

**Structured Finance Trends – Yield Spreads, Credit Support, and Collateral Performance – The Big Picture**

27 June 2005

**Table of Contents**

Introduction ..... 1  
 Background and Data Sources ..... 2  
 Results ..... 4  
     Sector Comparisons..... 4  
     Individual Sectors..... 9  
 Problems and Limitations of the Study ..... 14  
 Conclusion ..... 16

**I. Introduction**

Outstanding structured finance securities in the U.S. amount to more than \$7.3 trillion and represent more than 30% of the total outstandings in the U.S. bond markets. Because of the market's size and the complexity of the instruments, structured finance professionals increasingly specialize in narrow sectors or sub-sectors within the structured finance universe. In doing so, they can lose touch with the "big picture" and relationships of different sectors to each other. However, keeping the big picture in view is necessary for making strategic decisions in the areas of risk management and asset allocation.

Viewed over a recent five-year time horizon, the credit card ABS sector was the most placid one on the structured finance landscape. In contrast, CMBS was the area to experience the greatest adverse change, with declining credit support levels, weakening collateral performance, and – contrary to what one might expect – tightening spreads. The residential MBS sector displayed moderately negative trends. Other sectors, such as home equity ABS and auto ABS displayed mixed results.

This paper attempts to take a high altitude view of the whole structured finance landscape over the past five years in order to help professionals with responsibility for strategic decisions.

We examined different categories of structured finance products along three dimensions: (1) yield spreads, (2) credit support levels, and (3) collateral credit performance.<sup>1</sup> The product categories that we considered were:

- residential mortgage-backed securities (RMBS),
- commercial mortgage-backed securities (CMBS),
- asset-backed securities (ABS) composed of home equity (subprime mortgage) loans,

<sup>1</sup> We use the term "collateral" colloquially to refer to securitized assets included in a deal.

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- ABS composed of credit card receivables,
- ABS composed of auto loans, and
- collateralized bond obligations (CBOs).

Credit support levels declined notably for CMBS, residential MBS, and auto loan ABS. Collateral credit performance deteriorated significantly for CMBS and, to a lesser degree, for residential MBS. Collateral credit performance improved somewhat for auto ABS and home equity ABS. Residential MBS displayed the greatest volatility of yield spreads, but that was mostly attributable to their embedded prepayment options. Home equity ABS and high-yield CBOs displayed greater spread volatility than credit card ABS or auto ABS.

Summary Results			
Sector	Spreads	Credit Support	Collateral Performance
Residential MBS	volatile, slightly wider	declined	slightly deteriorated
CMBS	slightly tighter	declined	deteriorated
Home Equity ABS	volatile, flat trend	volatile	improved
Credit Card ABS	stable	stable	stable
Auto ABS	stable	declined	improved
CBOs	volatile	insufficient data	highly volatile

## II. Background and Data Sources

We studied yield spreads, credit support levels, and collateral performance for six categories of structured finance products for the period 2000 through 2004. Where applicable, we excluded deals done by the GSEs.

Within each category, we selected specific "benchmark" products to represent that category for purposes of comparison among the categories. In choosing such products, we leaned toward ones that were the most common during the study period and which were most representative of their respective categories. The following table enumerates the specific products that we chose to represent each of the six categories.

Representative Products for Structured Finance Sectors			
Sector	Representative Products		
	Spreads	Credit Support	Collateral Performance
Residential MBS	current coupon Fannie Mae MBS	private-label prime FRM30 deals	fixed rate prime quality mortgage loans
CMBS	10-year fixed rate tranches	conduit and fusion deals	loans backing conduit deals
Home Equity ABS	5-year, fixed rate tranches	fixed rate subprime deals	fixed rate subprime mortgage loans
Credit Card ABS	5-year, fixed rate tranches	prime quality deals from major bank card issuers	bank cards
Auto ABS	3-year, fixed rate tranches	prime quality deals from major issuers	prime quality auto loans
CBOs	6-9 year tranches of high-yield CBOs (spread to LIBOR)	arbitrage cash flow, high-yield CBOs	high-yield corporate bonds

We generally focused on yield spreads for fixed rate products because those were more prevalent during most of the sample period. When a product type included securities having different weighted-average lives, we generally selected the one that we viewed as most characteristic of the sector.

Residential MBS: We calculated Fannie Mae current coupon MBS spreads over 7½-year interpolated swaps as the representative data series for prime residential MBS spreads. We got the underlying data from Bloomberg. We chose the FNMA current coupon MBS because it minimizes distortions attributable to the changing coupon stack and because it maintains a fairly stable relationship with spreads on prime quality jumbo MBS. For prime residential MBS credit support, we compiled the weighted-average triple-A subordination levels for deals backed by prime 30-year fixed rate mortgage loans, as reported quarterly by S&P. To assess collateral performance for RMBS, we looked at delinquency and foreclosure data published quarterly by the Mortgage Bankers Association in its National Delinquency Survey.<sup>2</sup> Specifically, we created a single performance measure by combining the percentage of loans that were delinquent for 90 days or more and the percentage of loans in foreclosure at the end of each quarter. We chose these two characteristics to measure performance because we wanted to capture the most severe deterioration experienced by the loans.

CMBS: For CMBS yield spreads, we collected the 10-year triple-A spread to swaps available on Bloomberg. For CMBS credit support, we used quarterly median triple-A subordination levels based on data from Moody's and Commercial Mortgage Alert for conduit and fusion CMBS deals. We chose conduit and fusion deal types as representative of the sector because they account for the majority of historical CMBS issuance. For collateral performance of CMBS, we added together monthly 60- and 90-day delinquency, foreclosure, and REO data for conduit CMBS to create a single performance measure (sometimes called "core delinquencies"). We used data from Trepp LLC. The performance data was limited to the period from May 2000 through December 2004.

Home Equity ABS: We selected the 5-year triple-A spread to swaps, available on Bloomberg, as the representative data series for home equity ABS. For credit support, we compiled the weighted average AAA credit support levels for deals backed by fixed rate subprime mortgage loans as reported quarterly by S&P. The data reflects the value that S&P ascribes to various components of credit support including, overcollateralization, subordination, and excess spread. To assess collateral performance for home equity ABS, we looked at delinquency and foreclosure data on fixed rate subprime loans published quarterly by the Mortgage Bankers Association in its National Delinquency Survey.<sup>3</sup> Specifically, we created a single performance measure by combining the percentage of loans that were delinquent for 90-days or more and the percentage of loans in foreclosure at the end of the quarter.

Credit Card ABS (CCABS): For credit card ABS spreads, we selected the 5-year triple-A spread to swaps, available on Bloomberg, as the representative data series. For CCABS credit support levels, we took the average credit support levels for senior tranches of deals from a sampling of major issuers, as published in Moody's new issue reports. To assess the CCABS collateral performance of credit card ABS, we used the monthly chargeoff rate for bank credit card receivables published by Moody's in its *Historical Monthly Credit Card Indexes*.<sup>4</sup> The indexes are based on credit performance data for more than 250 individual CCABS backed by more than \$400 billion bank credit card receivables. The charge-off rate measures those credit card account balances written off as uncollectible as an annualized percent of total loans outstanding.

Auto ABS: For prime auto ABS spreads, we chose the 3-year triple-A spread to swaps, available on Bloomberg. For credit support levels for prime auto ABS, we used an approach similar to the one we used for credit card ABS. We took the average credit support levels for senior tranches of deals from a sampling of major issuers, as published in Moody's new issue reports. Credit support included subordination, reserve accounts/funds, and overcollateralization. To assess collateral performance of prime auto ABS, we looked at the ratio of cumulative chargeoffs to cumulative liquidations for prime

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<sup>2</sup> Mortgage Bankers Association, *The National Delinquency Survey from the Mortgage Bankers Association*, Historical National Delinquency Survey Data.

<sup>3</sup> *Id.*

<sup>4</sup> Black, W., B. Shih, and J. Rocco, *Credit Card Indexes: December 2004 Cardholders Repay Debt at Record Pace*, Moody's special report (17 Feb 2005).

auto loan pools, as reported in Moody's *Prime Auto Loan Credit Indexes*.<sup>5</sup> The indexes aggregate the performance of nationally diversified prime auto loan pools and measure the average credit performance of the pools of prime quality loans backing all rated securities.

CDOs: We chose high-yield CBOs to represent the CDO sector because this asset class had the most comprehensive and readily available historical data over the sample period. Most other products in the CDO area did not exist at the start of the sample period or did not offer readily available data. Because the flow of new high-yield CBOs has stopped, we had strongly considered using CLOs as the representative product for the CDO sector. However, we never got comfortable with using the quarterly charge-off and delinquency rates on C&I loans compiled by the Federal Reserve as a proxy for CLO collateral performance.<sup>6</sup> For high-yield CBO yield spreads, we used the spreads reported by JP Morgan for high-yield CBO/CDO spreads to LIBOR. For credit support levels on high-yield CBOs, we gathered data for the senior tranches of arbitrage cash flow CBOs, as listed in Moody's CDO indices.<sup>7</sup> Although there were many arbitrage cash flow CBOs issued in 2000 and 2001, the sample size for 2002, 2003, and 2004 was very small as very few deals were issued. As a result, we dropped those years from our analysis. To evaluate the collateral performance of high-yield CBOs, we collected dollar-weighted speculative grade corporate bond default rate data published by Moody's in its monthly default reports.

### III. Results

We present our results in two parts. In the first, we focus on the sectors all together, combining them in charts for each of the dimensions that we measured. In the second part, we focus on sectors separately, highlighting the combined evolution of spreads, credit support levels, and collateral performance within each one.

#### A. Sector Comparisons

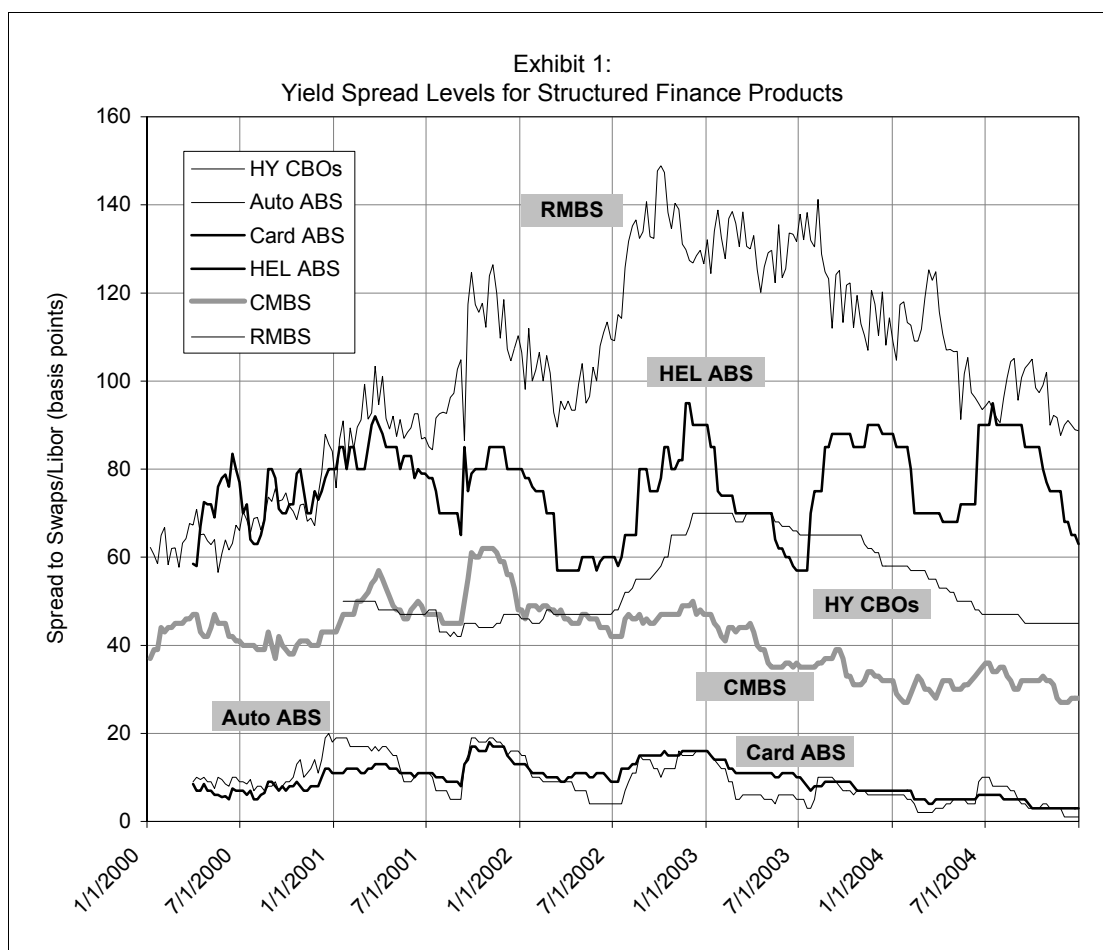
Spreads: Yield spread for most products display fluctuations around a generally flat overall trend. However, over our five-year sample period, yield spreads on residential MBS display a rising trend and yield spreads on CMBS display a slightly declining trend. Yield spread volatility differs markedly for the six categories. Yield spreads on residential MBS and home equity ABS fluctuate more than the other areas. This arguably is explained by those sectors' greater sensitivity to prepayment risk. Exhibit 1 shows weekly yield spreads for the representative products from each category.

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<sup>5</sup> McNally, P., K. Kanthan, and S. Vechorek, *Prime Auto Loan Credit Indexes: December 2004 Prime Auto Performance Still Strong Moving into 2005*, (8 Feb 2005).

<sup>6</sup> Board of Governors of the Federal Reserve System, *Charge-Off and Delinquency Rates on Loans and Leases at Commercial Banks* (<http://www.federalreserve.gov/releases/chargeoff/>); see also Emery, K., S. Ou, R. Cantor, and R. Amor, *Characteristics and Performance of Moody's-Rated U.S. Syndicated Bank Loans*, Moody's special report (Mar 2004).

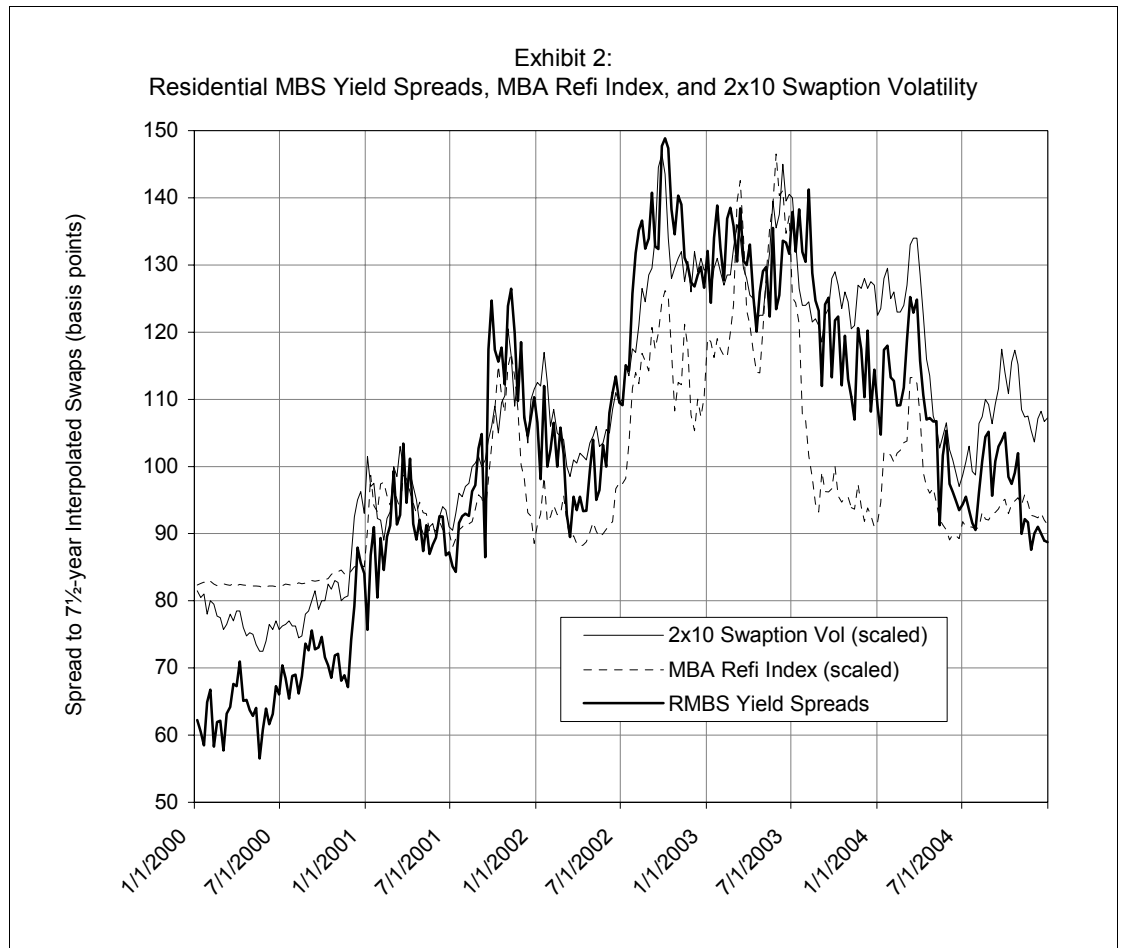
<sup>7</sup> Moody's Investors Service, *Collateralized Debt Obligations Indices: January 2005*, Moody's credit index at 83-84, (21 Mar 2005).



Source: Bloomberg (MTGEFNCL, USSP10, USSP5, LISPAAA1, DEUC3YR, DEUH5YR, DEUA3YR), JP Morgan (for CBO spreads).

A portion of the yield spread volatility for most sectors arguably reflects evolving perceptions of credit risk in different product areas. For example, the temporary increase in yield spreads on high-yield CBOs slightly lagged the wave of junk bond defaults in late 2001 and 2002. The one data series that does not reflect credit factors is the one for residential MBS. That series reflects spreads on Fannie Mae current coupon MBS, which the market views as having an "implied" government guarantee.

Exhibit 2 illustrates the strong connection between residential MBS yield spreads and prepayment risk. The chart includes three data series. The first is simply the same yield spread data for residential MBS as displayed on Exhibit 1. The second data series shows the seasonally adjusted refinancing index published by the Mortgage Bankers Association of America. It is a measure of the actual level of prepayment activity and a key driver of perceived prepayment risk. The third data series shows implied 2x10 swaption volatility. It is an indirect measure of the market's view of interest rate volatility, which is a direct driver of perceived prepayment risk. As shown on the chart, the yield spreads on residential MBS are strongly correlated with the other two data series. Indeed, over the sample period, residential MBS yield spreads displayed 84% correlation with the MBA refinancing index and 95% correlation with 2x10 swaption volatility.



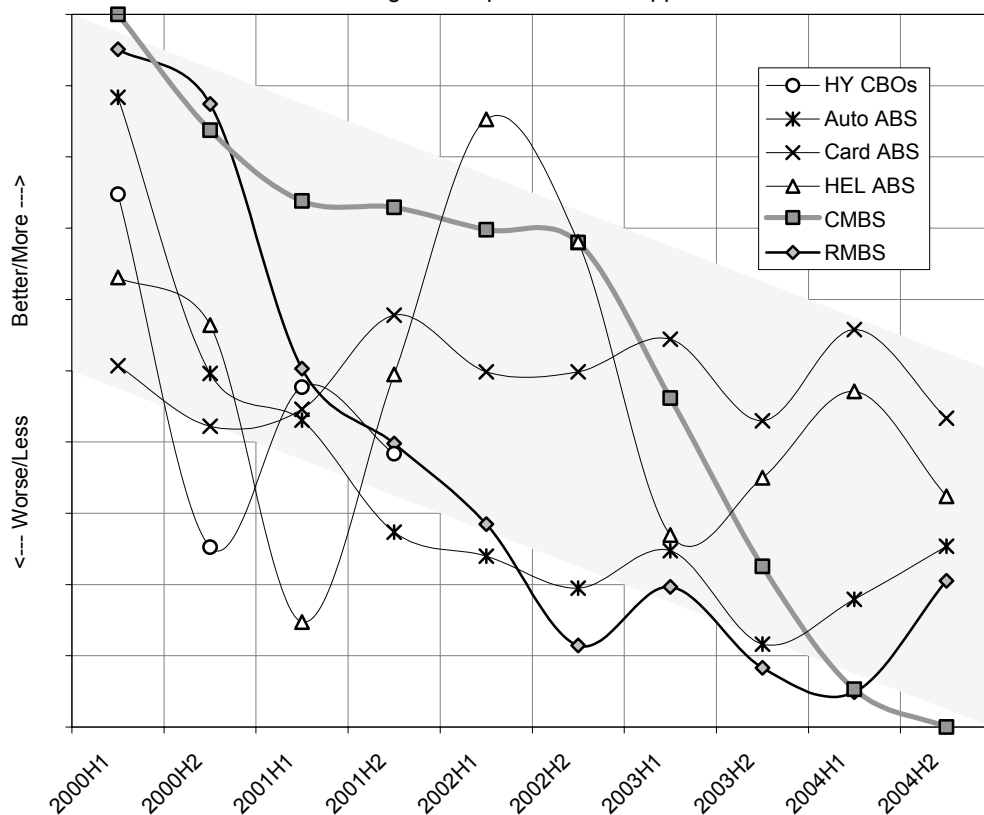
Source: Bloomberg (MTGEFNCL, USSP10, USSP5, MBAREFI, USSV0210).

**Credit Support Levels:** Triple-A credit support levels for structured finance products displayed an overall declining trend during the sample period. Triple-A credit support levels for CMBS and residential MBS declined significantly. Triple-A credit support levels for auto ABS also declined notably. Credit support levels for home equity ABS showed a slight declining trend and credit support levels for credit card ABS displayed a flat overall trend. We cannot provide a generalization about the high-yield CBO area because there were only a handful of deals after 2001.

Exhibit 3 shows relative changes in triple-A credit support levels for the representative products. We have scaled the data to highlight the magnitude of *relative* changes in credit support levels in each sector.<sup>8</sup> The shaded area of the chart highlights the general trend across all the sectors. Exhibit 4 shows the semi-annual averages from which we created the chart in Exhibit 3.

<sup>8</sup> Within each sector, we examined the range of credit support levels over time and compared the size of the range to the mean level for the whole sample period. For each series, we created a scaling factor based on the ratio of the range to the mean.

Exhibit 3:  
Relative Changes in Triple-A Credit Support Levels



Sources: Moody's, Standard & Poor's, Commercial Mortgage Alert, Nomura Securities International

Exhibit 4  
Triple-A Credit Support Levels for Structured Finance Products (%)

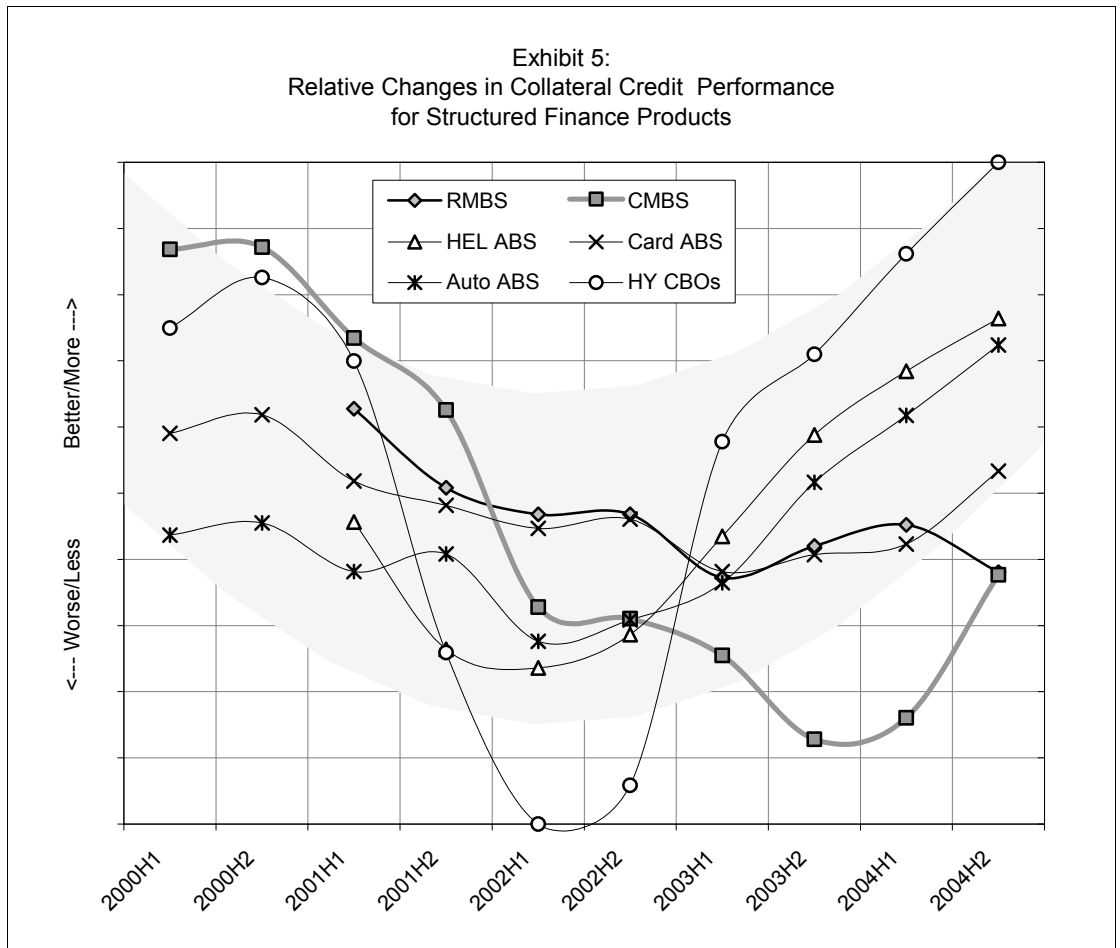
	Residential MBS	CMBS	Home Equity ABS	Credit Card ABS	Auto ABS	High-Yield CBOs
2000H1	4.185	24.900	19.255	15.250	7.440	37.065
2000H2	4.050	23.100	18.590	14.535	6.208	28.201
2001H1	3.395	22.000	14.460	14.733	6.000	32.216
2001H2	3.210	21.900	17.905	15.850	5.500	30.547
2002H1	3.010	21.550	21.455	15.180	5.393	
2002H2	2.710	21.350	19.750	15.180	5.250	
2003H1	2.855	18.933	15.670	15.566	5.417	
2003H2	2.655	16.315	16.465	14.600	5.000	
2004H1	2.595	14.400	17.670	15.680	5.200	
2004H2	2.870	13.815	16.210	14.630	5.438	

Sources: Standard & Poor's, Commercial Mortgage Alert, Moody's, Nomura Securities International

**Collateral Performance:** Overall collateral performance for structured finance products first declined and then rebounded during the sample period. The dip and recovery was most pronounced for high-yield CBOs, but discernable in most other sectors as well. Collateral performance for CMBS and residential MBS displayed negative trends overall. The negative trend for CMBS was the most apparent, and the one for residential MBS was moderate.

Exhibit 5 shows relative changes in collateral performance for the representative products. We have scaled the data to highlight the magnitude of *relative* performance changes in each sector. The shaded area of the chart highlights the general trend across all the sectors. Exhibit 6 shows the semi-annual averages from which we created the chart in Exhibit 5.

Exhibit 5:  
Relative Changes in Collateral Credit Performance  
for Structured Finance Products



Sources: Mortgage Bankers Association, Moody's, Trepp

Exhibit 6 Collateral Credit Performance for Structured Finance Products						
	Residential MBS	CMBS	Home Equity ABS	Credit Card ABS	Auto ABS	High-yield CBOs
2000H1		0.55		5.61	1.77	6.24
2000H2		0.55		5.43	1.73	4.97
2001H1	0.55	0.74	10.35	6.05	1.87	7.07
2001H2	0.62	0.90	12.55	6.27	1.82	14.41
2002H1	0.65	1.33	12.87	6.49	2.06	18.73
2002H2	0.65	1.35	12.29	6.40	2.00	17.75
2003H1	0.71	1.43	10.60	6.89	1.90	9.10
2003H2	0.68	1.61	8.84	6.73	1.62	6.90
2004H1	0.66	1.57	7.74	6.63	1.43	4.37
2004H2	0.70	1.26	6.82	5.95	1.24	2.06

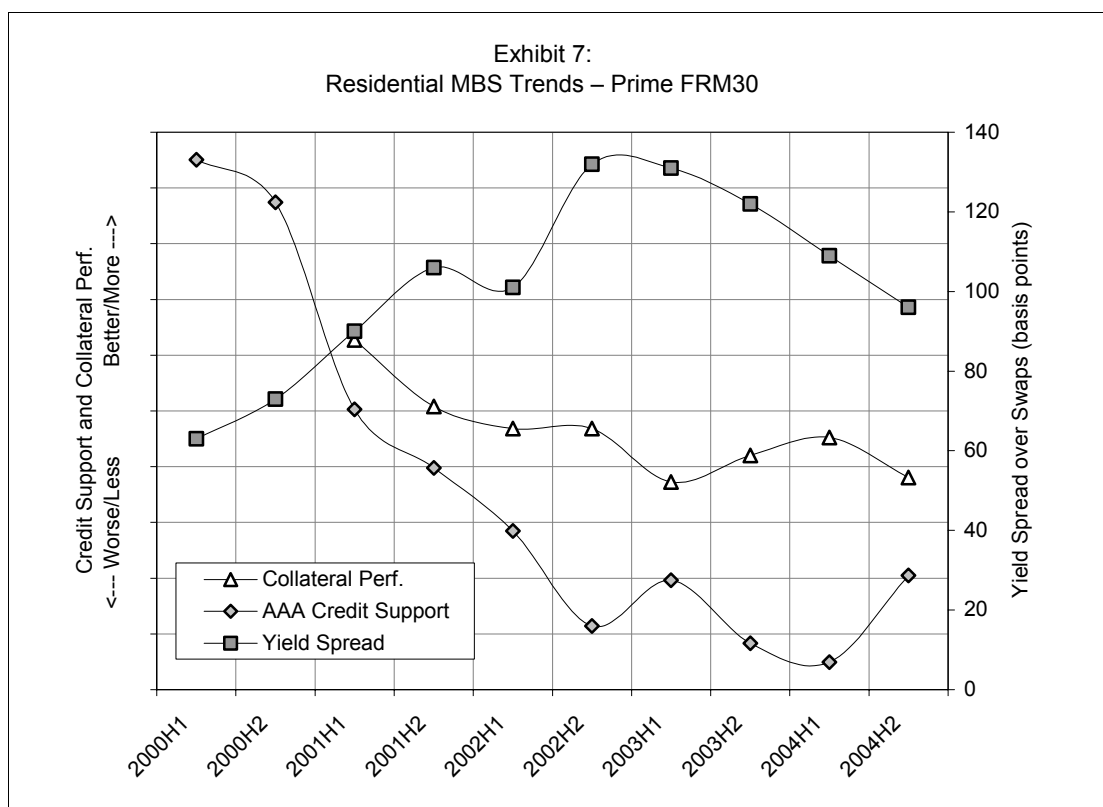
Sources: Mortgage Bankers Association, Moody's, Trepp  
Note: See Part II for a description of the collateral performance measure used for each of the sectors.



## B. Individual Sectors

**Residential MBS:** Residential MBS displayed the unfortunate combination of declining credit support levels and somewhat deteriorating collateral performance during the sample periods. On the other hand, yield spreads on residential MBS widened, but not because of credit factors.<sup>9</sup> As shown in Exhibit 2, the widening of residential MBS yield spreads is explainable by prepayment-related factors. Thus, during the sample period, residential MBS arguably became a worse overall credit proposition, but spread widening (for unrelated reasons) may have helped keep the product attractive to buyers.

Exhibit 7 shows the three data series for residential MBS together on one chart. The data series for spreads is aggregated into semi-annual averages to correspond to the other two data series. The negative trends in both collateral performance and credit support levels are clearly visible on the chart.



Sources: Bloomberg (MTGEFNCL, USSP10, USSP5), Mortgage Bankers Association, Standard & Poor's

The delinquency and foreclosure data from the Mortgage Bankers Association points firmly to a deterioration in the overall credit performance of fixed-rate, prime quality mortgage loans. On the other hand, actual losses on securitized pools of prime quality mortgage loans were virtually nil during the sample period. Accordingly, the rating agencies have been upgrading prime-quality jumbo mortgage deals much more frequently than downgrading them. For example, S&P reports 981 upgrades and only 17 downgrades of tranches from prime quality, jumbo mortgage securitizations in 2004.<sup>10</sup> Likewise, Moody's reports 414 upgrades and only four downgrades for the same period.<sup>11</sup> However, the trend of strong home price appreciation since 1998 arguably is the principle factor that

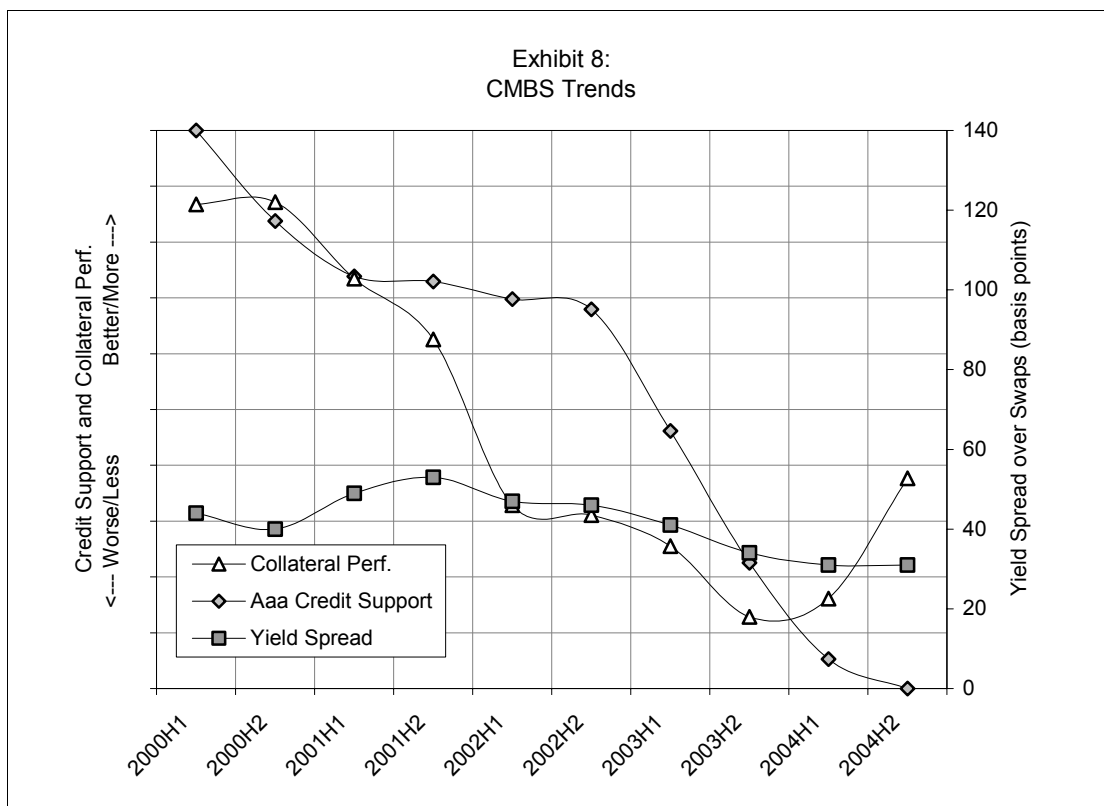
<sup>9</sup> Our data series for residential MBS yield spreads relates to Fannie Mae current coupon MBS.

<sup>10</sup> Warner, E., R. Pollsen, T. Warrack, and E. Erturk, *U.S. RMBS Rating Transitions & Ratings Roundup 2004: Stellar Performance Continues to Set Records*, Standard & Poor's presentation at 2 (15 Feb 2005).

<sup>11</sup> Hu, J. et al., *Structured Finance Rating Transitions: 1983-2004*, Moody's special report at 2 (Feb 2005); Gringauz, D., S. Garg, and I. Gonen, *2004 and 2005 Outlook: Private Label Jumbo-A RMBS*, Moody's special report (13 Jan 2005).

prevented delinquencies and defaults from ripening into losses. For purposes of a forming *forward looking* view, the MBA data on delinquencies and foreclosures may be more appropriate because it is not "contaminated" to the same degree by the hot housing market.

CMBS: Of all the product categories, CMBS arguably appears to present the worst story during the sample period. Credit support levels declined significantly and collateral credit performance worsened as well. Meanwhile, yield spreads on CMBS actually *tightened* to a slight degree. In addition, gradual changes in underwriting practices and deal structures made newer deals somewhat weaker than older deals from an investor's perspective.<sup>12</sup> Thus, from a value perspective, CMBS seemingly got worse along all dimensions during the sample period. Exhibit 8 shows the CMBS data series together on one graph.



Sources: Bloomberg (LISPAAA1), Trepp, Moody's, Commercial Mortgage Alert, Nomura Securities International

Notwithstanding the adverse trends shown in Exhibit 8, the rating agencies recently have been announcing greater numbers of CMBS upgrades than downgrades. For example, in the first quarter of 2005, Moody's upgraded 168 CMBS tranches and downgraded only 55.<sup>13</sup> For S&P, the first quarter's upgrade-to-downgrade ratio on CMBS was 2.3:1.<sup>14</sup> Fitch reports upgrades to 90 CMBS tranches and downgrades to 25 during the first quarter.<sup>15</sup>

<sup>12</sup> Manzi, J. and D. Jacob, *CMBS Is No Exception—Positive Credit Performance & Abundance of Capital Lead to Easing of Credit Protection and Structural Standards*, Nomura fixed income research (15 Mar 2005).

<sup>13</sup> Philipp, T. et al., *U.S. CMBS 1Q2005: Another Warning Light on the Credit Dashboard*. Moody's special report, at 6 (28 Apr 2005).

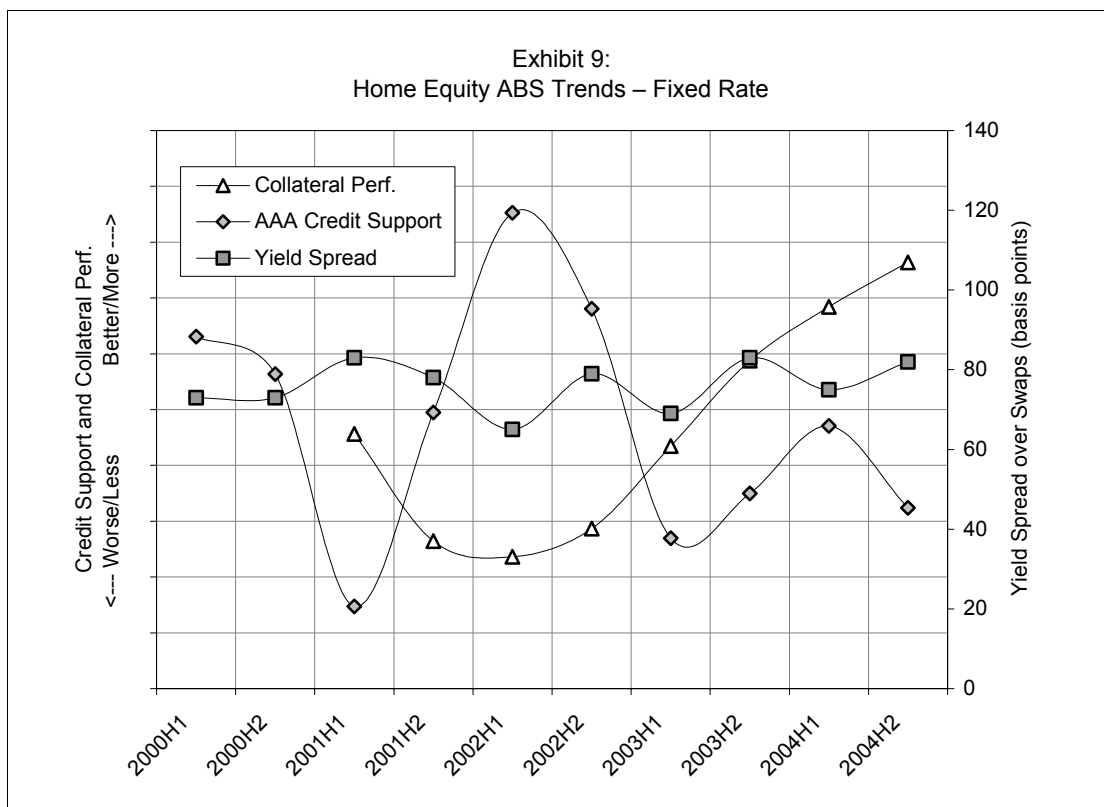
<sup>14</sup> Chun, R. and L. Kay, *CMBS Quarterly Insights: First-Quarter 2005*, Standard & Poor's special report (21 Apr 2005).

<sup>15</sup> Rasmussen, I. et al., *Global Structured Finance: Q105 and End-2004 Rating Performance Update*, Fitch special report, at 4 (23 May 2005).

Looking forward, the rating agencies appear to take differing views. Moody's expresses concern, noting recent trends toward "frothy" loan underwriting, rising leverage, and increasing use of interest-only loans.<sup>16</sup> In contrast S&P appears to hold a more optimistic view:

Credit support levels for new transactions have declined markedly because empirical default/loss studies have shown that past support levels were excessive. Going forward, as long as the loan underwriting standards remain stringent and disciplined, the significantly lowered support levels are expected to adequately protect investment-grade investors.<sup>17</sup>

**Home Equity ABS:** Home equity ABS displayed an overall trend of improving collateral performance. Credit support levels fluctuated significantly, around a nearly flat trend. Home equity ABS yield spreads fluctuated noticeably around an essentially flat trend. Overall, home equity ABS arguably became somewhat more attractive during the sample period. Exhibit 9 shows the three data series for home equity ABS together on one chart.

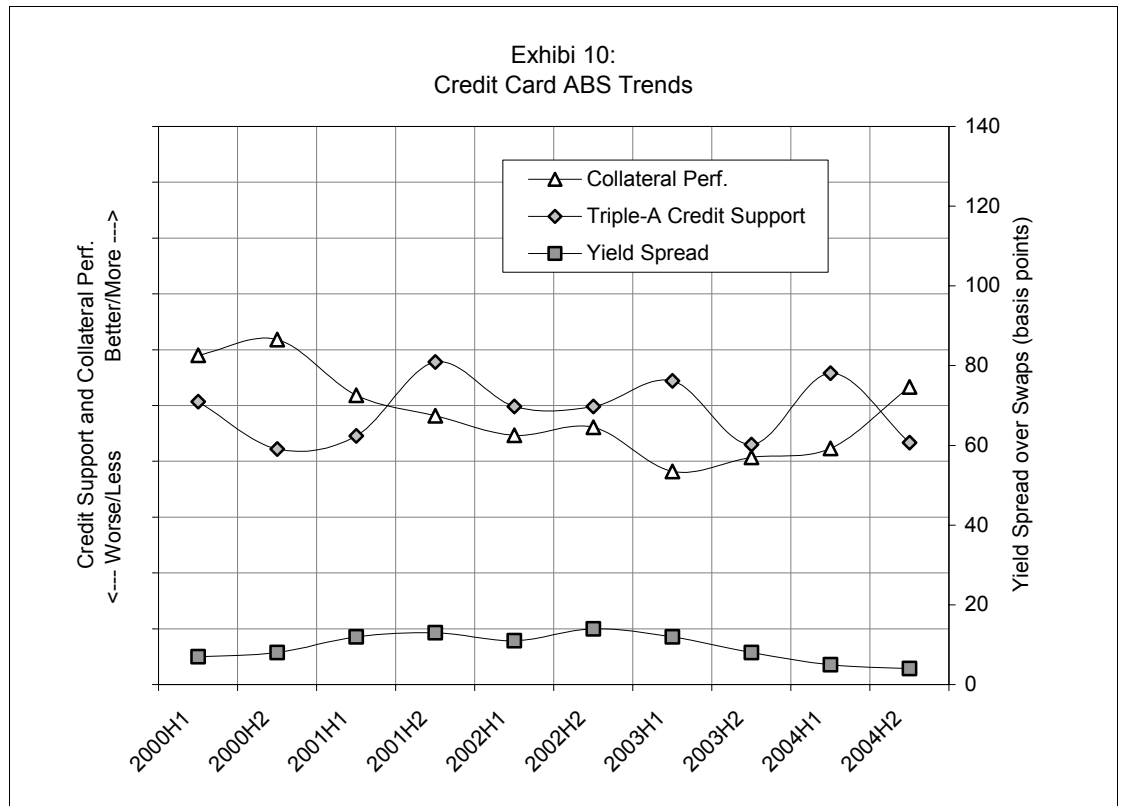


Sources: Bloomberg (DEUH5YR), Standard & Poor's, Mortgage Bankers Association

**Credit Card ABS:** Credit card ABS showed the greatest stability along all dimensions during the sample period. Each of yield spreads, credit support levels, and collateral performance displayed slight fluctuations around an essentially flat trend. The sector's reassuring stability seems to fully justify the tight yield spreads that it commands. Exhibit 10 shows the three data series for credit card ABS.

<sup>16</sup> Philipp, T., *supra* note 13.

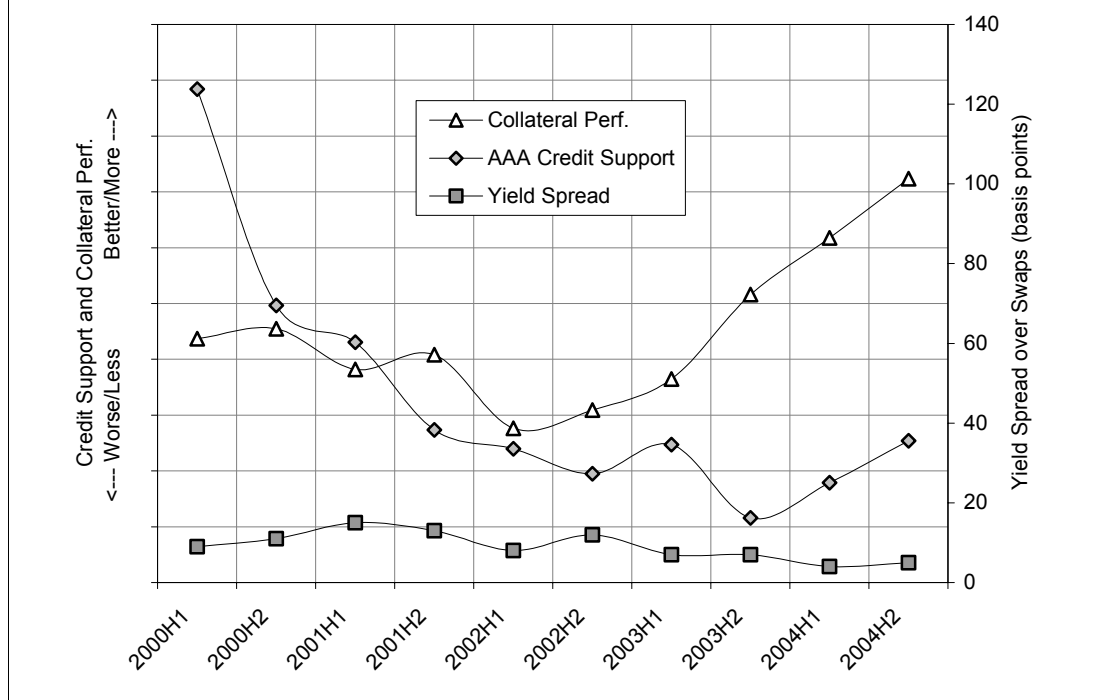
<sup>17</sup> Hu, J. and R. Chun, *Defaults and Losses of Standard & Poor's Rated U.S. Commercial Mortgage Loans: Year-End 2004* (28 Apr 2005).



Auto ABS: Auto ABS present the seemingly reasonable combination of declining credit support levels<sup>18</sup> and strengthening collateral performance. However, most of the decline in credit support levels occurred before the performance improvement appeared. This arguably reflects commendable prescience by the rating agencies. Spreads on auto ABS fluctuated slightly around an essentially flat overall trend. Exhibit 11 displays the three data series for auto loan ABS.

<sup>18</sup> Our measurement of the declining trend in auto ABS credit support levels arguably overstates the actual reduction in credit support. The measure that we used did not include the value of excess spread as credit support. Excess spread in auto ABS deals may generally have increased during the sample period, which would partly offset the declining levels of other types of support.

Exhibit 11:  
Auto ABS Trends – Prime Quality



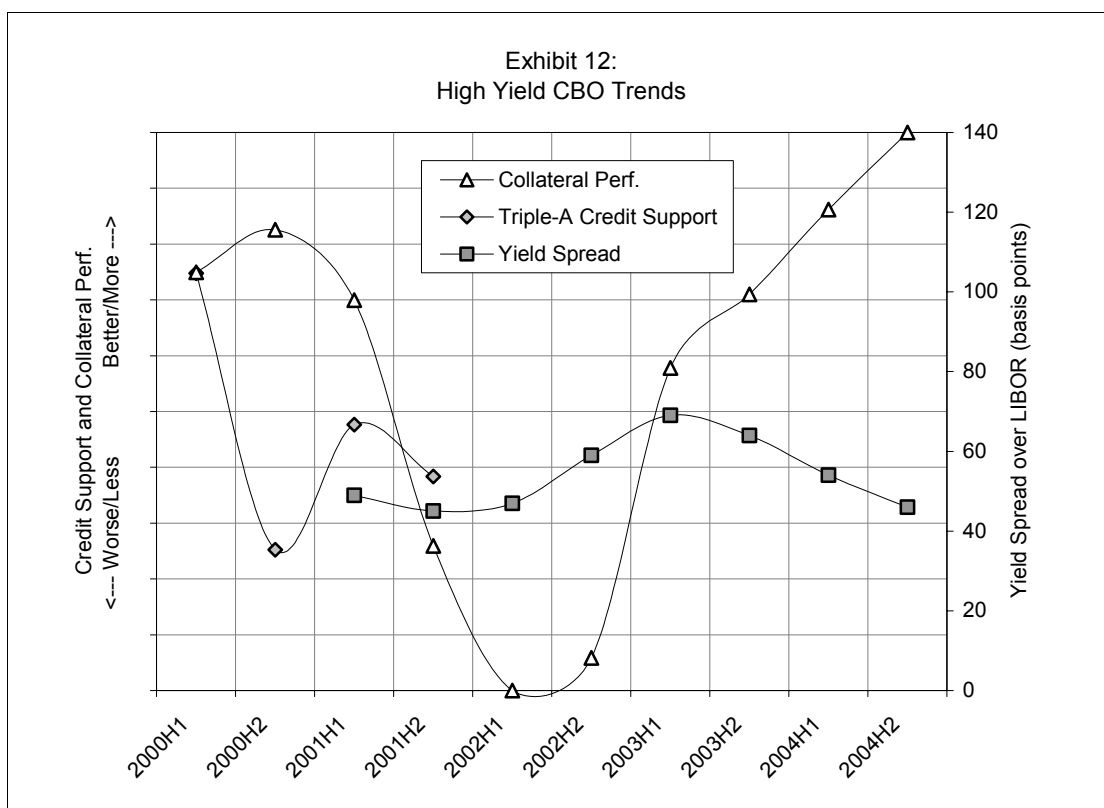
Sources: Bloomberg (DEUCA3R), Moody's

**CDOs:** Yield spreads on high-yield CBOs rose sharply in the latter half of 2002 as the performance of the underlying collateral deteriorated markedly. Spreads remained wide through most of the remainder of the year, before starting a gradual trend of tightening in response to recovery in junk bond performance. One might expect a significant increase in credit support levels to have followed the performance deterioration, but the flow of new high-yield CBOs virtually stopped. However, following the 2001-2002 wave of corporate bond defaults, the market embraced a variety of structural enhancements that helped to strengthen all types of CDOs.<sup>19</sup> In the meantime, high-yield synthetic CDOs (backed by credit default swaps) have begun to replace traditional high-yield CBOs (backed by actual bonds).

Unlike the other sectors, CDO issuance volume is not tied to underlying financing activity. CDO issuance drifts from one collateral species to another as "arbitrage" opportunities change. After the 2001-2002 troubles in the high-yield corporate bond sector, that type of collateral no longer offered profitable opportunities for arbitrage, and issuance of new deals declined dramatically.

The fluctuations in collateral performance (as measured by the default frequency on Moody's-rated junk bonds) are the most pronounced among all the categories of structured finance products. This is reflected in Exhibit 12, which includes the three data series for high-yield corporate CBOs.

<sup>19</sup> Nazarian, D., G. Harris, and I. Efrat, *Structural Features Aimed at Enhancing CDO Ratings Stability: An Overview*, Moody's special report (11 July 2002).



According to Moody's, the average performance of actual CDO collateral may have been worse than the performance of the high-yield bond market overall. Moody's suggests that CDOs had concentrated exposures to the riskiest corporate issuers.<sup>20</sup>

#### IV. Problems and Limitations of the Study

The results reported above demonstrate key historical differences among the various areas of the structured finance landscape. The non-homogeneity of that landscape is important (all by itself) and we expect it to persist. However, we also believe that it would be imprudent to extrapolate many of the historical trends because of factors that limit the reliability of our results.

Collateral and Environmental Changes: Lending practices and loan underwriting standards evolve over time. One driver is the credit cycle and a second is the spread of so-called "best practices" within lending markets. Thus, the overall quality of loans originated in a given year can be significantly better or worse than loans originated two years earlier. At the same time, loan pools of identical quality reasonably should perform differently under different economic conditions. Combined together, changing loan quality and the changing economic environment are confounding factors that limit the predictive relevance of the reported results. They make it difficult to explain the results shown on Exhibit 5 and the apparent conflict between Exhibit 3 and Exhibit 5 (declining credit support levels reported on Exhibit 3 arguably suggest that collateral quality was improving while the actual performance deteriorated and later recovered).

Moreover, within particular sectors, the specific nature of collateral can drift over time. For example, in the CMBS sector, some vintages may contain higher proportions of loans on hotels than do other

<sup>20</sup> Hu, J., R. Cantor, and G. Harris, *Default & Loss Rates of U.S. CDOs: 1993-2003*, Moody's special report at 20 (March 2005).

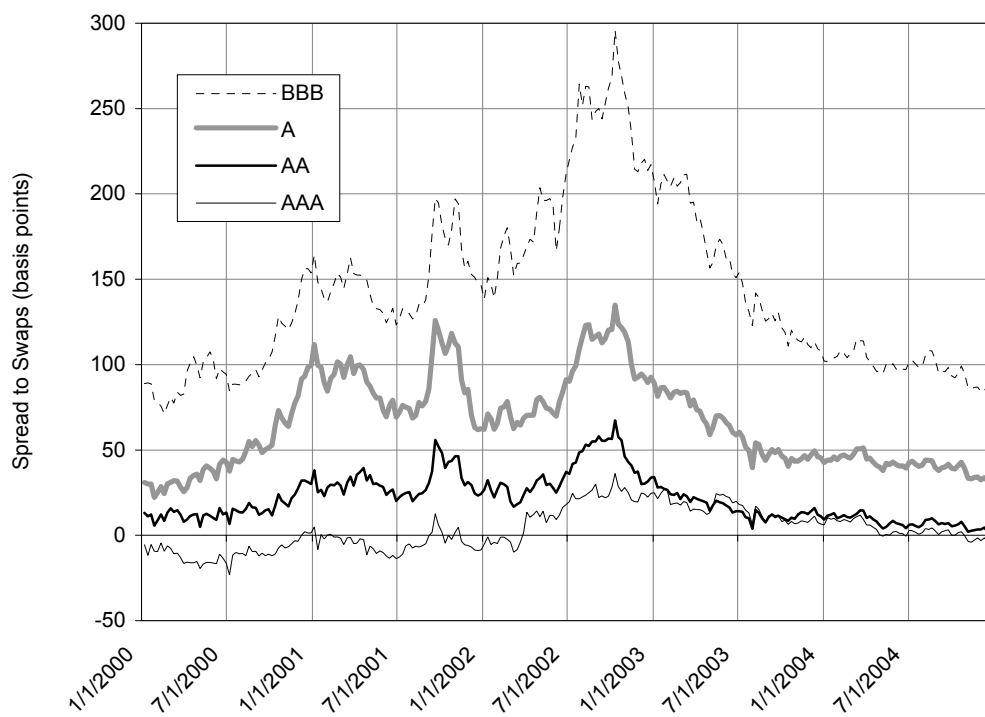
vintages. Likewise, newer CMBS conduit deals arguably contain a greater proportion of larger loans than did older deals.

**Prior Performance Expectations:** In some sectors, credit support levels may have declined because collateral performance exceeded the rating agencies' initial expectations, even if theoretically objective collateral quality remained constant. Thus, it may not be reasonable to view declining credit support levels as indicators of improving collateral quality.

**Changing Perceptions of Risk:** Even if theoretically objective collateral quality remains constant over time, perceptions of risk can change. Many factors can drive a divergence between perceptions and reality. Two are most important. First, recent experience exerts a disproportionate influence on perceived risk. Second, continuous, long-term exposure tends to reduce the perception of risk (*i.e.*, familiarity breeds contempt). The generally strong condition of the U.S. economy before and during the study period may have reduced perceptions of risk. In addition, the steady growth and maturation of various structured finance sectors meant that greater numbers of professionals experienced long-term exposure to the products. All other things being equal, those factors arguably exert a downward pressure on credit support levels and a tightening influence on spreads.

**Investment Alternatives:** As shown on Exhibit 13, spreads on U.S. corporate bonds were quite volatile during the study period. They tended to rise during the first 2½ or 3 years of the study period and generally declined during the final two years. Declining corporate spreads in 2003 and 2004 may explain declining spreads in CMBS, credit card ABS, and auto ABS during the same period. Thus, spread movements in the structured finance sectors may reflect neither changing fundamentals nor evolving perceptions. Moreover, corporate spread tightening may have motivated some investors to enter the structured finance arena. The larger investor base, in turn, may have produced a feedback effect on perceptions.

Exhibit 13:  
U.S. Corporate Bond Spreads (10-year maturity)



Source: Bloomberg (LUCI).

## V. Conclusion

The big picture view of the structured finance universe is one of dissonance. Different sectors have displayed differing trends in yield spreads, credit support levels, and collateral performance. Of all the sectors, credit card ABS displays the most stable characteristics. In contrast, CMBS displayed adverse trends along all three dimensions that we measured. The other sectors displayed a mix of trends, without sending especially strong signals of either positive or negative evolution. The residential MBS sector arguably sends a weak signal of adverse evolution while the home equity ABS sector arguably sends a weak signal of positive evolution.

Multi-sector CDOs may be able to benefit somewhat from the differing trends among the sectors. By diversifying across the various structured finance sectors, a multi-sector CDO may be able to dampen the overall volatility of its portfolio with respect to yield spreads, credit support, and collateral performance. More definitively, though, the only result that is crystal clear is the conclusion that the structured finance landscape is varied and dynamic and that structured finance professionals had better keep on their toes.

As securitizations grow in complexity, professionals necessarily must continue to hone their specialized expertise in individual sectors. Maintaining awareness of the big picture becomes an ever-greater challenge. As shown by the results reported above, the big picture is dynamic; it shifts and mutates as different sectors gain relative advantage at different times. Nonetheless, critical decisions in areas such as risk management and asset allocation require the big-picture perspective. Those who have it will possess a competitive advantage in making important, strategic decisions.

— E N D —



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