Action Rate	1-Year Large Rating Action Rate
Cohort Ending Date							
December 2006	111	93.5%	60.1%	0.02%	B2	7.8%	3.4%
June 2006	86	95.4%	61.1%	0.00%	B1	6.8%	2.8%
December 2005	83	91.5%	63.9%	0.02%	Ba2	8.0%	3.2%
June 2005	140	76.7%	66.2%	0.13%	Ba1	9.9%	4.5%
Average (1993-Most Recent)	82	76.5%	68.3%	0.19%	Ba1	8.0%	3.9%

Figure 2 - Summary of Structured Finance Rating Performance by Sector as of December 2006[2]

| | Number of New Impairments over Prior 12 Months | ----------Accuracy Measures---------- | | | | --Stability Measures-- | |
		1-Year Accuracy Ratio	5-Year Accuracy Ratio[3]	1-Year Investment-Grade Loss Rate	36-Month-Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending December 2006							
US ABS	55	94.1%	58.5%	0.04%	B1	5.6%	3.0%
US CMBS	35	96.1%	87.5%	0.00%	Caa2	24.3%	9.6%
US RMBS	8	94.1%	87.3%	0.01%	Ba3	4.3%	1.9%
Global CDOs	12	96.6%	59.4%	0.00%	B3	7.4%	3.5%
Int'l SF ex. CDOs	1	99.5%	87.9%	0.00%	B1	5.4%	1.4%
Historical Averages Since 1993							
US ABS	48	77.7%	69.9%	0.33%	Baa3	6.8%	4.1%
US CMBS	8	91.2%	87.9%	0.01%	Caa1	13.8%	4.5%
US RMBS	5	88.8%	88.6%	0.01%	Ba2	6.5%	3.0%
Global CDOs	21	74.2%	61.0%	0.43%	Ba2	11.3%	6.1%
Int'l SF ex. CDOs	0.4	65.2%	76.5%	0.01%	Baa3	5.6%	1.8%

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2. *A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment shortfalls can be cured and past remittance or trustee reports may be revised. In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using loss-given-default (LGD) from principal impaired securities alone. For more details, see the entry for LGD in the glossary. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer unless rounding results in zero.*

3. *The five-year accuracy ratio is a significantly lagged indicator of performance. It is based on the most recent five-year cohort as of the cohort ending date. For example, the most recent five-year cohort was formed in January 2002.*

Table of Contents

Introduction

In a *Special Comment* published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[4] Moody's corporate rating performance report is now updated on a quarterly basis.[5] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 Special Comment "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. In computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. In other words, Moody's structured rating performance metrics weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[6] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 *Special Comment*, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) - the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

Accuracy statistics are calculated based on the data from Moody's latest annual structured finance default and loss study (1993-2006)[7]. For the measurement of stability and volatility, we incorporate the most recent rating action data from Moody's latest structured finance rating transition study.[8] In particular, the data sample of this report includes all public, 144A, and private tranches with a Moody's long-term global debt rating in the global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS) and collateralized debt obligations (CDO) sectors. Provisional ratings, credit evaluations, and national scale ratings are not included. Pari passu tranches are collapsed into a single tranche.[9] In addition, the following tranches are excluded: (1) tranches guaranteed by financial guarantors, government agencies, or government-sponsored enterprises (GSEs); (2) interest-only (IO) or residual tranches; (3) repackaged securities, structured notes, structured investment vehicles, structured covered bonds, and other credit derivative securities; and (4) deals that have all their tranche ratings linked to a single corporate or sovereign rating.

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4. See "Measuring the Performance of Corporate Bond Ratings," Moody's Special Comment, April 2003.
5. For the latest performance report, see "The Performance of Moody's Corporate Bond Ratings: December 2006 Quarterly Update," Moody's Special Comment, February 2007.
6. The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004. The concept of accuracy ratio is also described in the glossary at the end of this report.
7. See "Default & Loss Rates of Structured Finance Securities: 1993-2006," Moody's Special Comment, April 2007.
8. See "Structured Finance Rating Transitions: 1983-2006," Moody's Special Comment, January 2007.
9. More exactly, tranches carrying the same rating from the same deal, regardless of their rating levels, 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. Additionally, we do not review each tranche of every deal in order to determine whether it is pari passu to another tranche of the same deal.

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

- The one-year accuracy ratio for the overall structured finance category dropped slightly from its level six months ago from 95.4% to 93.5%, but was still higher than its level 12 months and 24 months ago.

- All individual structured finance sectors exhibited one-year accuracy ratios above 94% for the January 2006 cohort.[10] US RMBS made the greatest improvement from its six-month prior level, increasing 3.2 percentage points to 94.1% over six months, while global CDOs experienced the largest year-over-year increase, jumping 11.6 percentage points to 96.6% over a twelve-month period. US ABS and CMBS were basically flat for the year at roughly 95%.

- Conversely, there was little improvement seen in the five-year accuracy ratios for all sectors, with the exception of the international structured finance sector excluding CDOs, as the most recent five-year cohorts were formed in late 2001 in the midst of the last recession, and significant improvements in the more recent cohorts have not yet been captured.

Figure 3 - One-Year (solid line) and Five-Year (dotted line) Accuracy Ratios
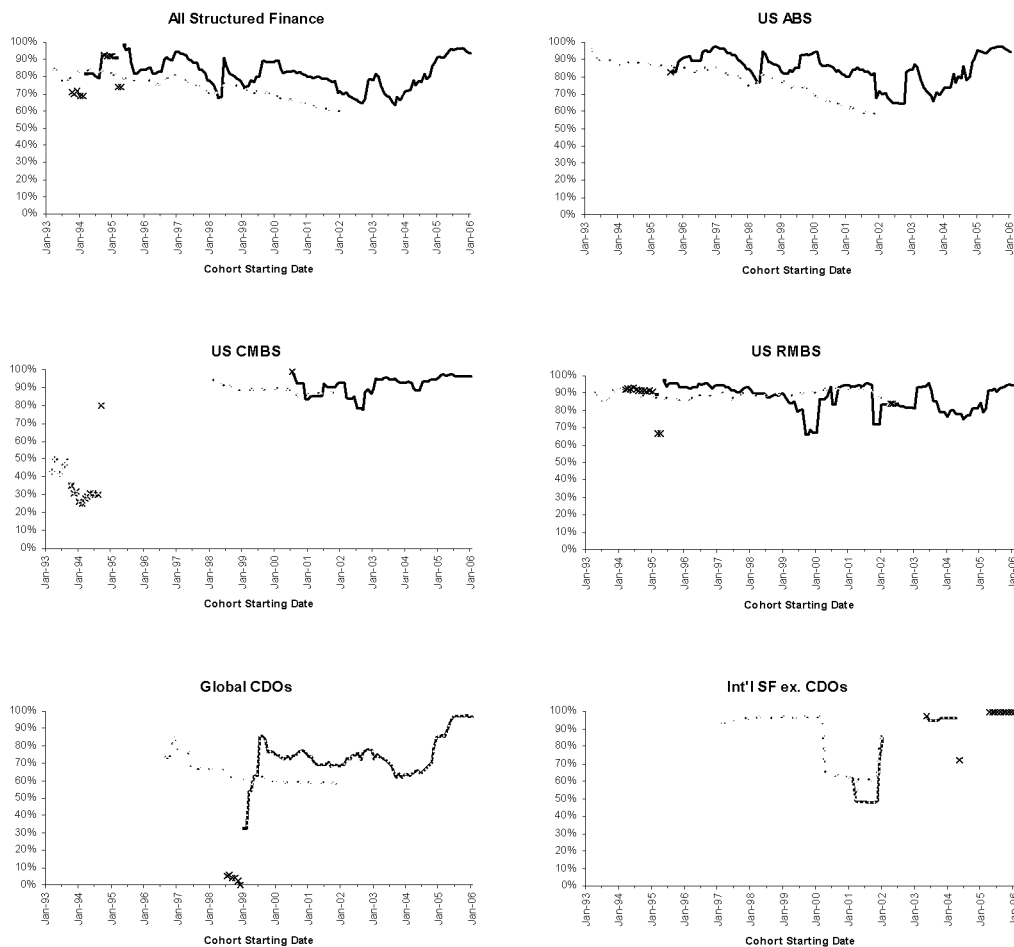
Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on January 1, 2006 and January 1, 2002. Breaks in the accuracy ratio series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

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10. The figures for US ABS and RMBS in this study differ from those reported in prior studies because some of the old vintage RMBS transactions sponsored by DLJ were reclassified into the HEL (and therefore ABS) category. Please refer to "Deal Sponsor and Credit Risk of US ABS and MBS Securities," Moody's Special Comment, December 2006 which discusses how these transactions were backed by subprime mortgage loans by today's standard. Please also see the glossary for the definition of RMBS, HEL and ABS.

Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

- For global structured finance, the one-year investment-grade loss rate rose to 0.02% from 0.004% six months prior, but was still low both in absolute terms, and relative to the loss rate 12 months and 24 months prior.
- For the cohort formed in January 2006, the one-year investment-grade loss rate was zero for US CMBS, global CDOs, and the international structured finance sector excluding CDOs, and has remained zero for the last 15, 9, and 12 months in each of these three sectors, respectively.
- The one-year investment-grade loss rate increased from 0.006% to 0.04% for US ABS over a six-month period, but was far lower than that of most of the cohorts formed before 2005. The US RMBS investment-grade loss rate for the January 2006 cohort was 0.007%, slightly below the 0.008% loss rate for the July 2005 cohort and much smaller than the January 2005 rate of 0.03%.
- All sectors displayed a declining trend in their five-year investment-grade loss rates, reflecting the improvement in performance for the more recent cohorts. Global CDOs experienced the steepest decline, falling from 6.1% for the January 2001 cohort to 4.1% for the January 2002 cohort. Additionally, the five-year investment-grade loss rate for US RMBS remained the lowest among all the sectors at 0.002%.

Figure 4 - One-Year (solid line) and Five-Year (dotted line) Investment-Grade Loss Rates
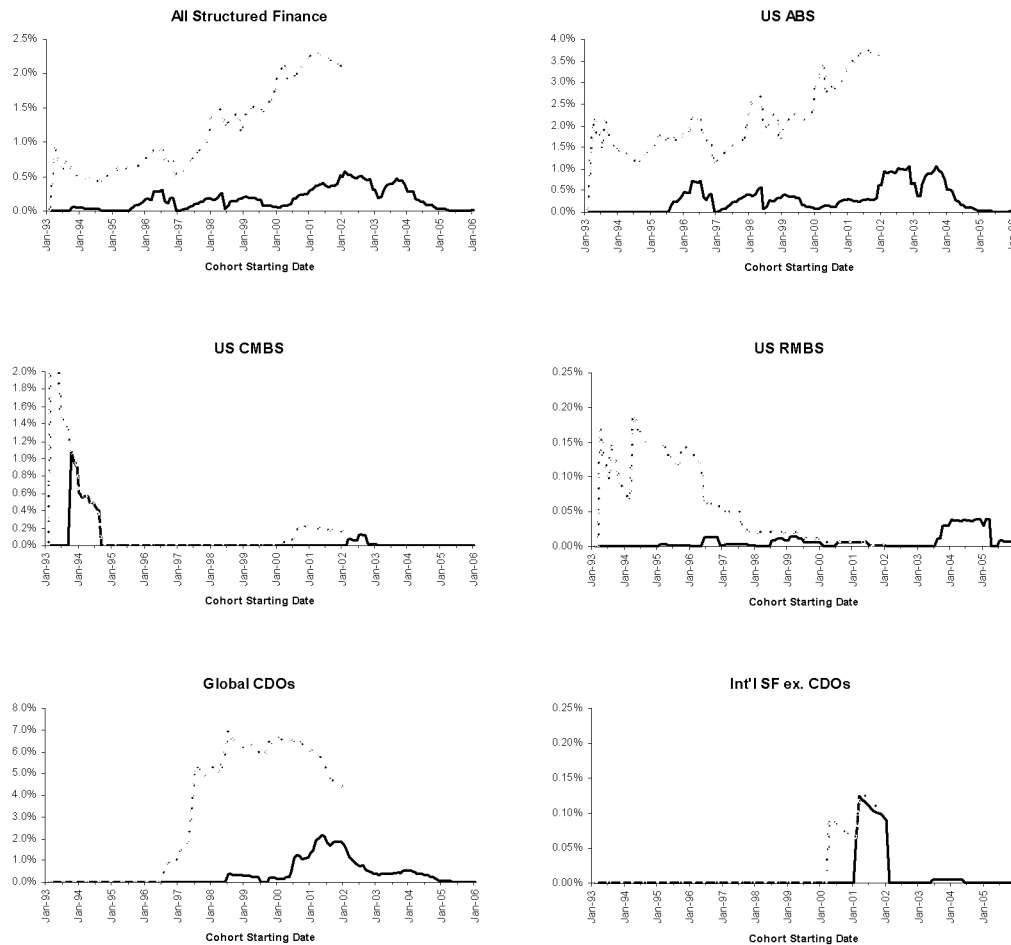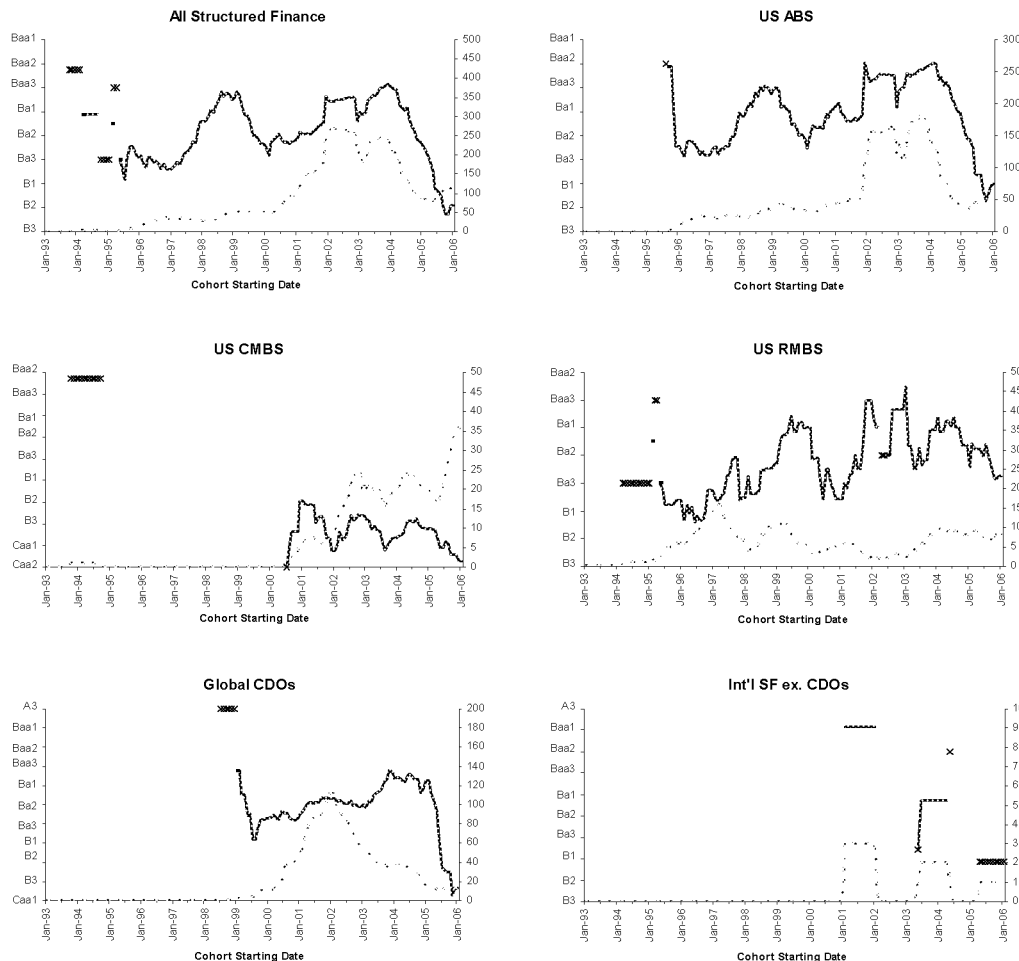

Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on January 1, 2006 and January 1, 2002.

Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

- The average rating before impairment for global structured finance fell to B2 for the most recent cohort, one notch down from B1 six months prior and three notches below its level twelve months prior. More-over, the average ratings before impairment for all sectors of structured finance remained below their historical averages.
- The US ABS and global CDO sectors exhibited the sharpest declines relative to the recent past. The average ratings before impairment for US ABS and global CDOs were B1 and B3, respectively, three and six notches below their year-prior averages.
- As has been the case in the past, US CMBS exhibited the lowest average rating before impairment of all sectors at Caa2, which is a historical low. The average rating before impairment for US RMBS for the most recent cohort was Ba3, one notch lower than its level six months ago.

Figure 5 - 36-Month-Average Ratings before Impairment (solid line) and Number of Newly Impaired Securities (dotted line)

Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on January 1, 2006. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.

# Rating Action Rates and Large Rating Action Rates

Figure 6 reports 12-month rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[11] Key observations include:

- The 12-month rating action rate in the all structured finance category was 7.8% for the January 2006 cohort, an increase from 6.8% six months prior, but in line with the twelve months-prior and historical levels (both 8.0%). The large rating action rate also increased over the last six months to 3.4% from 2.8%, but was in line with the twelve months-prior level of 3.2% and below the historical average of 3.9%.

- The global structured finance downgrade rate increased moderately to 1.9% from 1.5% six months earlier, but was still far below the peak of 8.8% reached by the May 2002 cohort. The large downgrade rate also rose slightly from 0.8% to 0.9% over the same period. The increase in the overall downgrade rate was caused by the rise in negative rating actions among US ABS, including securities backed by home equity loans and manufactured housing loans, and global CDOs, including resecuritization CDOs, synthetic arbitrage CDOs, and high-yield CBOs.

- The overall upgrade rate for the most recent cohort was 5.8%, higher than the upgrade rate of 5.3% six months ago, but slightly lower than the rate of 6.0% twelve months ago. Meanwhile, the large rating upgrade rate was 2.5%, up from 2.0% six months prior and 2.3% twelve months prior. The upgrade rate was on an increasing trend for all sectors of structured finance except US RMBS and international structured finance excluding CDOs. In addition, the frequencies of all upgrades and large upgrades for US CMBS reached all-time highs for the January 2006 cohort of 22.3% and 9.1%, respectively.

- Roughly three-quarters of structured finance downgrades that occurred over the last twelve months were on review for downgrade prior to being downgraded. However, the proportion of downgrades reviewed varied greatly by sector, with US ABS and RMBS exhibiting rates of approximately 90% each and US CMBS showing a rate of only 11%. In contrast, a much smaller percentage of upgrades were on review for upgrade prior to the rating action. The fraction of upgrades in the January 2006 cohort that were preceded by watchlist actions in the same direction was 29%, down from 41% in the July 2005 cohort.[12]

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11. For the latest rating transition statistics of structured finance securities worldwide, see "Structured Finance Rating Transitions: 1983-2006," Moody's Special Comment, January 2007. Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.
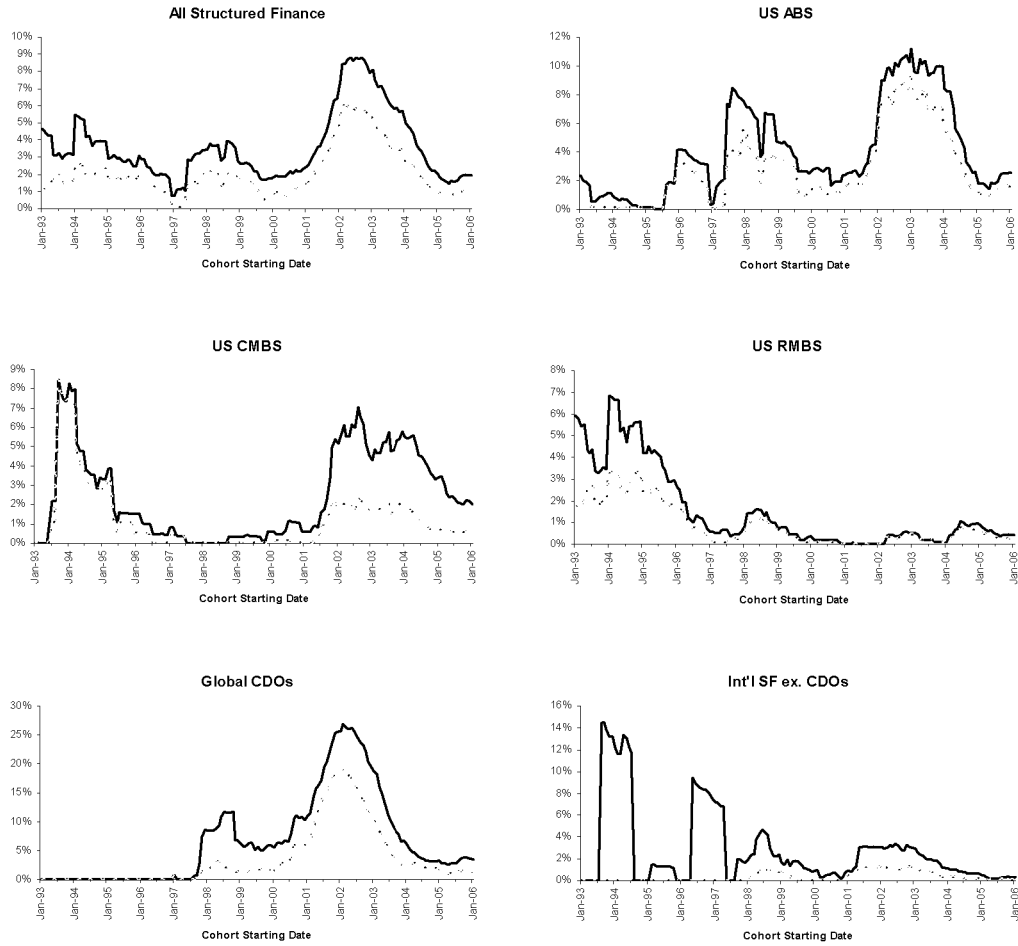
12. In 2006, there were 993 watchlist actions for downgrades affecting 913 unique tranches and 903 watchlist actions for upgrades affecting 871 unique tranches. 68% of the reviews for downgrades resulted in an actual downgrade, 17% resulted in confirmations or affirmations, 12% were ongoing as of the end of the first quarter of 2007, and the remaining 2% of the reviews concluded with a rating withdrawal or upgrade. 83% of the reviews for upgrade resulted in an actual upgrade, 9% resulted in confirmations or affirmations, 4% were ongoing as of the end of 2007 Q1, and the remaining 5% concluded with a rating withdrawal.

Figure 6 - 12-month Rating Action Rates (solid line) and
12-month Large (three notches or more) Rating Action Rates (dotted line)

All Structured Finance

US ABS

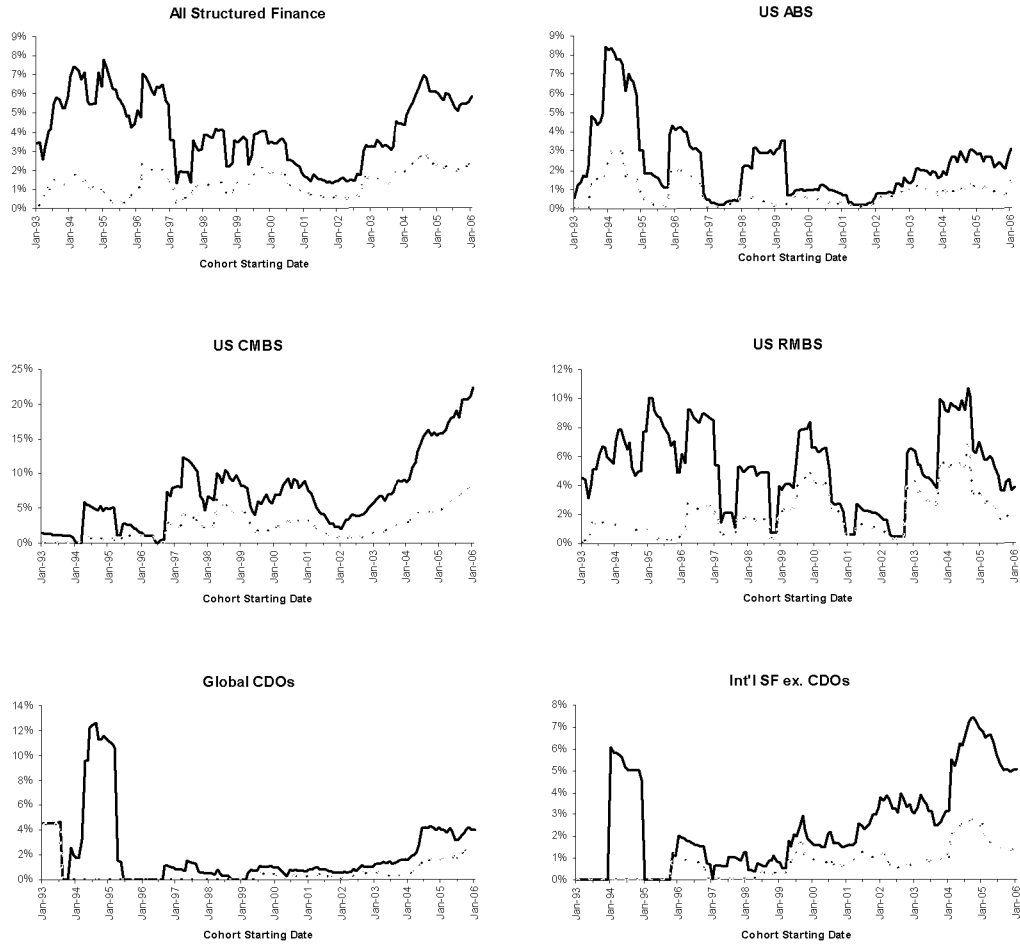US CMBS

US RMBS

Global CDOs

Int'l SF ex. CDOs
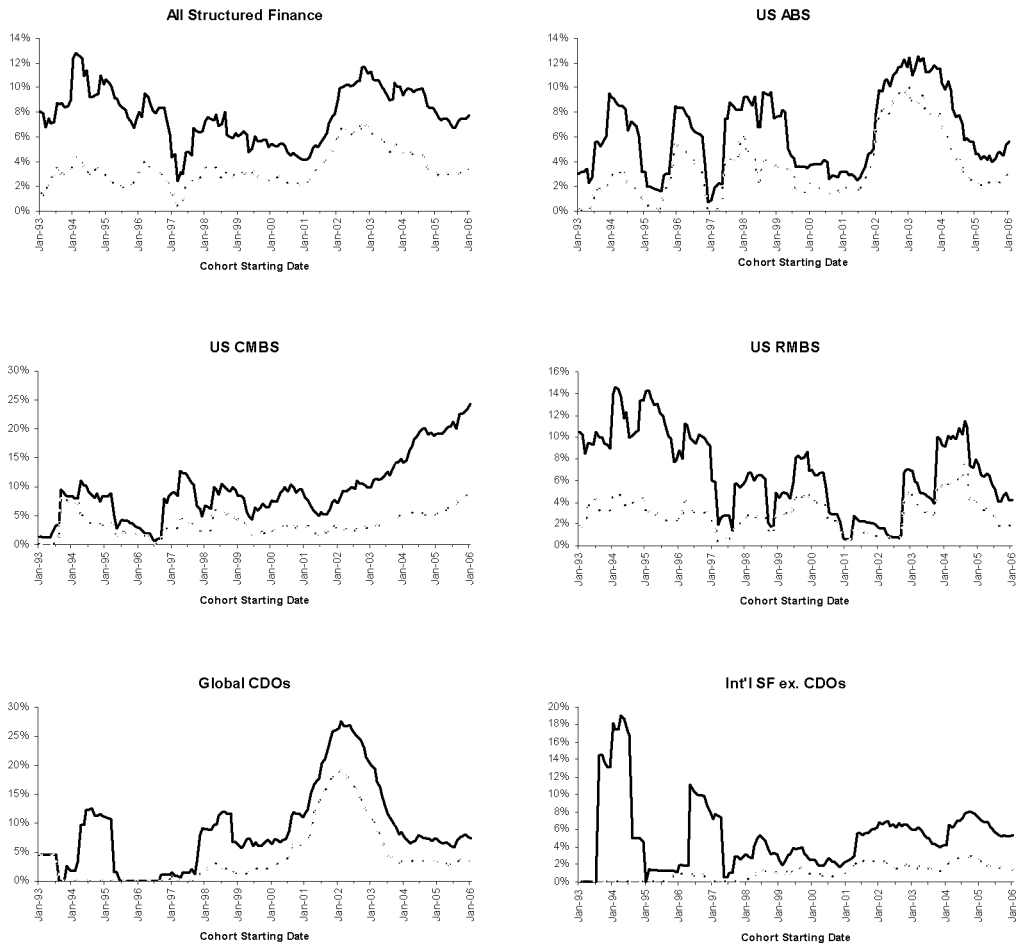
Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 2006.

Figure 7 - 12-month Downgrade Rates (solid line) and 12-month Large (three notches or more) Downgrade Rates (dotted line)


Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 2006.

Figure 8 - 12-month Upgrade Rates (solid line) and
12-month Large (three notches or more) Upgrade Rates (dotted line)

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 2006.

Figure 9 - Percentages of Downgrades (solid line) and
Upgrades (dotted line) Preceded by Watchlist Actions in the Same Direction

All Structured Finance

US ABS

US CMBS

US RMBS

Global CDOs

Int'l SF ex. CDOs
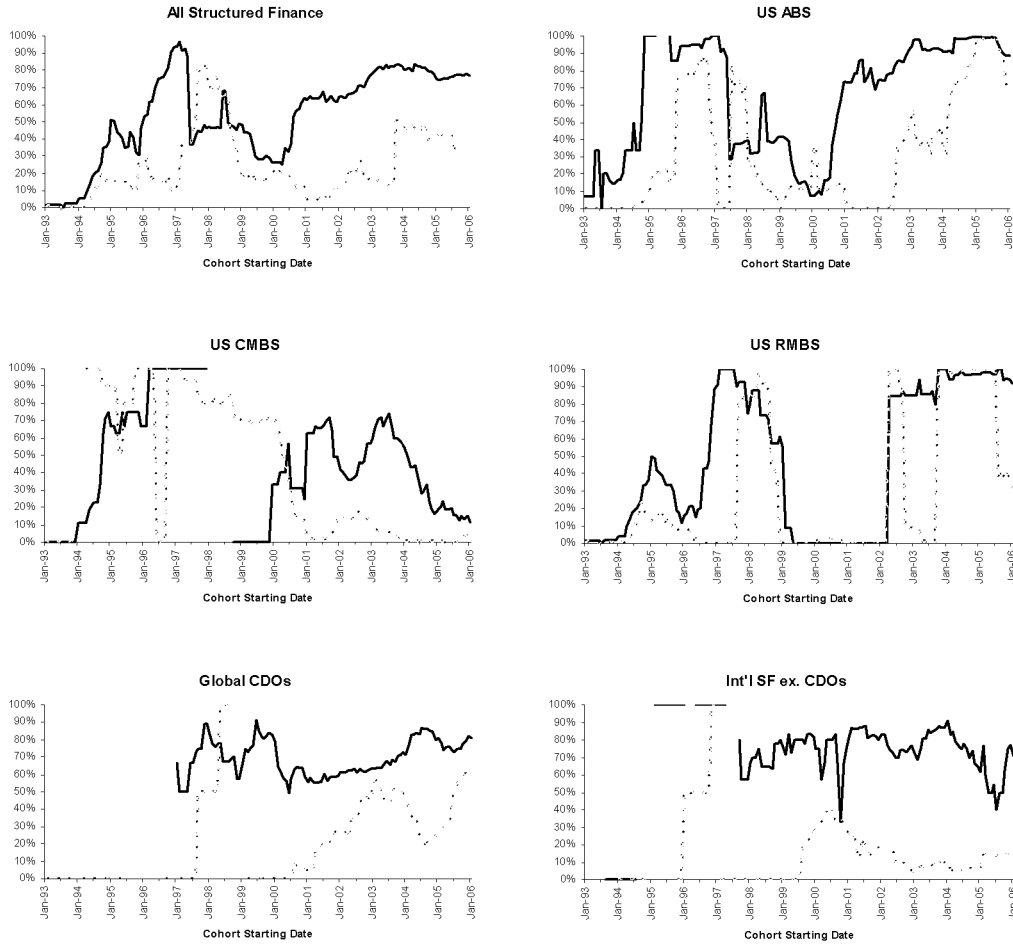
Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on January 1, 2006. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

Glossary

PAYMENT SHORTFALL

Structured finance securities are defined as being in payment shortfall (previously called "payment default") if they have suffered:

- an interest shortfall, or
- a principal write-down.

MATERIAL IMPAIRMENT

Structured finance securities are defined as being in material impairment if they have:

- sustained a payment shortfall that remained uncured, or
- been downgraded to Ca or C.

Prepayment-related and AFC-related interest shortfalls are not considered to be material impairments, but PIK-ing tranches are. Explicit principal write-downs are included whereas implicit principal write-downs or under-collateralizations are not.

The impairment status of a security may change as it goes from cured (i.e. all outstanding shortfalls and losses were repaid in full) to uncured (i.e. positive interest shortfalls or principal losses outstanding), or vice versa. If any securities rated Ca or C but not in payment shortfall are upgraded, they are considered to be no longer in material impairment. Securities rated Ca or C that were not upgraded are in material impairment even if their payment shortfalls have been cured. Finally, securities with very minor shortfalls or losses are excluded.

A security is called "newly impaired" in a given period if it had no payment shortfalls and was not downgraded to Ca or C in the prior period, but experienced at least one of these two credit events in the given period for the first time.

PRINCIPAL IMPAIRMENT

This refers to materially impaired securities that have suffered principal write-downs or principal losses, or have been downgraded to Ca or C even though a principal write-down or loss has not yet been observed. In particular, if a security had experienced principal write-down/loss or was downgraded to Ca or C, it is called a principal impairment regardless of whether it had experienced interest shortfalls.

INTEREST IMPAIRMENT

This refers to materially impaired securities that have experienced only interest shortfalls, no principal losses, and were not downgraded to Ca or C.

INVESTMENT-GRADE (IG) SECURITIES

This refers to securities rated Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, or Baa3.

SPECULATIVE-GRADE (SG) SECURITIES

This refers to securities rated Ba1, Ba2, Ba3, B1, B2, B3, Caa1, Caa2, Caa3, Ca, or C.

LOSS-GIVEN-DEFAULT (LGD) OR LOSS SEVERITY RATE

The loss-given-default, also known as LGD or loss severity rate, of an impaired security is measured by the sum of the present values of net losses, including both interest shortfalls and principal losses, discounted by the security's coupon rate and expressed as a percentage of the principal balance on a certain reference date. There are typically three types of reference dates used in the calculation of LGD: origination, the time of impairment, and a cohort formation date.

Final LGD on impaired securities with a zero outstanding principal balance are typically known. For impaired securities with positive principal balances or impaired securities with incomplete loss data, their LGD need to be estimated.[13] In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using LGD from principal impaired securities alone. In almost all cases, securities with only interest shortfalls (interest impairments) end up being cured or suffering principal writedowns or being downgraded to Ca/C (principal impairments). Interest impairments have frequently been cured, whereas cures on principal impairments have been rare. As a result, we do not attempt to project final LGD on interest impaired securities until they either become cured, in which case they drop out of the LGD data sample with an LGD of zero, or become principal impaired, in which case a projection of the final LGD is made if the impairment is not resolved at that time.

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13. See "Default & Loss Rates of Structured Finance Securities: 1993-2006," Moody's Special Comment, April 2007 and "Measuring Loss-Given-Default for Structured Finance Securities: An Update," Moody's Special Comment, December 2006 for discussions of the characteristics and estimation methods of LGD.

ACCURACY RATIO (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating. [14]

To calculate accuracy ratios, we use the same data sample that is used in the latest structured finance default and loss study (1993-2006). Rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted. Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

Because we use only data observations that span the time horizon under consideration, the latest cohort for a one-year horizon is formed on January 1, 2006, while for a five-year horizon the latest cohort is formed on January 1, 2002.

INVESTMENT-GRADE LOSS RATE

The one-year investment-grade loss rate is calculated as follows. First, for a given cohort, we calculate the LGD as a share of the tranche balance at the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these LGD rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the LGD rate is not weighted by the total dollar volume of outstanding securities in the cohort. Also note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details. The five-year investment-grade loss rate is calculated similarly.

AVERAGE RATING BEFORE IMPAIRMENT

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that became impaired within 12 months after the cohort formation date, where the weight for each security is the LGD rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher LGD over impaired tranches with lower LGD. [15] Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

RATING ACTION RATE

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scale. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

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14. For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," Moody's Special Comment, September 2004.
15. We began using LGD rates as weights in computing an average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make any material difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

LARGE RATING ACTION RATE

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

PERCENTAGE OF DOWNGRADES (UPGRADES) PRECEDED BY WATCHLIST ACTIONS IN THE SAME DIRECTION

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

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.

HEL

The home equity loan or HEL sector includes securities backed 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.

Prior to 1998, RMBS collateral was generally defined as first-lien residential mortgages, regardless of the credit quality of the borrower. HEL collateral generally included junior liens such as HELOCs or closed-end seconds. However, as subprime lending became more prevalent, the market shifted its definition such that HEL encompassed subprime first-lien residential mortgages while RMBS included first-lien mortgages made to higher quality borrowers. Since 1998 and especially in the last five years, a deal classified as RMBS by Moody's is generally backed by prime or Alt-A quality first-lien residential mortgages, while a deal classified as HEL can be backed by subprime first-lien mortgages or junior liens. Therefore, a subprime deal which would be classified as HEL today may have been classified as RMBS in the past.

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 comprised 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 comprised 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. For further details, see the definition of HEL.

ALL STRUCTURED FINANCE SECURITIES

All structured finance captures global structured finance securities in four major sectors: ABS, CDO, CMBS, and RMBS.

U.S. STRUCTURED FINANCE

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.

INTERNATIONAL STRUCTURED FINANCE EXCLUDING CDOS

This refers to non-CDO structured finance securities that are not denominated in U.S. dollars and issued in the U.S. market and not denominated in Canadian dollars and issued in Canada. The majority of the securities in this sector are issued in Europe, the Middle East, and Africa (EMEA); the rest are issued in the Asia Pacific region and Latin America.

Related Research

The Performance of Structured Finance Ratings: Mid-Year 2006 Report, September 2006 (99034)

The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

Default & Loss Rates of Structured Finance Securities: 1993-2006, April 2007 (102733)

Default & Loss Rates of Structured Finance Securities: 1993-2005, April 2006 (97234)

Default & Loss Rates of Structured Finance Securities: 1993-2004, July 2005 (93653)

Default & Loss Rates of U.S. CDOs: 1993-2003, March 2005 (91692)

Default & Loss Rates of Structured Finance Securities: 2004 First Half Update, January 2005 (90843)

Default & Loss Rates of Structured Finance Securities: 1993-2003, September 2004 (88692)

Measuring Loss-Given-Default for Structured Finance Securities: An Update, December 2006 (101284)

Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities: A Methodology, April 2004 (86769)

Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002, December 2003 (80247)

Structured Finance Rating Transitions: 1983-2006, January 2007 (101833)

Structured Finance Rating Transitions: 1983-2006 H1, August 2006 (98577)

Structured Finance Rating Transitions: 1983-2005, February 2006 (96533)

Structured Finance Rating Transitions: 1983-2004, February 2005 (91392)

Structured Finance Rating Transitions: 1983-2003, February 2004 (81239)

Structured Finance Rating Transitions: 1983-2002, January 2003 (77291)

European Structured Finance Rating Transitions: 1988-2006, February 2007 (102033)

European Structured Finance Rating Transitions: 1988-2005, February 2006 (96706)

Japanese Structured Finance Rating Transitions: 1994-2006, March 2007 (102509)

Asia Pacific (ex-Japan) Structured Finance Rating Transitions: 1990-2006 (102095)

Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities, December 2006 (100872)

The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

The Performance of Moody's Corporate Bond Ratings: December 2006 Quarterly Update, February 2007 (101930)

Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

Guide to Moody's Default Research: April 2007 Update, April 2007 (102661)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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Special Comment

October 2007

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The Performance of Structured Finance Ratings: Mid-Year 2007 Report

Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of June 2007.

As indicated in Figure 1, the one-year rating accuracy and stability of the most recent rating cohort (ending June 2007) was lower than that of the cohort formed six months ago, but still significantly higher compared to the long-term average performance of all prior cohorts. The highlights of this report are:

- Overall, 134 structured finance securities became impaired in the first half of 2007: 102 in US ABS, 12 in US CMBS, 14 in US RMBS, 5 in global CDOs, and one in the international structured finance sector excluding CDOs. Of these, 112 were principal impairments (suffered principal losses or were downgraded to Ca or C), while the remaining 22 were interest impairments (experienced interest shortfalls only).

- The one-year accuracy ratio for the most recent cohort was 84.6%, which is 9.9 percentage points lower than its six months-prior level, but 7.5 percentage points higher than the historical average.[1]

- The five-year accuracy ratio for the most recent five-year cohort, formed in July 2002, was 58.9%, 2.1 percentage points lower than its level of 61.0% six months ago.

- The one-year investment-grade loss rate was 0.05%, an increase over the loss rate of 0.01% for the cohort ending December 2006, but still very low in absolute terms.

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[1] These performance metrics should be interpreted with caution. Some statistics are based on small samples, as the number of impairments in any given year and any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors. Moreover, variations in rating performance over time may reflect either changes in the quality of the rating process or changes in the environment that make losses more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

Moody's Investors Service

* The average rating during the three years prior to impairment of all securities that were impaired for the cohort ending in June 2007 rose to Ba3, two notches above the average rating prior to impairment for the cohort ending six months earlier, but still a notch below the historical average.

* The one-year rating action rate dropped to 7.4% in the most recent cohort from its six months-prior level of 7.9%, as the recent increase in the frequency of downgrades was more than offset by a decrease in the frequency of upgrades.

* The one-year large rating action rate (rating changes of three notches or more) also declined to 3.3% from 3.5% six months ago.

* Performance was mixed among the various sectors of structured finance (Figure 2). The one-year accuracy ratio for US CMBS held steady at 94%, while that of global CDOs and international structured finance excluding CDOs reached all-time highs of greater than 98%. Meanwhile, the US ABS and US RMBS one-year accuracy ratios decreased to 87% and 80%, respectively.

* Structured finance rating performance metrics for the second half of 2007 will differ sharply from those in the first half of the year in light of the large number of rating actions that have already occurred between the end of June and early October.[2]

Figure 1 – Summary of All Structured Finance Rating Performance as of June 2007[3]

		Accuracy Metrics				Rating Accuracy	
Cohort Ending Date	Number of New Impair- ments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Invest- ment- Grade Loss Rate	36- Month- Average Rating Before Impair- ment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
June 2007	167	84.6%	58.9%	0.05%	Ba3	7.4%	3.3%
December 2006	107	94.5%	61.0%	0.01%	B2	7.9%	3.5%
June 2006	88	95.5%	62.2%	0.00%	B1	7.0%	3.0%
December 2005	84	91.6%	64.5%	0.02%	Ba2	8.4%	3.5%
Average (1993-Most Recent)	88	77.1%	67.6%	0.18%	Ba2	8.1%	3.9%

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[2] In particular, between July 1, 2007 and October 11, 2007 there were 758 new downgrades to Ca/C (752 affecting US subprime securities – which will impact ABS sector statistics, 1 affecting a US RMBS transaction, 4 affecting market-value CDOs, and 1 affecting an aircraft lease ABS transaction). These new material impairments will be included in our next structured finance default and loss study and our next performance report.

[3] A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment shortfalls can be cured and past remittance or trustee reports may be revised. In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using loss-given-default (LGD) from principal impaired securities alone. For more details, see the entry for LGD in the glossary. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer unless rounding results in zero.

Figure 2 – Summary of Structured Finance Rating Performance by Sector as of June 2007[3]

	Number of New Impair- ments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Invest- ment- Grade Loss Rate	36- Month- Average Rating Before Impair- ment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending June 2007							
US ABS	113	86.9%	55.7%	0.11%	Ba2	6.5%	3.6%
US CMBS	21	93.8%	86.0%	0.00%	Caa3	21.6%	8.2%
US RMBS	17	80.2%	81.6%	0.02%	Ba3	3.5%	1.6%
Global CDOs	15	98.4%	65.2%	0.00%	Caa1	7.5%	3.2%
Int'l SF ex. CDOs	1	99.8%	91.3%	0.00%	Caa3	4.0%	1.0%
Historical Averages Since 1993							
US ABS	53	77.7%	68.5%	0.29%	Ba1	6.6%	4.0%
US CMBS	8	91.0%	87.3%	0.01%	Caa1	15.2%	5.3%
US RMBS	6	87.7%	88.2%	0.01%	Ba3	6.5%	3.1%
Global CDOs	20	76.0%	61.5%	0.38%	Ba2	10.9%	5.7%
Int'l SF ex. CDOs	0.3	59.6%	75.1%	0.01%	Ba1	5.5%	1.8%

Introduction

In a Special Comment published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[4] Moody's corporate rating performance report is now updated on a quarterly basis.[5] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 Special Comment "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. In computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. In other words, Moody's structured rating performance metrics weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[6] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 Special Comment, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) – the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

The data sample used in this report includes all public, 144A, and private tranches with a Moody's long-term global debt rating in the global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS) and collateralized debt obligations (CDO) sectors. Provisional ratings, credit evaluations, and national scale ratings are not included. Pari passu tranches are collapsed into a single tranche.[7] In addition, the following tranches are excluded: (1) tranches guaranteed by financial guarantors, government agencies, or government-sponsored enterprises (GSEs); (2) interest-only (IO) or residual tranches; (3) repackaged securities, structured notes, structured investment vehicles, structured covered bonds, and other credit derivative securities; and (4) deals that have all their tranche ratings linked to a single corporate or sovereign rating.

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[4] See "Measuring the Performance of Corporate Bond Ratings," *Moody's Special Comment*, April 2003.
[5] For the latest performance report, see "The Performance of Moody's Corporate Bond Ratings: June 2007 Quarterly Update," *Moody's Special Comment*, August 2007.
[6] The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004. The concept of accuracy ratio is also described in the glossary at the end of this report.
[7] More exactly, tranches carrying the same rating from the same deal, regardless of their rating levels, 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. Additionally, we do not review each tranche of every deal in order to determine whether it is pari passu to another tranche of the same deal.

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

* The one-year accuracy ratio for the overall structured finance category decreased to 84.6% from its level six months ago of 94.5% due to an increase in the number of material impairments among securities backed by residential mortgages within US ABS and RMBS.

* For the cohort ending June 2007, the one-year accuracy ratio for US CMBS held steady at 94%, while the ratio for global CDOs reached an all-time high of 98%.[8] For US ABS and RMBS, the one-year accuracy ratio dropped from 95% for the cohort ending January 2007 to 87% and 80%, respectively. However, the accuracy ratio for US ABS remained above its historical average of 78% and the absolute number of new impairments over the prior 12 months for US RMBS was still low.

* The five-year accuracy ratios followed the same trend as the one-year accuracy ratios for all sectors, with declines seen for US ABS, US RMBS, and global structured finance as a whole, while the US CMBS and global CDO accuracy ratios exhibited stability or improvement.

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[8] The figures for US ABS and RMBS in this study differ from those reported in studies published prior to 2007 because some of the old vintage RMBS transactions sponsored by DLJ were reclassified into the HEL (and therefore ABS) category. Please refer to "Deal Sponsor and Credit Risk of US ABS and MBS Securities," *Moody's Special Comment*, December 2006 which discusses how these transactions were backed by subprime mortgage loans by today's standard. Please also see the glossary for the definition of RMBS, HEL, and ABS.

Figure 3 – One-Year (solid line) and Five-Year (dotted line) Accuracy Ratios
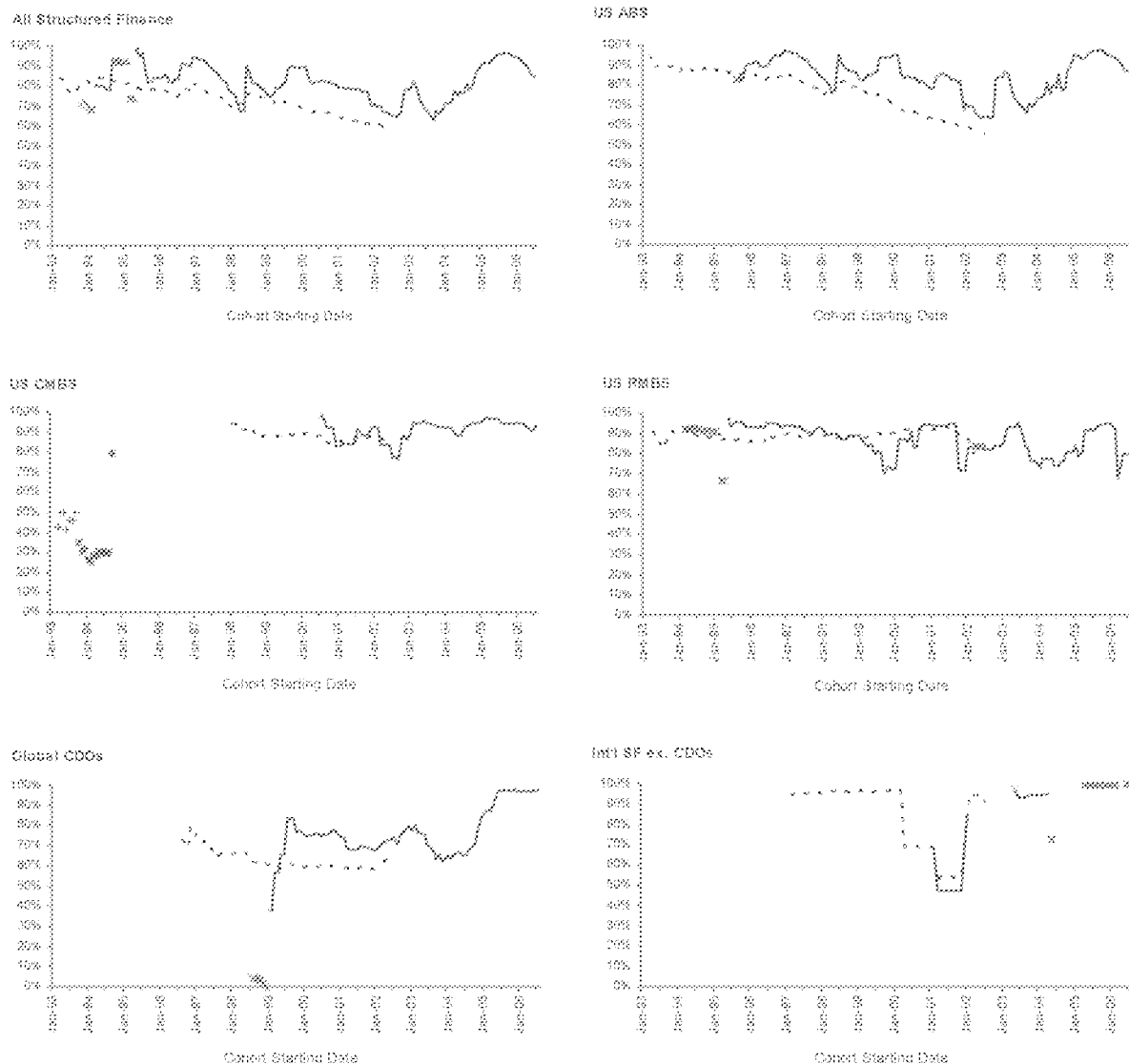
Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on July 1, 2006 and July 1, 2002. Breaks in the accuracy ratio 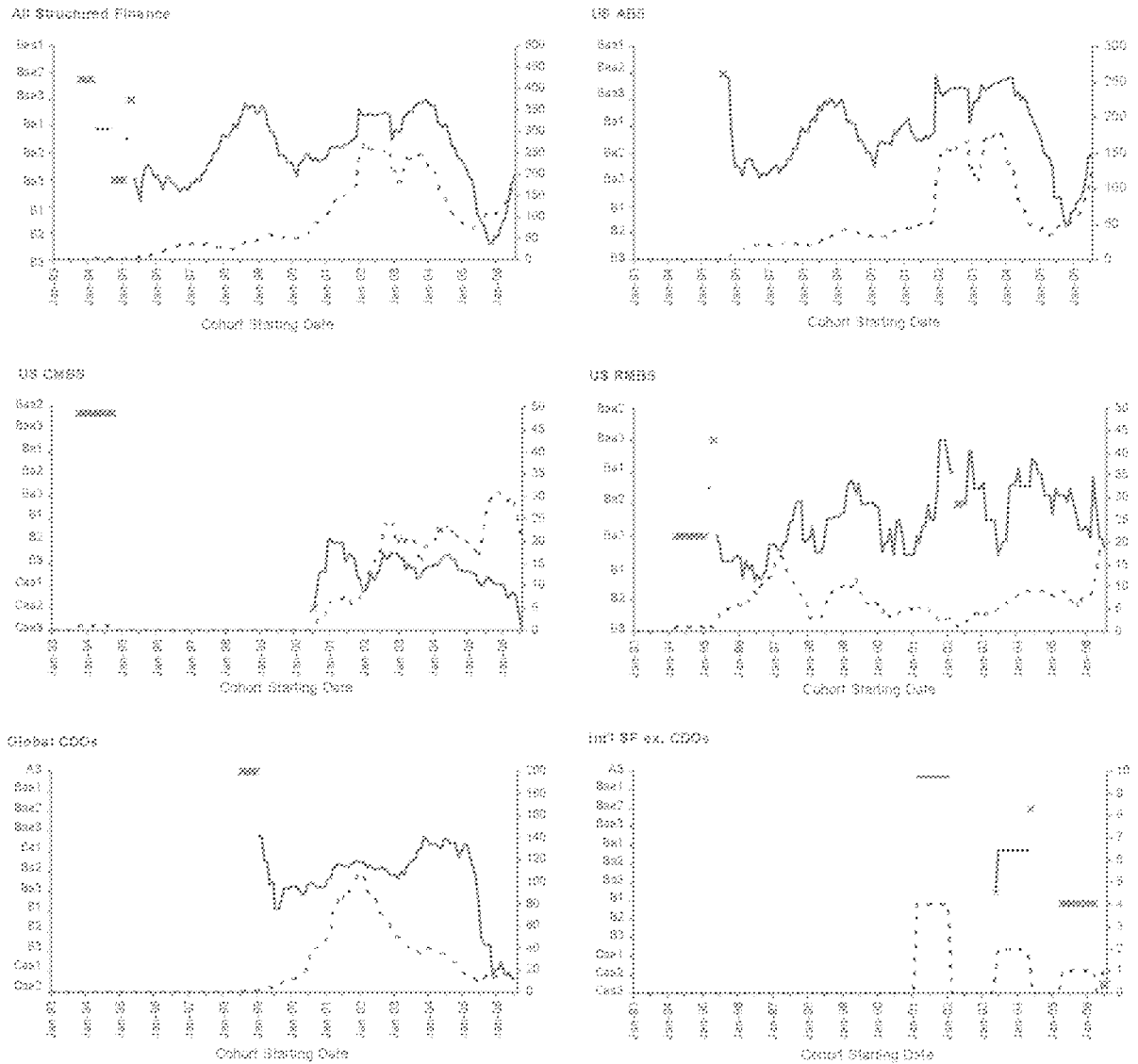series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

※ For global structured finance, the one-year investment-grade loss rate rose to 0.05% from 0.01% six months prior, but was still very low in absolute terms and relative to the cohorts formed between 2001 and 2004.

※ For the cohort formed in July 2006, the one-year investment-grade loss rate was zero for US CMBS, global CDOs, and the international structured finance sector excluding CDOs, and has remained zero for at least the last 15 months for each of these three sectors.

※ The one-year investment-grade loss rate increased to 0.11% from 0.03% for US ABS over a six-month period, but was still far lower than the average over 2002-2004. The US RMBS investment-grade loss rate

for the July 2006 cohort was 0.03%, an increase relative to the loss rate of 0.004% six months ago, but similar to the loss rate of 0.03% 18 months earlier.

✴ The five-year investment-grade loss rate for overall structured finance and all its sectors displayed a declining trend with the exception of US RMBS. Although the five-year investment-grade loss rate increased for US RMBS, it still remained among the lowest of all sectors.

Figure 4 – One-Year (solid line) and Five-Year (dotted line) Investment-Grade Loss Rates
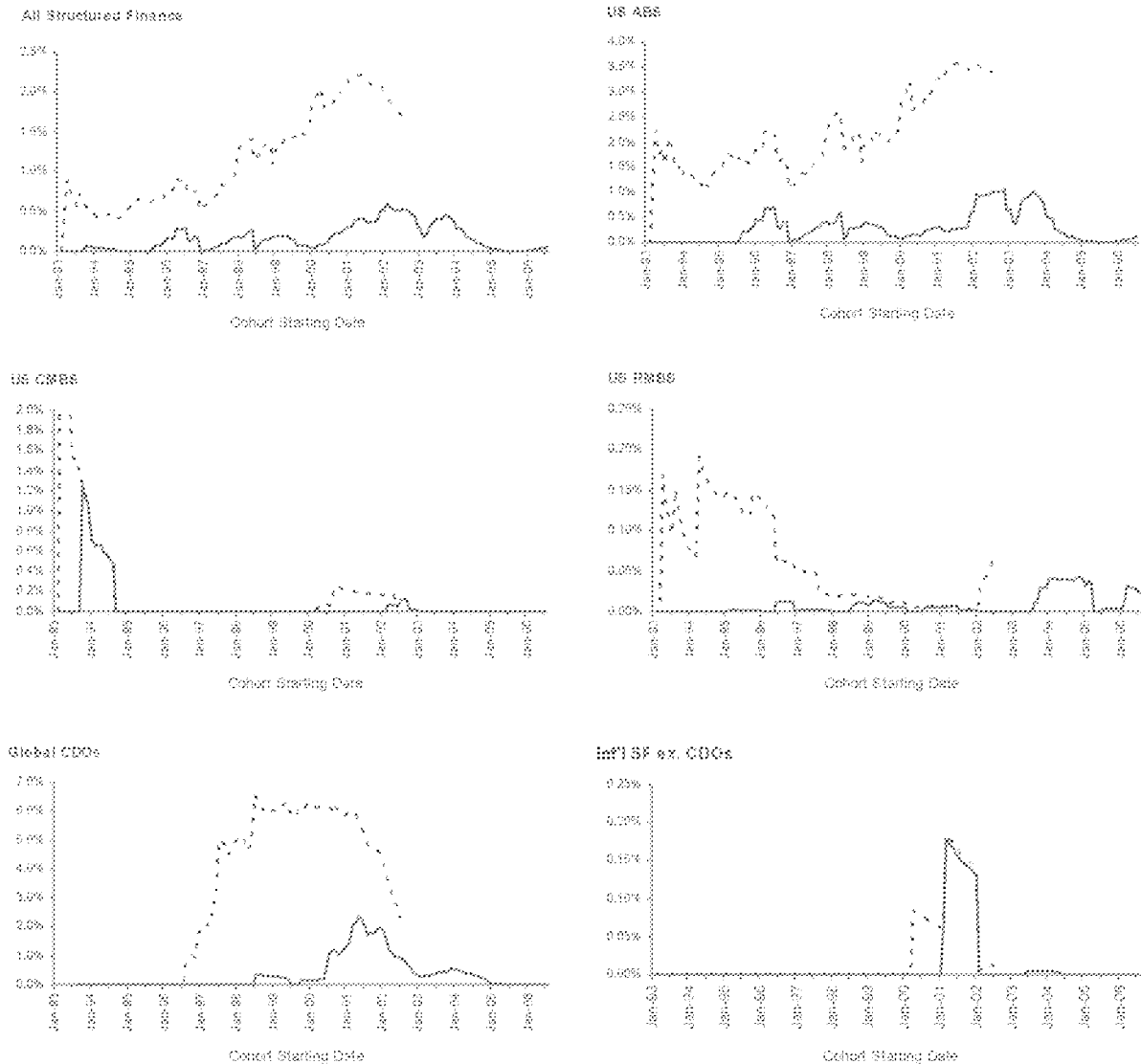
Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on July 1, 2006 and July 1, 2002.

Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

✴ The average rating before impairment for global structured finance rose to Ba3 for the most recent cohort, two notches up from B2 six months prior, but one notch below its historical average of Ba2. However, except for US ABS, the average ratings before impairment for all the sub-sectors of structured finance were at or below their levels six months earlier.

* The 36-month average rating prior to impairment for US ABS rose two notches to Ba2 for the cohort ending June 2007 from B1 for the cohort ending December 2006, but was still below the historical average of Ba1.

* US CMBS, global CDOs, and international structured finance excluding CDOs all exhibited low average ratings before impairment for the most recent cohort at Caa3, Caa1, and Caa3, respectively.

Figure 5 – 36-Month-Average Ratings before Impairment (solid line) and Number of Newly Impaired Securities (dotted line)

Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on July 1, 2006. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.

Rating Action Rates and Large Rating Action Rates

Figure 6 reports 12-month rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[9] Key observations include:
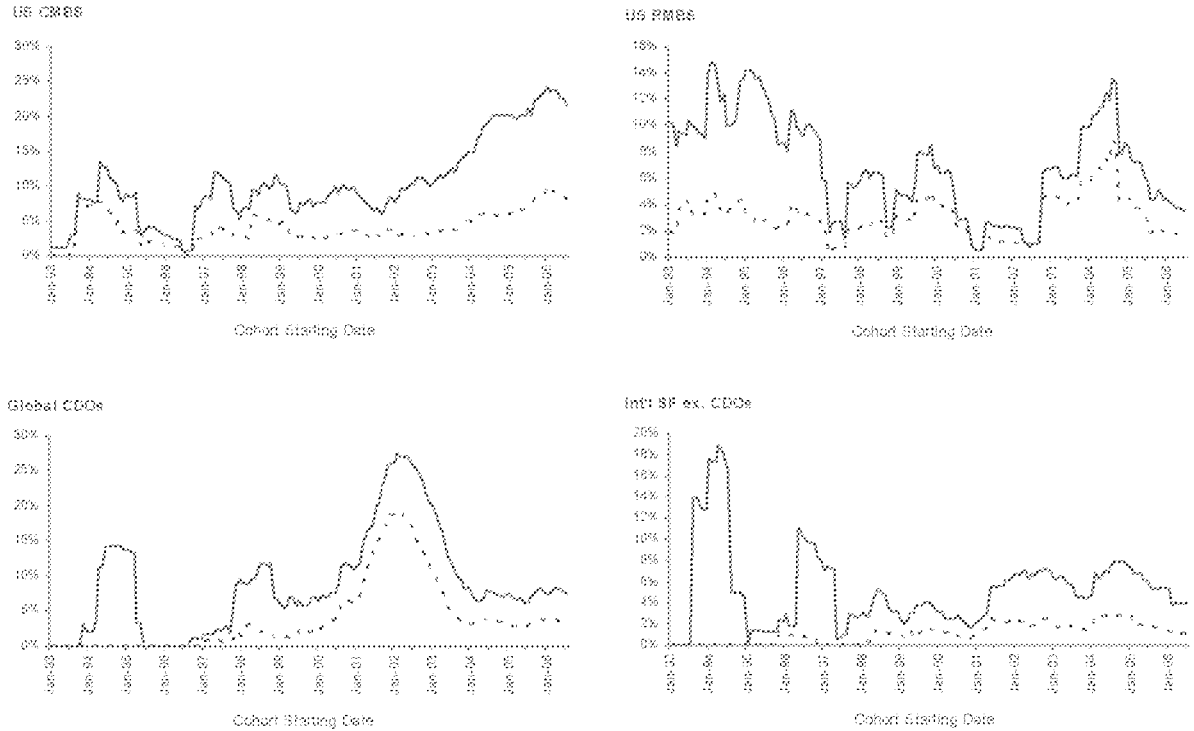
※ The 12-month rating action rate in the all structured finance category was 7.4% for the July 2006 cohort, down slightly from the rate of 7.9% six months prior and the historical level of 8.1%.[10] The large rating action rate was also somewhat lower at 3.3%, from 3.5% six months ago and 3.9% historically.

※ The global structured finance downgrade rate increased moderately to 2.2% from 1.9% six months earlier, but was still far below the peak of 8.7% reached by the July 2002 cohort. The large downgrade rate also rose from 1.0% to 1.3% over the same period. The major contributor of structured finance downgrades was US ABS, specifically securities backed by home equity loans. US ABS was the only sector which experienced a substantial increase in the downgrade rate, including an increase in the frequency of large downgrades.

※ The overall upgrade rate for the most recent cohort was 5.2%, a drop from the upgrade rate of 6.0% six months ago, but in line with the rate of 5.4% twelve months ago. The frequency of large upgrades also experienced a corresponding decline to 2.0% from 2.6% six months prior and 2.1% twelve months prior. The US CMBS upgrade rate decreased from an all-time high of 22.5% for the January 2006 cohort to 19.5% for the July 2006 cohort. US RMBS and international structured finance excluding CDOs also experienced declines in their upgrade rates over the last six months, while the US ABS upgrade stayed steady at 3.1% and the global CDO upgrade rate ticked upwards from 4.0% to 4.3%.

※ The proportion of downgrades and upgrades that were placed on review prior to the rating action continued a declining trend and fell to 72% for downgrades for the July 2006 cohort and 27% for upgrades. The declines were led by a decrease in the percentage of reviewed rating changes among US ABS and US RMBS. Meanwhile, global CDOs and international structured finance excluding CDOs experienced an upward trend for reviewed downgrades with over 90% of the downgrades in the 12 months before June 2007 being placed on review for downgrade prior to the rating action.

Figure 6 – 12-month Rating Action Rates (solid line) and 12-month Large (three notches or more) Rating Action Rates (dotted line)
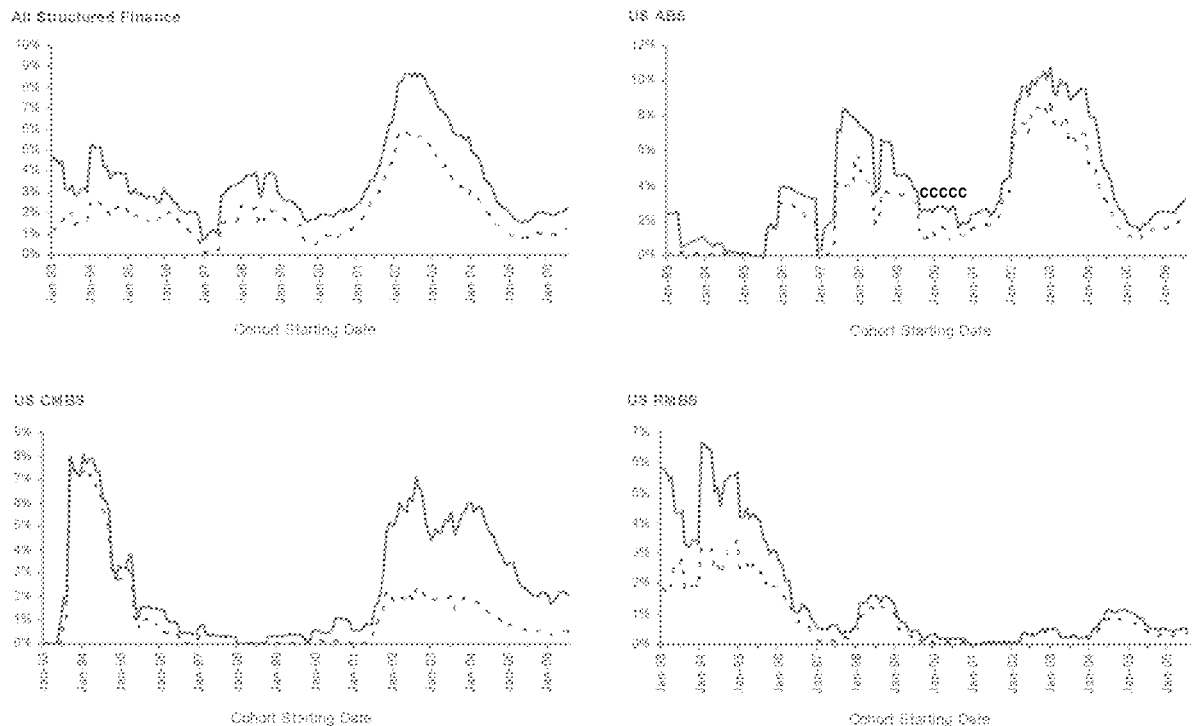

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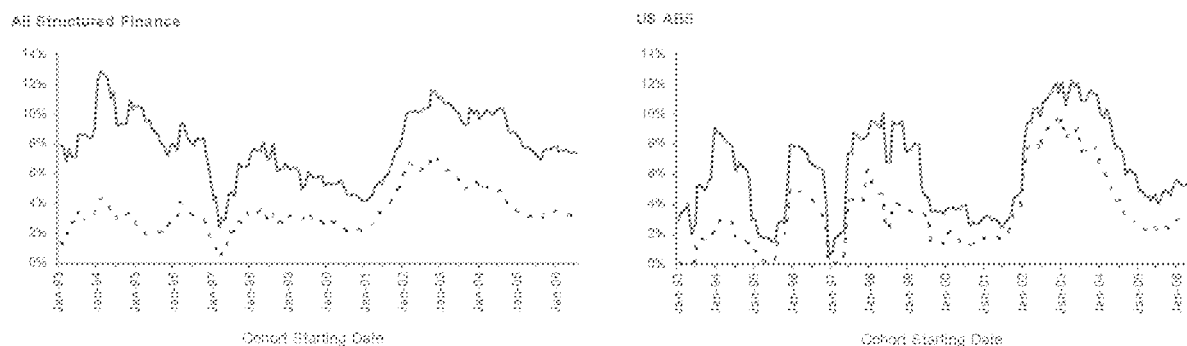
[9] Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.
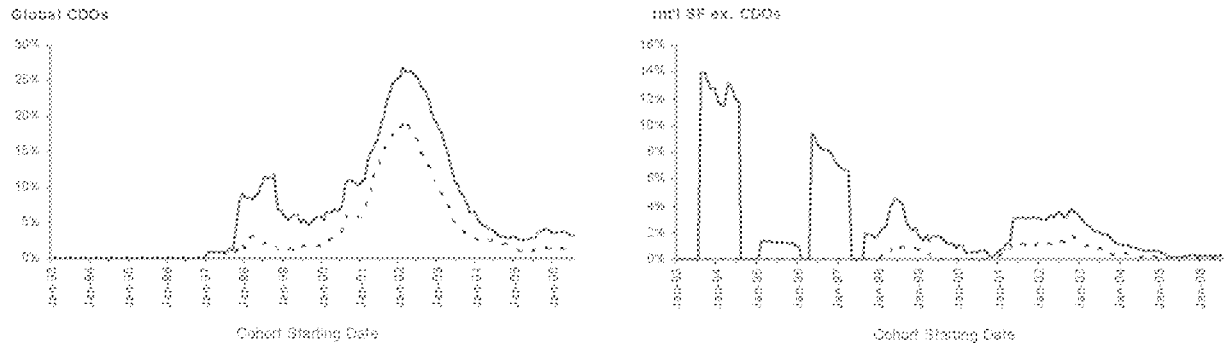[10] Note that the stated rating action rate excludes rating actions affecting deals with closing dates after June 2006 because the rating must have been outstanding as of the beginning of July 2006 in order to be counted in the calculation.

Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2006.
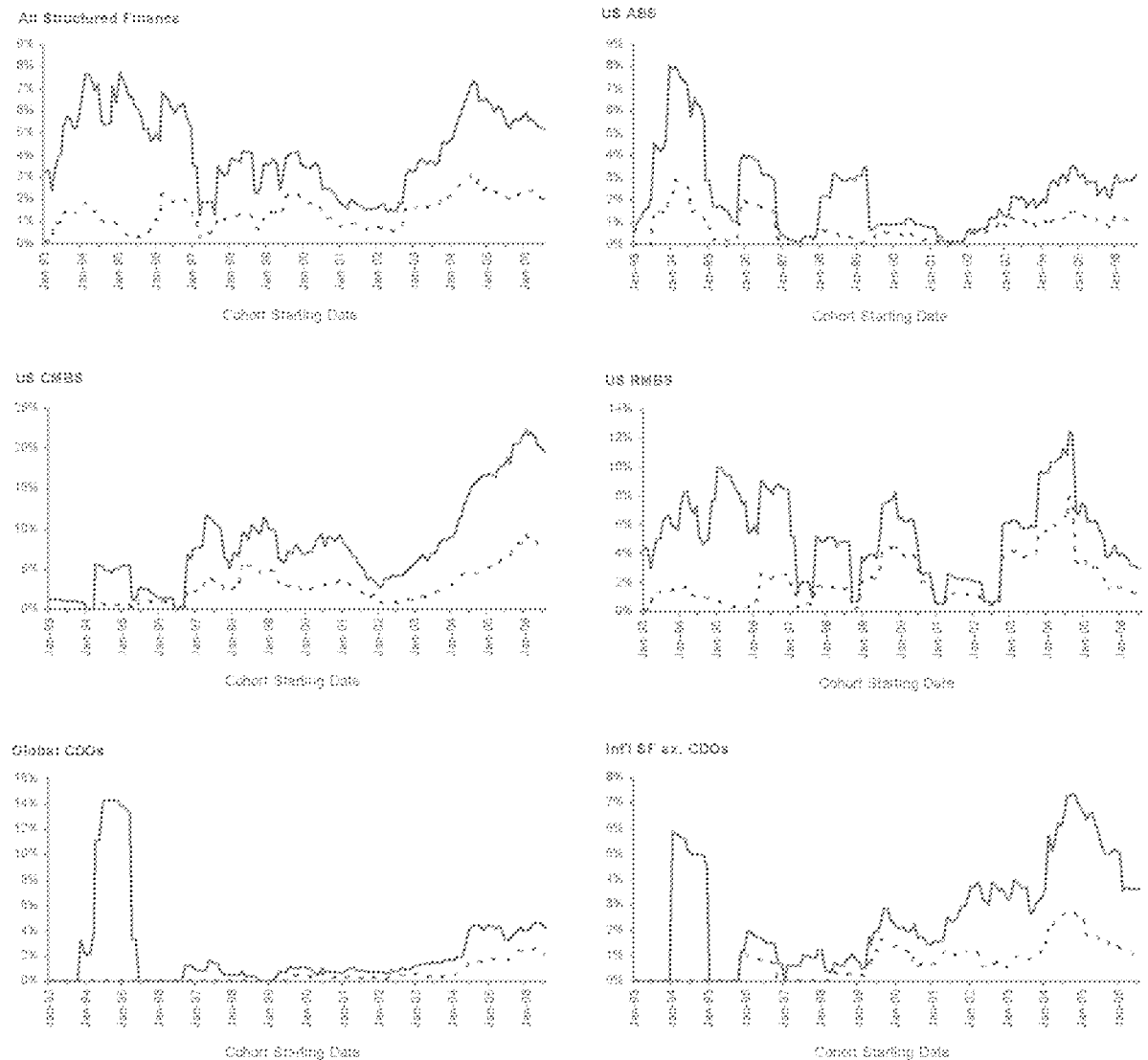
Figure 7 – 12-month Downgrade Rates (solid line) and 12-month Large (three notches or more) Downgrade Rates (dotted line)
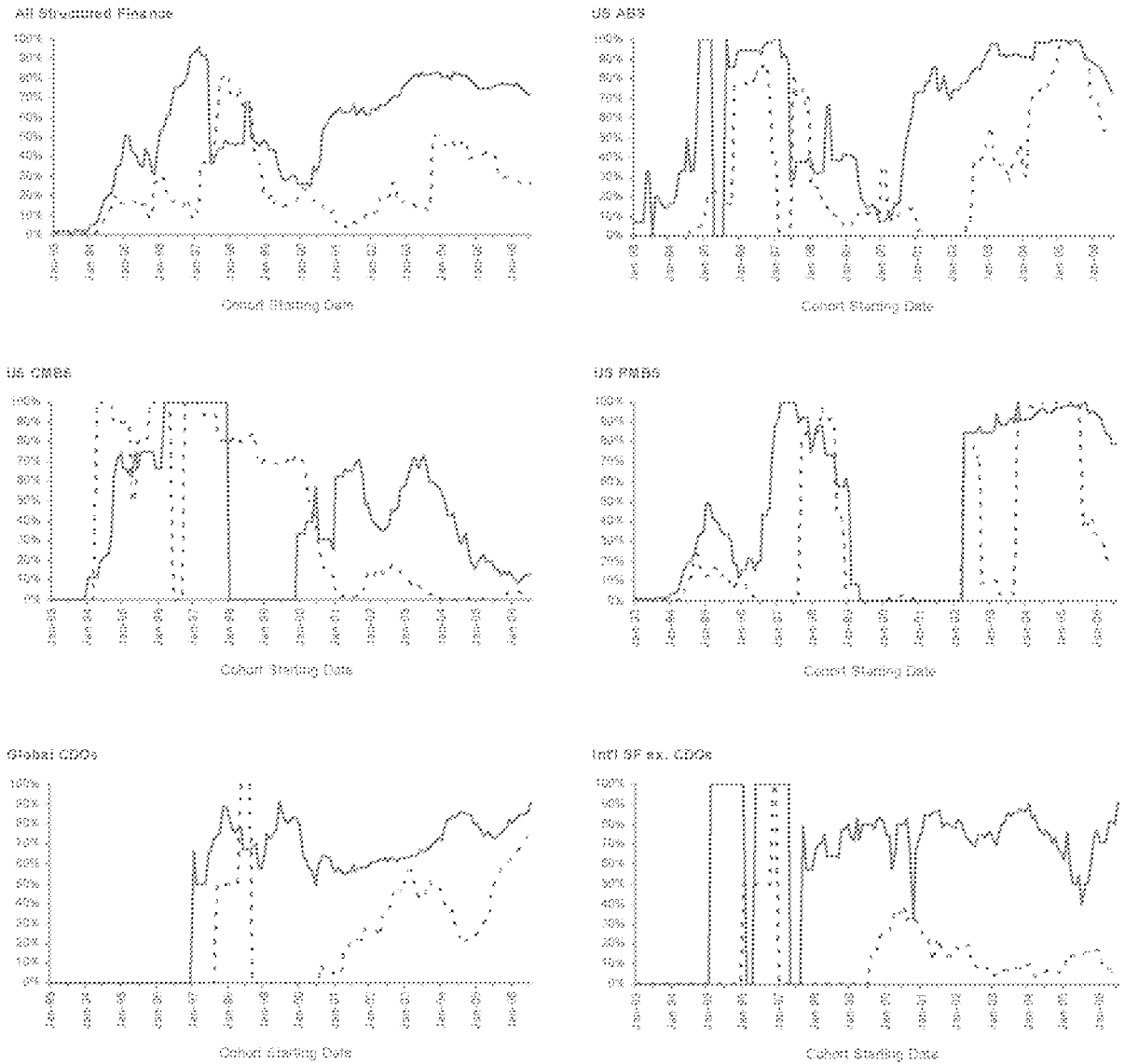
Global CDOs

Int'l SF ex. CDOs

Cohort Starting Date

Cohort Starting Date

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2006.

Figure 8 – 12-month Upgrade Rates (solid line) and 12-month Large (three notches or more) Upgrade Rates (dotted line)

All Structured Finance

US ABS

Cohort Starting Date

Cohort Starting Date

US CMBS

US RMBS

Cohort Starting Date

Cohort Starting Date

Global CDOs

Int'l SF ex. CDOs

Cohort Starting Date

Cohort Starting Date

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2006.

Figure 9 – Percentages of Downgrades (solid line) and Upgrades (dotted line) Preceded by Watchlist Actions in the Same Direction

Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on July 1, 2006. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

Glossary

Payment Shortfall

Structured finance securities are defined as being in payment shortfall (previously called "payment default") if they have suffered:

* an interest shortfall, or

* a principal write-down.

Material Impairment

Structured finance securities are defined as being in material impairment if they have:

* sustained a payment shortfall that remained uncured, or

* been downgraded to Ca or C.

Prepayment-related and AFC-related interest shortfalls are not considered to be material impairments, but PIKing tranches are. Explicit principal write-downs are included whereas implicit principal write-downs or under-collateralizations are not.

The impairment status of a security may change as it goes from cured (i.e. all outstanding shortfalls and losses were repaid in full) to uncured (i.e. positive interest shortfalls or principal losses outstanding), or vice versa. If any securities rated Ca or C but not in payment shortfall are upgraded, they are considered to be no longer in material impairment. Securities rated Ca or C that were not upgraded are in material impairment even if their payment shortfalls have been cured. Finally, securities with very minor shortfalls or losses are excluded.

A security is called "newly impaired" in a given period if it had no outstanding payment shortfalls and was not downgraded to Ca or C at the end of the prior period, but experienced at least one of these two credit events at the end of the given period.

Principal Impairment

This refers to materially impaired securities that have suffered principal write-downs or principal losses, or have been downgraded to Ca or C (with or without experiencing principal write-downs or losses). In particular, if a security had experienced principal write-down/loss or was downgraded to Ca or C, it is called a principal impairment regardless of whether it had experienced interest shortfalls.

Interest Impairment

This refers to materially impaired securities that have experienced only interest shortfalls, no principal losses, and were not downgraded to Ca or C.

Investment-Grade (IG) and Below Investment-Grade (BIG)/Speculative-Grade (SG) 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.

Loss-Given-Default (LGD) or Loss Severity Rate

The loss-given-default, also known as LGD or loss severity rate, of an impaired security is measured by the sum of the present values of net losses, including both interest shortfalls and principal losses, discounted by the security's coupon rate and expressed as a percentage of the principal balance on a certain reference date. There are typically three types of reference dates used in the calculation of LGD: origination, the time of impairment, and a cohort formation date.

Final LGD on impaired securities with a zero outstanding principal balance are typically known. For impaired securities with positive principal balances or impaired securities with incomplete loss data, their LGD need to

be estimated.[11] In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using LGD from principal impaired securities alone. In almost all cases, securities with only interest shortfalls (interest impairments) end up being cured or suffering principal writedowns or being downgraded to Ca/C (principal impairments). Interest impairments have frequently been cured, whereas cures on principal impairments have been rare. As a result, we do not attempt to project final LGD on interest impaired securities until they either become cured, in which case they drop out of the LGD data sample with an LGD of zero, or become principal impaired, in which case a projection of the final LGD is made if the impairment is not resolved at that time.

Accuracy Ratio (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[12]

To calculate accuracy ratios, rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted. Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

Because we use only data observations that span the time horizon under consideration, the latest cohort for a one-year horizon is formed on July 1, 2006, while for a five-year horizon the latest cohort is formed on July 1, 2002.

Investment-Grade Loss Rate

The one-year investment-grade loss rate is calculated as follows. First, for a given cohort, we calculate the LGD as a share of the tranche balance at the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these LGD rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the LGD rate is not weighted by the total dollar volume of outstanding securities in the cohort. Also note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details. The five-year investment-grade loss rate is calculated similarly.

Average Rating before Impairment

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a

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[11] See "Default & Loss Rates of Structured Finance Securities: 1993-2006," *Moody's Special Comment*, April 2007 and "Measuring Loss-Given-Default for Structured Finance Securities: An Update," *Moody's Special Comment*, December 2006 for discussions of the characteristics and estimation methods of LGD.
[12] For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004.

particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that became impaired within 12 months after the cohort formation date, where the weight for each security is the LGD rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher LGD over impaired tranches with lower LGD.[13] Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

Rating Action Rate

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scale and are based on comparing the rating at the beginning and end of the time period under consideration. However, if a rating was withdrawn by the end of the time period, then the rating prior to withdrawal is used as the end rating. Note that a security will only be counted if it was outstanding as of the cohort formation date. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

Large Rating Action Rate

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

Percentage of Downgrades (Upgrades) Preceded by Watchlist Actions in the Same Direction

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

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.

HEL

The home equity loan or HEL sector includes securities backed 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.

Prior to 1998, RMBS collateral was generally defined as first-lien residential mortgages, regardless of the credit quality of the borrower. HEL collateral generally included junior liens such as HELOCs or closed-end seconds. However, as subprime lending became more prevalent, the market shifted its definition such that HEL encompassed subprime first-lien residential mortgages while RMBS included first-lien mortgages made to higher quality borrowers. Since 1998 and especially in the last five years, a deal classified as RMBS by Moody's is generally backed by prime or Alt-A quality first-lien residential mortgages, while a deal classified as

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[13] We began using LGD rates as weights in computing an average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make any material difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

HEL can be backed by subprime first-lien mortgages or junior liens. Therefore, a subprime deal which would be classified as HEL today may have been classified as RMBS in the past.

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 comprised 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 comprised 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. For further details, see the definition of HEL.

All Structured Finance Securities

All structured finance captures global structured finance securities in four major sectors: ABS, CDO, CMBS, and RMBS.

U.S. Structured Finance

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.

International Structured Finance excluding CDOs

This refers to non-CDO structured finance securities that are not denominated in U.S. dollars and issued in the U.S. market and not denominated in Canadian dollars and issued in Canada. The majority of the securities in this sector are issued in Europe, the Middle East, and Africa (EMEA); the rest are issued in the Asia Pacific region and Latin America.

Related Research

⊛   The Performance of Structured Finance Ratings: Full-Year 2006 Report, May 2007 (103017)

⊛   The Performance of Structured Finance Ratings: Mid-Year 2006 Report, September 2006 (99034)

⊛   The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

⊛   The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

⊛   Default & Loss Rates of Structured Finance Securities: 1993-2006, April 2007 (102733)

⊛   Default & Loss Rates of Structured Finance Securities: 1993-2005, April 2006 (97234)

⊛   Default & Loss Rates of Structured Finance Securities: 1993-2004, July 2005 (93653)

⊛   Default & Loss Rates of U.S. CDOs: 1993-2003, March 2005 (91692)

⊛   Default & Loss Rates of Structured Finance Securities: 2004 First Half Update, January 2005 (90843)

⊛   Default & Loss Rates of Structured Finance Securities: 1993-2003, September 2004 (88692)

⊛   Measuring Loss-Given-Default for Structured Finance Securities: An Update, December 2006 (101284)

⊛   Measuring Loss Severity Rates of Defaulted Residential Mortgage Backed Securities: A Methodology, April 2004 (86769)

⊛   Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002, December 2003 (80247)

⊛   Structured Finance Rating Transitions: 1983-2006, January 2007 (101833)

⊛   Structured Finance Rating Transitions: 1983-2006 H1, August 2006 (98577)

⊛   Structured Finance Rating Transitions: 1983-2005, February 2006 (96533)

⊛   Structured Finance Rating Transitions: 1983-2004, February 2005 (91392)

⊛   Structured Finance Rating Transitions: 1983-2003, February 2004 (81239)

⊛   Structured Finance Rating Transitions: 1983-2002, January 2003 (77291)

⊛   European Structured Finance Rating Transitions: 1988-2006, February 2007 (102033)

⊛   European Structured Finance Rating Transitions: 1988-2005, February 2006 (96706)

⊛   Japanese Structured Finance Rating Transitions: 1994-2006, March 2007 (102509)

⊛   Asia Pacific (ex-Japan) Structured Finance Rating Transitions: 1990-2006 (102095)

⊛   Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities, December 2006 (100872)

⊛   The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

⊛   Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

⊛   The Performance of Moody's Corporate Bond Ratings: June 2007 Quarterly Update, August 2007 (104308)

⊛   Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

⊛   Guide to Moody's Default Research: April 2007 Update, April 2007 (102661)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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Moody's Investors Service

Special Comment

Moody's
Credit Policy

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The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of June 2008. The highlights of this report are:

* Overall, 4,551 structured finance securities became impaired in the first half of 2008: one in US ABS excluding HEL, 31 in US CMBS, 1,302 in US HEL, 1,348 in US RMBS, 1,854 in global CDOs, three in the international structured finance sector excluding CDOs and SIVs and Other SF, and 12 in SIVs and Other SF. Of these, 4,393 were principal impairments (suffered principal losses or were downgraded to Ca or C), while the remaining 158 were interest impairments (experienced interest shortfalls only).

* For global structured finance, the one-year accuracy ratio decreased to 59.7% from its level six months ago of 75.6% and its level twelve months ago of 90.7% (Figure 1).[1] However, excluding the most troubled sectors - structured finance CDOs (SF CDOs), the SIVs and Other SF category, and US HEL and RMBS securitized between 2005 and 2007 - the one-year accuracy ratio was higher at 83.2%.

* The five-year accuracy ratio, which measures the performance of ratings that were outstanding five years ago and hence does not incorporate the performance of the more recent vintages and more poorly performing mortgage-related securities, was 78.1%, 2.3 percentage points lower than its level of 80.4% six months ago.

* The one-year investment-grade loss rate jumped to 4.05% for the cohort ending June 2008. This represents a new historical high and a four-fold increase from its six months-prior rate.

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[1] These performance metrics should be interpreted with caution. Some statistics are based on small samples, as the number of impairments in any given year and any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors. Moreover, variations in rating performance over time may reflect either changes in the quality of the rating process or changes in the environment that make losses more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

⁘ The average rating during the three years prior to impairment of all impairments occurring during the 12-month period ending June 2008 rose to Baa2, one notch above the average rating prior to impairment for the cohort ending six months earlier, and four notches above the level for the cohort ending twelve months earlier.

⁘ The one-year rating action rate also reached a new record of 23.7%, almost four times higher than the historical average of 6.1%. Meanwhile, the frequency of large rating actions (rating changes of three notches or more) was 20.6%, only slightly less than the overall rating action rate. Both increases were caused by a surge in the downgrade rate, particularly for US HEL, US RMBS, and global CDOs.

⁘ US HEL, US RMBS, and global CDOs all experienced declines in their one-year accuracy ratios, increases in their one-year investment-grade loss rates, and higher than average ratings before impairment (Figure 2). In contrast, US ABS excluding HEL, US CMBS, and the international structured finance sector excluding CDOs and Other SF, all displayed one-year accuracy ratios in excess of 97% and investment-grade loss rates of zero.

Figure 1 – Summary of Global Structured Finance Rating Performance as of June 2008[2]

Cohort Ending Date	Number of New Impair-ments over Prior 12 Months	Accuracy Measures		1-Year Invest-ment-Grade Loss Rate	36-Month-Average Rating Before Impair-ment	Stability Measures	1-Year Large Rating Action Rate
		1-Year Accuracy Ratio	5-Year Accuracy Ratio			1-Year Rating Action Rate	
Global Structured Finance							
June 2008	6538	59.7%	78.1%	4.05%	Baa2	23.7%	20.6%
December 2007	2135	75.6%	80.4%	0.98%	Baa3	9.6%	6.4%
June 2007	195	90.7%	77.4%	0.04%	Ba3	4.6%	2.1%
December 2006	107	96.4%	78.7%	0.01%	B2	4.8%	2.1%
Average (1993-Most Recent)	510	76.1%	83.8%	0.42%	Baa2	6.1%	3.5%
Global Structured Finance excl SF CDOs, SIV and Other SF, and '05-'07 vintage US HEL & RMBS							
June 2008	416	83.2%	82.1%	0.22%	Ba1	13.9%	10.8%
December 2007	221	87.2%	82.1%	0.11%	Ba2	6.6%	3.4%
June 2007	125	90.7%	78.2%	0.05%	B1	6.4%	2.7%
December 2006	99	95.6%	79.5%	0.01%	B2	6.2%	2.7%
Average (1993-Most Recent)	106	87.5%	84.4%	0.10%	Ba2	5.3%	2.6%

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[2] A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment shortfalls can be cured and past remittance or trustee reports may be revised. In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using loss-given-default (LGD) from principal impaired securities alone. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer unless rounding results in zero.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 2 – Summary of Structured Finance Rating Performance by Sector as of June 2008

	Number of New Impair-ments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Invest-ment-Grade Loss Rate	36-Month-Average Rating Before Impair-ment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending June 2008							
US ABS ex HEL	3	97.6%	81.5%	0.00%	B3	13.2%	12.2%
US CMBS	35	98.9%	90.6%	0.00%	Caa1	8.7%	2.2%
US HEL (includes subprime)	2604	70.2%	85.3%	5.62%	Baa3	47.3%	42.3%
excl '05-'07 vintages	321	87.1%	85.3%	1.20%	Ba1	27.3%	21.9%
US RMBS (includes Alt-A)	1442	87.4%	90.8%	1.97%	Baa3	14.6%	13.4%
excl '05-'07 vintages	14	96.8%	90.8%	0.00%	B1	3.4%	2.1%
Global CDOs	2418	20.5%	49.6%	13.78%	A3	31.1%	27.5%
excl SF CDOs	40	38.7%	89.6%	0.26%	Baa2	25.8%	22.9%
Int'l SF ex CDO & Other SF	3	99.3%	87.7%	0.00%	Caa1	5.9%	3.5%
Other SF (includes SIVs)	33	52.8%	54.9%	5.04%	A3	15.5%	14.7%
Historical Averages Since 1993							
US ABS ex HEL	32	86.1%	80.3%	0.21%	Ba1	5.6%	3.3%
US CMBS	10	92.1%	86.5%	0.02%	B3	12.0%	4.0%
US HEL (includes subprime)	189	82.7%	90.4%	0.82%	Baa3	8.1%	6.4%
excl '05-'07 vintages	38	92.5%	90.4%	0.18%	Ba1	4.0%	2.7%
US RMBS (includes Alt-A)	98	88.5%	95.4%	0.13%	Ba1	3.4%	1.8%
excl '05-'07 vintages	5	95.2%	95.4%	0.01%	Ba3	3.0%	1.2%
Global CDOs	178	41.5%	62.9%	1.67%	Baa1	10.4%	6.6%
excl SF CDOs	19	79.1%	68.5%	0.24%	Ba2	10.2%	6.2%
Int'l SF ex CDO & Other SF	1	74.2%	83.4%	0.01%	Ba3	4.2%	1.4%
Other SF (includes SIVs)	2	55.9%	69.5%	0.43%	Baa1	2.4%	1.0%

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Introduction

In a Special Comment published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[3] Moody's corporate rating performance report is now updated on a quarterly basis.[4] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 Special Comment "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. In computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. In other words, Moody's structured rating performance metrics weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[5] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 Special Comment, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) – the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

Note that the criteria used to create the data set for this report have changed from prior performance studies. The most notable changes are that *pari passu* tranches are no longer collapsed and wrapped tranches are included. For a more detailed description of the data sample, please see the Appendix.

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[3] See "Measuring the Performance of Corporate Bond Ratings," *Moody's Special Comment*, April 2003.
[4] For the latest performance report, see "The Performance of Moody's Corporate Debt Ratings: September 2008 Quarterly Update," *Moody's Special Comment*, October 2008.
[5] The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004. The concept of the accuracy ratio is also described in the glossary at the end of this report.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

* For global structured finance, the one-year accuracy ratio decreased to 59.7% from its level six months ago of 75.6% and its level twelve months ago of 90.7%. The decline was caused by a massive increase in the number of material impairments among US HEL and US RMBS securities issued between 2005 and 2007, and among SF CDOs over the last year. Excluding these securities as well as the Other SF sector, the one-year accuracy ratio for the cohort ending June 2008 was 83.2%.

* US HEL and global CDOs both experienced steep declines in their one-year accuracy ratios compared to their levels six months prior and historically. The one-year accuracy ratio for US RMBS also fell approximately five percentage points from 92.3% for the cohort ending December 2006 to 87.4% for the cohort ending June 2008.

* In contrast, the one-year accuracy ratios for US ABS excluding HEL, US CMBS, and international structured finance excluding CDOs and Other SF were all very high at above 97% for the cohorts formed in July 2007. Excluding deals that closed between 2005 and 2007, the one-year accuracy ratio for US RMBS was also close to 97%.

* Unlike their one-year counterparts, there were no dramatic movements in the five-year accuracy ratios between the January 2003 cohort and the July 2003 cohort for global structured finance or any of its sub-sectors besides global CDOs. This statistic demonstrates performance on a lagged basis and the effects of the recent dramatic increase in material impairments have not been incorporated yet.
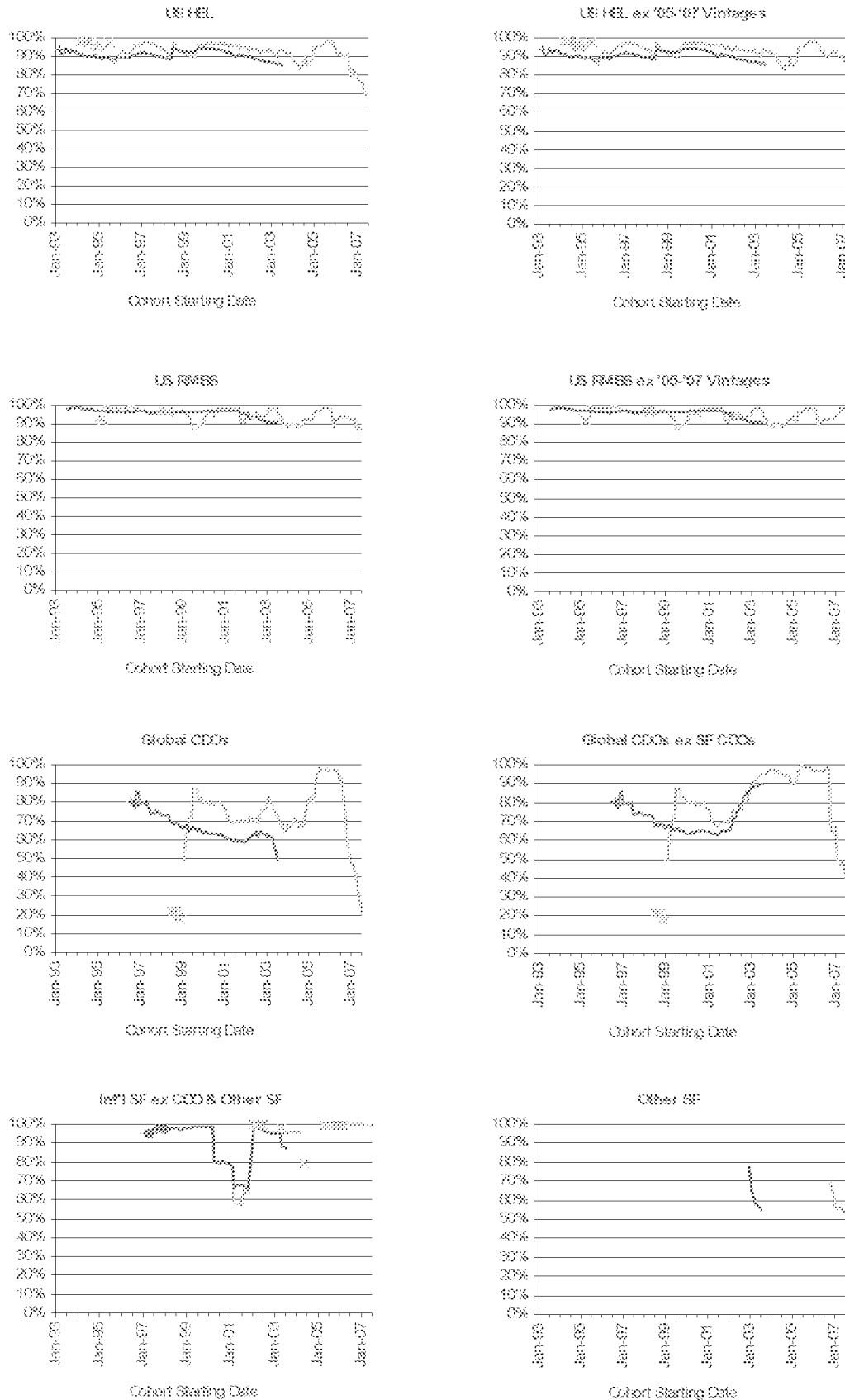
Figure 3 – One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios
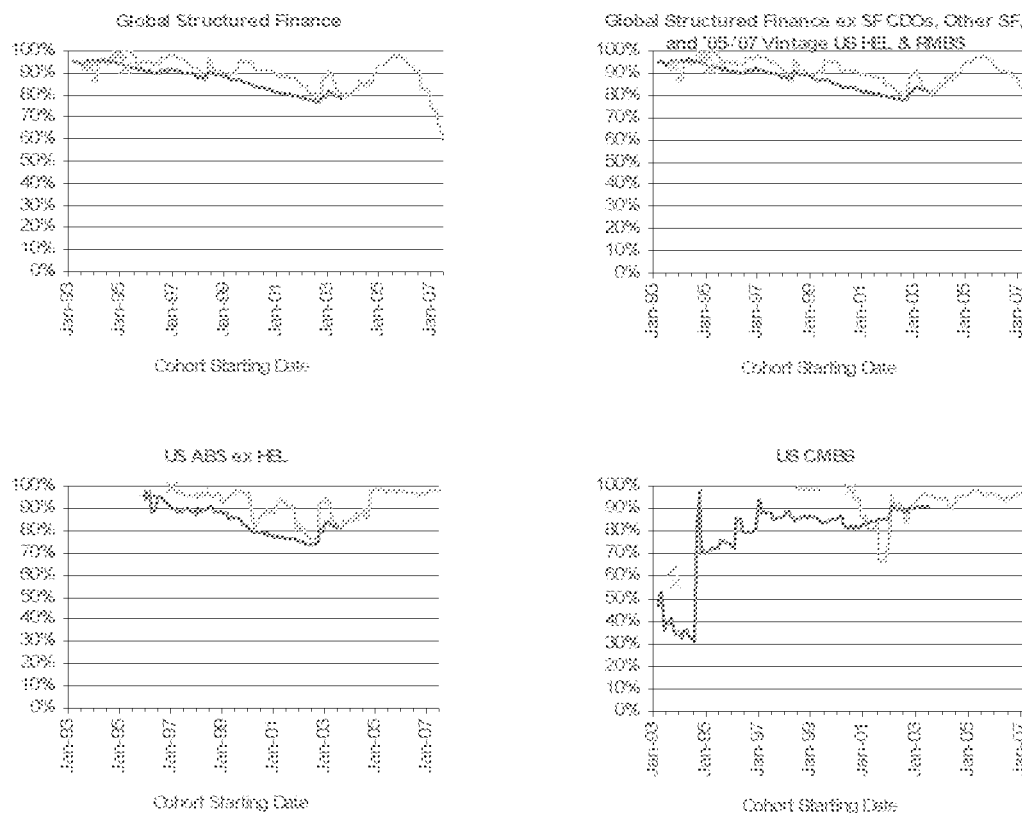
Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on July 1, 2007 and July 1, 2003. Breaks in the accuracy ratio series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 3 (continued) – One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios

US HEL

US HEL ex '06-'07 Vintages

US RMBS

US RMBS ex '06-'07 Vintages

Global CDOs

Global CDOs ex SF CDOs

Int'l SF ex CDO & Other SF

Other SF

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

⁜   For global structured finance, the one-year investment-grade loss rate rose precipitously to 4.0% for the cohort ending June 2008, four times higher than the loss rate of 1.0% six months prior and roughly 10 times higher than the historical average of 0.4%. However, excluding SF CDOs, the Other SF category, and US HEL and US RMBS from the 2005 to 2007 vintages, the one-year investment-grade loss rate was only 0.2%.

⁜   The one-year investment-grade loss rate also grew to record-breaking highs for US HEL, US RMBS, global CDOs, and Other SF. Global CDOs experienced the most striking increase, but most of this can be attributed to the poor performance of SF CDOs. Excluding this CDO deal type, the one-year CDO investment-grade loss rate was 0.3%.

⁜   For the cohort formed in July 2007, the one-year investment-grade loss rate was zero for US ABS excluding HEL, US CMBS, and the international structured finance sector excluding CDOs and Other SF.

⁜   Because the five-year investment-grade loss rate is a lagging indicator, it still did not show the dramatic increase displayed by the one-year loss rate.

Figure 4 – One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates
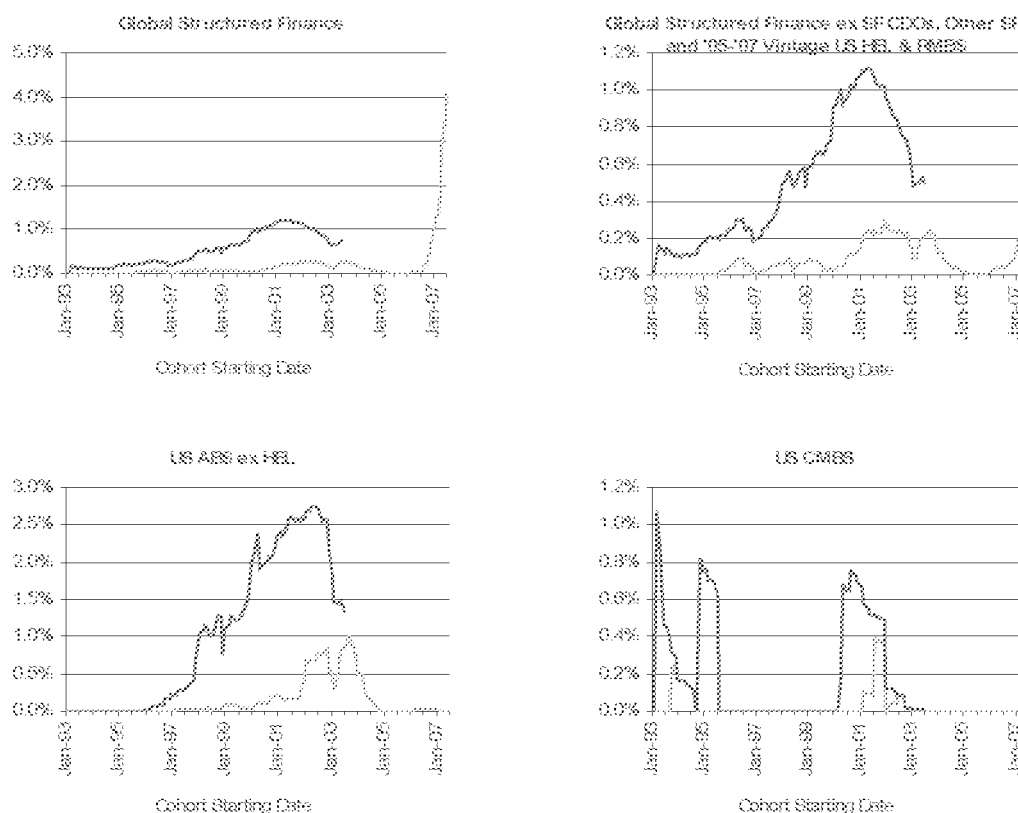
Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on July 1, 2007 and January 1, 2002.

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Figure 4 (continued) – One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates
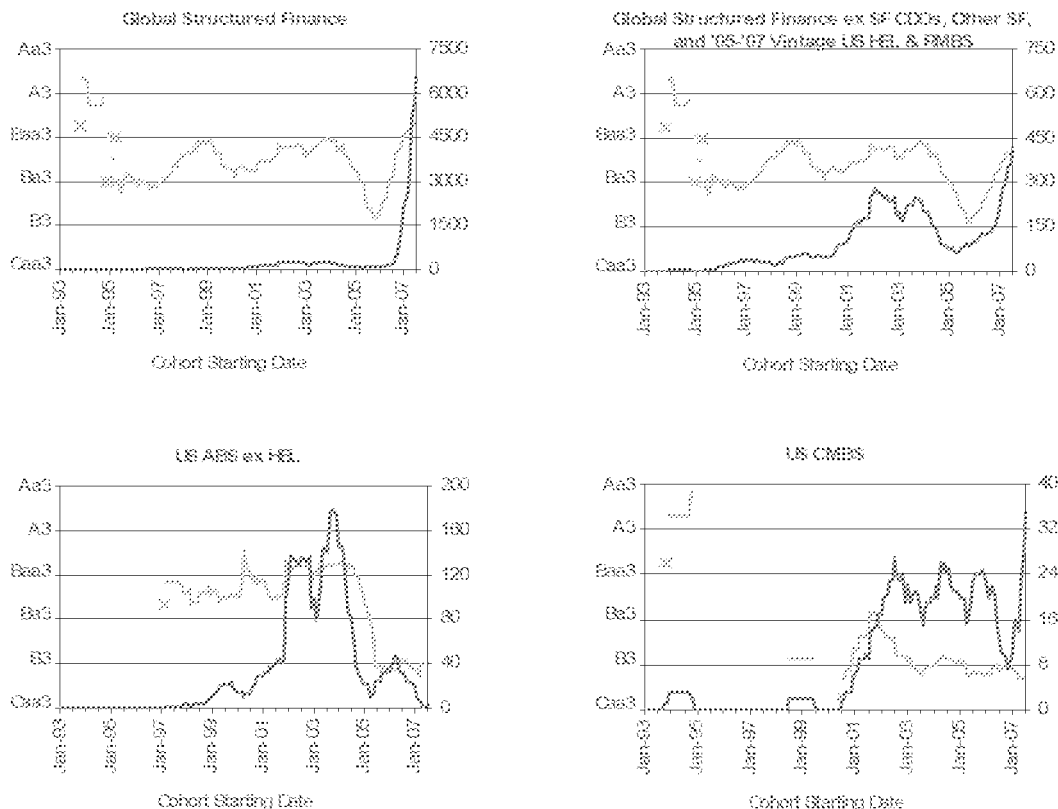
The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

※ The 36-month average rating before impairment for global structured finance rose to Baa2 for the most recent cohort, one notch up from Baa3 six months prior, and four notches above Ba3 twelve months prior. Excluding SF CDOs, the Other SF category, and 2005 to 2007 vintage US HEL and US RMBS, the average rating before impairment was two notches lower at Ba1.

※ The average ratings prior to impairment for US HEL, US RMBS, and global CDOs remained high at Baa3, Baa3, and A3, respectively. For global CDOs, this represents a 5.5-notch increase from the year-prior level, while the average ratings for US HEL and US RMBS increased 1.3 and 2.6 notches, respectively, over the same period.

※ The average ratings before impairment for US ABS excluding HEL, US CMBS, and international structured finance excluding CDOs and Other SF were B3, Caa1, and Caa1, respectively, low in absolute terms and compared to their historical averages.

Figure 5 – 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)

Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on July 1, 2007. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 5 (continued) – 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)

The Performance of Structured Finance Ratings: Mid-Year 2008 Report
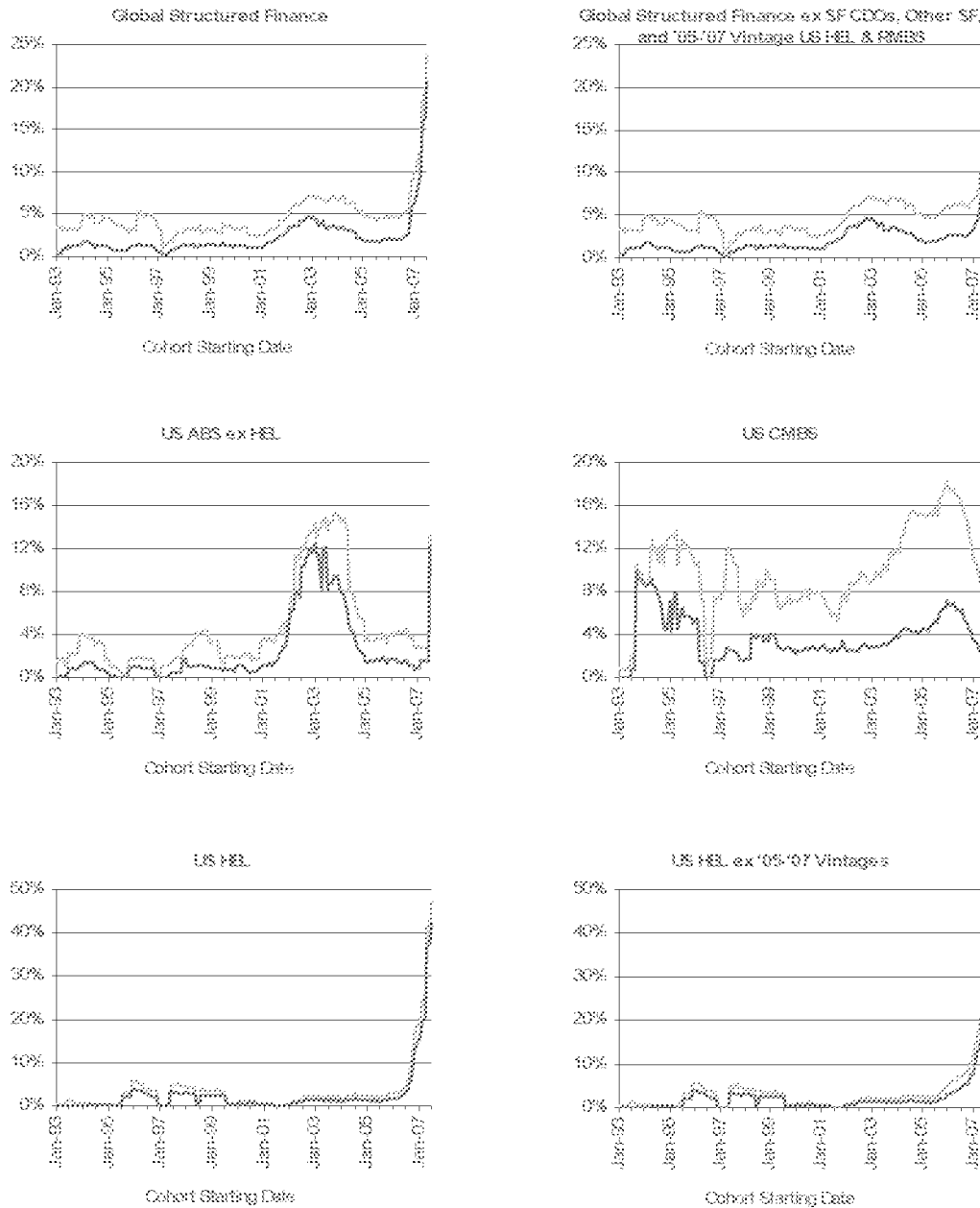
Rating Action Rates and Large Rating Action Rates

Figure 6 reports 12-month rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[6] Key observations include:

    ※   The 12-month rating action rate in the global structured finance category was 23.7% for the July 2007 cohort, more than twice the rate of 9.6% six months prior and almost four times higher than the historical level of 6.1%. The large rating action rate was only a little lower than the overall rating action rate, jumping to 20.6% from 6.4% six months ago and 3.5% historically. Excluding SF CDOs, the Other SF category, and US HEL and RMBS transactions that closed between 2005 and 2007, the general and large rating actions rates were much lower at 13.9% and 10.8%, respectively, but still high compared to the past.

    ※   The global structured finance downgrade rate reached a new historical high of 22.2% for the cohort ending June 2008. The large downgrade rate followed the same pattern, rising to 20.2% from 5.7% over a six-month period. Except for US CMBS, all sectors of structured finance experienced large increases in the frequency of downgrades.

    ※   In contrast, the upgrade rate for global structured finance and all the sub-sectors displayed a declining trend. For the most recent cohort, the overall frequency of upgrades was a low 1.4% and the frequency of large upgrades was a mere 0.4%.

    ※   Although still low by historical standards, the proportion of downgrades that were placed on review prior to the rating action rose to 35% for the cohort ending June 2008, up from 22% six months prior. All sectors experienced an increase in the frequency of reviewed downgrades over the previous 6 months, with the exceptions of US CMBS and international structured finance excluding CDOs and Other SF which were flat; US ABS excluding HEL and global CDOs experienced the largest increases. Meanwhile, the percentage of reviewed structured finance upgrades continued to decline, falling to 18% for the cohort ending June 2008 compared to 23% for the cohort ending December 2007.

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[6] Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.

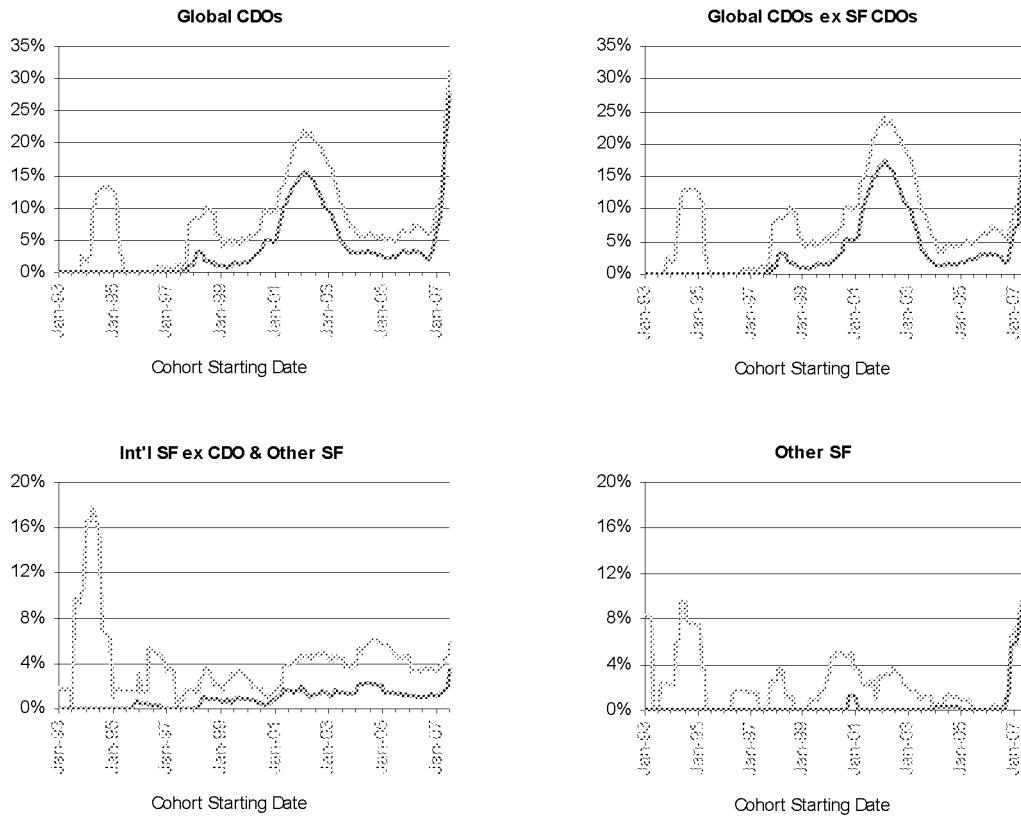# The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 6 – 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)

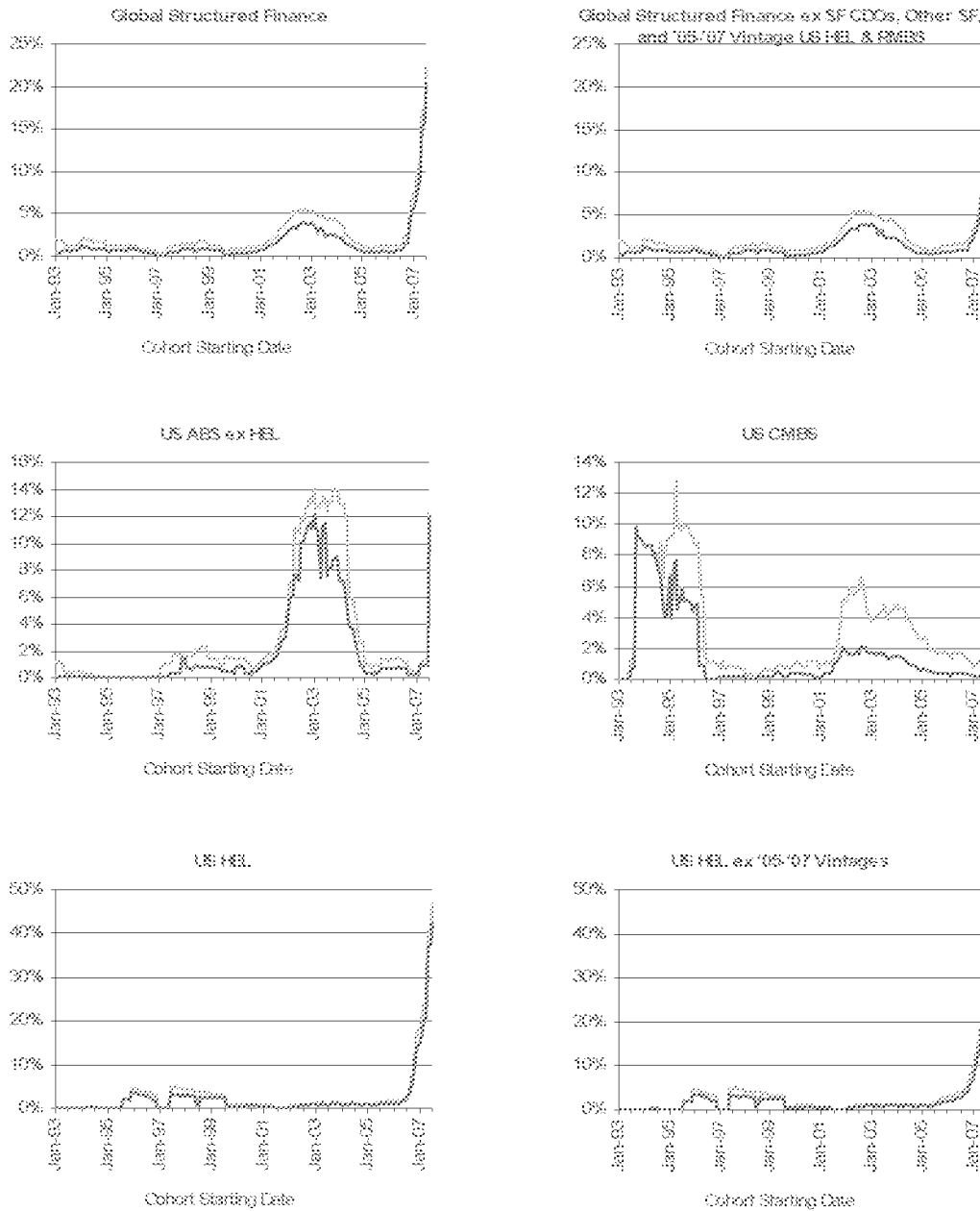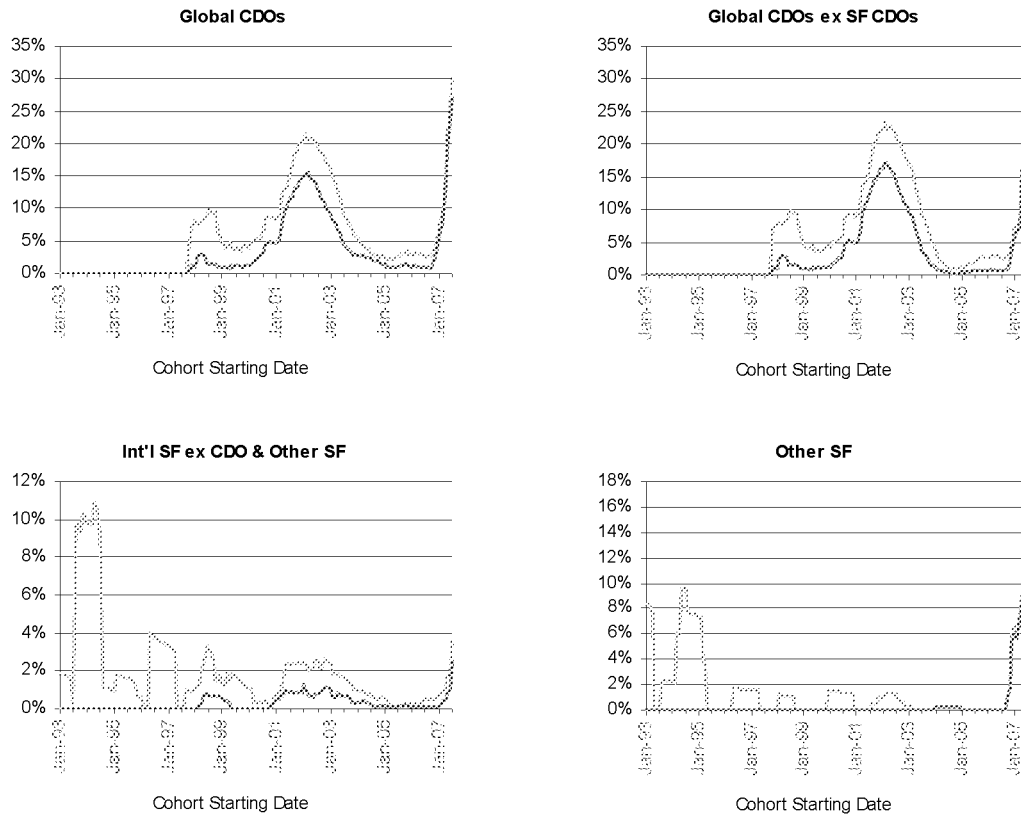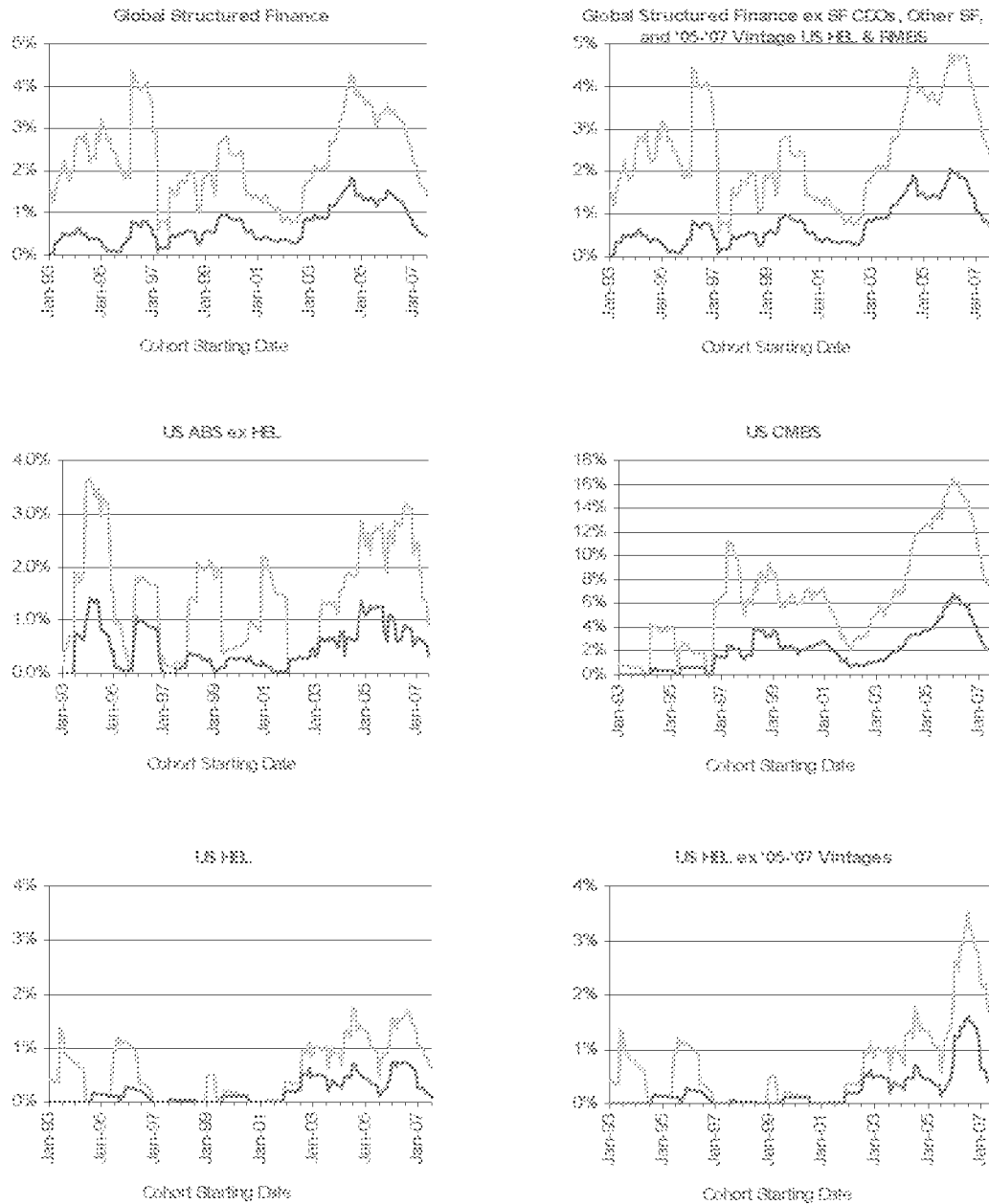# The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 6 (continued) – 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)

Global CDOs

Global CDOs ex SF CDOs

Int'l SF ex CDO & Other SF

Other SF

Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2007.
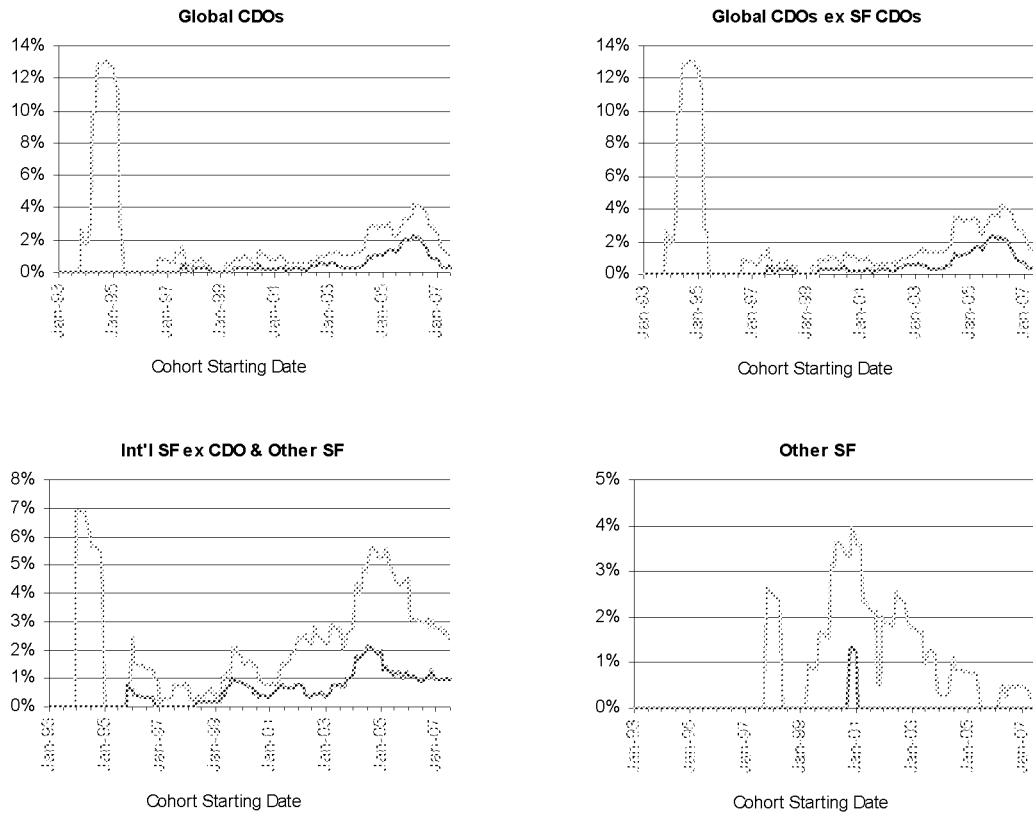
The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 7 – 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

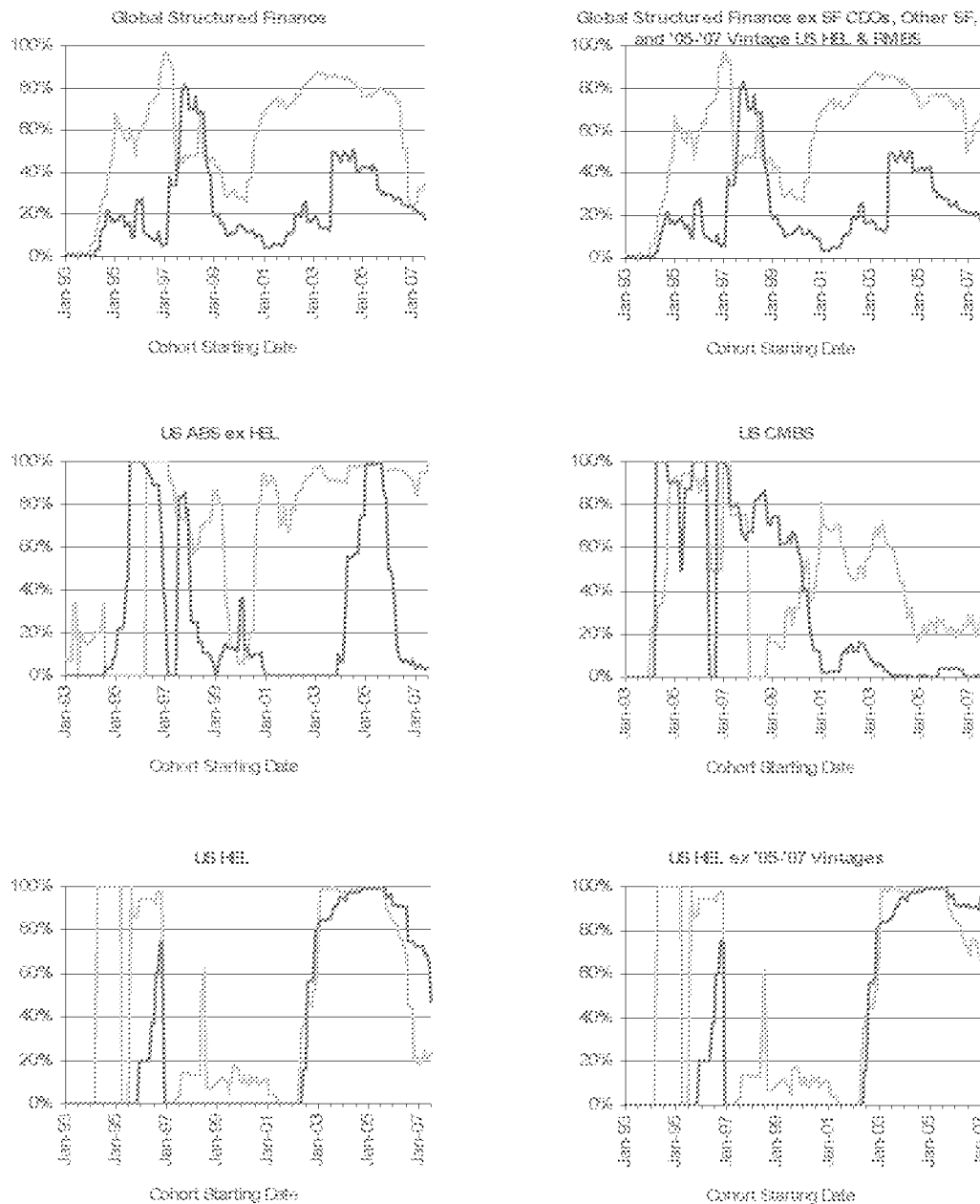# The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 7 (continued) – 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2007.
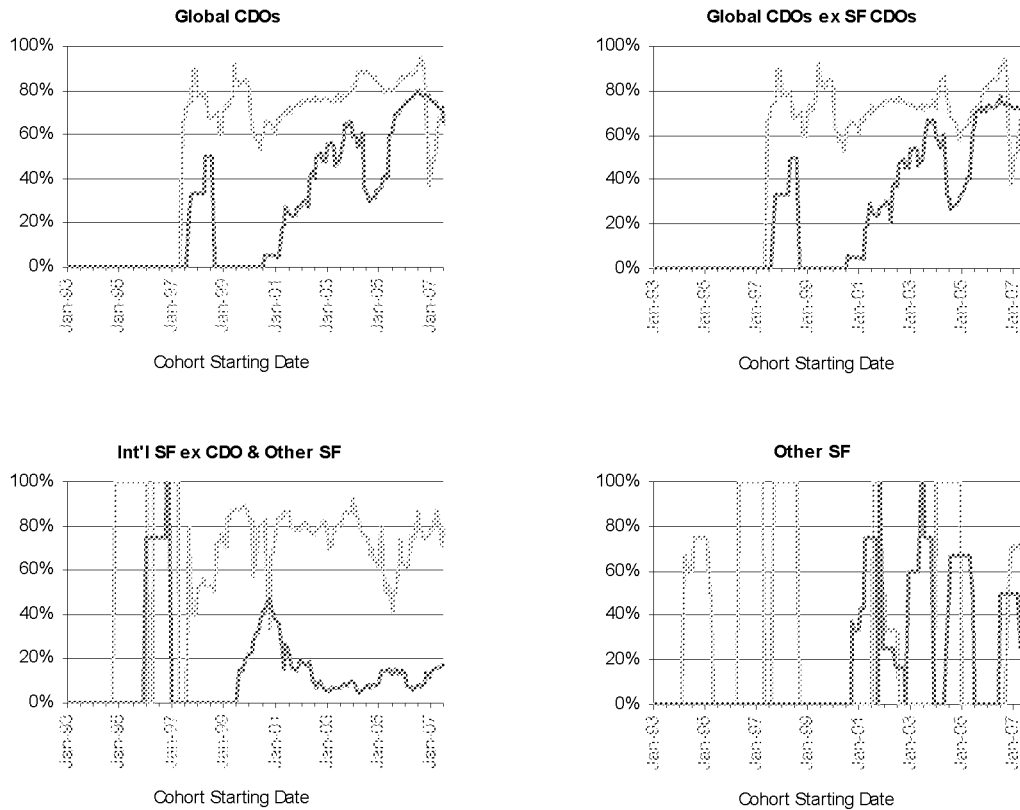
The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 8 – 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 8 (continued) – 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

Global CDOs

Global CDOs ex SF CDOs

Int'l SF ex CDO & Other SF

Other SF

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2007.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Figure 9 – Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction

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Figure 9 (continued) – Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction

Global CDOs

Global CDOs ex SF CDOs

Cohort Starting Date

Cohort Starting Date

Int'l SF ex CDO & Other SF

Other SF

Cohort Starting Date

Cohort Starting Date

Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on July 1, 2007. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

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Appendix: Description of Data Sample and Glossary

The data sample used in this report includes all public, 144A, and private tranches with a published Moody's long-term global debt rating among global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS), collateralized debt obligations (CDOs), and other structured finance, including asset backed commercial paper (ABCP), structured investment vehicles (SIVs), structured covered bonds, catastrophe bonds, and derivative product companies. Provisional ratings, credit estimates or evaluations, short-term ratings, and national scale ratings are not included. The following types of securities are excluded from the definition of global structured finance and therefore are not included in the data sample: repackaged securities, structured notes, and other credit derivatives which are basically pass-throughs of the rating of another entity.

This data set is an expansion of the data set that was used in prior structured finance performance studies.[7] Unlike the data set from previous years, this data sample:

* Includes tranches wrapped by financial guarantors, government agencies, and government sponsored enterprises (GSEs);

* Includes interest-only (IO) and residual tranches;

* Includes some transactions outside of the four major sectors (ABS, CDO, CMBS, RMBS) of structured finance, such as ABCP, SIVs, structured covered bonds, catastrophe bonds and derivative product companies;

* Does not collapse tranches with the same rating from the same deal, i.e. all *pari passu* tranches are counted in the data sample. The exceptions to this are notes with the same rating issued out of the same program for ABCP, SIVs and structured covered bonds, in which case only the rating of the program and not each individual security is counted.

The data used to create this report are commercially available via Moody's Structured Finance Default Risk service. For more information, please email DefaultResearch@moodys.com.

Glossary

Material Impairment

Structured finance securities are defined as being in material impairment if they have:

* Sustained a payment shortfall that remained uncured, or

* Been downgraded to Ca or C.

Prepayment-related and AFC-related interest shortfalls are not considered to be material impairments, but PIKing tranches are. Explicit principal write-downs are included whereas implicit principal write-downs or under-collateralizations are not.

The impairment status of a security may change as it goes from cured (i.e. all outstanding shortfalls and losses were repaid in full) to uncured (i.e. positive interest shortfalls or principal losses outstanding), or vice versa. If any securities rated Ca or C but not in payment shortfall are upgraded, they are considered to be no longer in material impairment. Securities rated Ca or C that were not upgraded are in material impairment even if their payment shortfalls have been cured. Finally, securities with very minor shortfalls or losses are excluded.

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[7] The expanded data sample was first introduced in our 2007 structured finance rating transitions studies that were published this year. The data sample in this study was extracted following similar guidelines.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Payment Shortfall

Structured finance securities are defined as being in payment shortfall (previously called "payment default") if they have suffered either one of the following:

* Interest shortfall

* Principal write-down.

Principal Impairment

This refers to materially impaired securities that have suffered principal write-downs or principal losses, or have been downgraded to Ca or C even though a principal write-down or loss has not yet been observed. In particular, if a security had experienced principal write-down/loss or was downgraded to Ca or C, it is called a principal impairment regardless of whether it had experienced interest shortfalls.

Interest Impairment

This refers to materially impaired securities that have experienced only interest shortfalls, no principal losses, and were not downgraded to Ca or C.

Investment-Grade (IG) and Speculative-Grade (SG) 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.

Loss Severity or LGD

The LGD rate of an impaired structured finance security is measured by the sum of the present values of net losses, including both interest shortfalls and principal losses, discounted by the security's coupon rate and expressed as a percentage of a given principal balance such as the principal balance at origination, at the impairment date, or at any given cohort date.

Accuracy Ratio (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[8]

To calculate accuracy ratios, rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted. Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is

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[8] For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

Investment-Grade Loss Rate

The one-year investment-grade loss rate is calculated as follows. First, for a given cohort, we calculate the LGD as a share of the tranche balance at the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these LGD rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the LGD rate is not weighted by the total dollar volume of outstanding securities in the cohort. Also note that only LGD for principal impaired securities are used in the calculation. The five-year investment-grade loss rate is calculated similarly.

Average Rating Before Impairment

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that became impaired within 12 months after the cohort formation date, where the weight for each security is the LGD rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher LGD over impaired tranches with lower LGD.[9] Note that only LGD for principal impaired securities are used in the calculation.

Rating Action Rate

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric (or modified) rating scale and are based on comparing the rating at the beginning and end of the time period under consideration. However, if a rating was withdrawn by the end of the time period, then the rating prior to withdrawal is used as the end rating. Note that a security will only be counted if it was outstanding as of the cohort formation date. Downgrade rates and upgrade rates are measured similarly based on downgrade rating actions and upgrade rating actions, respectively.

Large Rating Action Rate

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade rating actions and large upgrade rating actions, respectively.

Percentage of Downgrades (Upgrades) Preceded by Watchlist Actions in the Same Direction

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

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[9] We began using LGD rates as weights in computing an average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make any material difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

ABS ex HEL

ABS stands for asset-backed securities. This structured finance sector includes securities backed by 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. Home equity loans (HEL) are excluded from this sector.

HEL

The home equity loan or HEL sector includes securities backed 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.

Prior to 1998, RMBS collateral was generally defined as first-lien residential mortgages, regardless of the credit quality of the borrower. HEL collateral generally included junior liens such as HELOCs or closed-end seconds. However, as subprime lending became more prevalent, the market shifted its definition such that HEL encompassed subprime first-lien residential mortgages while RMBS included first-lien mortgages made to higher quality borrowers. Since 1998, a deal classified as RMBS by Moody's is generally backed by prime or Alt-A quality first-lien residential mortgages, while a deal classified as HEL is generally backed by subprime first-lien mortgages or junior liens. Therefore, a subprime deal which would be classified as HEL today may have been classified as RMBS in the past.

RMBS

RMBS stands for residential mortgage-backed securities. The vast majority of these securities are backed by first-lien prime mortgages or by Alt-A mortgages.

CMBS

CMBS stands for commercial mortgage-backed securities. Commercial real estate (CRE) CDOs, where 70% or more of the collateral is comprised 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.

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 comprised 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.

Other Structured Finance

Other structured finance consists of structured finance securities not categorized in the five major sectors (ABS, HEL, CDO, CMBS, and RMBS) including asset-backed commercial paper (ABCP) programs, structured investment vehicles (SIVs), structured covered bonds, insurance-linked securities such as catastrophe bonds, and derivative product companies. However, notes carrying only short-term ratings such as commercial paper are excluded.

Global Structured Finance

Global structured finance captures securities issued around the world in the five major sectors - ABS, HEL, CDO, CMBS, and RMBS – and in the other structured finance category.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

U.S. Structured Finance

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.

Intl SF ex CDO and Other SF

This refers to securities that are not denominated in U.S. dollars and issued in the U.S. market and not denominated in Canadian dollars and issued in Canada. The majority of the securities in this sector are issued in Europe, the Middle East, and Africa (EMEA); the rest are issued in the Asia Pacific region and Latin America. CDOs and Other SF are excluded.

Moody's Related Research

Special Comments:

* The Performance of Structured Finance Ratings: Full-Year 2007 Report, July 2008 (110179)

* The Performance of Structured Finance Ratings: Mid-Year 2007 Report, October 2007 (105390)

* The Performance of Structured Finance Ratings: Full-Year 2006 Report, May 2007 (103017)

* The Performance of Structured Finance Ratings: Mid-Year 2006 Report, September 2006 (99034)

* The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

* The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

* Default & Loss Rates of Structured Finance Securities: 1993-2007, July 2008 (109707)

* Measuring Loss-Given-Default for Structured Finance Securities: An Update, December 2006 (101284)

* Structured Finance Rating Transitions: 1983-2007, February 2008 (107444)

* Japanese Structured Finance Rating Transitions: 1994-2007, March 2008 (107833 / SF125229)

* Asia-Pacific (ex-Japan) Structured Finance Rating Transitions: 1990-2007, March 2008 (107947)

* EMEA Structured Finance Rating Transitions: 1988-2007, March 2008 (107977)

* Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities, December 2006 (100872)

* The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

* Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

* The Performance of Moody's Corporate Debt Ratings: September 2008 Quarterly Update, October 2008 (112077)

* Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

* Guide to Moody's Default Research: October 2008 Update, November 2008 (112205)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

The Performance of Structured Finance Ratings: Mid-Year 2008 Report

Report Number: 112347

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Special Comment

Moody's Global
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August 2009

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The Performance of Structured Finance Ratings: Full-Year 2008 Report

Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of December 2008. The highlights of this report are:

* Overall, 12,666 structured finance securities became impaired in 2008: 17 in US ABS, excluding HEL, 97 in US CMBS, 6,519 in US HEL, 3,174 in US RMBS, 2,825 in global CDOs, 16 in the international structured finance sector excluding CDOs and SIVs and Other SF, and 18 in SIVs and Other SF. Of these, 12,425 were principal impairments (experienced principal losses or were downgraded to Ca or C), while the remaining 241 were interest impairments (experienced interest shortfalls only).

* For global structured finance, the one-year accuracy ratio was flat at 60.2% relative to its level six months ago, but declined from its level of 75.7% from 12 months ago (see Figure 1)[1]. However, excluding the most troubled sectors - structured finance CDOs (SF CDOs), the SIVs and Other SF category, and US HEL and RMBS securitized between 2005 and 2007 - the one-year accuracy ratio was higher at 74.2%.

* The five-year accuracy ratio, which measures the performance of ratings that were outstanding five years ago and hence, does not incorporate the performance of the more recent poorly performing vintages, was 73.1%, 4.4 percentage points lower than its level of 77.5% six months ago.

* The one-year investment-grade loss rate increased to 7.8% for the cohort ending December 2008, an almost 60% increase from its six months-prior rate.

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[1] These performance metrics should be interpreted with caution. Some statistics are based on small samples, as the number of impairments in any given year and any given sector is often small. Individual performance metrics may also be driven by highly correlated collateral performance underlying multiple securitizations, particularly within certain sectors. Moreover, variations in rating performance over time may reflect either changes in the quality of the rating process or changes in the environment that make losses more or less difficult to predict or make collateral performance more volatile, thus resulting in either higher rating accuracy and lower rating stability at one time than another, or vice versa.

Moody's Investors Service

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⁂ The average rating during the three years prior to impairment for all impairments occurring in 2008 was unchanged at Baa2. This was the same as the average rating for the cohort ending six months earlier, and one notch above the level for the cohort ending twelve months earlier.

⁂ The one-year rating action rate rose to 36.2%, a 50% increase from the rate of 23.7% six months prior and an almost four-fold increase from 9.6% a year ago. Most of the rating actions were large actions, i.e. changes of three notches or more, as the large rating action rate of 31.1% was only a little smaller than the overall rate. Both increases were caused by growth in the number of downgrades, which was seen across all sectors of structured finance.

⁂ US HEL, US RMBS, and global CDOs all continued to experienced declines in their accuracy ratios and increases in their one-year investment-grade loss rates (Figure 2). In contrast, US ABS, excluding HEL, maintained 96% one-year accuracy ratio and 0% investment-grade loss rate. US CMBS also displayed a near-zero one-year investment-grade loss rate.

Figure 1: Summary of Global Structured Finance Rating Performance as of December 2008[2]

Cohort Ending Date	Number of New Impairments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Global Structured Finance							
December 2008	12,666	60.2%	73.1%	7.80%	Baa2	36.2%	31.1%
June 2008	6,645	60.3%	77.5%	4.92%	Baa2	23.7%	20.6%
December 2007	2,141	75.7%	79.7%	1.08%	Baa3	9.6%	6.4%
June 2007	193	90.3%	76.5%	0.05%	Ba3	4.6%	2.1%
Average (1993-Most Recent)	1,001	67.5%	82.5%	1.23%	Baa2	8.7%	6.0%
Global Structured Finance excl SF CDOs, SIV and Other SF, and '05-'07 vintage US HEL & RMBS							
December 2008	878	74.2%	82.6%	0.64%	Baa3	13.4%	9.6%
June 2008	427	83.0%	81.3%	0.27%	Ba1	10.0%	6.9%
December 2007	219	87.0%	81.2%	0.12%	Ba2	5.9%	2.6%
June 2007	123	90.5%	77.2%	0.05%	B1	6.5%	2.8%
Average (1993-Most Recent)	139	86.4%	83.4%	0.12%	Ba1	5.5%	2.8%

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[2] A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment shortfalls can be cured and past remittance or trustee reports may be revised. In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using loss-given-default (LGD) from principal impaired securities alone. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer unless rounding results in zero.

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Figure 2: Summary of Structured Finance Rating Performance by Sector as of December 2008

	Number of New Impairments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending December 2008							
US ABS ex HEL	17	96.0%	85.4%	0.00%	Ba3	16.4%	15.5%
US CMBS	97	89.8%	91.9%	0.02%	B3	9.0%	2.4%
US HEL (includes subprime)	6,519	54.4%	84.7%	16.65%	Baa3	54.4%	48.4%
excl '05-'07 vintages	355	84.1%	84.7%	1.49%	Ba1	23.7%	19.4%
US RMBS (includes Alt-A)	3,174	83.2%	90.2%	5.08%	Baa2	37.3%	32.6%
excl '05-'07 vintages	146	91.7%	90.2%	0.48%	Ba1	6.6%	4.6%
Global CDOs	2,825	20.8%	35.7%	15.32%	A2	45.8%	39.6%
excl SF CDOs	247	34.5%	64.2%	1.78%	Baa1	19.8%	14.6%
Int'l SF ex CDO & Other SF	16	75.2%	79.9%	0.10%	Ba1	8.9%	4.9%
Other SF (includes SIVs)	18	61.4%	3.1%	1.71%	A2	25.8%	18.5%
Historical Averages Since 1993							
US ABS ex HEL	32	85.6%	79.4%	0.20%	Ba1	6.1%	3.8%
US CMBS	14	93.4%	88.6%	0.01%	Caa1	11.6%	3.8%
US HEL (includes subprime)	509	75.4%	89.7%	2.25%	Baa3	13.6%	11.4%
excl '05-'07 vintages	46	92.3%	89.7%	0.25%	Ba1	5.2%	3.7%
US RMBS (includes Alt-A)	209	84.2%	94.0%	0.80%	Baa2	5.8%	4.0%
excl '05-'07 vintages	14	93.7%	94.0%	0.02%	Ba2	3.0%	1.2%
Global CDOs	234	23.4%	60.9%	4.02%	A3	14.7%	10.7%
excl SF CDOs	32	71.5%	69.0%	0.32%	Baa3	9.3%	5.0%
Int'l SF ex CDO & Other SF	2	79.1%	83.5%	0.01%	Ba2	4.5%	1.6%
Other SF (includes SIVs)	2	48.5%	35.8%	0.88%	Baa3	4.3%	2.4%

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Introduction

In a Special Comment published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[3] Moody's corporate rating performance report is now updated on a quarterly basis.[4] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 Special Comment "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.[5]

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. In computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. In other words, Moody's structured rating performance metrics weigh those tranches that have become materially impaired but with lower loss severity less than those with higher loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[6] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 Special Comment, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) – the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

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[3] See "Measuring the Performance of Corporate Bond Ratings," *Moody's Special Comment*, April 2003.
[4] For the latest performance report, see "The Performance of Moody's Corporate Debt Ratings: June 2009 Quarterly Update," *Moody's Special Comment*, July 2009.
[5] Note that the criteria used to create the data set for this report have changed from prior performance studies. The most notable changes are that pari passu tranches are no longer collapsed and wrapped tranches are included. For a more detailed description of the data sample, please see the Appendix.
[6] The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004. The concept of the accuracy ratio is also described in the glossary at the end of this report.

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Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

* For global structured finance, the one-year accuracy ratio was flat at 60.2% relative to its level six months ago, but down from its level twelve months ago of 75.7%. Since much of the recent rise in material impairments can be attributed to US HEL and US RMBS securities issued between 2005 and 2007, and to SF CDOs, excluding these securities as well as the Other SF sector caused the one-year accuracy ratio to jump to 74.2%.

* The one-year accuracy ratios for US HEL and global CDOs continued their declines. Accuracy ratios for US RMBS and US CMBS also decreased versus their levels 6 and 12 months prior, but the ratio for US CMBS was still close to 90% and that of US RMBS remained above 80%.

* US ABS, excluding HEL, was the only major sector that exhibited stable performance over the past year, maintaining a 96% accuracy ratio for the cohort ending December 2008. If deals that closed between 2005 and 2007 are excluded from US RMBS, its one-year accuracy ratio is also over 90%.

* For most sectors, the five-year accuracy ratio has not dropped as much as its one-year counterpart because this statistic demonstrates performance on a lagged basis and the effects of the recent growth in material impairments have not yet been fully incorporated. However, the five-year ratio also declined for global structured finance and most of the sub-sectors.

Figure 3: One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios
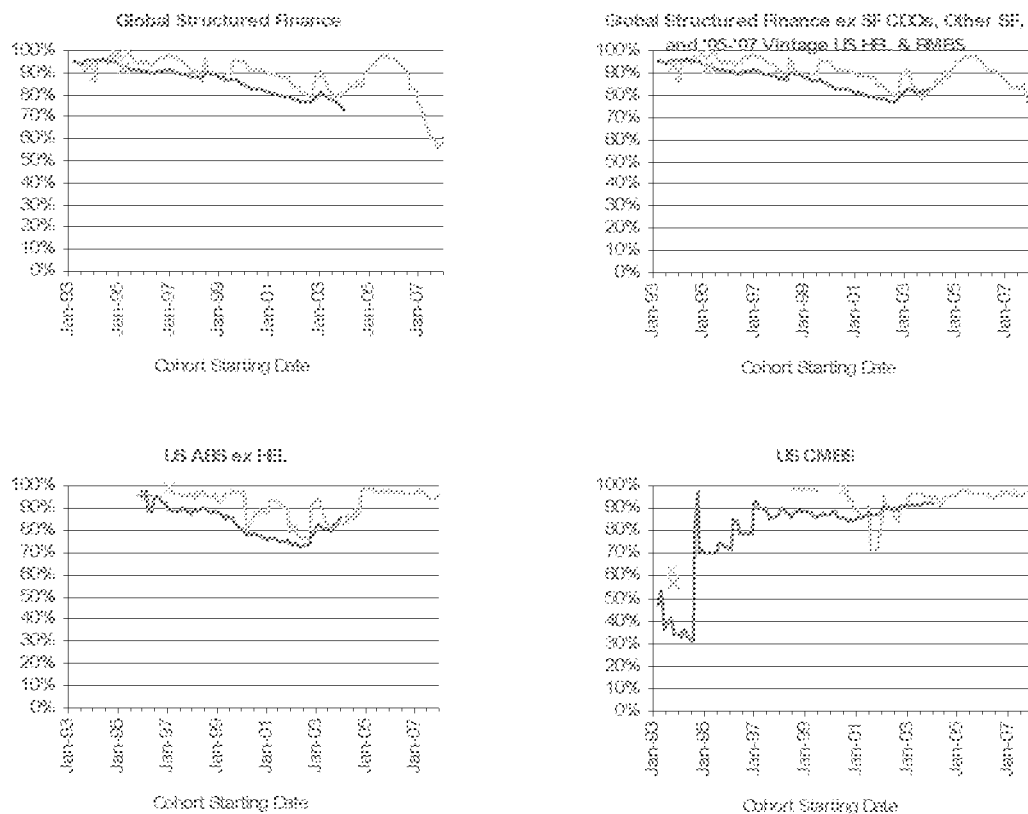
Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on January 1, 2008 and January 1, 2004. Breaks in the accuracy ratio series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

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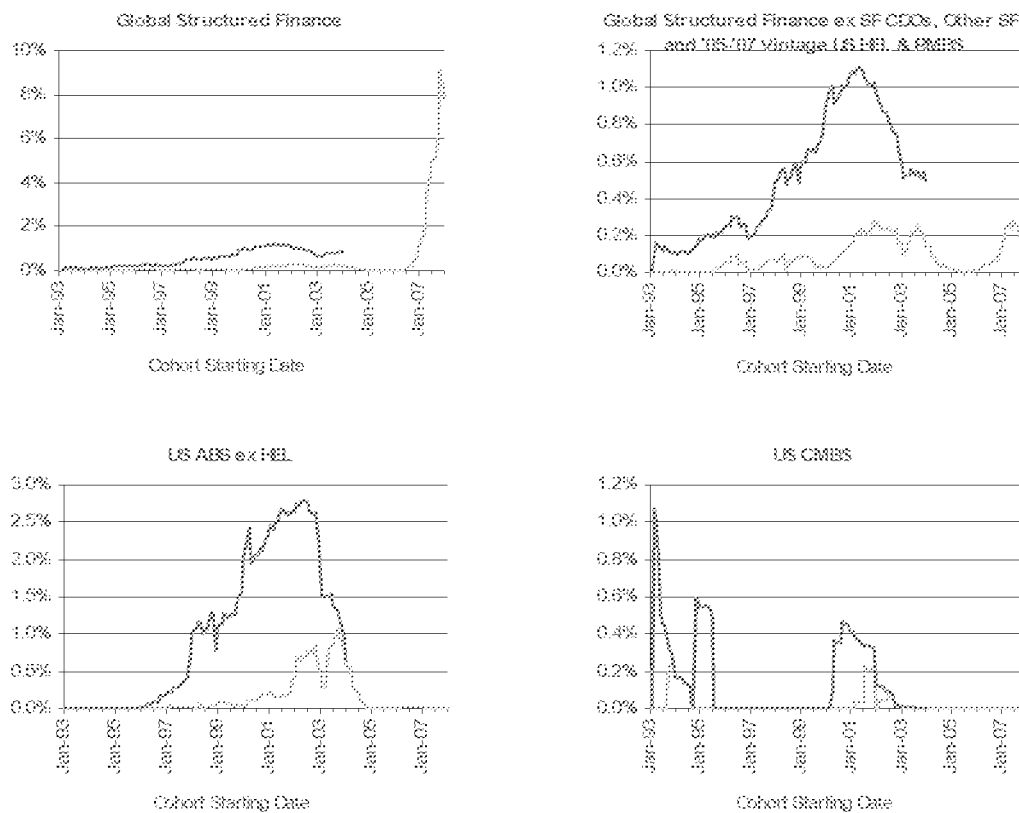**Figure 3 (continued): One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios**

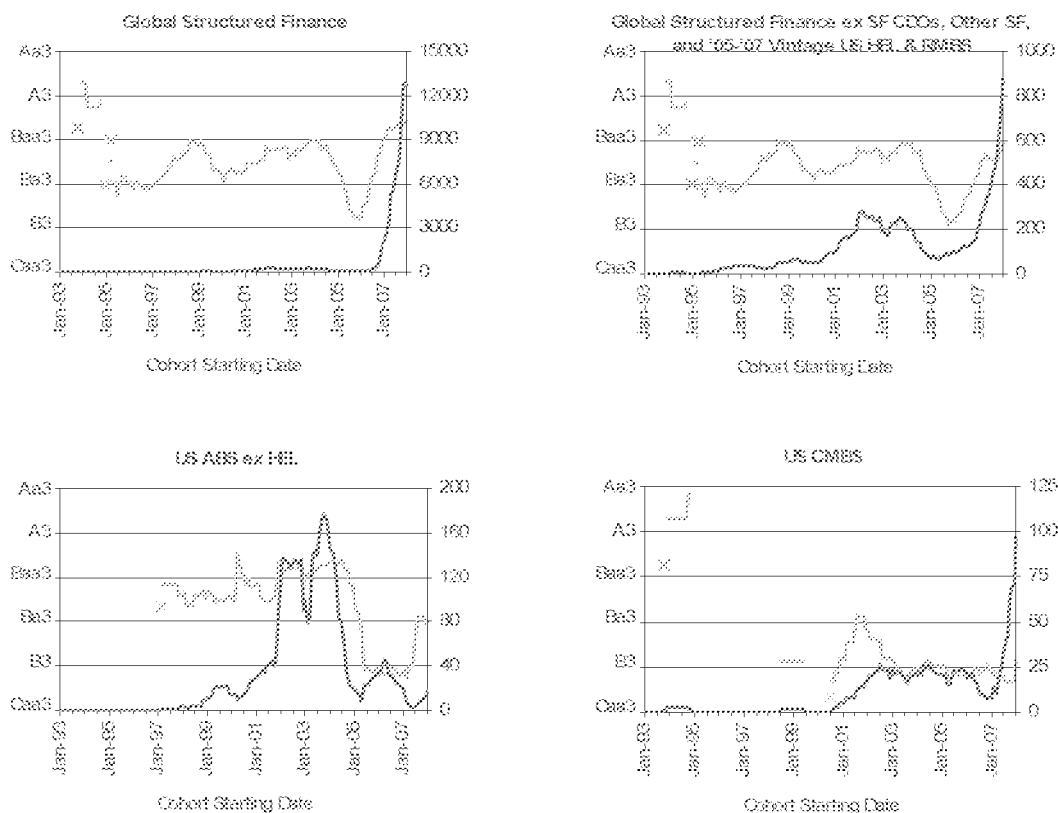The Performance of Structured Finance Ratings: Full-Year 2008 Report

Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

⁂ Increases in the one-year investment-grade loss rate were seen for global structured finance, US HEL, US RMBS, global CDOs, and International SF, excluding CDOs and the Other SF category. Removing the 2005 to 2007 vintages reduces the loss rate for US HEL and US RMBS by over 90%. The same is true for global structured finance when mortgage-backed securities from these vintages, SF CDOs, and the Other SF category are excluded.

⁂ In contrast, the one-year investment-grade loss rate was zero for the cohort formed in January 2008 for US ABS ex HEL and was near zero for US CMBS.

⁂ Because the five-year investment-grade loss rate is a lagging indicator, it still did not show the type of increase displayed by the one-year loss rate.

Figure 4: One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates

Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on January 1, 2008 and January 1, 2004.

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Figure 4 (continued): One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates

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Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

※ The 36-month average rating before impairment for global structured finance was Baa2 for the most recent cohort, the same average as six months prior, and one notch above Baa3 twelve months prior. Excluding SF CDOs, the Other SF category, and 2005 to 2007 vintage US HEL and US RMBS, the average rating before impairment dropped one notch to Baa3.

※ Global CDOs and Other SF displayed the highest average rating prior to impairment of A2. For the January 2008 cohort, the 36-month average ratings for US HEL and US RMBS were also high at Baa3 and Baa2, respectively.

※ As has been the case historically, US CMBS exhibited the lowest average rating before impairment of B3 for the cohort ending December 2008. The average rating for US ABS ex HEL was the second-lowest at Ba3.

Figure 5: 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)

Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on January 1, 1008. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.

The Performance of Structured Finance Ratings: Full-Year 2008 Report

Figure 5 (continued): 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)

The Performance of Structured Finance Ratings: Full-Year 2008 Report
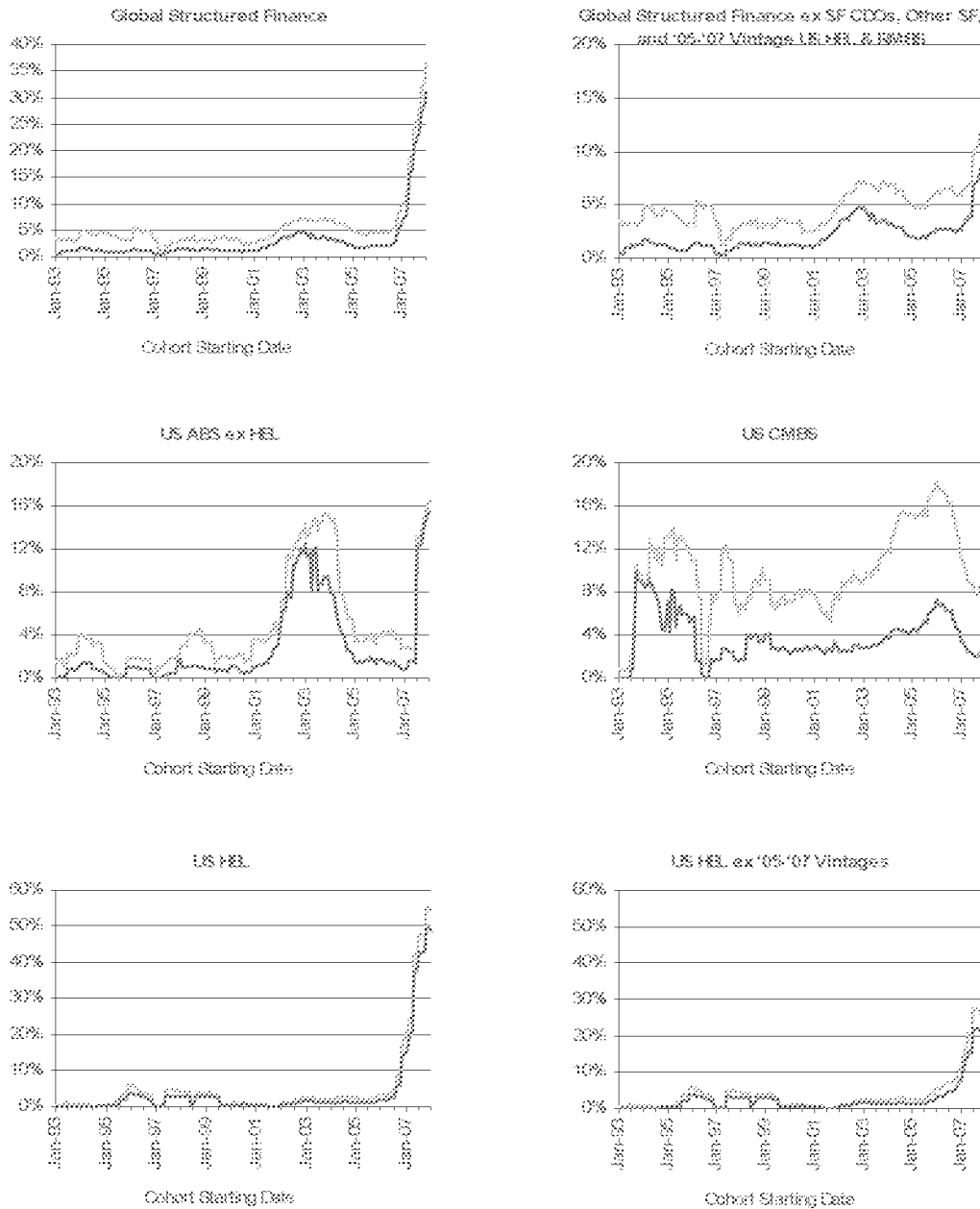
Rating Action Rates and Large Rating Action Rates

Figure 6 reports 12-month rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[7] Key observations include:

* The 12-month rating action rate in the global structured finance category was 36.2% for the January 2008 cohort, a 50% increase from the rate of 23.7% six months prior and an almost four-fold increase from 9.6% a year ago. Most of the rating actions were large actions, i.e. changes of three notches or more, as the large rating action rate of 31.1% was only a little smaller than the overall rate. Excluding SF CDOs, the Other SF category, and US HEL and RMBS transactions that closed between 2005 and 2007, the general and large rating actions rates were much lower at 13.4% and 9.6%, respectively, but still much higher than the historical average.

* Rating changes that occurred in 2008 were comprised almost entirely of downgrades as the global structured finance downgrade rate climbed to 35.5% while the upgrade rate dropped to 0.7%. Moreover, the same pattern of a rising frequency of downgrades and declining frequency of upgrades was seen across all sectors.

* The proportion of downgrades that were placed on review prior to the rating action rose to 44% for the cohort ending December 2008, up from 35% for the cohort ending June 2008 and from 22% for the cohort ending December 2007. The frequency of reviewed downgrades also increased over the six-month period for all sub-sectors with the exception of US ABS ex HEL.

* In contrast, the percentage of upgrades that were placed on review prior to the rating change fell to 8% for the January 2008 cohort from 18% for the July 2007 cohort. In addition, the rate of reviewed upgrades was less than 10% for all sub-sectors except for global CDOs.

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[7] Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.
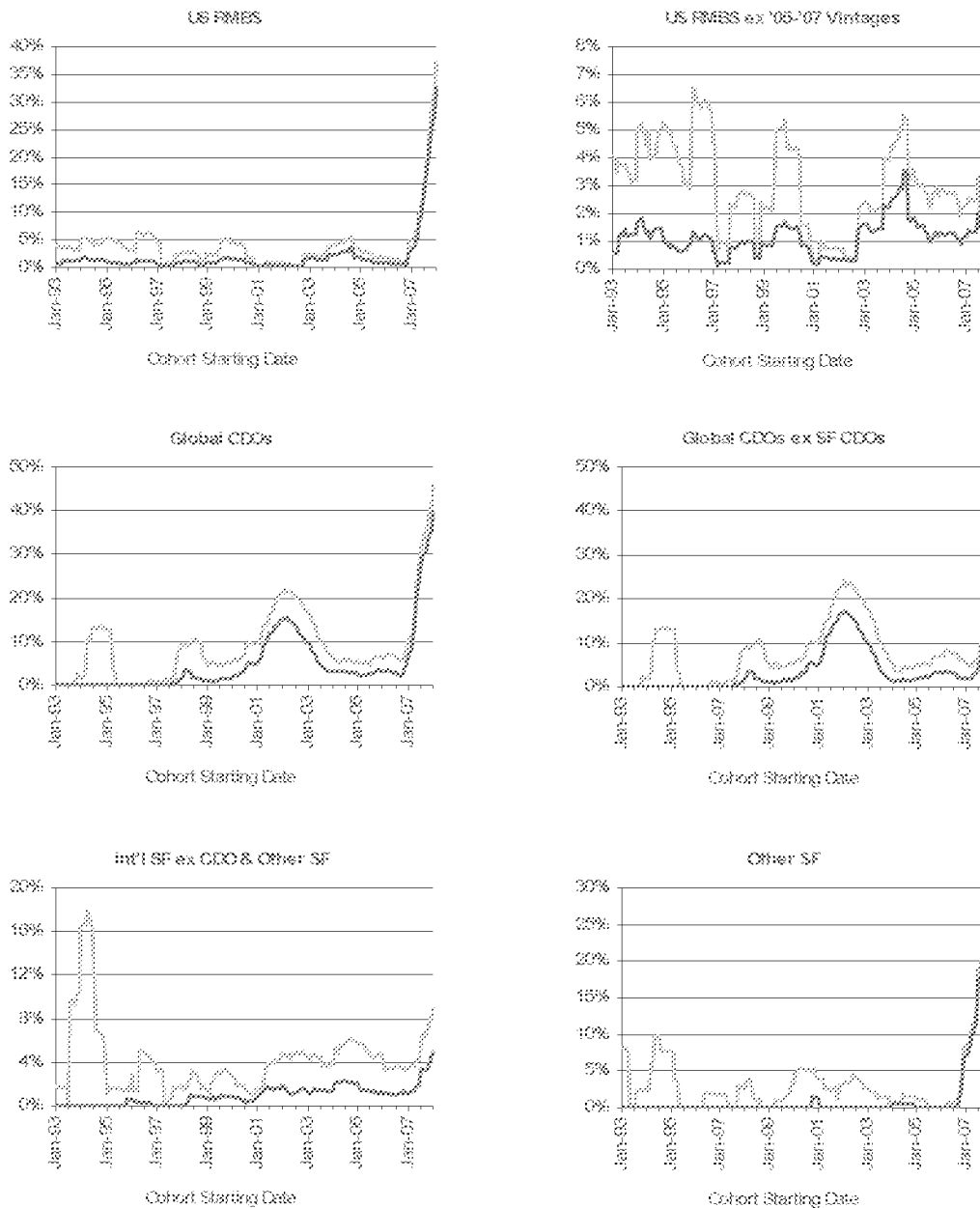
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Figure 6: 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)

The Performance of Structured Finance Ratings: Full-Year 2008 Report
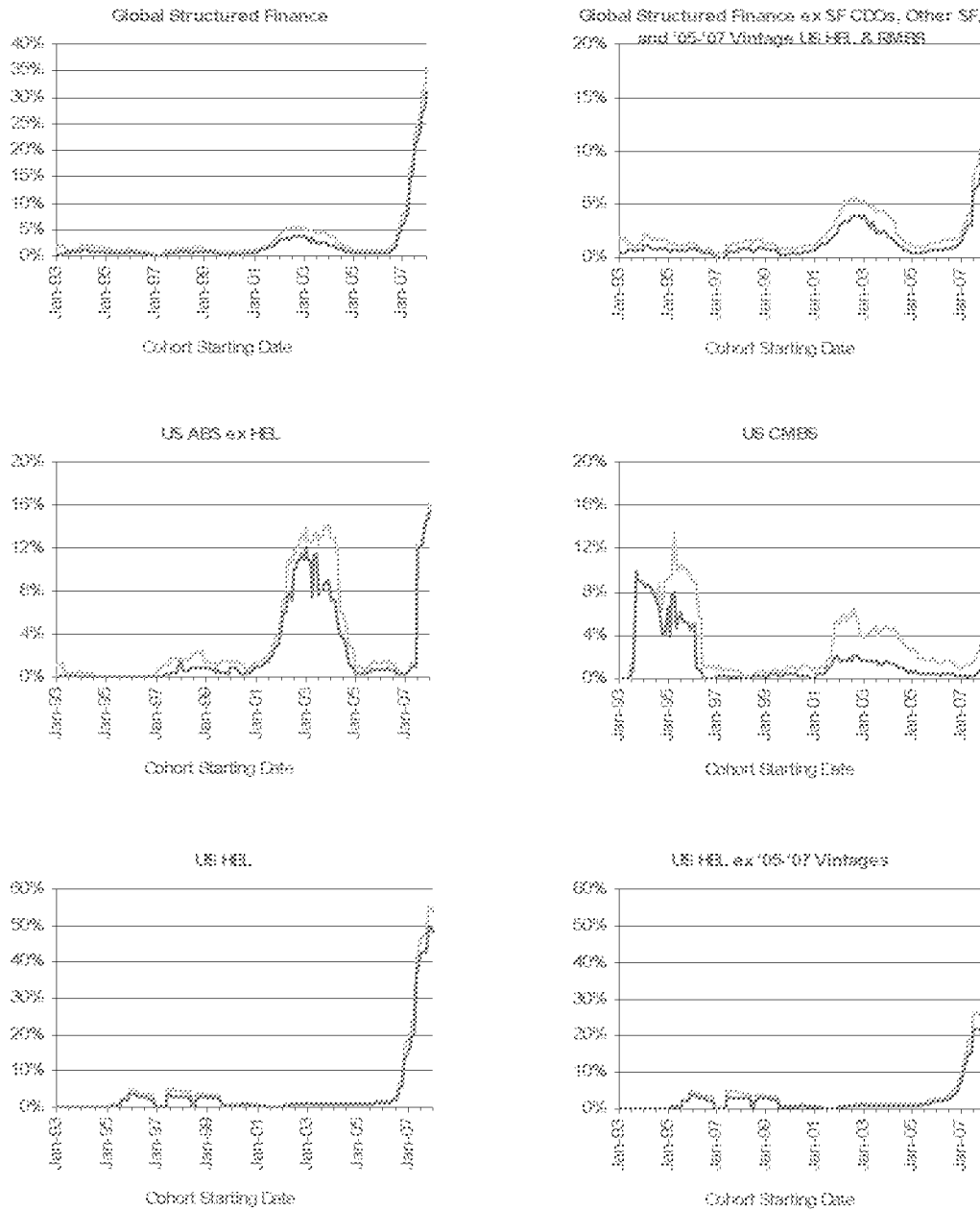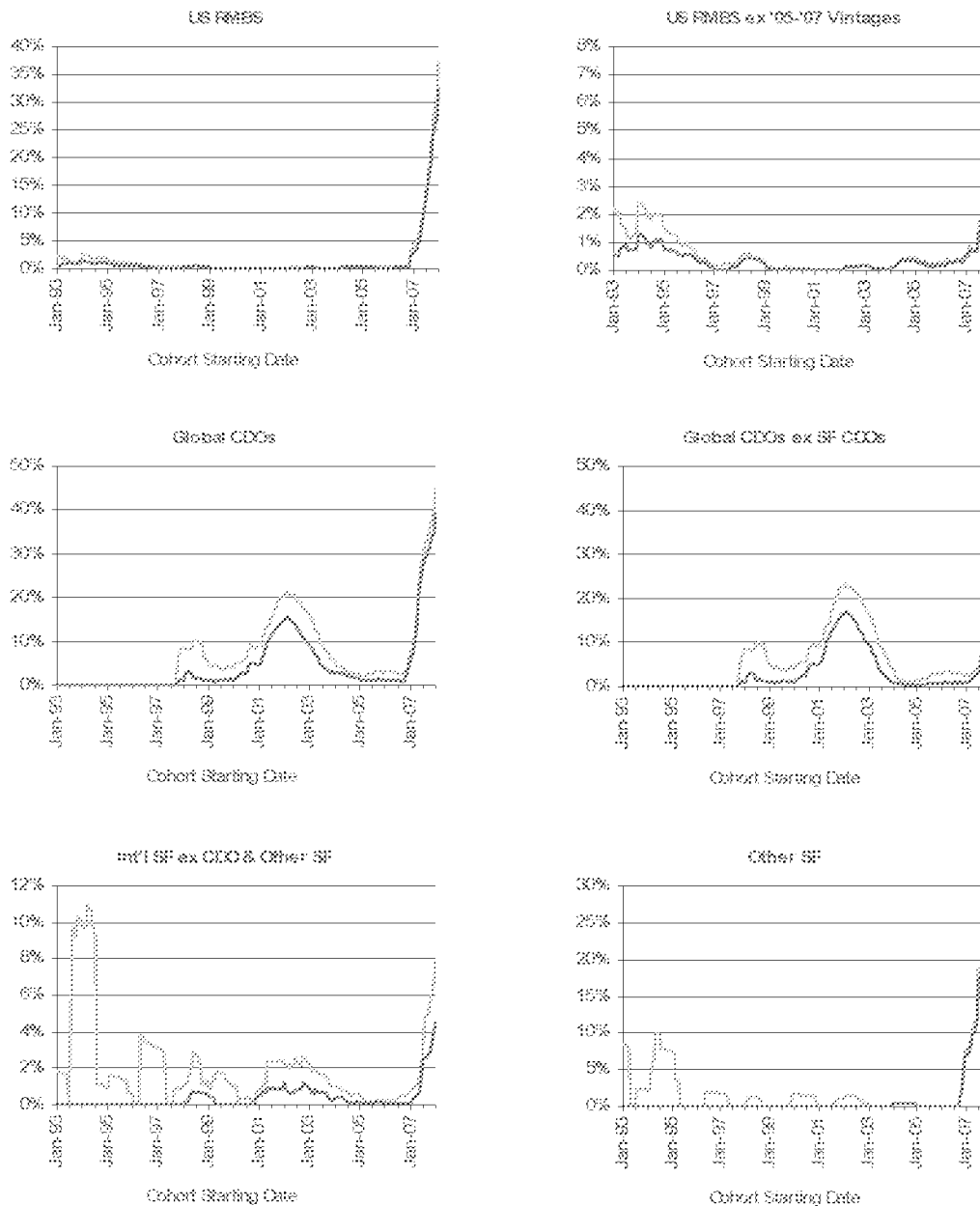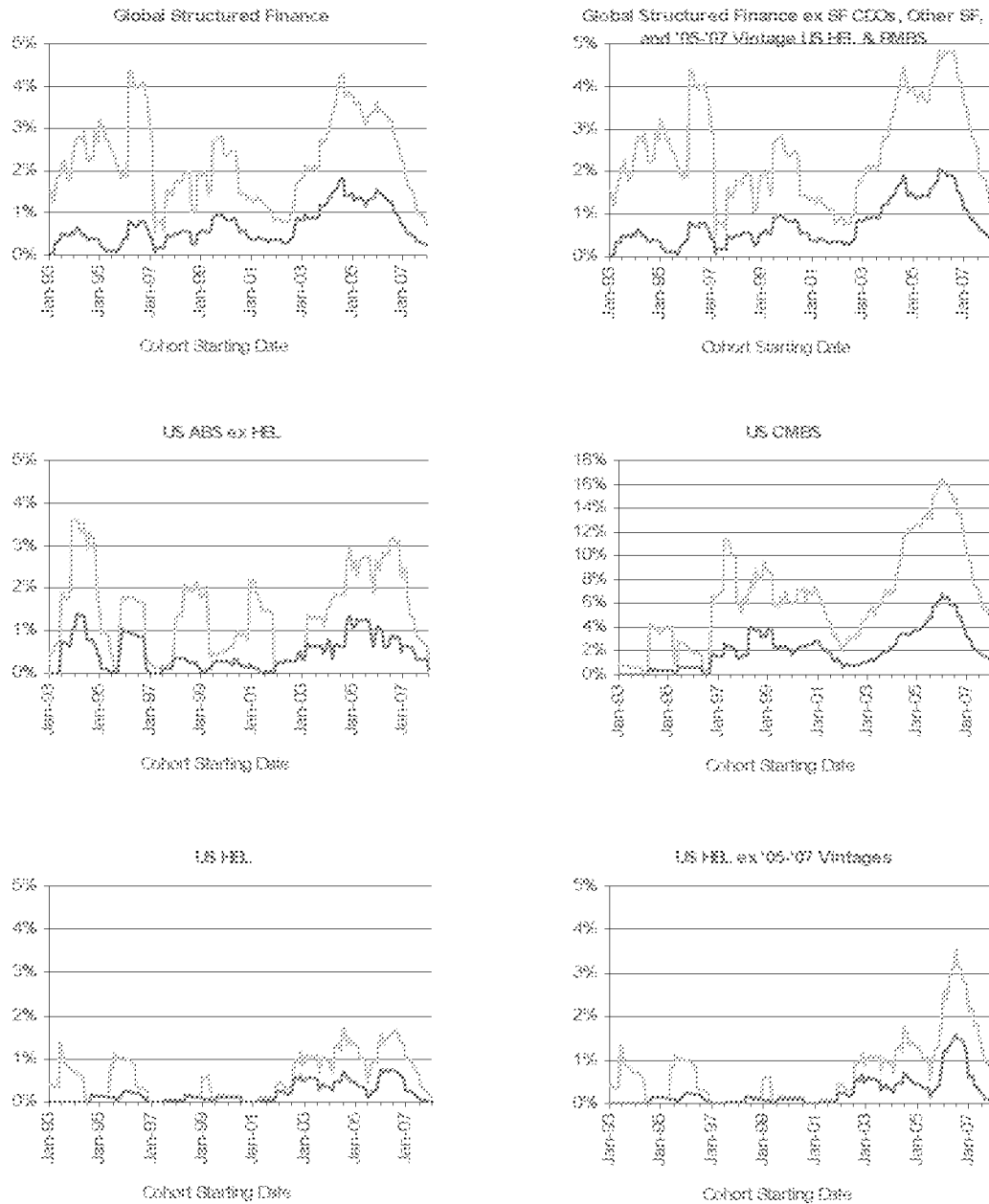
Figure 6 (continued): 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)

Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 1008.
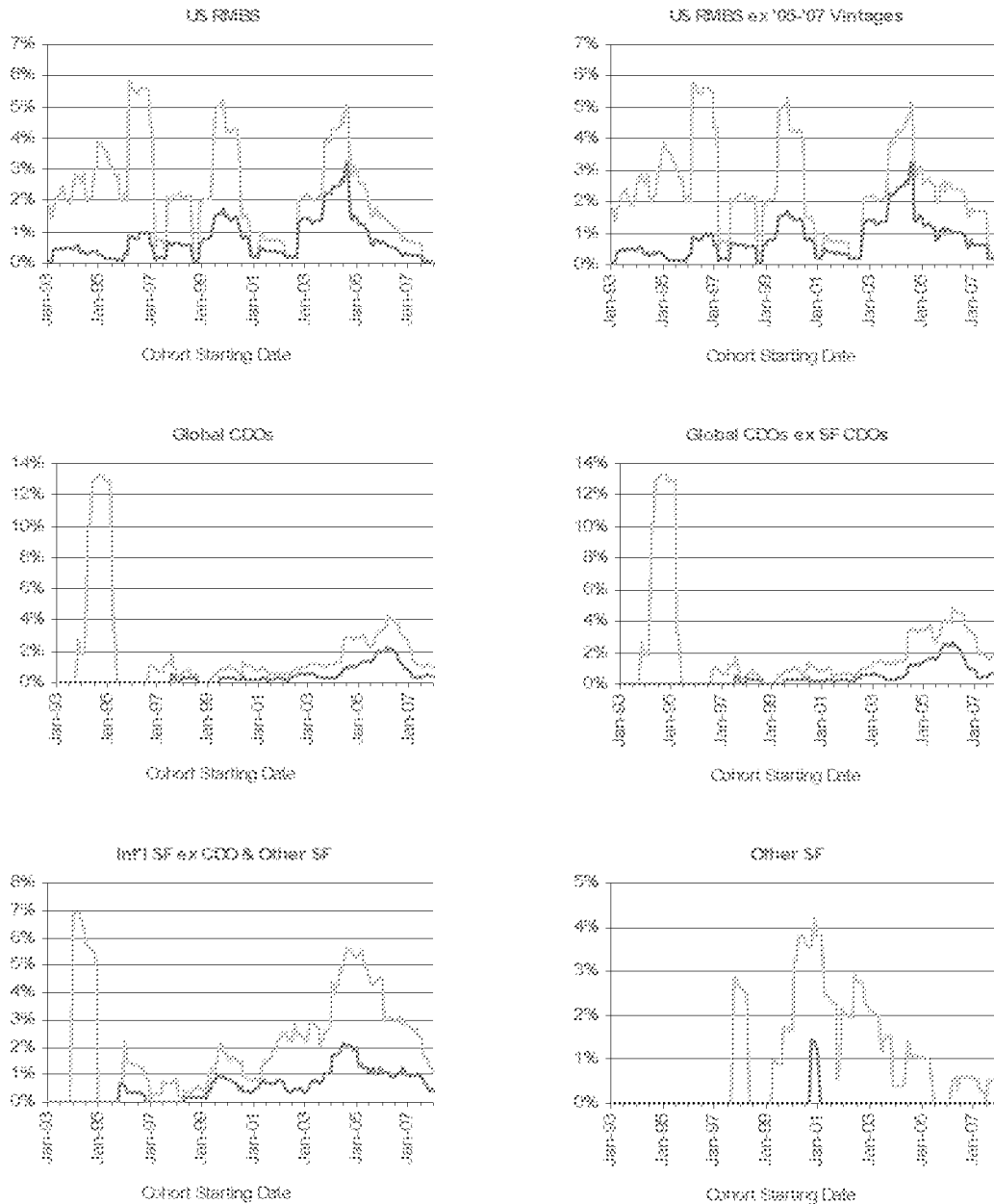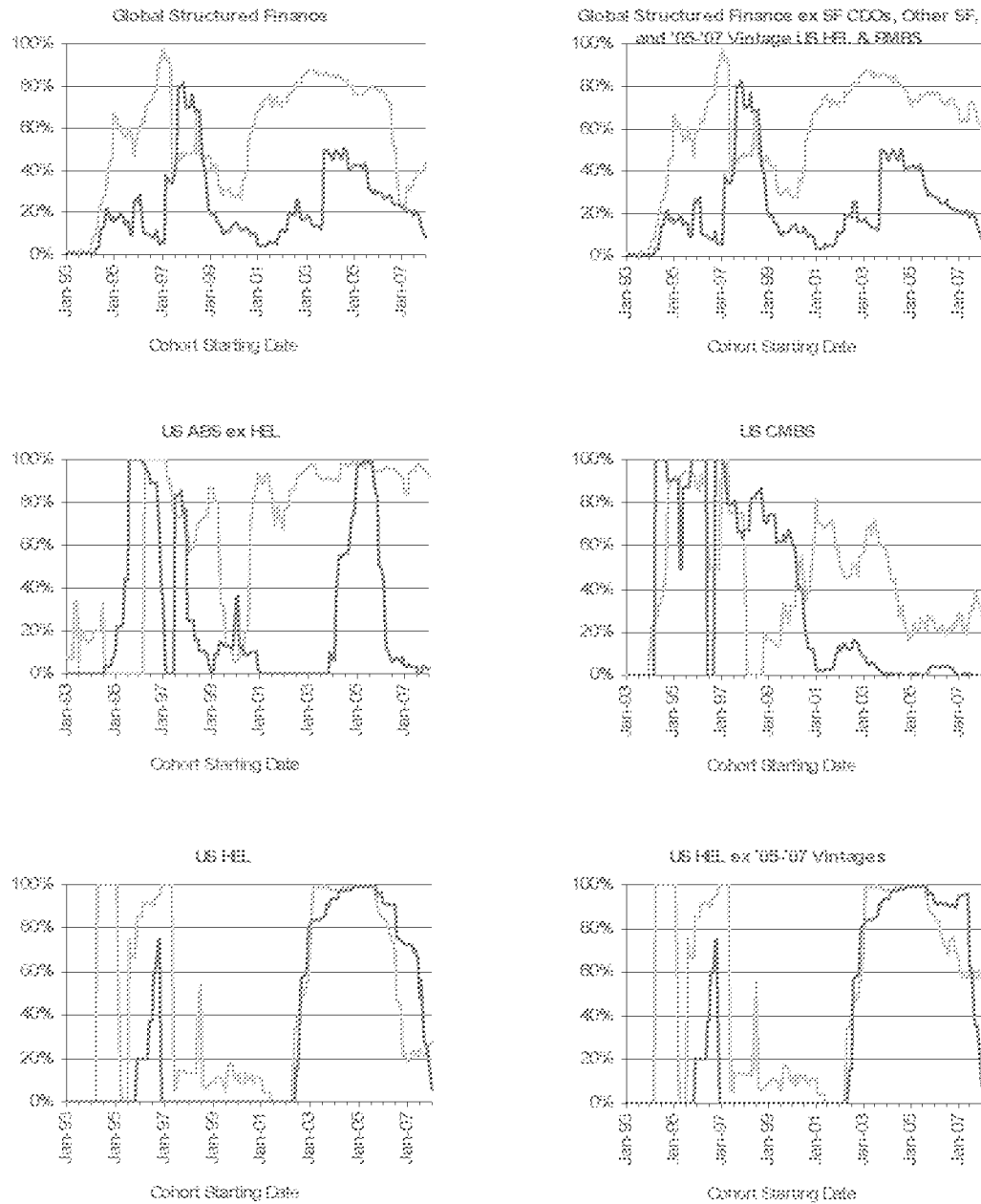
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Figure 7: 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

Global Structured Finance

Global Structured Finance ex SF CDOs, Other SF, and '05-'07 Vintage US HEL & RMBS

US ABS ex HEL

US CMBS

US HEL

US HEL ex '05-'07 Vintages

The Performance of Structured Finance Ratings: Full-Year 2008 Report

Figure 7 (continued): 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 1008.
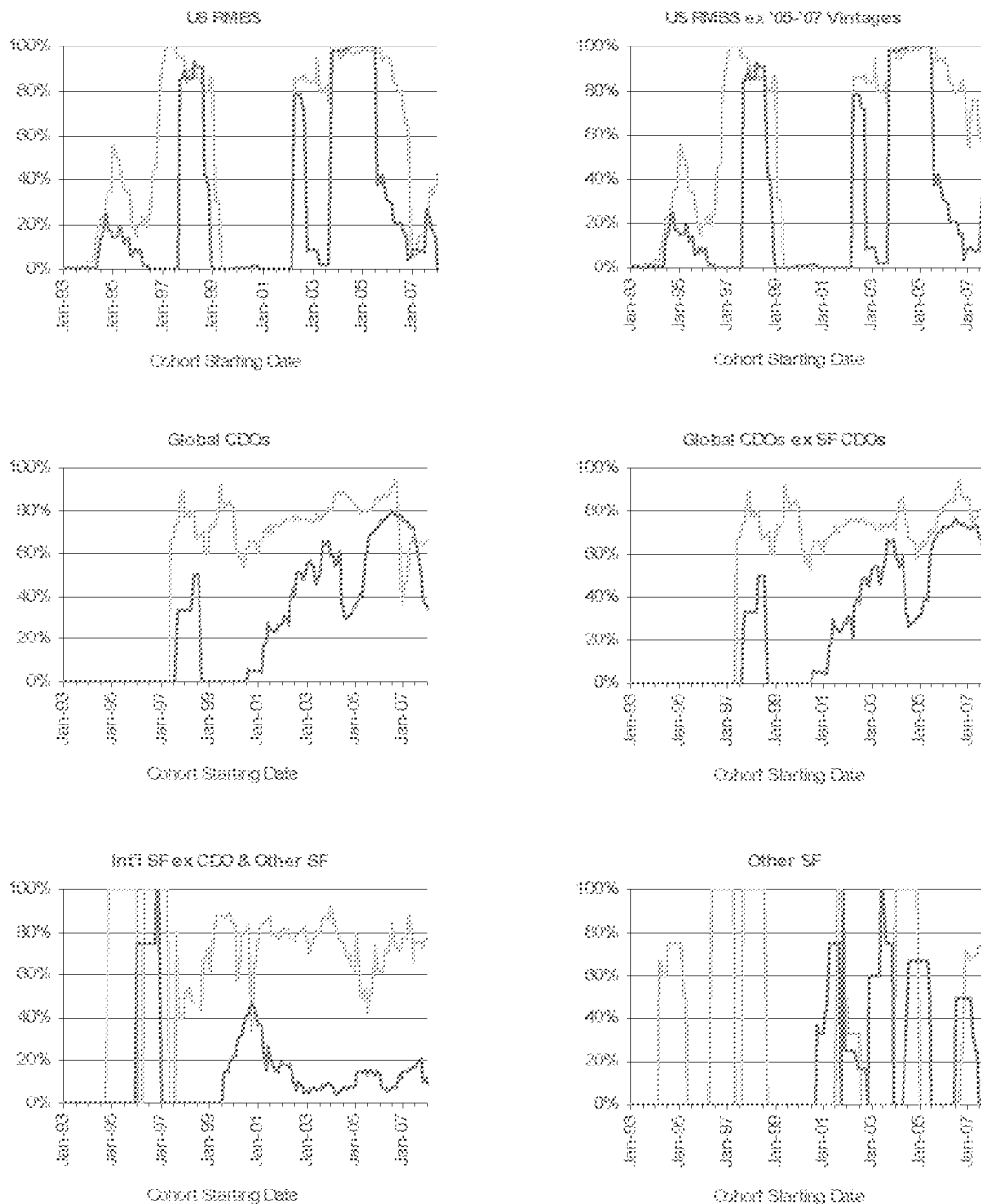
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Figure 8: 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

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Figure 8 (continued): 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on January 1, 1008.

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Figure 9: Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction

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Figure 9 (continued): Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction

Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on January 1, 1008. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

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Appendix: Description of Data Sample and Glossary

The data sample used in this report includes all public, 144A, and private tranches with a published Moody's long-term global debt rating among global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS), collateralized debt obligations (CDOs), and other structured finance, including asset backed commercial paper (ABCP), structured investment vehicles (SIVs), structured covered bonds, catastrophe bonds, and derivative product companies. Provisional ratings, credit estimates or evaluations, short-term ratings, and national scale ratings are not included. The following types of securities are excluded from the definition of global structured finance and therefore are not included in the data sample: repackaged securities, structured notes, and other credit derivatives which are basically pass-throughs of the rating of another entity.

This data set is an expansion of the data set that was used in prior structured finance performance studies.[8] In particular, this data sample:

* Includes tranches wrapped by financial guarantors, government agencies, and government sponsored enterprises (GSEs);

* Includes interest-only (IO) and residual tranches;

* Includes some transactions outside of the four major sectors (ABS, CDO, CMBS, RMBS) of structured finance, such as ABCP, SIVs, structured covered bonds, catastrophe bonds and derivative product companies;

* Does not collapse tranches with the same rating from the same deal, i.e. all *pari passu* tranches are counted in the data sample. The exceptions to this are notes with the same rating issued out of the same program for ABCP, SIVs and structured covered bonds, in which case only the rating of the program and not each individual security is counted.

The data used to create this report are commercially available via Moody's Structured Finance Default Risk service. For more information, please email DefaultResearch@moodys.com.

Glossary

Payment Shortfall

Structured finance securities are defined as having a payment shortfall (previously called "payment default") if they have experienced either one of the following:

* Interest shortfall, or

* Principal write-down/loss.

Reductions in interest paid that arise due to prepayments of principal on the underlying loans or due to limitations imposed by "available funds caps" (AFC) are not considered to be interest shortfalls. On the other hand, "payment-in-kind" (PIK) events, in which the interest payment is deferred and capitalized into the balance, are treated as interest shortfalls, regardless of whether or not it is described as a default event in the bond's indenture. Explicit principal write-downs are included whereas implicit principal write-downs or under-collateralizations are not.

Material Impairment

Structured finance securities are defined as being in material impairment if they have:

* Sustained a payment shortfall that has not been cured, or

* Been downgraded to Ca or C, and hence is expected to suffer a significant level of payment losses in the future.

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[8] The expanded data sample was first introduced in our 2007 rating transitions studies.

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The impairment status of a security may change as it goes from cured (i.e. all outstanding shortfalls and losses were repaid in full) to uncured (i.e. positive interest shortfalls or principal losses outstanding), or vice versa. If a security downgraded to Ca or C, but not in payment shortfall, is subsequently upgraded, then it is no longer in material impairment. Securities downgraded to Ca or C that are not upgraded are in material impairment even if their payment shortfalls have been cured. Finally, securities with very minor shortfalls or losses are excluded.

Principal Impairment

This refers to materially impaired securities that have experienced principal write-downs or principal losses, or have been downgraded to Ca or C even if a principal write-down or loss has not yet been observed. In particular, if a security has experienced principal write-down/loss or was downgraded to Ca or C, it is called a principal impairment regardless of whether it has experienced interest shortfalls.

Interest Impairment

This refers to materially impaired securities that have experienced only interest shortfalls, no principal losses, and were not downgraded to Ca or C.

Investment-Grade (IG) and Speculative-Grade (SG) 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.

Loss Severity or Loss-Given-Default (LGD)

The LGD rate of an impaired structured finance security is measured as the sum of the present values of net losses, including both interest shortfalls and principal losses, discounted by the security's coupon rate and expressed as a percentage of a given principal balance such as the principal balance at origination, at the impairment date, or at any given cohort date.

Accuracy Ratio (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[9]

To calculate accuracy ratios, rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted. Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

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[9] For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004.

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Investment-Grade Loss Rate

The one-year investment-grade loss rate is calculated as follows. First, for a given cohort, we compute the LGD as a share of the tranche balance as of the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these LGD rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the LGD rate is not weighted by dollar volume and that only LGD for principal impaired securities are used in the calculation. The five-year investment-grade loss rate is calculated similarly.

Average Rating Before Impairment

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that became impaired within 12 months after the cohort formation date. The weight for each security is the LGD rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher LGD over impaired tranches with lower LGD.[10] Note that only LGD for principal impaired securities are used in the calculation.

Rating Action Rate (Downgrade and Upgrade Rate)

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric rating scale and are based on comparing the rating at the beginning and end of the time period under consideration. However, if a rating was withdrawn by the end of the time period, then the rating prior to withdrawal is used as the end rating. Note that a security will only be counted if it was outstanding as of the cohort formation date. Downgrade rates and upgrade rates are measured similarly based on downgrade and upgrade rating actions, respectively.

Large Rating Action Rate

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade and large upgrade rating actions, respectively.

Percentage of Downgrades (Upgrades) Preceded by Watchlist Actions in the Same Direction

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

ABS ex HEL

ABS stands for asset-backed securities. This structured finance sector includes securities backed by 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. Home equity loans (HEL) are explicitly excluded from US ABS ex HEL.

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[10] We began using LGD rates as weights in computing the average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make a substantial difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

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HEL

The home equity loan or HEL sector includes securities backed 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.

Prior to 1998, RMBS collateral was generally defined as first-lien residential mortgages, regardless of the credit quality of the borrower. HEL collateral generally included junior liens such as HELOCs or closed-end seconds. However, as subprime lending became more prevalent, the market shifted its definition such that HEL encompassed subprime first-lien residential mortgages while RMBS included first-lien mortgages made to higher quality borrowers. Since 1998, a deal classified as RMBS by Moody's is generally backed by prime or Alt-A quality first-lien residential mortgages, while a deal classified as HEL is generally backed by subprime first-lien mortgages or junior liens. Therefore, a subprime deal which would be classified as HEL today may have been classified as RMBS in the past.

RMBS

RMBS stands for residential mortgage-backed securities. The vast majority of these securities are backed by first-lien prime mortgages or by Alt-A mortgages. For further details, see the definition of HEL.

CMBS

CMBS stands for commercial mortgage-backed securities. Commercial real estate (CRE) CDOs, where 70% or more of the collateral is comprised 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.

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 are also excluded (see the definition of CMBS).

Other Structured Finance

Other structured finance consists of structured finance securities not categorized in the five major sectors (ABS ex HEL, HEL, RMBS, CMBS, and CDO) including asset-backed commercial paper (ABCP) programs, structured investment vehicles (SIVs), structured covered bonds, insurance-linked securities such as catastrophe bonds, and derivative product companies. However, notes carrying only short-term ratings such as commercial paper are excluded.

Global Structured Finance

Global structured finance captures securities issued around the world in the five major sectors - ABS ex HEL, HEL, RMBS, CMBS, and CDO – and in the Other Structured Finance category.

US Structured Finance

US structured finance securities are denominated in US dollars and issued in the US 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 cross multiple countries/regions, deals are classified by the location at which they are monitored.

Intl SF ex CDO and Other SF

This refers to securities that are not denominated in US dollars and issued in the US market and not denominated in Canadian dollars and issued in Canada. The majority of the securities in this sector are issued in Europe, the Middle East, and Africa (EMEA); the rest are issued in the Asia Pacific region and Latin America. CDOs and Other SF are excluded.

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Moody's Related Research

Special Comments:

* The Performance of Structured Finance Ratings: Mid-Year 2008 Report, November 2008 (112347)

* The Performance of Structured Finance Ratings: Full-Year 2007 Report, July 2008 (110179)

* The Performance of Structured Finance Ratings: Mid-Year 2007 Report, October 2007 (105390)

* The Performance of Structured Finance Ratings: Full-Year 2006 Report, May 2007 (103017)

* The Performance of Structured Finance Ratings: Mid-Year 2006 Report, September 2006 (99034)

* The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

* The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

* Default & Loss Rates of Structured Finance Securities: 1993-2008, August 2009 (119617)

* Measuring Loss-Given-Default for Structured Finance Securities: An Update, December 2006 (101284)

* Structured Finance Rating Transitions: 1983-2008, March 2009 (115157)

* Japanese Structured Finance Rating Transitions: 1994-2008, March 2009 (115070)

* Asia-Pacific (ex-Japan) Structured Finance Rating Transitions: 1990-2008, March 2009 (115165)

* EMEA Structured Finance Rating Transitions: 1988-2008, April 2009 (116507)

* Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities, December 2006 (100872)

* The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

* Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

* The Performance of Moody's Corporate Debt Ratings: June 2009 Quarterly Update, July 2009 (118748)

* Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

* Guide to Moody's Default Research: June 2009 Update, June 2009 (118044)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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Highlights

This *Special Comment* updates Moody's structured finance rating performance metrics as of June 2009. The highlights of this report are:

* Overall, 12,026 structured finance securities became impaired in the first half of 2009: 106 in US ABS, excluding HEL, 377 in US CMBS, 3,218 in US HEL, 6,295 in US RMBS, 2,004 in global CDOs, 22 in the international structured finance sector excluding CDOs and SIVs and Other SF, and 4 in SIVs and Other SF. Of these, 11,548 were principal impairments (experienced principal losses or were downgraded to Ca or C), while the remaining 478 were interest impairments (experienced interest shortfalls only).

* For global structured finance, the one-year accuracy ratio declined to 57.4% from 59.7% six months ago (see Figure 1). Excluding the most troubled sectors - structured finance CDOs (SF CDOs), the SIVs and Other SF category, and US HEL and RMBS securitized between 2005 and 2007 – caused the one-year accuracy ratio to increase by 5.4 percentage points to 62.8%.

* The five-year accuracy ratio also decreased from 73.8% for the cohort ending December 2008 to 59.0% for the most recent cohort.

* The one-year investment-grade loss rate increased to 9.9% for the cohort ending June 2009, a 20% increase from its six months-prior rate.

Moody's Investors Service

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∗ The average rating during the three years prior to impairment for all impairments occurring between July 2008 and June 2009 was Baa1. This was one notch above the average rating for the cohort ending six months earlier and twelve months earlier.

∗ The one-year rating action rate rose to 58.3%, a 61% increase from the rate of 36.2% six months prior and 2.5 times larger than the rate of 23.6% a year ago. The large rating action rate was 49.9% indicating that most of the rating actions involved movements of three notches or more. The increases in both rates were caused by growth in the number of downgrades, which affected all sectors of structured finance.

∗ Almost all sectors of structured finance experienced declines in their accuracy ratios and increases in their one-year investment-grade loss rates (Figure 2). However, US ABS, excluding HEL, and US CMBS maintained one-year accuracy ratios of above 85%, and their one-year investment-grade loss rates for the most recent cohort were low at 0.24% and 0.04% respectively.

Figure 1: Summary of Global Structured Finance Rating Performance as of June 2009 [1]

Cohort Ending Date	Number of New Impair- ments over Prior 12 Months	Accuracy Metrics				Stability Metrics	
		1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment- Grade Loss Rate	36-Month Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Global Structured Finance							
June 2009	20,118	57.4%	59.0%	9.89%	Baa1	58.3%	49.9%
December 2008	12,738	59.7%	73.8%	8.27%	Baa2	36.2%	31.1%
June 2008	6,644	60.0%	77.3%	5.05%	Baa2	23.6%	20.6%
December 2007	2,146	75.3%	79.6%	1.09%	Baa3	9.6%	6.4%
Average (1993-Most Recent)	1,704	63.1%	80.1%	2.28%	Baa1	12.8%	9.7%
Global Structured Finance excl SF CDOs, SIV and Other SF, and '05-'07 vintage US HEL & RMBS							
June 2009	2,820	62.8%	74.0%	2.46%	Baa2	33.9%	26.8%
December 2008	888	72.3%	83.0%	0.68%	Baa3	13.4%	9.6%
June 2008	424	82.4%	81.2%	0.26%	Ba1	10.0%	6.9%
December 2007	219	87.0%	81.0%	0.11%	Ba2	5.9%	2.6%
Average (1993-Most Recent)	270	80.1%	82.7%	0.24%	Baa3	6.8%	3.9%

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[1] A glossary appears at the end of this report. The number of impairments for historical cohorts is subject to revision during each update as payment shortfalls can be cured and past remittance or trustee reports may be revised. In addition, consistent with Moody's annual default and loss study, Moody's now derives loss rates using loss-given-default (LGD) from principal impaired securities alone. The historical average of the number of new impairments over the prior 12 months is calculated as the total number of newly impaired tranches divided by the number of years in the sample period, and has been rounded to the nearest integer unless rounding results in zero.

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Figure 2: Summary of Structured Finance Rating Performance by Sector as of June 2009

	Number of New Impairments over Prior 12 Months	1-Year Accuracy Ratio	5-Year Accuracy Ratio	1-Year Investment-Grade Loss Rate	36-Month Average Rating Before Impairment	1-Year Rating Action Rate	1-Year Large Rating Action Rate
Cohorts Ending June 2009							
US ABS ex HEL	124	86.4%	84.9%	0.24%	Ba3	26.2%	17.9%
US CMBS	426	87.6%	92.8%	0.04%	B2	37.6%	30.0%
US HEL (includes subprime)	8,439	51.6%	76.3%	15.88%	Baa2	70.4%	58.6%
excl '05-'07 vintages	673	77.5%	76.3%	2.68%	Ba1	41.8%	30.1%
US RMBS (includes Alt-A)	8,140	61.2%	86.3%	11.98%	A2	71.2%	64.7%
excl '05-'07 vintages	449	82.9%	86.3%	2.11%	Baa2	27.4%	21.5%
Global CDOs	2,944	41.3%	17.6%	15.43%	A3	61.4%	51.2%
excl SF CDOs	1,113	35.6%	39.0%	9.05%	Baa1	56.9%	52.4%
Int'l SF ex CDO & Other SF	35	79.5%	81.7%	0.13%	Ba3	12.8%	6.7%
Other SF (includes SIVs)	10	90.1%	46.3%	0.28%	Ba1	25.3%	18.6%
Historical Averages Since 1993							
US ABS ex HEL	37	85.5%	78.8%	0.20%	Ba1	7.1%	4.7%
US CMBS	35	91.2%	88.5%	0.02%	B2	13.4%	5.8%
US HEL (includes subprime)	690	71.6%	89.4%	3.79%	Baa2	19.1%	16.2%
excl '05-'07 vintages	77	91.0%	89.4%	0.33%	Ba1	6.5%	4.7%
US RMBS (includes Alt-A)	586	70.8%	93.2%	2.17%	A3	10.9%	8.9%
excl '05-'07 vintages	33	88.5%	93.2%	0.09%	Baa3	3.6%	1.7%
Global CDOs	350	25.8%	52.2%	5.91%	A3	20.2%	15.7%
excl SF CDOs	85	46.0%	66.4%	1.13%	Baa2	13.1%	8.8%
Int'l SF ex CDO & Other SF	3	80.8%	83.5%	0.02%	Ba3	5.1%	2.0%
Other SF (includes SIVs)	3	63.6%	56.8%	0.62%	Baa2	6.8%	3.2%

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Introduction

In a Special Comment published in April 2003, Moody's developed a set of metrics to measure the performance of corporate ratings with respect to the dual objectives of rating accuracy and rating stability.[2] Moody's corporate rating performance report is now updated on a quarterly basis.[3] Moody's first introduced and examined its structured finance rating performance metrics in a September 2004 Special Comment "Default & Loss Rates of Structured Finance Securities: 1993-2003," and published these performance metrics in a stand-alone document for the first time in September 2005. The structured finance rating performance report is now updated on a semi-annual basis.[4]

For both the corporate and structured finance rating performance reports, the basic unit of observation is a monthly cohort of ratings, i.e. all outstanding ratings at the beginning of a month are recorded and their performance tracked over different time horizons. However, in computing rating performance metrics for structured finance, Moody's incorporates both the default and loss severity experience of all structured finance tranches because Moody's structured finance ratings rank order expected loss rates. This is in contrast to the performance metrics published in the corporate rating performance report, which make no reference to loss severity.

The most important measure of rating accuracy is the accuracy ratio, which for structured finance measures the relationship between tranche ratings and their realized loss rates.[5] This metric measures the quality of Moody's ratings as indicators of relative expected credit loss risk.

As discussed in the April 2003 Special Comment, although relative rating accuracy is our primary objective, Moody's recognizes that many investors are also concerned with the cardinal accuracy of the rating system. In particular, they expect that investment-grade credits should rarely suffer credit losses and impaired securities should normally carry low ratings well in advance of impairment. For this purpose, we regularly track investment-grade loss rates and the average rating of securities during the 36 months prior to impairment. Both of these measures should be low if the rating system is accurate in a cardinal sense.

We employ two measures of rating stability (or rating volatility) – the rating action rate (the frequency of rating changes) and the large rating action rate (the frequency of rating changes of three notches or more) over a twelve-month period. To examine how watchlist actions are used, we also report the percentages of downgrades and upgrades preceded by watchlist (review) actions in the same direction.

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[2] See "Measuring the Performance of Corporate Bond Ratings," *Moody's Special Comment*, April 2003.
[3] For the latest performance report, see "The Performance of Moody's Corporate Debt Ratings: September 2009 Quarterly Update," *Moody's Special Comment*, October 2009.
[4] Note that the criteria used to create the data set for this report have changed from prior performance studies. The most notable changes are that pari passu tranches are no longer collapsed and wrapped tranches are included. For a more detailed description of the data sample, please see the Appendix.
[5] The required adjustments to convert the standard default-based AR measure to a loss-based measure are discussed in "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004. The concept of the accuracy ratio is also described in the glossary at the end of this report.
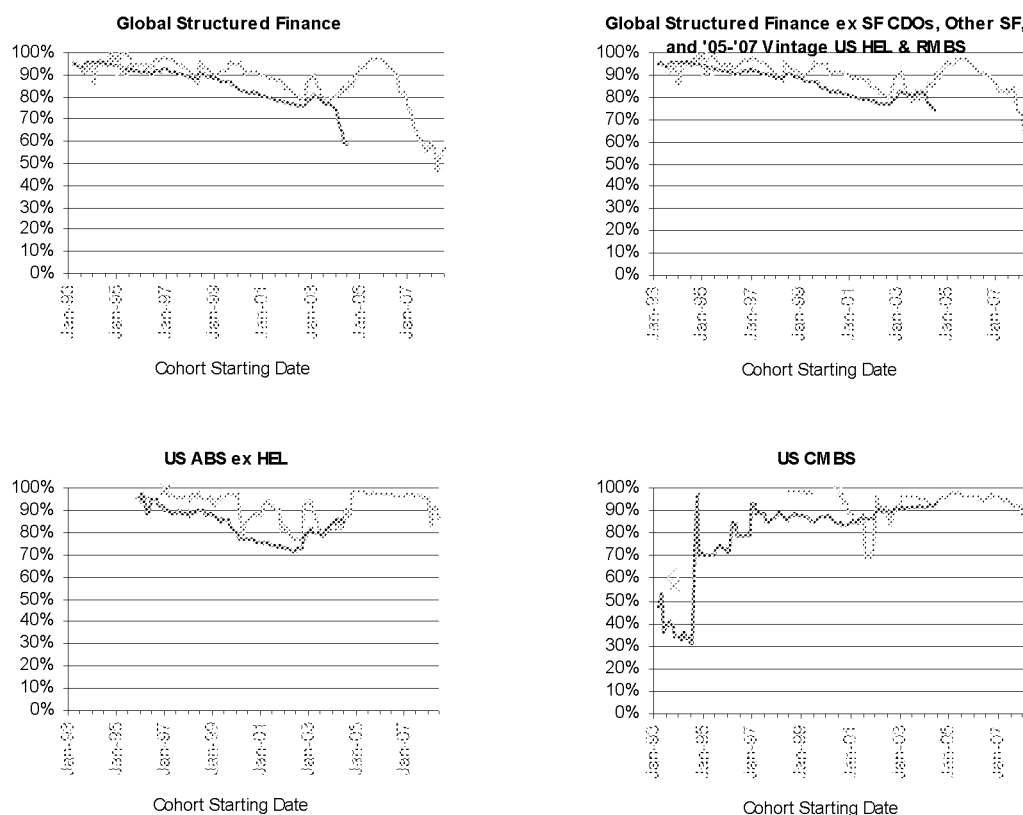
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Accuracy Ratios

Figure 3 depicts the one- and five-year accuracy ratios over time with the following notable observations:

❋   For global structured finance, the one-year accuracy ratio declined to 57.4% from 59.7% six months ago. Excluding US HEL and US RMBS securities issued between 2005 and 2007, SF CDOs, and the Other SF sector raised the one-year accuracy ratio by 5.4 percentage points to 62.8%.

❋   One-year accuracy ratios declined on a year-over-year basis for all sectors except global CDOs and Other SF. US RMBS saw the steepest percent decline from its level 12 months ago, while the US CMBS accuracy ratio changed the least over the same time period.

❋   US ABS, excluding HEL, and US CMBS both maintained one-year accuracy ratios over 85%. If transactions that closed between 2005 and 2007 were excluded from US RMBS, its one-year accuracy ratio for the cohort ending June 2009 was 82.9%.

❋   The five-year accuracy ratio continued to fall for global structured finance, US HEL, US RMBS, and global CDOs. Further declines are expected for this statistic because it demonstrates performance on a lagged basis and the effects of the recent growth in material impairments have not yet been fully incorporated.

Figure 3: One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios

Note: At the beginning of each month, securities are grouped together by their alpha-numeric ratings to form rating cohorts. The latest one- and five-year cohorts are formed on July 1, 2008 and July 1, 2004. Breaks in the accuracy ratio series occur when the number of impairments for the cohort is less than or equal to one. Crosses in the one-year series and plus signs in the five-year series indicate that the accuracy ratio was computed from only one impaired security.

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## *Figure 3 (continued): One-Year (yellow line) and Five-Year (blue line) Accuracy Ratios*
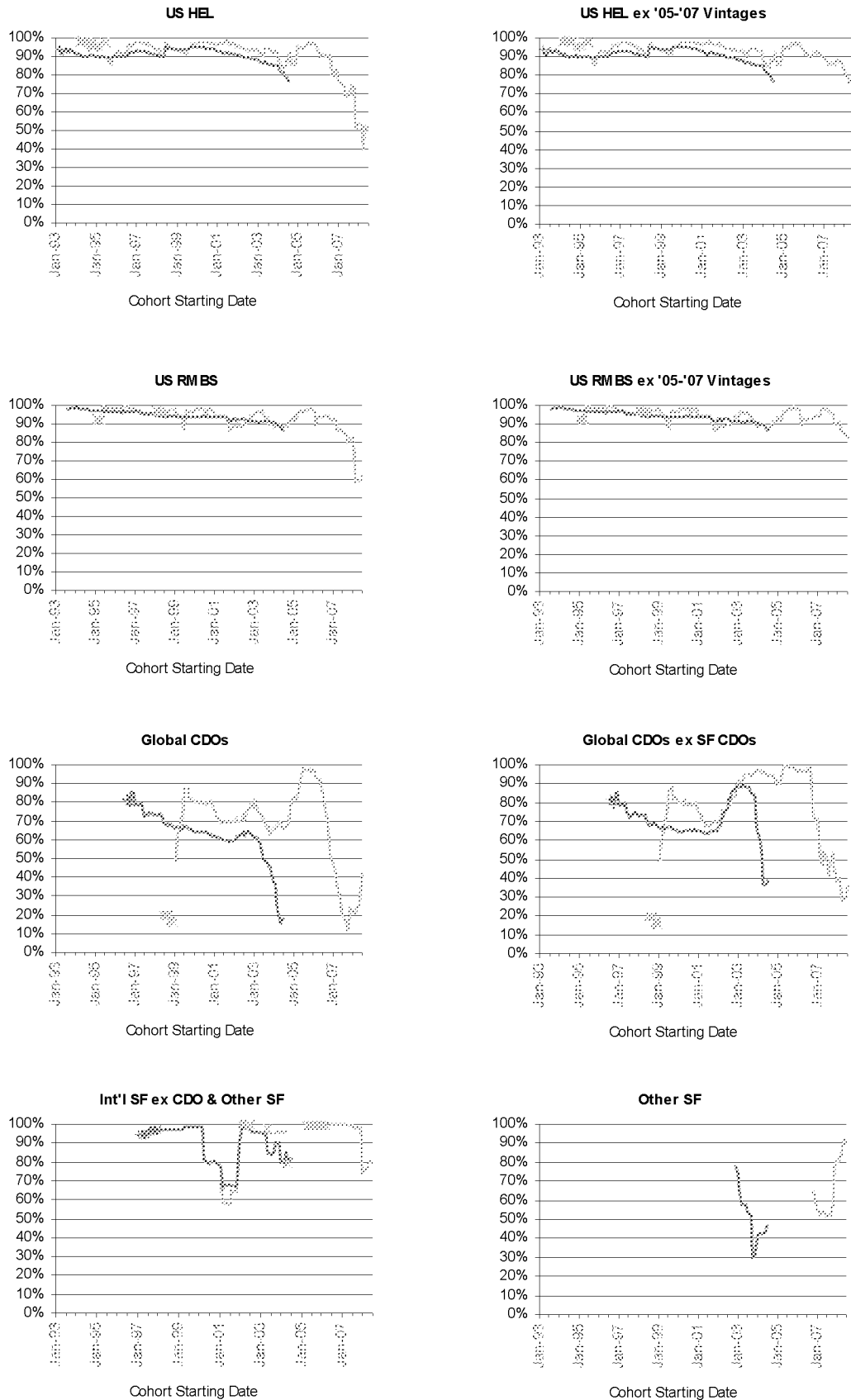
### US HEL

Cohort Starting Date

US HEL ex '05-'07 Vintages

Cohort Starting Date

US RMBS

Cohort Starting Date

US RMBS ex '05-'07 Vintages

Cohort Starting Date

Global CDOs

Cohort Starting Date

Global CDOs ex SF CDOs

Cohort Starting Date

Int'l SF ex CDO & Other SF

Cohort Starting Date

Other SF

Cohort Starting Date

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Investment-Grade Loss Rates

Figure 4 shows one-year and five-year investment-grade loss rates by sector. Note that:

* The one-year investment-grade loss rate increased for global structured finance and all sub-sectors with the exception of the Other SF category in comparison to the rate a year ago. However, it appears that the loss rate peaked for the cohort ending March 2009 for global structured finance and has been steadily declining since then. The one-year loss rate is reduced by 75% if US HEL and US RMBS from the 2005 to 2007 vintages, SF CDOs, and Other SF are excluded from the calculation.

* US ABS ex HEL, US CMBS, and International SF, excluding CDOs and Other SF, experienced low one-year investment-grade loss rates for the cohort ending June 2009 at 0.2%, 0.04%, and 0.1%, respectively.

* Because the five-year investment-grade loss rate is a lagging indicator, it still did not show the type of increase displayed by the one-year loss rate.

Figure 4: One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates
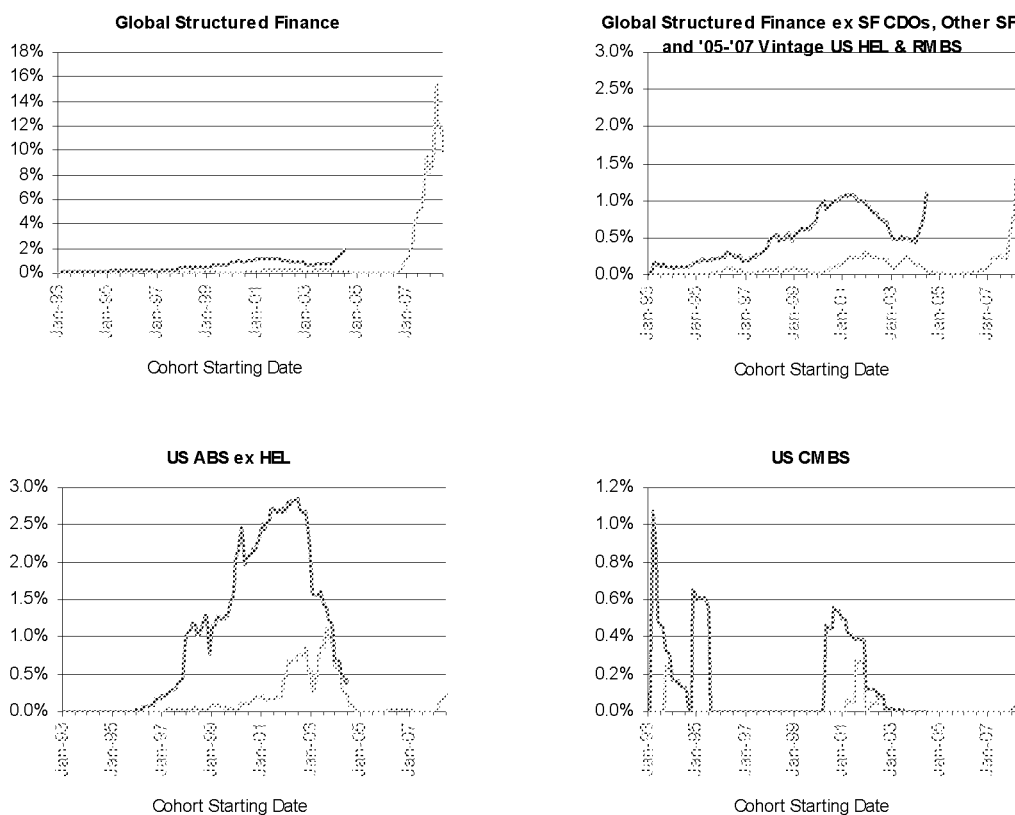
Note: At the beginning of each month, all securities carrying an investment-grade rating are grouped together to form a rating cohort. The latest one- and five-year cohorts are formed on July 1, 2008 and July 1, 2004.

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Figure 4 (continued): One-Year (yellow line) and Five-Year (blue line) Investment-Grade Loss Rates
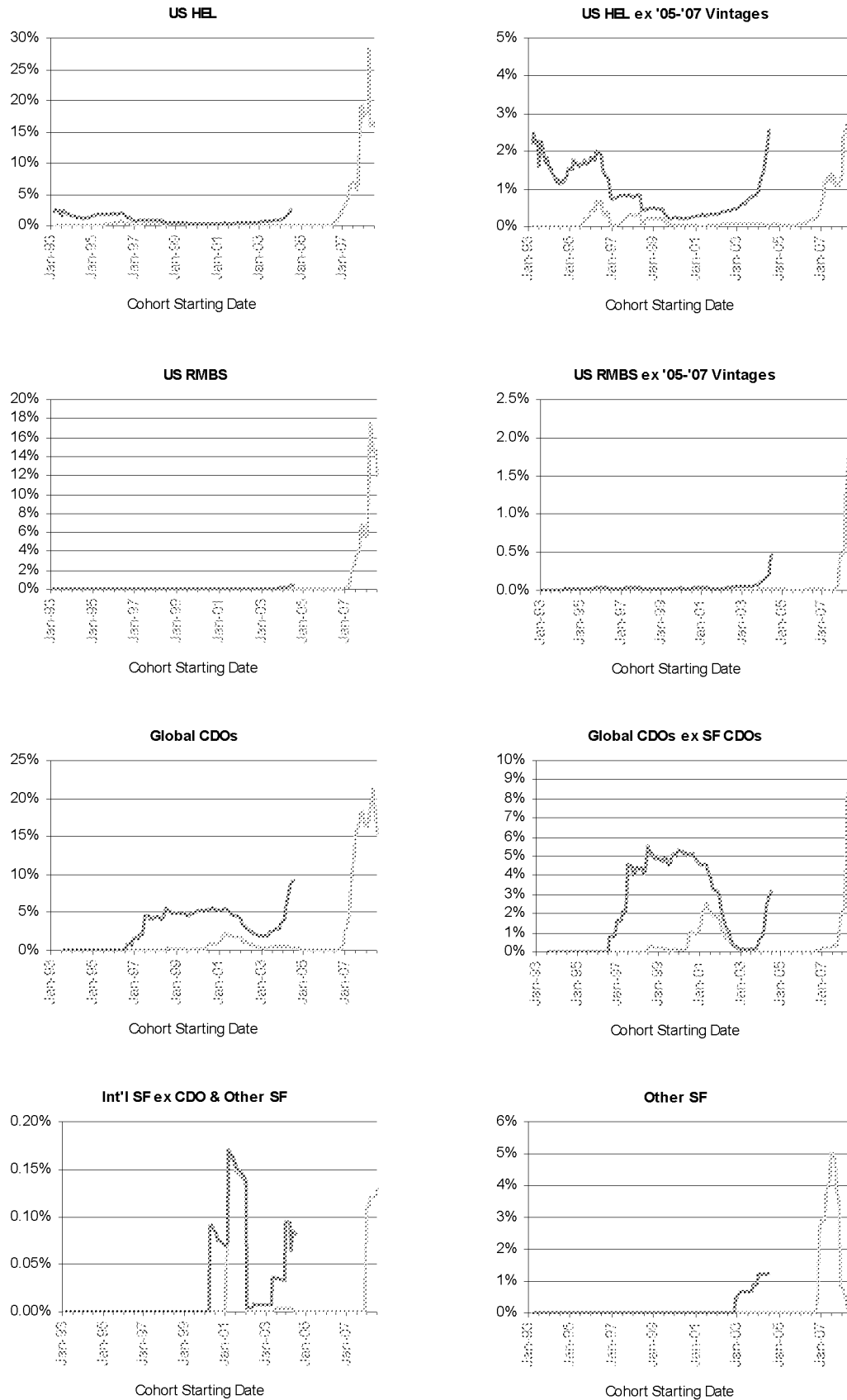
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Average Rating Before Impairment

Figure 5 presents the 36-month-average rating before impairment over time as well as the number of newly impaired securities used to calculate the average ratings. The following observations are noteworthy:

⁑ The 36-month average rating before impairment for global structured finance was Baa1 for the most recent cohort, one notch above the average of Baa2 six months and twelve months prior. Excluding SF CDOs, the Other SF category, and 2005 to 2007 vintage US HEL and US RMBS, the average rating before impairment dropped one notch to Baa2.

⁑ US RMBS and global CDOs exhibited the highest average rating prior to impairment of A2 and A3, respectively. For the latest cohort, the 36-month average rating for US HEL was also high at Baa2.

⁑ All other sectors displayed average ratings before impairment that were below investment-grade with US CMBS experiencing the lowest average rating of B2.

Figure 5: 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)
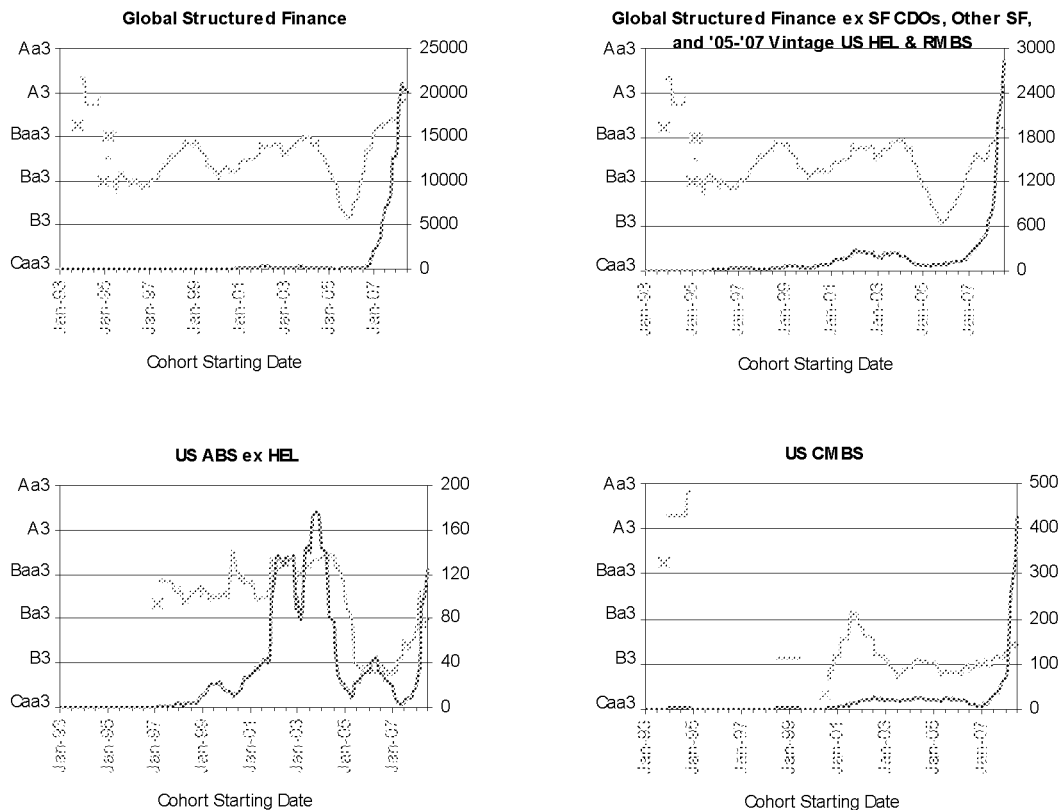
Note: At the beginning of each month, all securities that become impaired within the next 12-month period are grouped to form a cohort. The latest 12-month cohort is formed on July 1, 2008. Breaks in the average rating before impairment series occur when the number of impairments for the cohort is less than or equal to one. Crosses indicate that the average rating was computed from only one impaired security.

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Figure 5 (continued): 36-Month-Average Ratings before Impairment (yellow line) and Number of Newly Impaired Securities (blue line)

US HEL

US HEL ex '05-'07 Vintages

US RMBS

US RMBS ex '05-'07 Vintages

Global CDOs

Global CDOs ex SF CDOs

Intl SF ex CDO and Other SF

Other SF
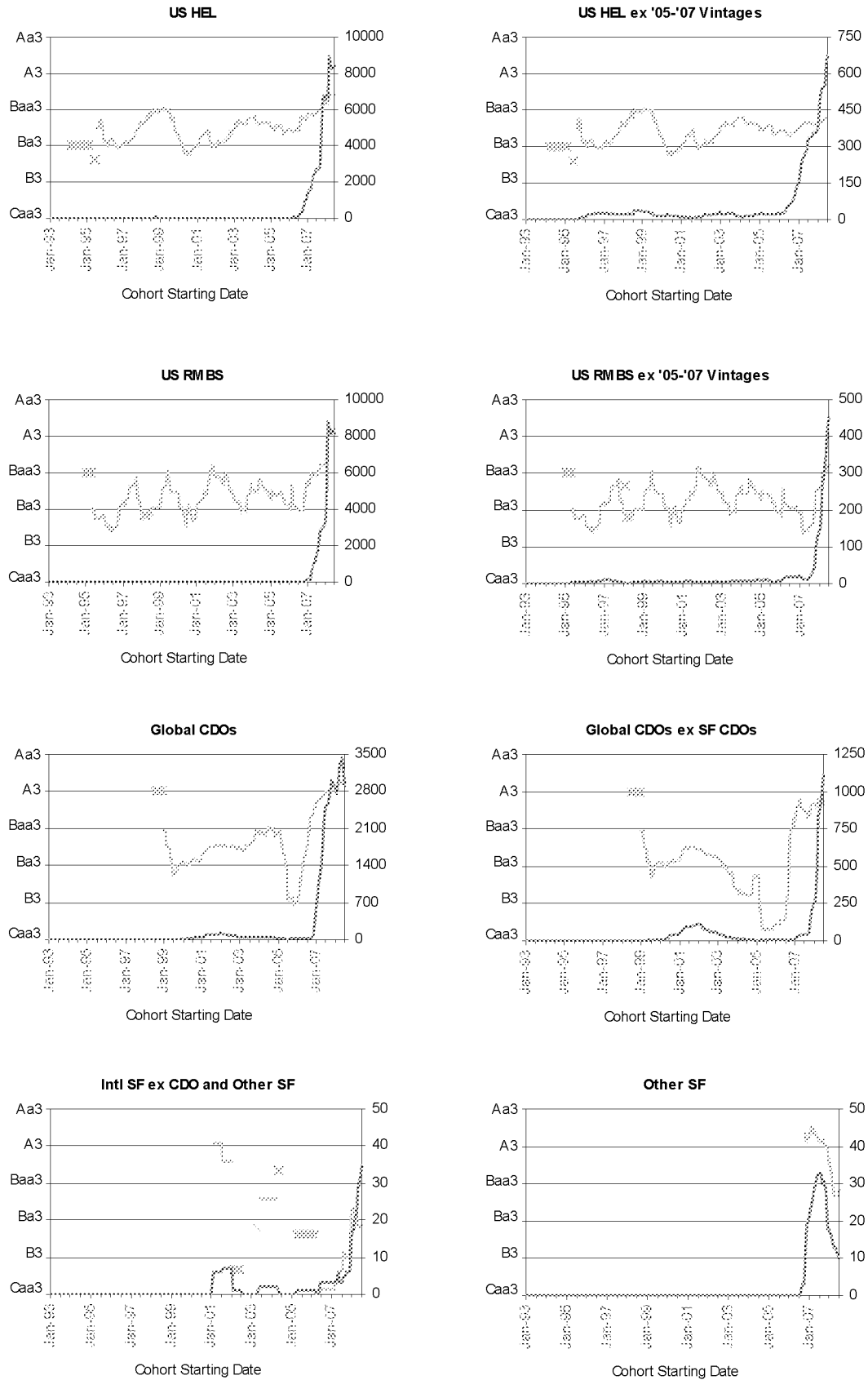
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Rating Action Rates and Large Rating Action Rates

Figure 6 reports 12-month rating action rates and large rating action rates. Figures 7 and 8 further disaggregate rating actions into downgrades and upgrades, and Figure 9 demonstrates how frequently downgrades and upgrades have been preceded by watchlist actions in the same direction.[6] Key observations include:

* The one-year rating action rate rose to 58.3%, a 61% increase from the rate of 36.2% six months prior and 2.5 times larger than the rate of 23.6% a year ago. The large rating action rate was 49.9% indicating that most of the rating actions involved movements of three notches or more. Excluding SF CDOs, the Other SF category, and US HEL and RMBS transactions that closed between 2005 and 2007, the overall and large rating actions rates declined to 33.9% and 26.8%, respectively.

* As has been the case since early 2007, downgrades dominated rating changes for the latest cohort as the 12-month global structured finance downgrade rate rose to 57.5% while the upgrade rate stood at 0.8%. Downgrade rates increased compared to their levels six months ago for all sectors and US ABS ex HEL was the only sector that experienced a significant increase in the frequency of upgrades.

* The proportion of downgrades that were placed on review prior to the rating action increased slightly to 45.8% for the cohort ending June 2009 versus 44.3% for the cohort ending December 2008. The increase was caused by a rise in the frequency of reviewed downgrades among US HEL and US CMBS as most other sectors experienced declines in this rate.

* The percentage of upgrades that were placed on review prior to the rating change fell to 4.1% for the July 2008 cohort from 8.0% for the January 2008 cohort. Declines were also seen across all sectors except US ABS ex HEL and US CMBS.

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[6] Moody's also reviewed its uses of watchlist actions on structured finance securities in a Special Comment, "Structured Finance Watchlist Resolutions: 1992-2003," June 2004.
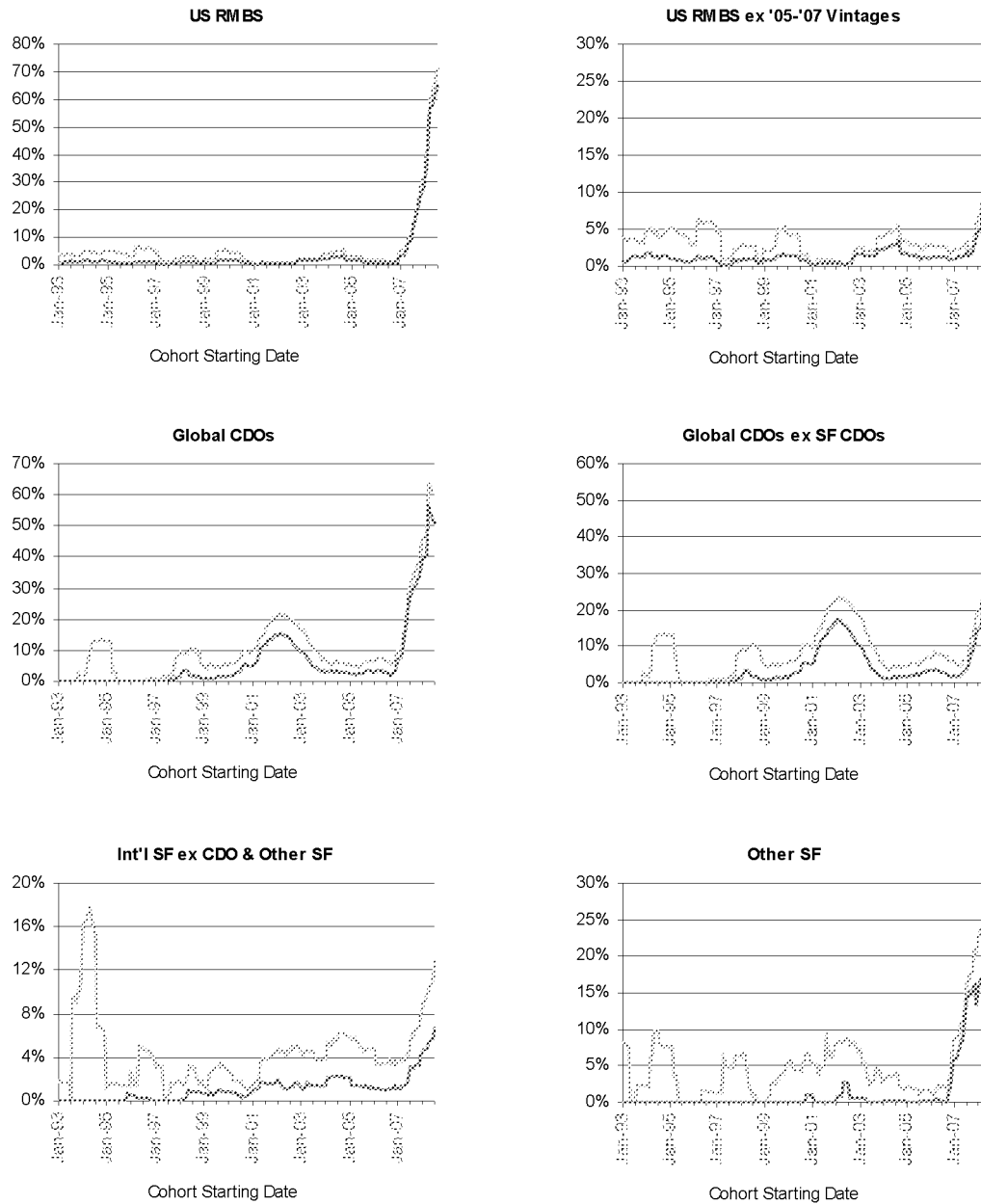
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Figure 6: 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)

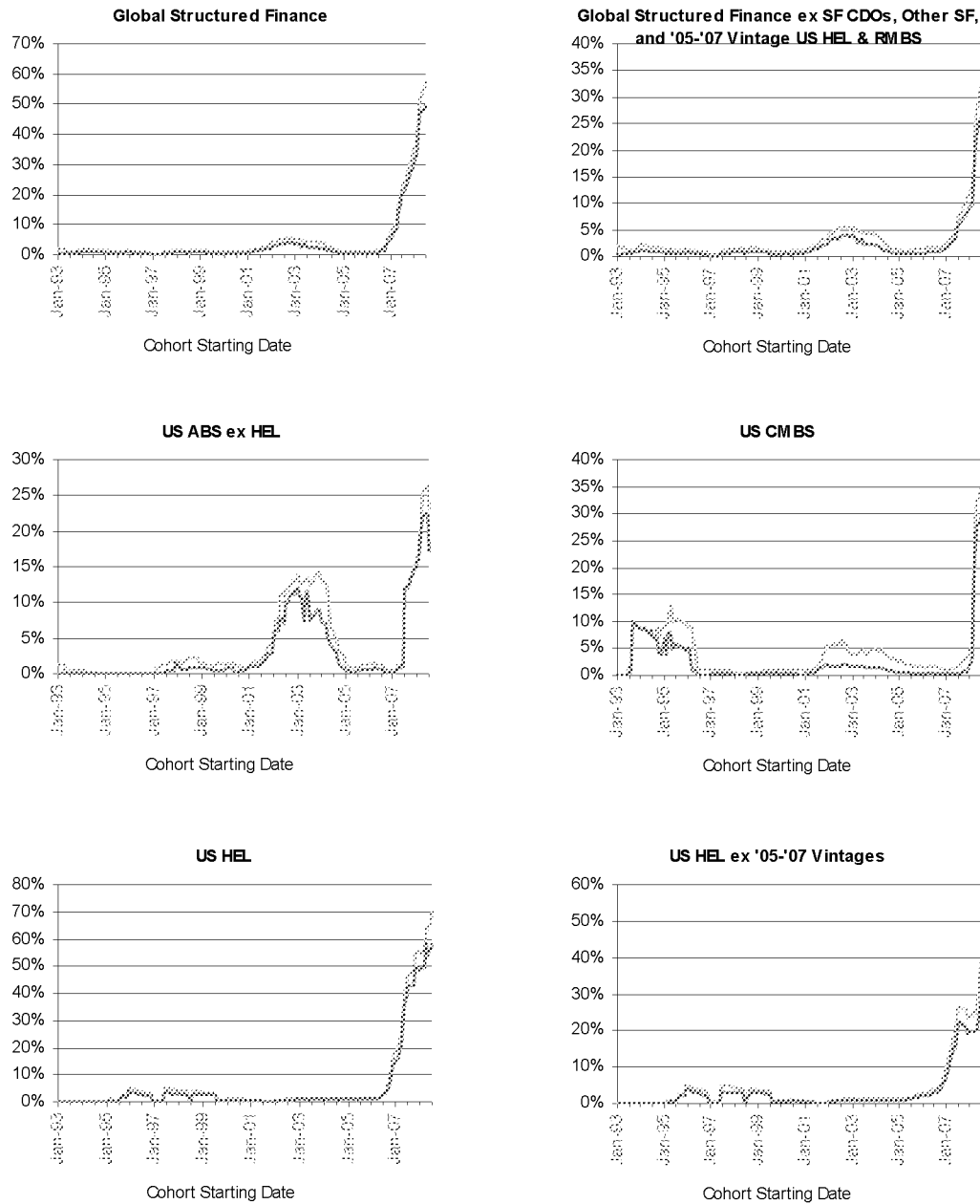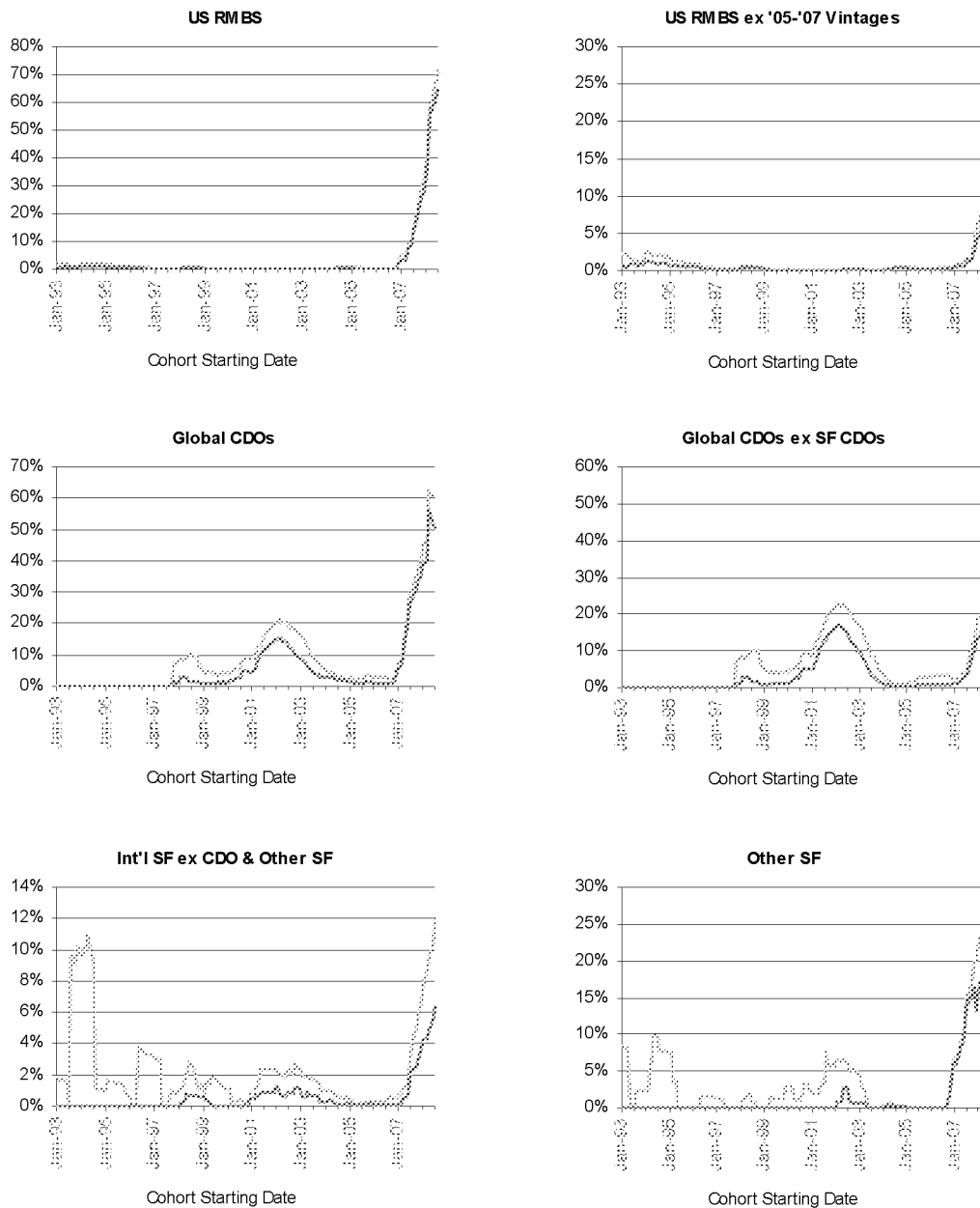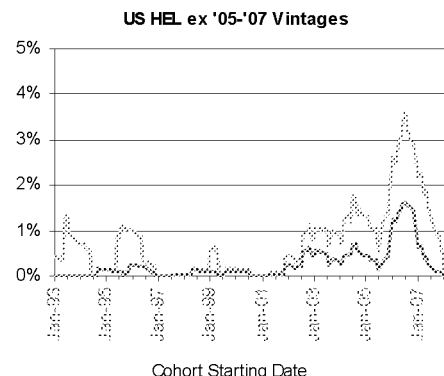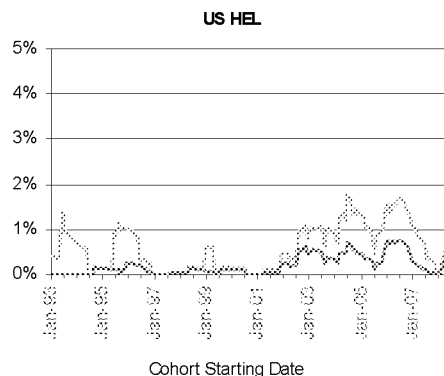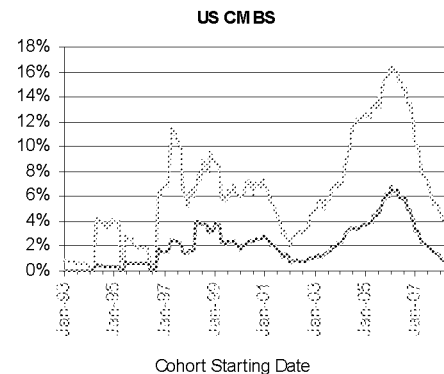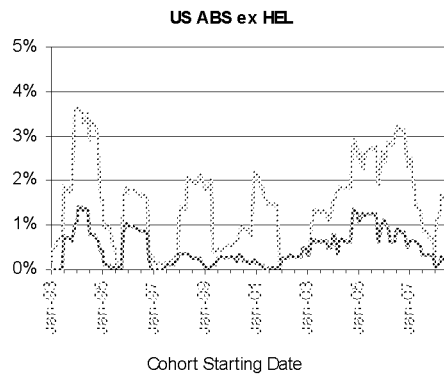## The Performance of Structured Finance Ratings: Mid-Year 2009 Report

Figure 6 (continued): 12-month Rating Action Rates (yellow line) and 12-month Large (three notches or more) Rating Action Rates (blue line)

US RMBS

US RMBS ex '05-'07 Vintages

Global CDOs

Global CDOs ex SF CDOs

Int'l SF ex CDO & Other SF

Other SF

Note: Rating actions include upgrades and downgrades, which are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2008.

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Figure 7: 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

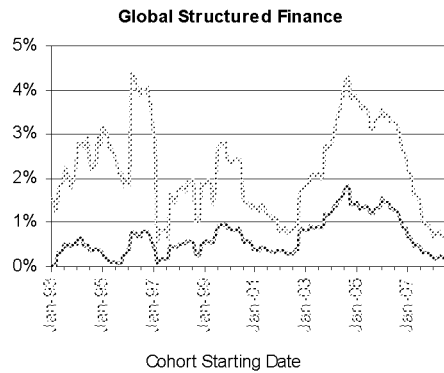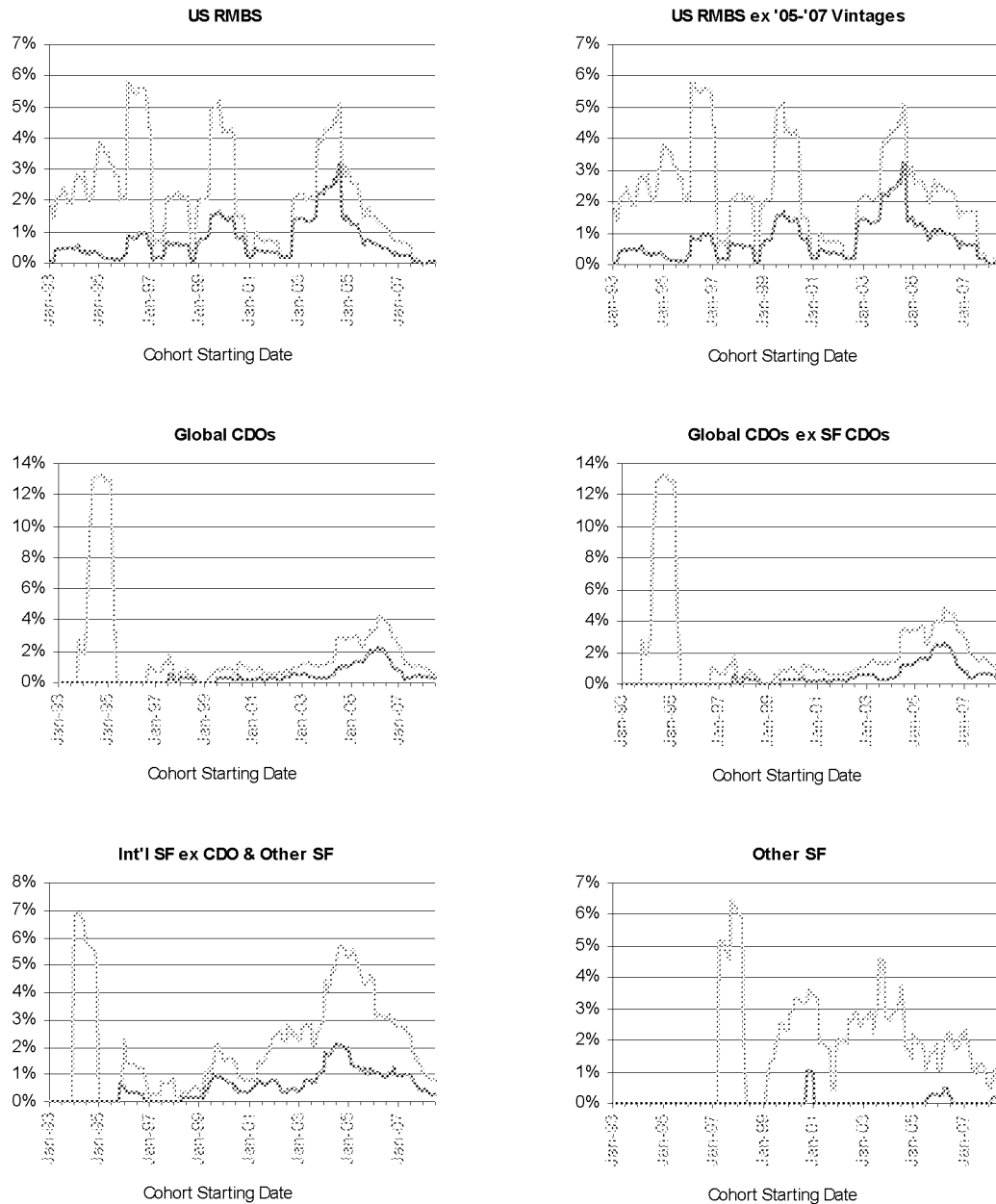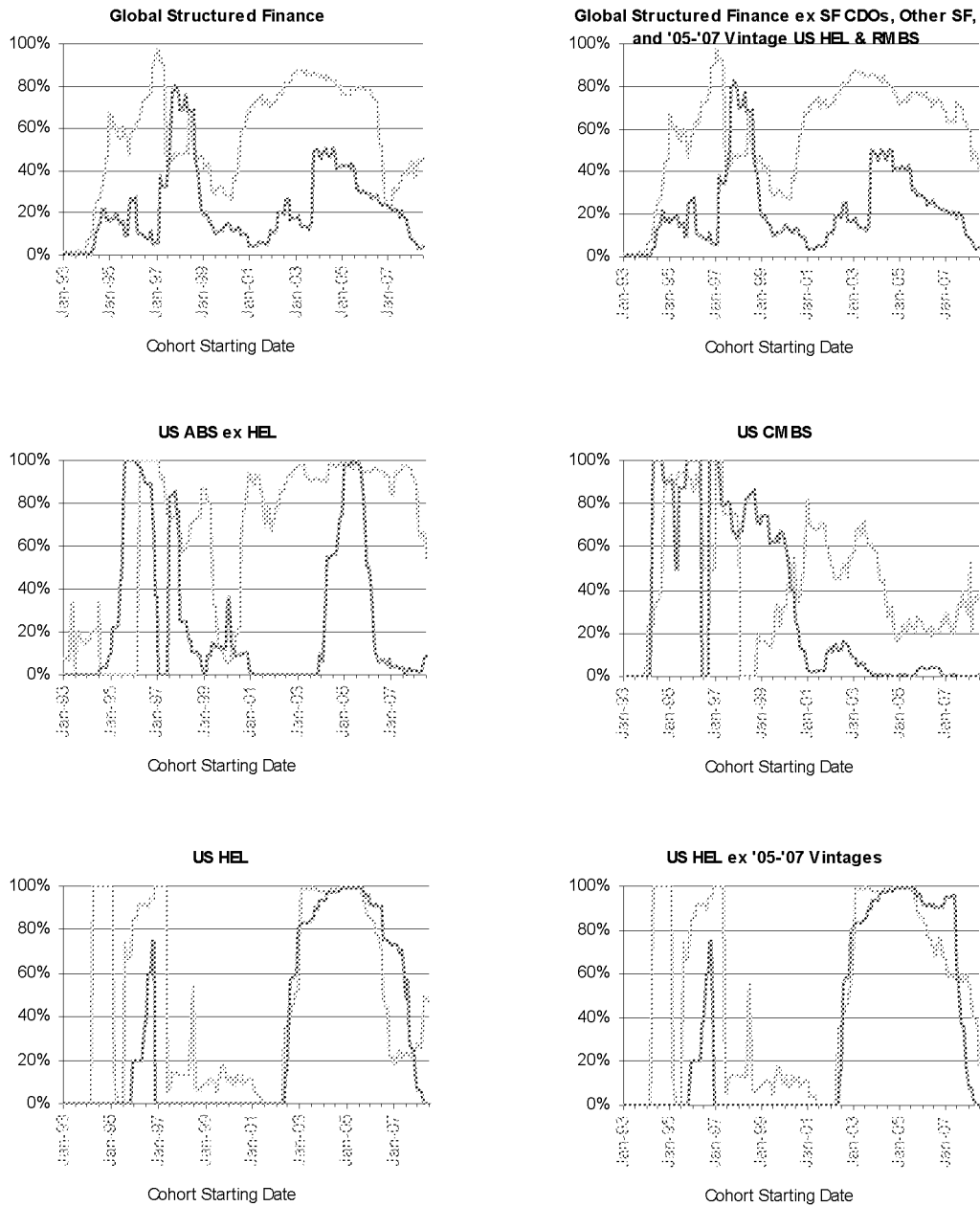# The Performance of Structured Finance Ratings: Mid-Year 2009 Report

Figure 7 (continued): 12-month Downgrade Rates (yellow line) and 12-month Large (three notches or more) Downgrade Rates (blue line)

Note: Downgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2008.
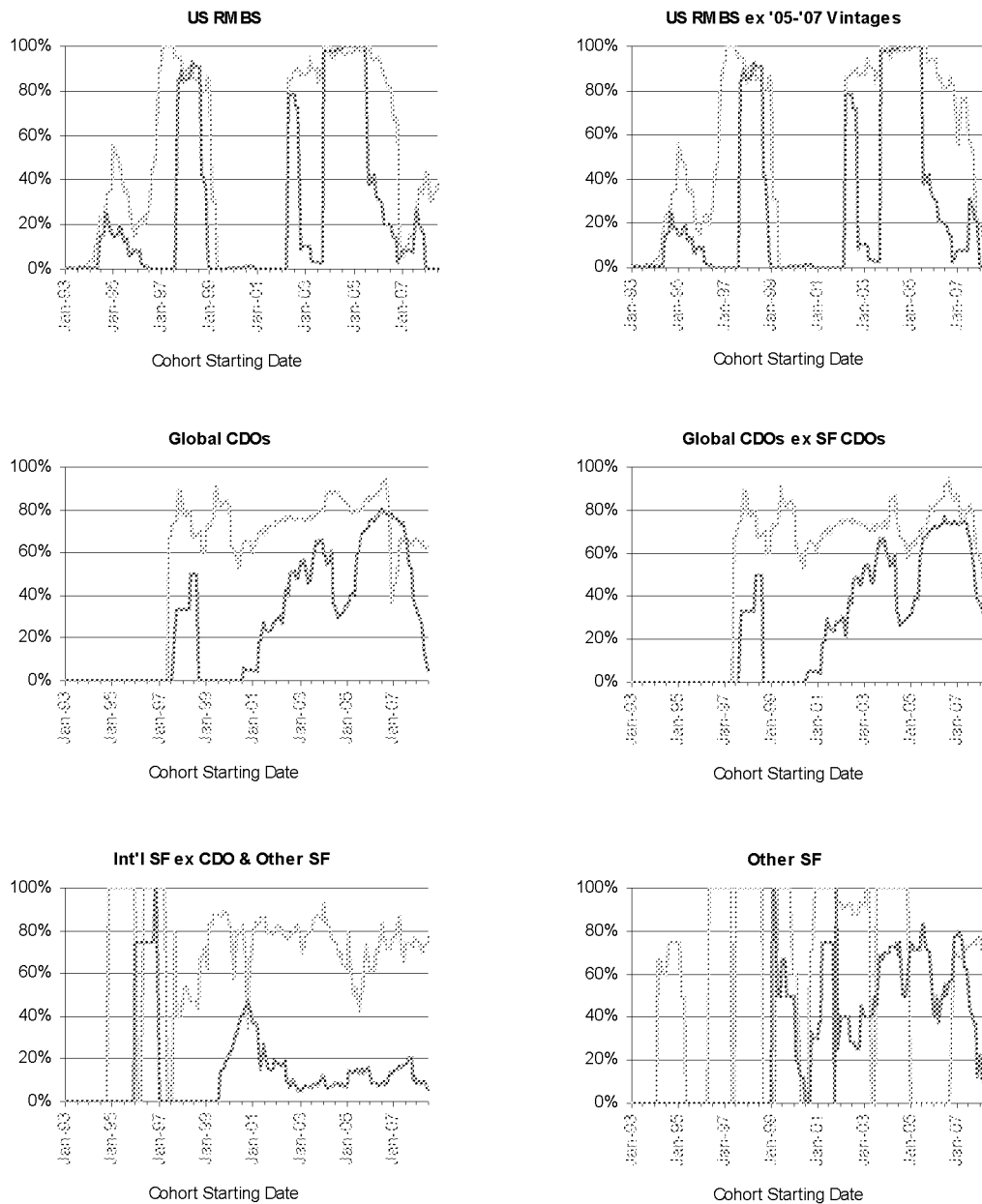
The Performance of Structured Finance Ratings: Mid-Year 2009 Report

Figure 8: 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

Global Structured Finance

Global Structured Finance ex SF CDOs, Other SF, and '05-'07 Vintage US HEL & RMBS

US ABS ex HEL

US CMBS

US HEL

US HEL ex '05-'07 Vintages

The Performance of Structured Finance Ratings: Mid-Year 2009 Report

Figure 8 (continued): 12-month Upgrade Rates (yellow line) and 12-month Large (three notches or more) Upgrade Rates (blue line)

US RMBS

Cohort Starting Date

US RMBS ex '05-'07 Vintages

Cohort Starting Date

Global CDOs

Cohort Starting Date

Global CDOs ex SF CDOs

Cohort Starting Date

Int'l SF ex CDO & Other SF

Cohort Starting Date

Other SF

Cohort Starting Date

Note: Upgrades are measured on the alpha-numeric (or modified) rating scale. Rating cohorts are formed each month covering a 12-month period. The latest 12-month cohort is formed on July 1, 2008.

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Figure 9: Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction

Global Structured Finance

Cohort Starting Date

Global Structured Finance ex SF CDOs, Other SF, and '05-'07 Vintage US HEL & RMBS

Cohort Starting Date

US ABS ex HEL

Cohort Starting Date

US CMBS

Cohort Starting Date

US HEL

Cohort Starting Date

US HEL ex '05-'07 Vintages

Cohort Starting Date

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Figure 9 (continued): Percentages of Downgrades (yellow line) and Upgrades (blue line) Preceded by Watchlist Actions in the Same Direction

Note: At the beginning of each month, all securities that experienced downgrades (upgrades) within the next 12-month period are grouped together to form a rating cohort. The latest 12-month cohort is formed on July 1, 2008. Gaps in the data indicate that there were no downgrades (upgrades) during that time period.

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Appendix: Description of Data Sample and Glossary

The data sample used in this report includes all public, 144A, and private tranches with a published Moody's long-term global debt rating among global asset-backed securities (ABS), commercial and residential mortgage-backed securities (CMBS and RMBS), collateralized debt obligations (CDOs), and other structured finance, including asset backed commercial paper (ABCP), structured investment vehicles (SIVs), structured covered bonds, catastrophe bonds, and derivative product companies. Provisional ratings, credit estimates or evaluations, short-term ratings, and national scale ratings are not included. The following types of securities are excluded from the definition of global structured finance and therefore are not included in the data sample: repackaged securities, structured notes, and other credit derivatives which are basically pass-throughs of the rating of another entity.

This data set is an expansion of the data set that was used in prior structured finance performance studies.[7] In particular, this data sample:

* Includes tranches wrapped by financial guarantors, government agencies, and government sponsored enterprises (GSEs);

* Includes interest-only (IO) and residual tranches;

* Includes some transactions outside of the four major sectors (ABS, CDO, CMBS, RMBS) of structured finance, such as ABCP, SIVs, structured covered bonds, catastrophe bonds and derivative product companies;

* Does not collapse tranches with the same rating from the same deal, i.e. all *pari passu* tranches are counted in the data sample. The exceptions to this are notes with the same rating issued out of the same program for ABCP, SIVs and structured covered bonds, in which case only the rating of the program and not each individual security is counted.

The data used to create this report are commercially available via Moody's Structured Finance Default Risk service. For more information, please email DefaultResearch@moodys.com.

Glossary

Payment Shortfall

Structured finance securities are defined as having a payment shortfall (previously called "payment default") if they have experienced either one of the following:

* Interest shortfall, or

* Principal write-down/loss.

Reductions in interest paid that arise due to prepayments of principal on the underlying loans or due to limitations imposed by "available funds caps" (AFC) are not considered to be interest shortfalls. On the other hand, "payment-in-kind" (PIK) events, in which the interest payment is deferred and capitalized into the balance, are treated as interest shortfalls, regardless of whether or not it is described as a default event in the bond's indenture. Explicit principal write-downs are included whereas implicit principal write-downs or under-collateralizations are not.

Material Impairment

Structured finance securities are defined as being in material impairment if they have:

* Sustained a payment shortfall that has not been cured, or

* Been downgraded to Ca or C, and hence is expected to suffer a significant level of payment losses in the future.

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[7] The expanded data sample was first introduced in our 2007 rating transitions studies.

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The impairment status of a security may change as it goes from cured (i.e. all outstanding shortfalls and losses were repaid in full) to uncured (i.e. positive interest shortfalls or principal losses outstanding), or vice versa. If a security downgraded to Ca or C, but not in payment shortfall, is subsequently upgraded, then it is no longer in material impairment. Securities downgraded to Ca or C that are not upgraded are in material impairment even if their payment shortfalls have been cured. Finally, securities with very minor shortfalls or losses are excluded.

Principal Impairment

This refers to materially impaired securities that have experienced principal write-downs or principal losses, or have been downgraded to Ca or C even if a principal write-down or loss has not yet been observed. In particular, if a security has experienced principal write-down/loss or was downgraded to Ca or C, it is called a principal impairment regardless of whether it has experienced interest shortfalls.

Interest Impairment

This refers to materially impaired securities that have experienced only interest shortfalls, no principal losses, and were not downgraded to Ca or C.

Investment-Grade (IG) and Speculative-Grade (SG) 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.

Loss Severity or Loss-Given-Default (LGD)

The LGD rate of an impaired structured finance security is measured as the sum of the present values of net losses, including both interest shortfalls and principal losses, discounted by the security's coupon rate and expressed as a percentage of a given principal balance such as the principal balance at origination, at the impairment date, or at any given cohort date.

Accuracy Ratio (AR)

An accuracy ratio based on the loss experience of structured finance securities (or an accuracy ratio adjusted for loss-given-default, or LGD) is the ratio of the area between a loss-based cumulative accuracy profile (CAP) curve and the 45-degree line to the maximum possible area above the 45-degree line. The loss-based CAP curve (or a CAP curve adjusted for LGD) plots, for each rating category, the proportion of the losses of all impaired securities accounted for by securities with the same or lower rating against the proportion of all securities in the sample population with the same or lower rating.[8]

To calculate accuracy ratios, rating cohorts are formed for each calendar month over the study period so that all outstanding securities in the sample population are grouped together by their alpha-numeric ratings at the beginning of the month. For each monthly rating cohort, we determine the number of securities that became impaired within one or five years of the cohort formation date and their loss severity rates as a percentage of the cohort date balance. Cumulative shares of securities rank-ordered by rating are calculated for the universe of all securities and the universe of impaired securities, respectively, and based on this, a CAP curve is plotted. Note that only LGD for principal impaired securities are used in the calculation. Please see the definition of LGD for further details.

The CAP curve adjusted for LGD is also known as a "power curve" because it shows how effective a rating system is at differentiating between securities that have sustained high losses from securities that have sustained low or no losses. The metric is defined relative to the distribution of ratings in the population. The accuracy ratio is an effective way to summarize the CAP curve into a single number. The accuracy ratio is zero if the CAP curve collapses to the 45-degree line, suggesting that all impaired securities are randomly distributed throughout the population without regard to rating.

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[8] For an illustration of the CAP curve adjusted for LGD, see "Default & Loss Rates of Structured Finance Securities: 1993-2003," *Moody's Special Comment*, September 2004.

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Investment-Grade Loss Rate

The one-year investment-grade loss rate is calculated as follows. First, for a given cohort, we compute the LGD as a share of the tranche balance as of the cohort date for each security that carried an investment-grade rating at the cohort formation date and became impaired within a 12-month period after the cohort date. We then take the sum of these LGD rates and divide by the total number of investment-grade securities outstanding as of the cohort formation date. Note that the LGD rate is not weighted by dollar volume and that only LGD for principal impaired securities are used in the calculation. The five-year investment-grade loss rate is calculated similarly.

Average Rating Before Impairment

The rating of an impaired security is measured every month for 36 months prior to impairment. These 36 rating measurements are averaged together to create one representative number for each impaired security. For a particular cohort, the average rating before impairment is the weighted average of these average ratings for each security that became impaired within 12 months after the cohort formation date. The weight for each security is the LGD rate of the tranche as a share of its original balance. This weighting scheme will place greater emphasis on the average ratings of impaired tranches with higher LGD over impaired tranches with lower LGD.[9] Note that only LGD for principal impaired securities are used in the calculation.

Rating Action Rate (Downgrade and Upgrade Rate)

The rating action rate is defined as the number of securities that experienced a rating change within a year after cohort formation divided by the total number of securities outstanding at the cohort formation date (the beginning of each month). Rating changes are measured on the alpha-numeric rating scale and are based on comparing the rating at the beginning and end of the time period under consideration. However, if a rating was withdrawn by the end of the time period, then the rating prior to withdrawal is used as the end rating. Note that a security will only be counted if it was outstanding as of the cohort formation date. Downgrade rates and upgrade rates are measured similarly based on downgrade and upgrade rating actions, respectively.

Large Rating Action Rate

A large ration action is said to occur if a rating action (or cumulative rating actions) cause(s) a security's rating to change by three or more notches within a year after cohort formation. The large rating action rate is the number of such securities divided by the total number of securities outstanding at the cohort formation date. Large downgrade rates and large upgrade rates are measured similarly based on large downgrade and large upgrade rating actions, respectively.

Percentage of Downgrades (Upgrades) Preceded by Watchlist Actions in the Same Direction

This metric is defined as the total number of downgraded (upgraded) securities that were placed on the watchlist in the same direction before they were downgraded (upgraded), divided by the total number of securities that were downgraded (upgraded) within 12 months after the cohort formation date.

ABS ex HEL

ABS stands for asset-backed securities. This structured finance sector includes securities backed by 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. Home equity loans (HEL) are explicitly excluded from US ABS ex HEL.

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[9] We began using LGD rates as weights in computing the average rating before impairment in the full-year 2005 structured finance performance report. Ideally, LGD rates should be calculated as a percentage of the principal balance outstanding for each month in the 36 months prior to the impairment, and ratings should then be weighted by these monthly LGD rates. Practically, however, it does not make a substantial difference in the average rating number whether we use LGD rates as a share of impairment-date balance, original balance, or monthly principal outstanding. Since the monthly LGD rates are very time consuming to compute due to amortization, we use the LGD rate as a share of original balance as the weight variable.

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HEL

The home equity loan or HEL sector includes securities backed 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.

Prior to 1998, RMBS collateral was generally defined as first-lien residential mortgages, regardless of the credit quality of the borrower. HEL collateral generally included junior liens such as HELOCs or closed-end seconds. However, as subprime lending became more prevalent, the market shifted its definition such that HEL encompassed subprime first-lien residential mortgages while RMBS included first-lien mortgages made to higher quality borrowers. Since 1998, a deal classified as RMBS by Moody's is generally backed by prime or Alt-A quality first-lien residential mortgages, while a deal classified as HEL is generally backed by subprime first-lien mortgages or junior liens. Therefore, a subprime deal which would be classified as HEL today may have been classified as RMBS in the past.

RMBS

RMBS stands for residential mortgage-backed securities. The vast majority of these securities are backed by first-lien prime mortgages or by Alt-A mortgages. For further details, see the definition of HEL.

CMBS

CMBS stands for commercial mortgage-backed securities. Commercial real estate (CRE) CDOs, where 70% or more of the collateral is comprised 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.

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 are also excluded (see the definition of CMBS).

Other Structured Finance

Other structured finance consists of structured finance securities not categorized in the five major sectors (ABS ex HEL, HEL, RMBS, CMBS, and CDO) including asset-backed commercial paper (ABCP) programs, structured investment vehicles (SIVs), structured covered bonds, insurance-linked securities such as catastrophe bonds, and derivative product companies. However, notes carrying only short-term ratings such as commercial paper are excluded.

Global Structured Finance

Global structured finance captures securities issued around the world in the five major sectors - ABS ex HEL, HEL, RMBS, CMBS, and CDO – and in the Other Structured Finance category.

US Structured Finance

US structured finance securities are denominated in US dollars and issued in the US 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 cross multiple countries/regions, deals are classified by the location at which they are monitored.

Intl SF ex CDO and Other SF

This refers to securities that are not denominated in US dollars and issued in the US market and not denominated in Canadian dollars and issued in Canada. The majority of the securities in this sector are issued in Europe, the Middle East, and Africa (EMEA); the rest are issued in the Asia Pacific region and Latin America. CDOs and Other SF are excluded.

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Moody's Related Research

Special Comments:

* The Performance of Structured Finance Ratings: Full-Year 2008 Report, August 2009 (119780)

* The Performance of Structured Finance Ratings: Mid-Year 2008 Report, November 2008 (112347)

* The Performance of Structured Finance Ratings: Full-Year 2007 Report, July 2008 (110179)

* The Performance of Structured Finance Ratings: Mid-Year 2007 Report, October 2007 (105390)

* The Performance of Structured Finance Ratings: Full-Year 2006 Report, May 2007 (103017)

* The Performance of Structured Finance Ratings: Mid-Year 2006 Report, September 2006 (99034)

* The Performance of Structured Finance Ratings: Full-Year 2005 Report, May 2006 (97346)

* The Performance of Structured Finance Ratings: Mid-Year 2005 Report, September 2005 (94463)

* Default & Loss Rates of Structured Finance Securities: 1993-2008, August 2009 (119617)

* Measuring Loss-Given-Default for Structured Finance Securities: An Update, December 2006 (101284)

* Structured Finance Rating Transitions: 1983-2008, March 2009 (115157)

* Japanese Structured Finance Rating Transitions: 1994-2008, March 2009 (115070)

* Asia-Pacific (ex-Japan) Structured Finance Rating Transitions: 1990-2008, March 2009 (115165)

* EMEA Structured Finance Rating Transitions: 1988-2008, April 2009 (116507)

* Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities, December 2006 (100872)

* The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance, December 2005 (95494)

* Structured Finance Watchlist Resolutions: 1992-2003, June 2004 (87305)

* The Performance of Moody's Corporate Debt Ratings: September 2009 Quarterly Update, October 2009 (120706)

* Measuring the Performance of Corporate Bond Ratings, April 2003 (77916)

* Guide to Moody's Default Research: October 2009 Update, October 2009 (120969)

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