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Deal Sponsor and Credit Risk of U.S. ABS and MBS Securities

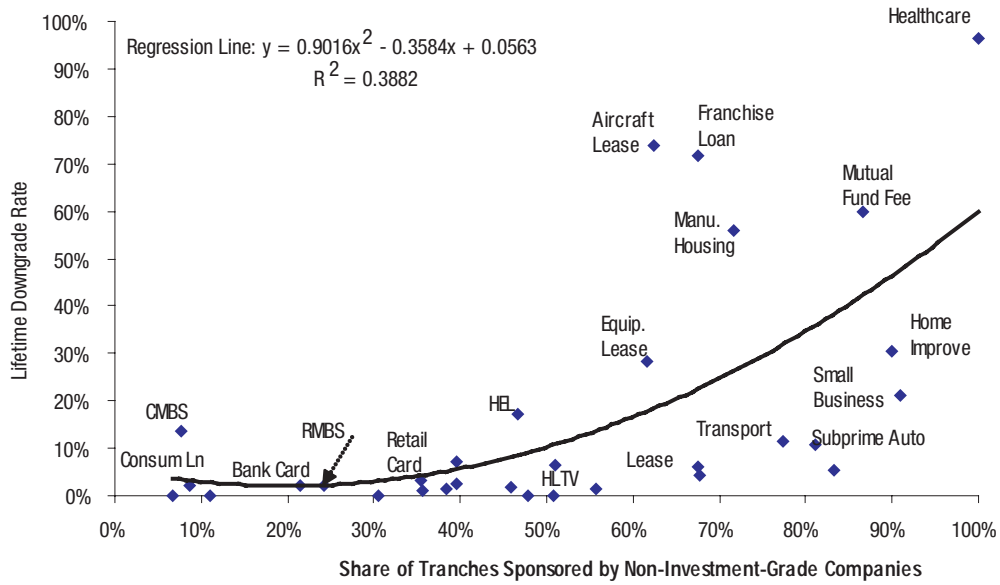
Highlights

Sponsors of structured finance transactions can affect deal performance through the assets they select for securitization and through the servicing they provide for those assets. In this *Special Comment*, we study the variation in structured finance tranche performance by type of sponsor in the US ABS, RMBS, and CMBS sectors. We distinguish sponsor types in two ways, by broad rating class (investment-grade vs. non-investment companies) and by industry (commercial banking, captive finance, investment banking, and specialty finance). Credit risk is measured by downgrade rate, material impairment rate, and coupon spread at issuance.

Highlights of this study's findings are:

- Credit performance has been on average stronger in those asset classes where a high proportion of sponsors have been banks and/or rated investment-grade; whereas, performance has tended to be weaker in asset classes where a high proportion of sponsors have been specialty finance firms and/or non-investment-grade (unrated or rated speculative grade).
- The correlation of sponsor type and credit performance has been stronger across asset classes than within a particular asset class, meaning that the likelihood that a securitization experienced adverse credit performance is better predicted by the prevalence of certain types of sponsors within its asset class than by the nature of its own particular sponsor.
- Within some ABS asset classes - such as credit card, equipment lease, and small business loan ABS - transactions of non-investment-grade sponsors underperformed the transactions of investment-grade sponsors; however, within most asset classes - such as student loan, HEL, RMBS, CMBS, and manufactured housing loan ABS - the impact of sponsor rating on performance was modest or non-existent.
- While the data reveals some interesting correlations between credit performance and sponsor type, the analysis does not discriminate among the many possible explanations for the findings, which include:
 - Competitive forces may cause lower rated sponsors and specialty finance companies to be most active in market segments where collateral is risky and pool performance is hard to predict.
 - Collateral performance may be inversely related to the credit quality of the sponsor since the pool's underlying obligors may be less likely to service their debts if the servicer is bankrupt.
 - Agency problems may be less severe for more highly rated sponsors and for some banks, security firms, and captive finance companies if their expected long-term participation in the securitization market makes them more likely to be consistent in their underwriting standards, selection of assets, and servicing.

Figure 1 - Lifetime Downgrade Rate and Share of Tranches Sponsored by Non-Investment-Grade Companies by Asset Class



Note: Lifetime downgrade rate is calculated as the total number of securities downgraded as a share of all securities issued in each asset class during 1993-2002. The downgrade status of each security is updated as of June 2006 using the latest rating or the rating before withdrawal. Sponsor rating is the senior unsecured rating at the time of deal closing. In cases where a formal rating did not exist and an estimated senior unsecured rating was available, the estimated rating was used. Non-investment-grade sponsors include unrated companies and companies rated speculative-grade.

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Introduction

One of the key players in structured finance is the sponsor, the company that "organizes and initiates a structured finance transaction by selling or transferring assets, either directly or indirectly, including through an affiliate, to the issuer (the Special Purpose Vehicle)."¹ Examining the credit and financial strength of the sponsor of a structured finance transaction has always been an important part of transaction risk analysis. Discussions on deal sponsors appear frequently in industry publications. For example, in the wake of General Motors credit woes in early 2005, when its senior unsecured debt rating was downgraded from Baa1 to Baa2 and then Ba1, one market participant commented:²

*"Auto spreads weakened a touch more this week with investors being more cautious. GMAC Auto ABS spreads widened further, contributing to increased tiering between GMAC and other names. Spread on Ford ABS bonds, for example, have held in fairly well."*³

Also in 2005, following Morgan Stanley's announcement of its intention to pursue a spin-off of Discover Financial Services, Moody's placed all Discover Bank's ratings on review for downgrades, and on July 22, 2005, its senior unsecured rating was lowered to A3 from Aa3. With this change of the risk assessment of a sponsor, the following was observed:

*"With the contraction in Credit Card ABS supply, due in part to portfolio acquisition trends, and spreads among issuers as compressed as they are, Discover [credit card] bonds traded merely a hair wider on the news of the spin off."*⁴

In both scenarios, the ABS issued by the sponsors responded to the negative news of the sponsor, resulting in wider spreads. The impact, however, was limited due to the overall tight spread environment, the long track record of GMAC as the sponsor of a large number of structured finance transactions, and the relatively high rating of Discover Bank after the downgrade.

ACADEMIC INTEREST IN THE ROLE OF SPONSOR

In addition to the large amount of interest in the role of the sponsor within the securitization industry, there have been several academic research papers that attempt to empirically test the existence of and even quantify that role.⁵

For example, Higgins and Mason (2004) showed that the asset-backed securities market was like the commercial paper market, where a firm's ability to issue was directly correlated with credit quality. They studied the value of a credit card bank's recourse to asset-backed securities, and found recourse had beneficial effects for sponsors.⁶

Gorton and Souleles (2005) showed that investors did indeed require higher yields for bonds issued by the trusts of riskier sponsors, even after they controlled for expected maturity, credit enhancement features, and issuance year. They concluded that this was evidence of implicit recourse commitment by credit card ABS issuers.

While both papers cited implicit recourse as a possible explanation for their findings, it remains an open question as to whether this addresses the main source of sponsor risk in securitization. For example, Moody's indicated that "providing support to the transactions by their sponsor has become less and less common because of the increasing costs and declining benefits of such support."⁷ Data from recent years also reports few such cases.⁸

1. For detailed discussions on the definition of sponsor, please refer to Federal Register, 17 CFR Parts 210 228, et al. *Asset-Backed Securities; Final Rule*, January 7, 2005.

2. Moody's placed GMAC's senior unsecured rating on review for downgrade on March 16, 2005, and lowered the rating to Baa2 on April 5, 2005, and again to Ba1 on August 24, 2005.

3. JP Morgan Global ABS/CDO Weekly Market Snapshot, April 1, 2005.

4. JP Morgan Global ABS/CDO Weekly Market Snapshot, April 8 & July 22, 2005

5. In addition, banks and investment banks have also published research reports that discussed the different spread and rating migration patterns associated with sponsor risks. See for example, "ABS Credit Migrations 2004," Nomura Fixed Income Research, December 2004.

6. Recourse is equivalent to performance guarantee to the buyer. There is no true sale if the sale agreement provides recourse to the buyer. Higgins and Mason (2004) argues that while few loan sales contracts contain explicit terms that provide recourse, many loan sales (particularly those involving collateral like credit card loans) hinge upon an implicit understanding that recourse may be provided by the sponsor.

7. See Moody's Structured Finance Special Reports, "The Relationship between Asset Performance and Rating Changes in Asset-Backed Securities," March 1996, and "The Costs and Benefits of Supporting 'Troubled' Asset-Backed Securities: Has the Balance Shifted," January 1997.

8. The strong performance of these transactions in recent years may have made such potential support unnecessary. In addition, such support, if they exist, are implicit in nature. Calomiris and Mason (2004), for example, argues that although there were no explicit recourse events in recent years, recent events involving NextCard and First Consumers National Bank during 2001 and 2002 suggest that only the face of recourse has changed, but not its substance.

MOODY'S PAST RESEARCH ON THE ROLE OF ORIGINATORS AND SERVICERS

As an important participant of the structured finance market, Moody's has always emphasized the analysis of sponsor risk in its rating process. As a matter of fact, Moody's assesses a variety of risk factors associated with different players of a transaction. Although the type and number of players involved in a transaction can vary by asset class, the risk associated with three types of players are most frequently analyzed: (1) the risk associated with an originator's origination and underwriting practice, (2) the risk associated with a servicer's credit condition and servicing capabilities, and (3) the bankruptcy risk of a transaction's seller.

For example, in addressing the risk due to varying origination and underwriting practices, Moody's noted in its auto loan ABS rating methodology:⁹

The variability in the credit quality of loan pools backing automobile securities is striking. On the one hand, pools for established issuers are typically characterized by a low and stable level of losses because of the high quality obligor base. As a result, for a given rating level, issues backed by these pools typically have relatively low credit support for investors. On the other hand, high risk, lower quality receivables often secure pools originated by lenders at the lower end of the credit spectrum, with correspondingly higher credit support levels in relation to pools consisting of loans to higher quality obligors.

On the risk associated with servicers, Moody's noted in its home equity loan ABS rating methodology:¹⁰

An important qualitative factor in evaluating the credit risk of a home equity mortgage pool is the quality of the originator/seller/servicer. As part of the rating process, Moody's conducts regular on-site reviews of the originator/servicer's underwriting processes and servicing operations...Typically, home equity B&C loans require more hands-on servicing operations, as the borrowers are more likely to become delinquent. Experience has proven that portfolio performance improves with more intensive servicing.

With regard to bankruptcy risk to the holders of structured finance securities, Moody's noted in its student loan ABS rating methodology:¹¹

Isolation of the securitized assets from the bankruptcy estate of the originator or seller, either through a properly structured "true sale" of the student loan assets or by virtue of the seller's eligibility to be a debtor under Title 11 of the United States Code (Bankruptcy Code), should ensure that timely payment of interest will not be delayed by a bankruptcy proceeding, particularly by application of section 362 of the Bankruptcy Code - the automatic stay provision.

To exemplify the risk associated with originators, sellers, and servicers, Moody's published two detailed case-study reports, one in 1997 and one in 2002,¹² addressing servicing missteps and fraud, declining obligor quality due to changes in underwriting and collections practices, mistakes in transaction execution, and the "bulletproof structures" that were dented. Some of the interesting examples Moody's examined in these reports include transactions sponsored by: Towers Financial Corporation, AT&T Universal Credit Card, ContiFinancial, Citiscape, Commercial Financial Services (CFS), Heilig-Meyers, First Consumer, NextCard, and Autobond Funding. In particular, the 2002 report noted:

The examples of deals gone "bad" reveal that an over-reliance on securitization as a funding source is an important risk factor. The overuse of securitization coupled with aggressive gain-on-sale accounting was a particularly lethal combination that contributed to the collapse of quite a few finance companies in the subprime mortgage and auto finance businesses...On the positive side, many securitizations have successfully survived the bankruptcy of their sponsors. In most cases, the sponsors were sound - if highly leveraged - businesses for whom securitization was one of many funding sources.

In addition to the risk associated with originator, servicer, and seller, more recently, in response to the failure of NCFE, Moody's reaffirmed the role of trustees in the performance of structured transactions.¹³ Specifically, Moody's noted:

The importance of the trustee's role in Moody's rating process is mostly a function of the credit strength of the seller/servicer. As long as the seller/servicer is financially strong, the role of the trustee is not as critical a compo-

9. Moody's Structured Finance Special Report, "Moody's Approach to Rating Automobile-Backed Securitizations: The Driving Force," August 1995.

10. Moody's Structured Finance Special Report, "Moody's Approach to Rating Home Equity Loans," March 1996.

11. Moody's Structured Finance Special Report, "Bankruptcy Risk Analysis in Student Loan Backed Securities Structures: Moody's Approach," October 1998.

12. Moody's Structured Finance Special Report, "Bulletproof Structures Dented: Case Studies of Problem ABS Transactions," March 1997, "Bullet Proof Structures Revisited: Bankruptcies and a Market Hangover Test Securitizations' Mettle," August 2002.

13. Moody's Structured Finance Special Report, "Moody's Re-examines Trustees' Role in ABS and RMBS," February 2003.

ment of Moody's analysis... In transactions involving weaker seller/servicers, the trustee's role is much more important to the rating analysis. Control of transaction cash flows is of paramount importance.

Furthermore, in a continuing effort to address transaction risk associated with different participants of a transaction, Moody's initiated, starting in 2004, transaction governance assessment (TGA) on a number of transactions with a focus currently on "transactions with unrated or non-investment grade rated sponsors or servicers in the more complex and risky ABS and RMBS sectors."¹⁴

FINDINGS FROM MOODY'S STRUCTURED FINANCE CREDIT PERFORMANCE STUDIES

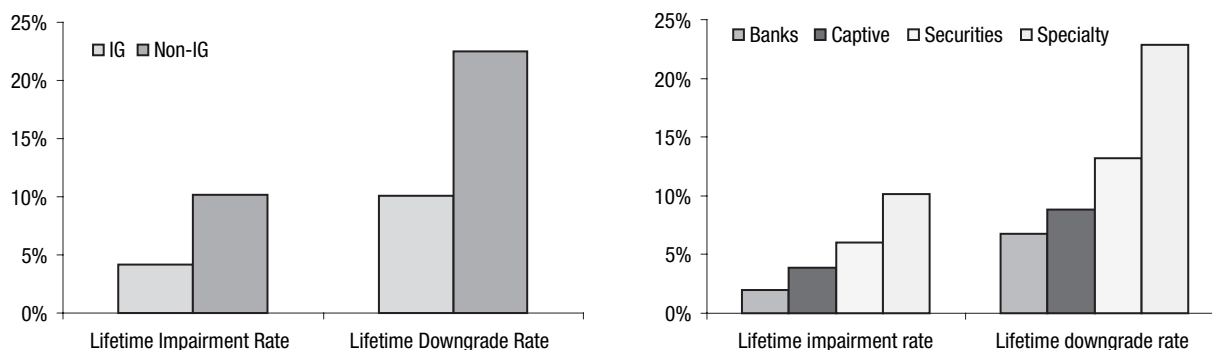
In several prior research reports on structured finance securities' credit performance, Moody's discussed numerous instances where the failure of the corporate sponsor of some structured finance transactions had a material impact on the credit performance of those transactions.¹⁵

For example, in a Special Comment covering the default and loss experiences of all structured finance asset classes worldwide, "Default & Loss Rates of Structured Finance Securities: 1993-2004," Moody's explained the connection between the higher-than-expected default and loss rates in the investment-grade categories of some asset classes to the corporate failures of Heilig-Meyers, National Century Financial Enterprises (NCFE), and DVI, Inc., as well as Green Tree/Conseco Finance Corporation.¹⁶

Additionally, in its first global structured finance rating transition study and default/impairment study, Moody's commented on the credit risk associated with a small number of originators and servicers. In both studies Moody's showed that a very large number, in fact the majority of, downgraded and materially impaired RMBS tranches were backed by loans originated by Quality Mortgage USA, Inc. In addition, the failure of Green Tree/Conseco had an overreaching effect on the credit performance of structured securities across several asset classes.¹⁷

Figure 2 takes this anecdotal evidence even further by depicting a relationship, which is highly stylized at an aggregate level with no control for asset classes or tranche rating, between historical credit performance and sponsor type, that is, sponsor rating and sponsor industry. It is clear from this Figure that tranches sponsored by investment-grade companies experienced lower downgrade and impairment rates than those sponsored by speculative-grade or non-rated companies. There is also a clear rank-ordering of the downgrade and impairment rates by sponsor industry in the sense that tranches sponsored by banks and captive finance companies experienced lower downgrade and impairment rates than those sponsored by securities firms and specialty finance companies.

Figure 2 - Lifetime Downgrade and Impairment Rates of US ABS and MBS Tranches by Sponsor Rating and Sponsor Industry



Note: Securities issued during 1993-2002 are used in the analysis. The downgrade and impairment status of the securities are updated as of June 2006. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies. Definition of sponsor industry types appear later in the study.

14. Moody's Structured Finance Special Report, "Moody's Rating Methodology for Transaction Governance Assessments," October 2004.
 15. Moody's has published numerous Special Comments covering credit performance across various asset classes worldwide since 2003. Some examples are, "Structured Finance Rating Transitions: 1983-2002, Comparisons with Corporate Ratings and Across Sectors," January 2003 (Moody's first comprehensive rating transition study for the global structured finance sector), "Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002", December 2003 (Moody's first structured finance default study), and "Default & Loss Rates of U.S. CDOs: 1993-2003," March 2005 (Moody's first default and loss study for CDOs). The latest structured finance default and loss study was published in April 2006, "Default & Loss Rates of Structured Finance Securities: 1993-2005."
 16. The poor performance of Heilig-Meyers-sponsored ABS deals is the result of operational and servicing failures due to the bankruptcy of Heilig-Meyers. After Heilig-Meyers filed for bankruptcy, payment collections, via its various store locations, were interrupted resulting in significant losses to investors of all tranches. By contrast, the failures of NCFE and DVI deals are most often attributed to fraud. In the case of Green Tree/Conseco, a market meltdown plus servicing problems after the bankruptcy of Conseco is often blamed.
 17. Adelson (2004) provided a detailed review of ABS credit migration patterns using deals as the units of measurement, and also found large variations of performance across asset classes and vintages.

REASONS WHY SPONSOR TYPE MAY HAVE AN IMPACT ON CREDIT PERFORMANCE

Given the strong impact sponsor characteristics have on the performance of securitizations, industry and academic researchers have examined its many possible causes. Four areas commonly analyzed include:

- *Origination/Asset Selection*: A sponsor's strength may affect its securitizations' underwriting standard and asset selection criteria when the sponsor is also the originator;
- *Servicing*: when the sponsor is also the servicer, the sponsor's strength may affect both its capability to service securitizations and its operational efficiency;
- *Bankruptcy remoteness*: Bankruptcy remoteness typically has two meanings: a SPV can't go bankrupt, and structured securities are insulated from the bankruptcy of the sponsor.¹⁸ To the extent that the assets are not truly sold to the SPV, the risk of debt consolidation in a bankruptcy proceeding exists.
- *Possibility of supporting troubled transactions*. Some sponsors might alter transactions to fix the credit or structural weakness in a deal. However, there is no guarantee that a sponsor will take such actions even under special circumstances.¹⁹

In our data sample, we have seen few deals that actually broke the bankruptcy proof protection of a SPV, as deals are structured very carefully (the combination of "true sale" and non-consolidation requirements) to avoid this kind of sponsor risk. This has made the third reason for sponsor-type impact a really remote possibility.²⁰

We also discussed in an earlier section that the possibility of supporting troubled transaction is also very small. This means that the first two reasons are the most important ones. Their importance is further supported by the fact that sponsor type had a stronger impact on ABS securities than on MBS securities (HEL, CMBS, RMBS), as shown in later sections of this report, and the fact that a greater number of deals in ABS than in MBS were sponsored by the originators themselves (roughly 44% in ABS, and 20% in HEL, CMBS, or RMBS).²¹

The analysis of the role of the sponsor in the performance of structured finance securities cannot be separated from the analysis of sponsor incentives in securitizations. The existing literature of securitization has discussed many benefits for companies to sponsor structured finance transactions. The four major benefits are:²²

- 1) *Lower funding cost* for companies having difficulty in access to the traditional capital markets such as equity and unsecured debt markets for the financing of certain assets.²³
- 2) *Asset liability management* for companies such as commercial banks that need to improve funding diversification and liquidity, reduce interest rate risk, or achieve better balance sheet economics.
- 3) *Regulatory capital arbitrage* for banks or insurance companies that find holding certain types of loans are too capital expensive and securitization would enable some risk to be off-loaded.²⁴
- 4) *High leveraged return* for companies who are able to identify liquidity premium and arbitrage opportunities from spread differences across different markets.

Sponsors motivated by different objectives may behave differently in the process of securitization. For example, on the one hand, companies that rely on securitizations as a material or sole funding source because of the prohibitive cost of accessing the traditional market (incentive (1) above) but otherwise have a solid position in the marketplace may have a strong incentive to maintain a strong and consistent record in securitization. Similarly, companies that use securitizations only as an alternative funding source or as a way of streamlining their balance sheet may already have a well-established business model and franchise value in the traditional market, and therefore they may have strong incentive to maintain a consistent record and strong reputation in securitizations as well.

18. See for example, "Issues in Securitized Mortgage Lending," by Gregory P. Pressman, *New York Law Journal*, January 1998.

19. In addition to the implicit recourse research literature cited earlier, Adelson (2004) also commented on the possible impact on performance from the rescue of troubled deals, and suggested that rescues were concentrated in asset classes dominated by well-capitalized large issuers, namely credit cards and autos. In addition, he argued that when fraud by an issuer was the cause of an adverse credit event, the likelihood of a rescue by the issuer was virtually zero.

20. For examples, please refer to "Bullet Proof Structures Revisited: Bankruptcies and a Market Hangover Test Securitizations' Mettle," *Moody's Structured Finance Special Report*, August 2002.

21. About half of the deals in the data sample either had more than one originator or the originator information was not identified. When a deal had one originator and the originator was the same as the seller, the sponsor of the deal was likely the primary servicer.

22. Not all these benefits are realizable by all sponsors, but some sponsors may benefit from more than one of the four listed or benefit from them in differently ways at different times. The benefits also depend on the assets being securitized. A comprehensive list of Moody's research reports about securitization and its effects on its sponsors first appeared in a Moody's Special Comments, "Securitization and Its Effects on the Credit Strength of Financial Services Companies: Moody's Perspective 1987-1999," July 1999. The latest update of this report covering 1987-2002 was published in March 2002. Also see Moody's Special Comment, "Demystifying Securitization for Unsecured Investors," January 2003.

23. For example, a recent *Wall Street Journal* article, "GMAC Taps Unusual Asset Mix To Back \$1.3 Billion Debt Offer," dated October 19, 2006, wrote: "General Motors Acceptance Corp. is preparing to sell about \$1.3 billion of securities backed by receivables from three subsidiaries it has never tapped for public financing: Nuveel Credit Co., Sabb Financial Services and American Suzuki Financial Services. It is the latest example of the finance arm of General Motors Corp. digging further into its balance sheet to raise money now that its speculative-grade credit rating makes selling large amounts of unsecured debt prohibitively expensive."

24. See Calomiris and Mason (2004), for example, for discussions on this incentive in credit card securitizations. Gan and Mayer (2006) indicated that regulators have given insurance companies preferential capital treatment when they hold investment-grade ABS instead of less transparent whole loans. Additionally, the ongoing implementation of Basel II may have an impact on future deals motivated by regulatory arbitrage, as the new Accord intends to reduce such incentives. According to Calomiris and Mason (2004), regulators see securitizations' subversion of capital requirements as a risk to the financial system and an attempt to reap implicit subsidies from the federal safety net.

On the other hand, some specialty finance companies operate in less transparent market segments and are under very limited external monitoring. These sponsors may be more interested in pursuing short term profits via securitizations than a good long term track record, or be more willing to take on risk to survive because of their weak financial or credit conditions in the marketplace.²⁵

The purpose of this study therefore is to examine whether and how the sponsor of a structured finance transaction plays a role in the credit performance of structured finance securities. We will use a broad dataset that covers all transactions in the asset-backed (ABS) and mortgage-backed securities (RMBS and CMBS) sectors. Sponsors are classified by their industry and senior rating at the time of issuance for all the deals they sponsored. We analyze four metrics including lifetime downgrade rate, downgrade severity, lifetime impairment rate, and coupon spread at issuance.

The rest of the study is organized as follows.

First, we define what the sponsor is in a structured finance transaction and describe how we constructed the data sample. We discuss the rationale of grouping sponsors by rating and industry (sponsor types), and review some basic sponsor characteristics such as the number of sponsors, sponsor concentration, sponsor rating, and sponsor industry across key asset classes and over time.

Second, we study the differences in credit performance by sponsor type. We compare lifetime impairment rates, lifetime downgrade rates, and downgrade severity by sponsor type both across and within asset classes. We also examine the difference in performance by sponsor type at various tranche rating levels, and test the significance of the sponsor impact on performance in multivariate regression models.

Next, we compare coupon spreads at issuance by sponsor type for major and sub-asset classes. We also analyze spreads by sponsor type at tranche rating levels and test the statistical significance of the observed spread differentials in multivariate settings.

The final section concludes this study with closing remarks and offers some possible explanations for the findings.

Deal Sponsor Definition and Classification

PARTICIPANTS OF A STRUCTURED FINANCE TRANSACTION

Completing a structured finance transaction involves many players. Often mentioned players include originator, sponsor, seller, servicer, depositor, issuer, trustee, underwriter, rating agency, collateral manager, and investor.

A simplified securitization process starts with an originator, which initiates loans to borrowers, selling loans to a Special Purpose Vehicle (SPV), which then issues structured securities to investors. In this scenario, the originator is also the seller.

A seller does not have to be the originator, however. In some securitizations a two-step process exists, where an originator sells loans to an intermediary, called a depositor, which then sells the loans to the SPV.

In both of these scenarios, the SPV that issues the structured securities is called the issuer, which is a bankruptcy-remote entity that owns or holds the assets. After the transaction is completed, the servicer is responsible for collecting cash receipts and disbursing them according to the contractual terms to the trustee, which in turn passes the payments to investors accordingly.²⁶ In most transactions, the role of trustee is "to hold transaction cash flows in segregated accounts, notifying investors and rating agencies of any covenant breaches and events of default, and managing servicing transfers."

Collateral managers are most commonly seen in CDO transactions, which can securitize anything from bonds to loans both from the corporate and structured finance sectors. Most collateral managers are involved in the selection of the initial collateral pool and pool asset management within the investment guidelines. This study focuses on non-CDO transactions.²⁷

DEFINITION OF DEAL SPONSOR

The term "sponsor" has been used frequently in many structured finance publications. It is sometimes used interchangeably with "originator" or "seller" because in many transactions they are the same company. When the originator and the seller are different companies, the meaning of sponsor needs to be clarified.

25. The use of aggressive gain-on-sale accounting method is a commonly cited example.

26. There are four types of servicers commonly seen: master servicer, primary servicer, back-up servicer, and special servicer. See more discussions in Federal Register, 17 CFR Parts 210, 228, et al. *Asset-Backed Securities; Final Rule*, January 7, 2005. Gan and Mayer (2006) discussed the role of special servicer in CMBS transactions and found that yields were lower for junior tranches in deals in which the special servicer owned the first-loss piece, and junior tranches were the most likely to be positively impacted by superior performance of the special servicer.

27. For the role of collateral managers in the credit performance of CDO tranches, see Moody's Special Comment, "Default & Loss Rates of U.S. CDOs: 1993-2003," March 2005.

In this study, the sponsor is defined to be either the seller, or if the seller is a wholly-owned subsidiary of another entity at the time of issuance the sponsor is the parent of the seller. This definition is consistent with the sponsor concept illustrated by the SEC, which defines the sponsor of a structured finance transaction to be "the entity that organizes and initiates a structured finance transaction by selling or transferring assets, either directly or indirectly, including through an affiliate, to the issuer (the SPV)."

In practice, determining the sponsor of each transaction for all rated deals is a huge task and is fraught with imperfections.

For example, in one type of transactions (commonly seen in CMBS), an aggregator or consolidator acquires loans from many other unaffiliated sellers before securitization. The underlying sellers, according to the SEC, are not considered to be sponsors, but rather the aggregator or consolidator is. So we follow the SEC's principle and use the aggregator as the sponsor. The matter becomes more complicated when sponsors use a "rent-a-shelf" program for securitization, in which case the sponsor is the underlying seller (or sellers). Details of how we deal with different possibilities appear later in this section.

In addition, although Moody's maintains a comprehensive database of the different participants of all transactions, most of the deals do not have an identified sponsor because of the lack of a commonly accepted definition of sponsor in the past.²⁸ For most deals, information on originators and sellers exists. However, there are a significant number of deals that do not have good information about a leading seller. In some cases, for example, the Special Purpose Vehicle was recorded as the seller, and in other cases, there are multiple sellers.

Another challenge is to identify the immediate parent of a seller or originator, and determine whether it was wholly-owned by the parent or not at the time of deal closing. The parent-subsidiary relationship is not easy to identify, and the relationship can change frequently with the occurrence of mergers and acquisitions.

For example, DLJ sponsored a large number of subprime mortgage deals before the company was acquired by Credit Suisse First Boston (CSFB) in 2000. As a result, DLJ is the sponsor of all its deals before 2001, but CSFB (now called Credit Suisse) is the sponsor of DLJ deals after 2001.

Another example is EMC Mortgage Corporation, a wholly-owned subsidiary of Bear Stearns; therefore, Bear Stearns is the sponsor of all deals that listed EMC as the seller in the data sample. GMAC, however, is an exception. Although GMAC was a wholly-owned subsidiary of General Motors until in 2005 when it sold a majority interest in GMAC Commercial Mortgage to an investor group, we used GMAC instead of GM because of its sheer volume of issuance and independent status in the structured finance market. Of course, using GMAC as the sponsor does not have a material impact on our analysis because it is classified as an industrial captive and was rated investment-grade until 2005.

To address these data issues, we used the following procedures to construct the data sample:

- When there is a single seller for a transaction, the seller or its parent is the sponsor. Those are the majority of the cases.
- When the seller information is not available, and there is a single originator, and no depositor information is available, the originator is the sponsor.
- When there are multiple sellers, or there are multiple originators but no seller information, or there is no seller or originator information but the sponsor or the depositor or the aggregator is identified, the sponsor or the depositor or aggregator (in this order) is the sponsor.
- When there is no information about seller, originator, sponsor, or depositor, the deal name and issuance date are used jointly to identify the sponsor manually.²⁹

SPONSOR CLASSIFICATION

Once a sponsor is identified, we classify it into one of the two sponsor rating categories and one of the four sponsor industry categories.³⁰

The rating of a sponsor is its senior unsecured rating at the time of deal issuance. In cases where such a rating did not exist and an estimated senior (unsecured) rating was available, the estimated rating was used. The estimated senior

28. It was not until the release of Regulation AB on December 15, 2004, that the securitization industry had its own regulation regime. One of the required items in ABS transaction filings, according to this regulation, is the disclosure of a transaction's sponsor, its securitization programs, experience, and underwriting criteria.

29. We also used the Asset-Backed Alert sponsor database as a reference in the entire deal sponsor identification process.

30. In addition to sponsor rating and sponsor industry classification, we also examined the impact on transaction performance by a sponsor's prior securitization volume and performance. The impact appeared to be relevant, but once the rating of a sponsor is controlled, most of the experience and performance impact disappeared. This is consistent with the analytical framework Moody's uses to rate financial institutions. For example, in rating finance companies, Moody's analyzes securitization as a funding source and "consider the maturity and depth of the securitization market for the issuer's various asset classes, the issuer's track record in placing assets into securitization vehicles, and immediacy of access to that market." See Moody's Special Comment, "Analyzing the Credit Risk of Finance Companies," October 2000.

rating is derived from the debt obligation level ratings according to an algorithm called the senior ratings algorithm (SRA);³¹ As a result, sponsors without any debt obligation ratings do not have estimated senior ratings.

The two sponsor rating categories are:

- Investment grade sponsors (IG)
- Non-investment-grade (speculative grade or unrated) sponsors (Non-IG)

The four sponsor industry groups are:

- "Banks": US banks, insurance companies, and thrifts;
- "Specialty": Specialty finance companies, mortgage banks, REITs, and other unknown business types;
- "Securities": Securities firms, foreign banks, and investment firms;
- "Industrial Captive": Captive finance companies of industrial companies or other subsidiaries of industrial companies

Classifying sponsors into these four industry groups is largely based on their traditional business characteristics.³² For example, banks traditionally have access to cheap funding (deposits from ordinary citizens of varying income levels), make commercial and consumer loans, and are closely regulated with strict risk-based capital requirements. Commercial and consumer lending (loan origination) is one of their major business activities. Business activities are generally diversified.

Specialty finance companies are set up for unique business purposes such as automobile finance, commercial finance, consumer finance, credit card finance, which can be further divided into subprime and prime credit card finance.³³

Securities firms or investment banks typically help corporations to raise funds through the capital markets and help clients trade and invest in assets. Loan origination is not their major business activity. They are usually not as tightly regulated as commercial banks are. They also have diversified business activities. Compared to commercial banks and thrifts, they are the relatively newcomers to the securitization market.

Industrial captive finance companies typically support the business activities of their parents, which are often not in the financial industry. The most well known captive companies are in the automobile industry such as GMAC, Chrysler Financial, and Ford Motor Credit, but captive finance companies can be found in many industries besides the auto industry such as industrial equipment, leasing, home building, retail, or leisure.

In general, there are more sponsors in larger and more traditional asset classes than in smaller esoteric asset classes. Many large sponsors are active in several asset classes. For example, more than half of the deals in auto ABS were sponsored by industrial captive finance companies such as Ford Motor Credit, GMAC, and DaimlerChrysler. More than 70% of the credit card ABS deals were sponsored by banks such as Citibank, MBNA, and J.P. Morgan Chase.³⁴ Also most CMBS deals were sponsored by large banks or securities firms. For a list of top ten sponsors in some of the familiar asset classes, please see appendix. In the next section, we review the details of deal distribution by sponsor type and asset class.

Deal Distribution by Sponsor Type

DISTRIBUTION OF SPONSORS

There are 8,914 US ABS and MBS transactions in our data sample, all issued during the period from 1993 to 2006H1. A total of 520 sponsors were identified for 8,377, or 94% of the total, transactions. Of the 520 sponsors, 210 had Moody's senior unsecured (or estimated) rating histories. Figure 3 depicts the distributions of sponsors and deals by sponsor industry and rating.

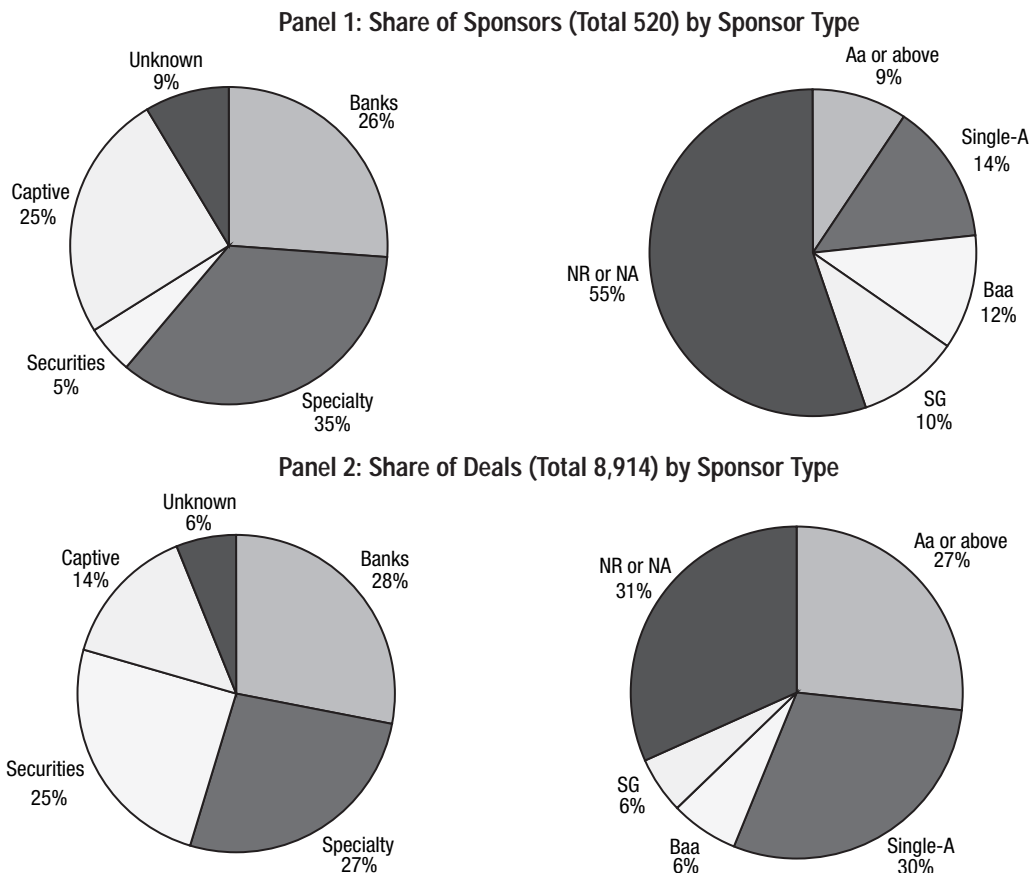
31. The process Moody's uses to derive issuer-level ratings from particular debt obligation level ratings is called the senior ratings algorithm (SRA), and the resulting ratings are called estimated senior unsecured ratings or, more concisely, estimated senior ratings. Briefly, a company's estimated senior rating is set equal to its actual senior unsecured debt rating or, if there is none, by implying such a rating on the basis of rated subordinated or secured debt. In most cases, this yields an assessment of credit risk that is relatively unaffected by collateral or position in the capital structure. Please refer to "Moody's Senior Ratings Algorithm & Estimated Senior Ratings," July 2005.

32. The line between commercial banks and investment banks is not as clear now as before, as a result of the Gramm-Leach-Bliley Act in 1998.

33. For more information about the classification of finance companies and the analysis of credit risks of finance companies, please refer to Moody's Special Comment, "Analyzing the Credit Risks of Finance Companies," October 2000.

34. In this study, credit card companies such as Capital One, American Express, Advanta, Provident National Bank, MBNA, and FIA Card Services are classified in the "banks" category. In 2005, Provident was acquired by WAMU, and MBNA was acquired by Bank of America.

Figure 3 - Distributions of Sponsors and Deals by Sponsor Type, 1993-2006H1



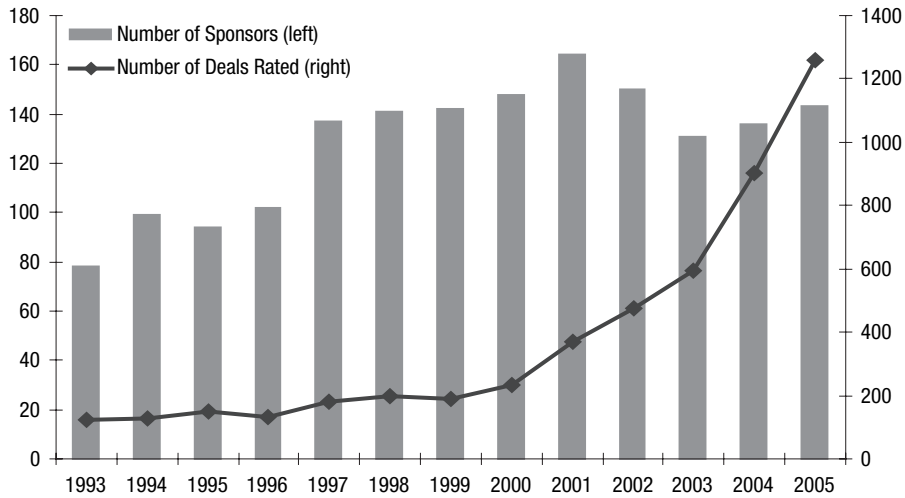
As indicated by Figure 3, the 520 sponsors were concentrated (86%) in three sponsor industry groups: banks, specialty finance companies, and industrial captive companies. The share of sponsors in the category of securities firms and foreign banks is small (only 5% of the total), but the share of deals they sponsored has been large (25%, mostly in the RMBS, HEL and CMBS sectors).

A large proportion (55%) of sponsors was not rated. Among the rated sponsors, the shares across the four broad rating buckets were similar. By share of deals, speculative-grade and Baa-rated companies accounted for only 12% of all deals, compared to roughly 30% each from Aa or above, single-A, and unrated sponsors, respectively.

Additionally, of all deals sponsored by banks, securities firms, or industrial captive companies, the majority came from those rated investment grade, whereas of all deals sponsored by specialty finance firms, the majority were from those rated speculative-grade or unrated.

Over time, compared to the exponential growth in the total number of rated deals by vintage, the number of sponsors has only seen two material changes. According to the data in Figure 4, there was a jump in the number of sponsors in 1997, when the market gained a net of 35 additional sponsors relative to 1996. In 2002 and 2003, the number of sponsors declined markedly, after a recession suddenly hit the US economy. During the recession, bankruptcies increased and access to any capital market was difficult for many companies.

Figure 4 - Number of Sponsors and Deals by Vintage

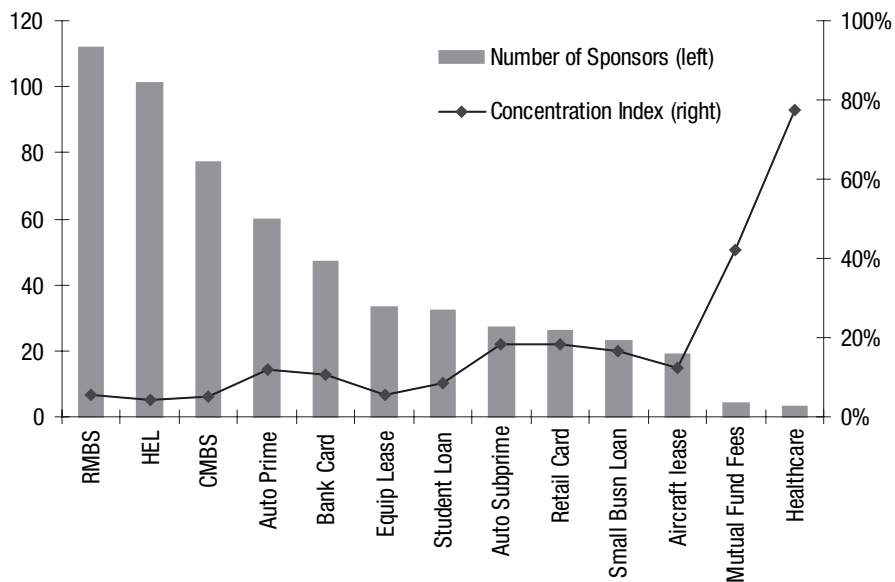


Since 2004, the resilience of the structured finance market and investors' hunt for higher yield and return prompted more new players to enter the securitization market. As a result, the number of sponsors increased in 2004 and 2005. For instance, in 2005, there were more than 140 sponsors in the US ABS and MBS structured finance market, compared to 131 in 2003.³⁵

Not all sponsors are active in all structured finance asset classes. Some large banks and security firms securitize assets in several sectors, while specialty finance companies often focus on just one or two asset classes. Therefore, the distribution of deals by sponsor characteristics can be quite different across asset classes, and in fact, may only be meaningful within certain asset class domains.

Figure 5 reports the number of sponsors and sponsor concentration within each asset class. Sponsor concentration is measured by the Herfindahl index, which is the sum of squares of each sponsor's share (based on the number of deals) in the asset class. The concentration index is calculated for each vintage by asset class and then averaged over the sample period.

Figure 5 - Number of Sponsors and Sponsor Concentration by Asset Class, 1993-2006H1



35. The number of sponsors over time can also be influenced by merger and acquisition activity, although we do not believe it is the driving force.

Asset classes on the horizontal axis in Figure 5 are ordered by the number of sponsors in each asset class. Evidently, there are more sponsors in the mortgage-backed securities sectors (on the left portion of the chart) than in other asset classes such as small business loan and aircraft lease ABS. The number of sponsors in the esoteric ABS asset classes such as mutual fund fees and healthcare receivable ABS was even smaller.

Figure 5 also depicts the differences in sponsor concentration across asset classes. Asset classes that appear not to be concentrated include prime and subprime RMBS, CMBS, and prime auto ABS. Most specialized ABS asset classes are dominated by a small number of sponsors and are concentrated.

DISTRIBUTION OF DEALS AND DOLLAR VOLUME OF ISSUANCE

Figure 6 exhibits the share of deals by sponsor industry and sponsor rating, and the share of dollar volume of issuance by the same categories.

Figure 6 - Distribution of US ABS and MBS Deals by Sponsor Type, 1993-2006H1

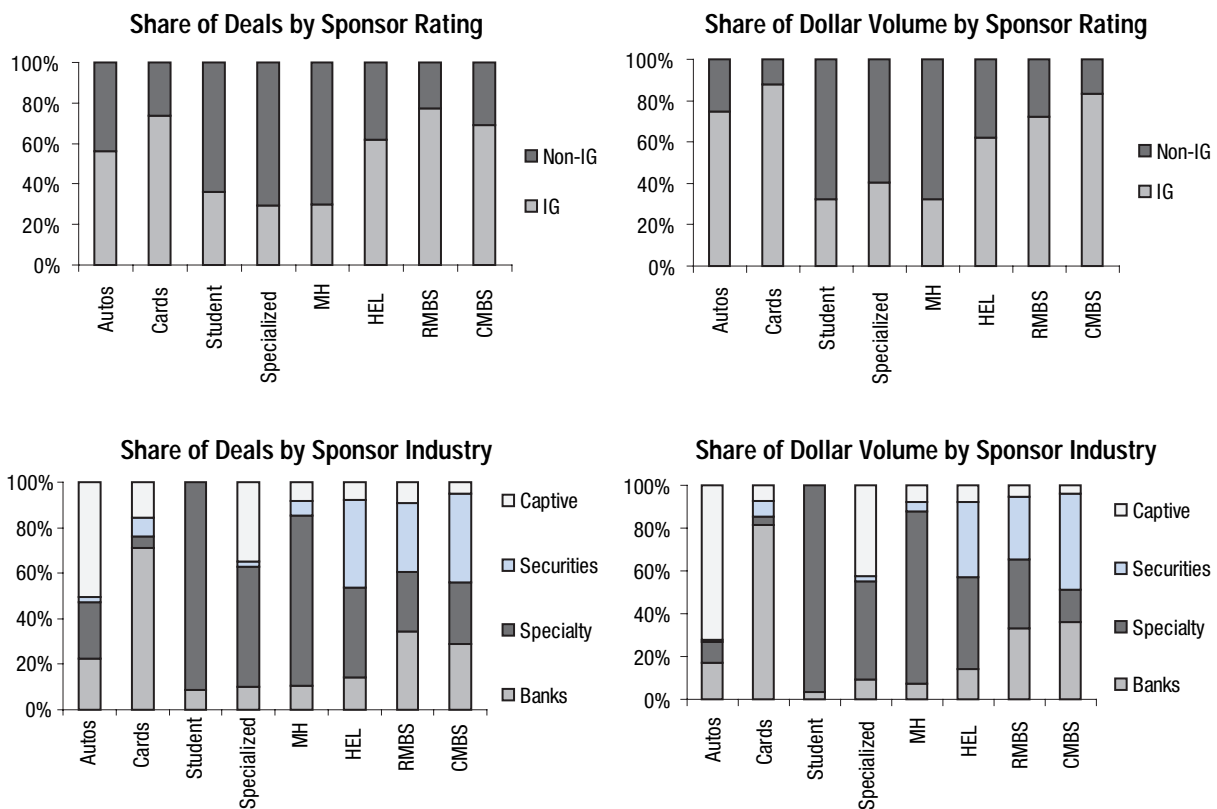


Figure 6 reveals that there is a wide variation among the different asset classes in the distribution of deals by sponsor rating. For example, most deals in auto and credit card ABS, HEL, CMBS, and RMBS were sponsored by investment-grade companies, whereas in specialized ABS asset classes, there were more unrated or speculative-grade sponsors.

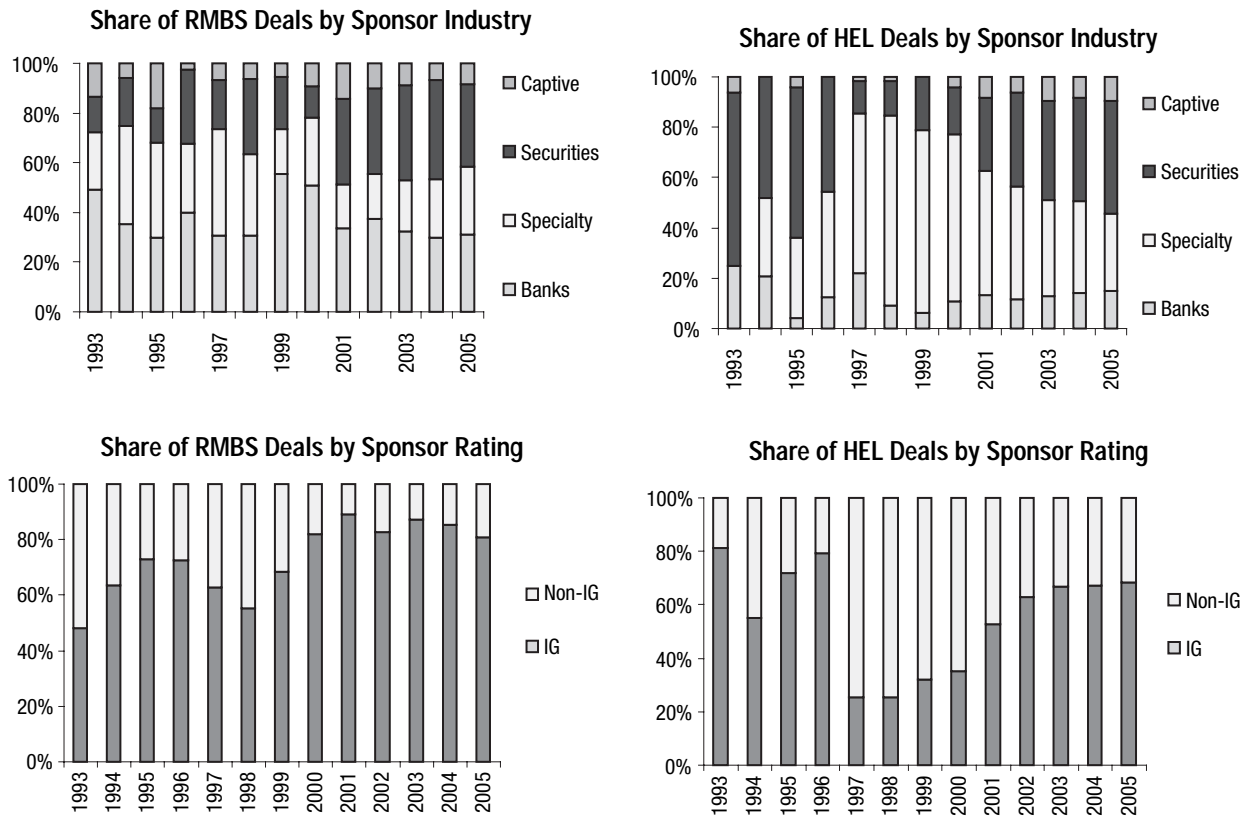
Variations in the distribution of deals by sponsor industry were also large. For example, there were more specialty finance company sponsored deals in specialized ABS asset classes than in credit card ABS, RMBS, and CMBS. This suggests that the distribution of sponsor rating and the distribution of sponsor industry within an asset class are correlated. Finally, securities firms and foreign banks have largely been concentrated in the mortgage backed securities sectors such as HEL and CMBS, and have shown little activity in the ABS asset classes.

CHANGES IN DEAL DISTRIBUTION OVER TIME

Sponsors of structured finance deals in various sectors of the market have also been changing. New sponsors can be attracted into a particular asset class as a result of increased demand and strong performance (the HEL sector is a good example). Some sponsors may decide to exit from an asset class as a result of the poor performance of past transactions, or as a result of their own financial constraints.

Figure 7 uses two of the fastest growing asset classes as examples - RMBS and HEL - to show how the distribution of deals by sponsor industry and sponsor rating has changed. For the relatively small or stable asset classes not shown, the changes in deal distribution by sponsor type, though some have occurred, were not as significant, and hence the share of deals by sponsor type over time was similar to those in Figure 6.

Figure 7 - Deal Distribution by Vintage, Sponsor Industry, and Sponsor Rating in RMBS and HEL



Note: IG - deals sponsored by investment-grade companies; Non-IG - deals sponsored by speculative-grade or non-rated companies. Shares are calculated based on the number of deals issued in each vintage.

Figure 7 demonstrates that there have been significant increases in the share of RMBS and HEL deals sponsored by securities firms and foreign banks in the last five years. The significant increases in securitization from securities firms and foreign banks highlight the fact that the structured finance market dynamics are closely related to the overall financial market conditions and the strength of the traditional equity and debt markets. It is possible that the stock market bubble and economic recession during 2000-2001, in combination with the strong housing market in the last five years, have been key drivers behind the surge of securitizations from securities firms and foreign banks.

The increased participation from securities firms and foreign banks in RMBS and HEL has also resulted in more deals coming from higher rated sponsors. Specifically, the share of deals from investment-grade sponsors in the RMBS sector jumped to about 80% in 2005 from 52% in 1998, and in the HEL sector to 62% from 21% over the same period.

Comparing Credit Performance by Sponsor Type

In this section, we compare tranche credit performance by sponsor type. We first define two credit variables. A security experienced a downgrade if the security's rating as of the end of the study period (June 30, 2006) was lower than the original rating. If the rating of the security was withdrawn, the rating before withdrawal is used to determine whether a downgrade had occurred. A security was impaired if it experienced a loss of principal, a shortfall of interest, or was downgraded to Ca or C even though principal loss or interest shortfall has not occurred.³⁶

Because downgrade rates or impairment rates typically do not peak until the fourth year after issuance,³⁷ we measure lifetime downgrade and impairment rates to date (June 2006) using securities issued before the end of 2002 - three and a half years before the end of our sample period. The lifetime downgrade rate for a given asset class is the number of downgraded securities divided by the total number of securities in that asset class during 1993-2002. Likewise, the lifetime impairment rate is the number of impaired securities divided by the total number of securities. The downgrade and impairment status of each security is updated as of June 2006. Distributions of sponsors, deals, and tranches by asset class appear in the appendix.³⁸

We will first analyze sponsor rating and industry effects on credit performance by controlling for each of them. We show that the sponsor rating effect is two-fold: there is a strong correlation between the distribution of sponsor rating and credit performance across asset classes, and a strong correlation between sponsor rating and performance within a given asset class. We also study the sponsor rating effect controlling for tranche ratings in addition to controlling for asset classes.

SPONSOR RATING AND INDUSTRY EFFECTS IN THE AGGREGATE

We discussed in the introduction that the lifetime downgrade and impairment rates were lower for tranches sponsored by investment-grade companies than for those sponsored by speculative-grade companies, and for tranches sponsored by banks than for those sponsored by specialty finance firms. Figure 8 further compares lifetime downgrade and impairment rates by sponsor industry within each sponsor rating category, and by sponsor rating category within each sponsor industry category.

As the figure shows, for both the investment-grade and speculative-grade or non-rated sponsor categories, tranches sponsored by banks experienced markedly lower downgrade and impairment rates than did those sponsored by specialty finance companies. In addition, within each sponsor rating category, there is a clear ordering of performance among banks, captive finance companies, securities firms, and specialty finance companies. The performance difference between the two sponsor rating categories is also evident in three of the four sponsor industry categories (the securities firms category is the only exception), especially in the specialty finance company category.³⁹

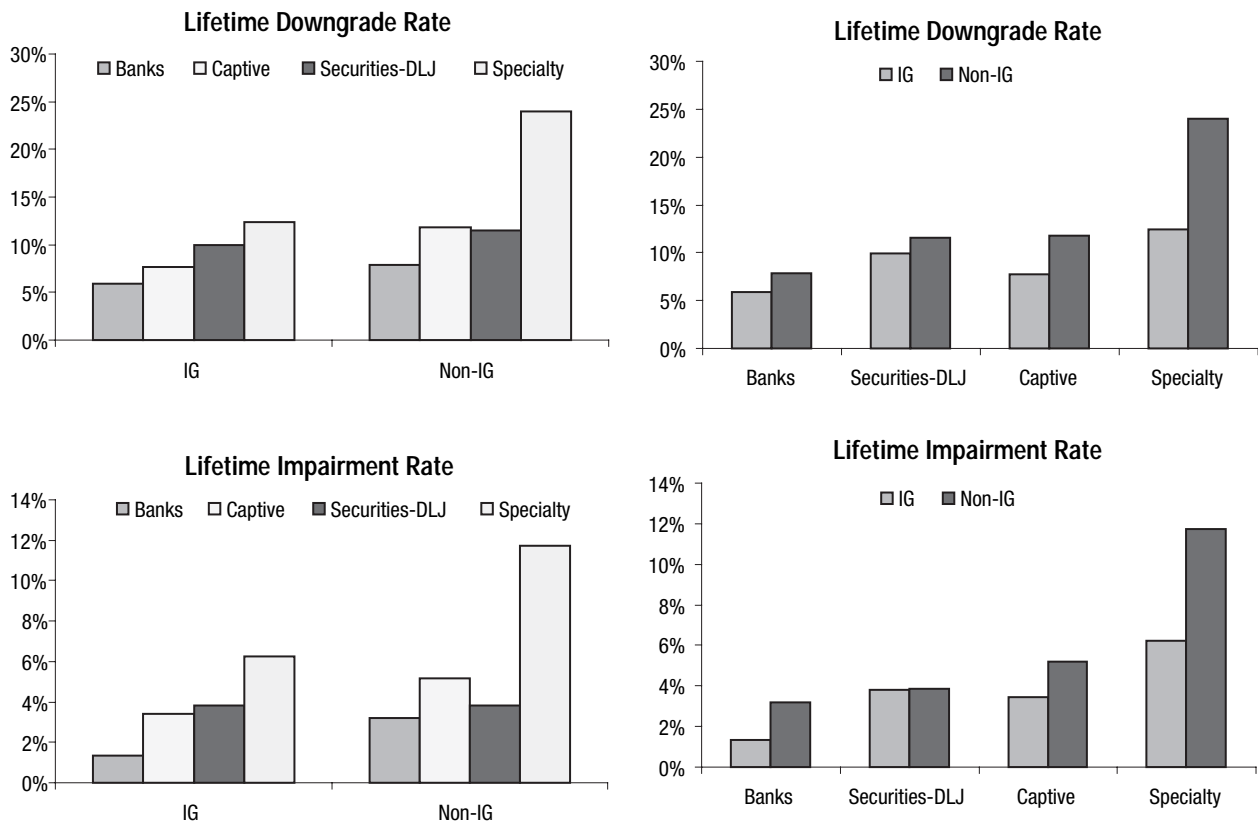
36. Definitions of payment default and material impairment are first provided in Moody's Special Comment, "Payment Defaults and Material Impairments of U.S. Structured Finance Securities: 1993-2002," December 2003.

37. This is the seasoning pattern of downgrade and impairment rates we have discussed in numerous reports. See, for example, Moody's Special Comment, "Default & Loss Rates of Structured Finance Securities: 1993-2005," April 2006.

38. The units of measurement in this study are tranches. Adelson (2004) studied the credit migration patterns of ABS deals. His main results appear to be similar to those based on tranches.

39. Moody's credit analysis of finance companies incorporates extensive analysis of their quantitative and qualitative characteristics. The analytic framework covers franchise strength, corporate governance, funding and liquidity, and profitability. In particular, Moody's evaluates their competitive strength by evaluating their origination capability, underwriting and risk management skill and discipline, servicing ability and funding capability. Moreover, higher rated finance companies often have a unique, or very strong, capability in more than one area. See Moody's Special Comment, "Analyzing the Credit Risks of Finance Companies," October 2000.

Figure 8 - Lifetime Downgrade and Impairment Rates of US ABS and MBS Securities by Sponsor Rating and Industry



Note: Securities issued during 1993-2002 are used in the analysis. The downgrade and impairment status of the securities are updated as of June 2006. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies. The impact of DLJ-sponsored deals is analyzed later in this section. DLJ deals are included in across-asset-class analyses unless noted otherwise.

To test the statistical significance of these observed differences in performance, we ran logistic regression models at security level using the downgrade and impairment status of a security as the dependent variable (the dependent variable equals to 1 if a security is ultimately downgraded/impaired, 0 otherwise). We ran the model for each of the two sponsor rating categories separately. Each sponsor industry except banks enters the regression as a dummy variable. The omission of banks allows us to interpret the coefficient estimates as the difference between a non-bank sponsor industry and banks. Figure 9 reports the regression results.

Figure 9 - Coefficient Estimates on Sponsor Industry Dummies from Logistic Regressions of Impairment or Downgrade Concerning Sponsor Industry Effect by Sponsor Rating

| | Sponsor Industry Dummy | Impairment | Downgrade |
|--|---------------------------|-------------|-------------|
| Investment-Grade Sponsors (IG) | Specialty Finance Firms | 1.08 | 0.65 |
| | DLJ | 2.56 | 2.22 |
| | Securities Firms (ex DLJ) | 0.67 | -0.07 |
| | Industrial Captives | 0.49 | -0.02 |
| Non-Investment-Grade Sponsors (Non-IG) | Specialty Finance Firms | 1.22 | 0.98 |
| | DLJ | NA | NA |
| | Securities Firms (ex DLJ) | 0.19 | 0.37 |
| | Industrial Captives | 0.31 | 0.13 |

Note: Bold-faced values are statistically significant. Securities issued during 1993-2002 are used in the regressions. The downgrade and impairment status of the securities are updated as of June 2006. Each regression also includes a dummy variable for each vintage. A dummy variable for DLJ-sponsored tranches is added because they had a strong impact on the performance of tranches sponsored by securities firms. Regressions are run for each sponsor rating group separately. The industry dummy for Banks is omitted from the regression. All coefficients are relative to banks.

In the impairment regression model, as shown in Figure 9, the coefficient estimates are positive and significant for all industries in the investment-grade sponsor category. This implies that tranches sponsored by non-bank companies had higher impairment rates than those sponsored by banks in this sponsor rating category. Moreover, the coefficient estimates are the highest for deals sponsored by DLJ, followed by specialty firms, securities firms, and industrial captive finance companies.

In the non-investment-grade sponsor category, even though the coefficient estimates from the impairment regressions are positive for all three categories, the estimate is only significant for specialty finance firms.

Figure 9 also indicates that the coefficient estimate from the downgrade regression is significantly positive only for specialty finance companies and DLJ in the investment-grade sponsor rating category, but not in other categories.

In summary, Figure 9 reveals:

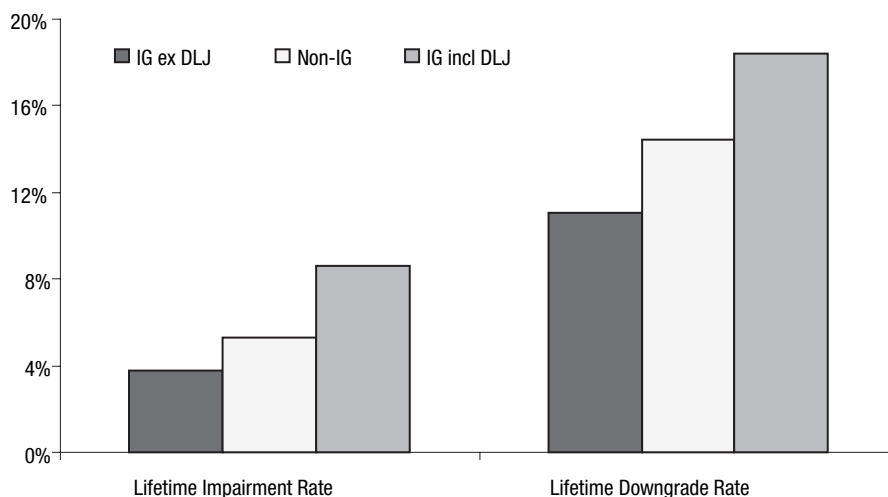
- Sponsor industry effect on credit performance is stronger if a deal sponsor is an investment-grade company than if it is a speculative-grade or non-rated company.
- Tranches sponsored by banks experienced a lower impairment rates than did those sponsored by specialty finance firms even after controlling for sponsor rating.

In both Figures 8 and 9, we excluded DLJ-sponsored tranches from all tranches sponsored by securities firms and foreign banks (DLJ was rated investment-grade and merged with Credit Suisse First Boston in 2001). The reason is that a substantial number of tranches sponsored by DLJ were downgraded and impaired. The impaired tranches sponsored by DLJ include 83 in HEL (a large majority of these were backed loans originated by Quality Mortgage USA, a subprime mortgage lender), 7 in CMBS, and 4 in RMBS.⁴⁰ The impact of DLJ deals on HEL securities' credit performance is particularly large because they accounted for 42% of all HEL impairments as of June 2006.

In the CMBS sector, two investment-grade-rated (Baa2 initially) tranches from two DLJ-sponsored CMBS deals, DLJ 1991-MF01 and DLJ 1993-MF02, were downgraded to Ca and impaired in September 1994.⁴¹ The performance of these two deals is also significant because they were the only impaired CMBS securities during an eight-year period from 1993 to 2000. Because the number of DLJ deals in CMBS was relatively small, the DLJ deals did not materially impact the overall performance of CMBS securities in the aggregate.

Figure 10 demonstrates the impact of DLJ deals on HEL securities' performance. In particular, both the impairment and downgrade rates were higher in the IG category than in the non-IG category when the DLJ deals were included, but lower when they were excluded.

Figure 10 - The Impact of DLJ-Sponsored Tranches on the Credit Performance of HEL Securities



Note: Securities issued during 1993-2002 are used in the analysis. The downgrade and impairment status of the securities are updated as of June 2006. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies.

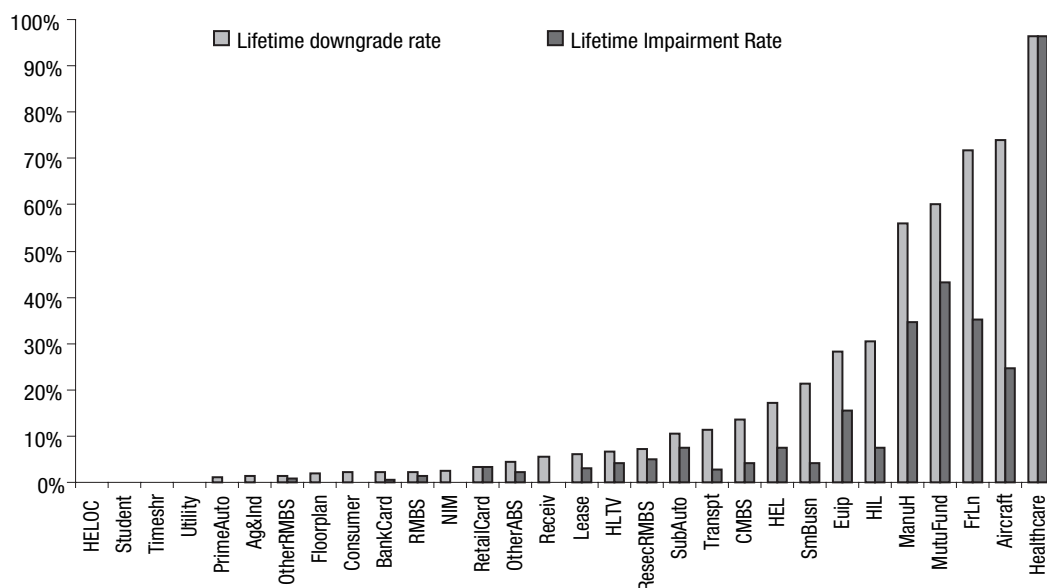
40. As a result of this study, we determined that all deals backed by loans originated by Quality Mortgage USA and sponsored by DLJ were subprime mortgage deals, and therefore are categorized in the HEL sector in this study. In our previous research reports, these Quality Mortgage deals were in the RMBS sector due to the classification used at the time of deal closing.

41. The 1991 deal was not in this study because we only include securities issued since 1993.

ASSET CLASS PERFORMANCE AND DISTRIBUTION OF SPONSOR TYPE

One of the key findings from our studies on the credit performance of structured finance securities is that the performance varied significantly across asset classes. Figure 11 depicts these differences.

Figure 11 - Lifetime Downgrade and Impairment Rates by Sub-Asset Class

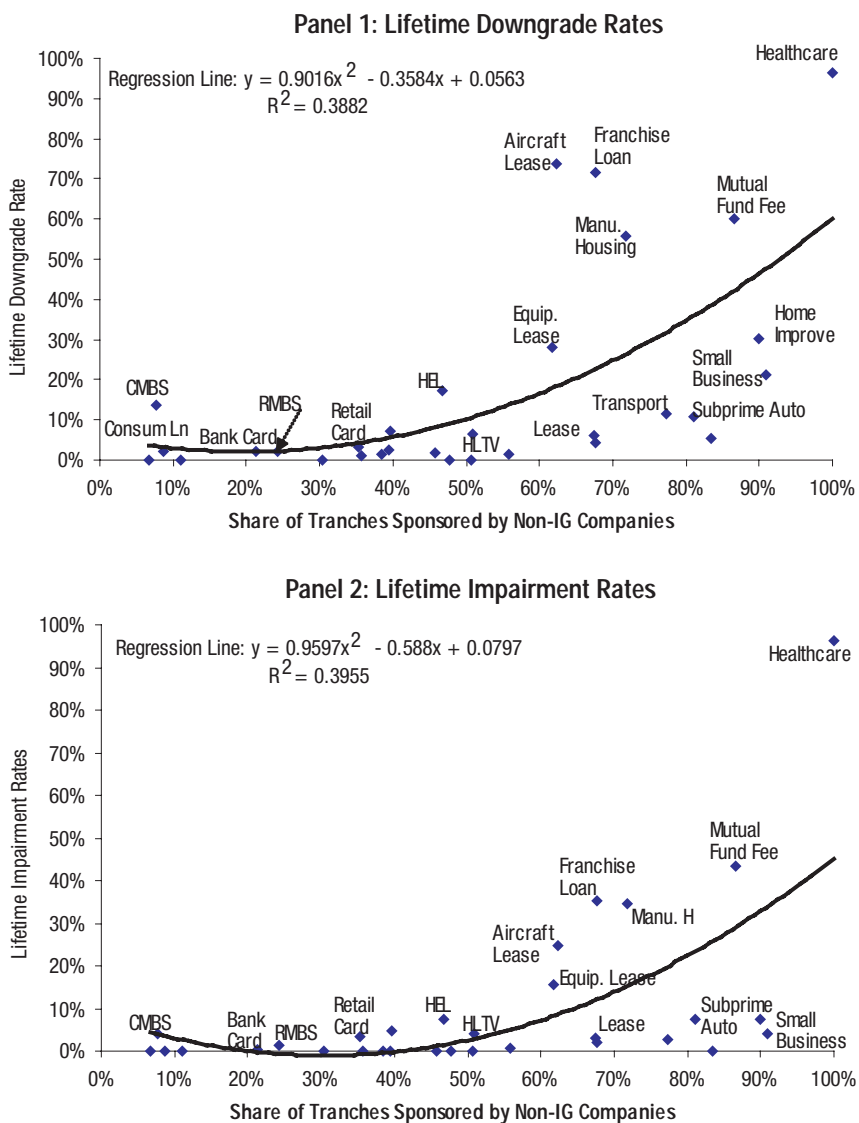


Note: Securities issued during 1993-2002 are used in the analysis. The downgrade and impairment status of the securities are updated as of June 2006.

For example, five ABS asset classes - manufactured housing (ManuH), mutual fund fee (MutuFund), franchise loan (FrLn), aircraft lease (Aircraft), and healthcare receivables (Healthcare) - experienced much higher downgrade and impairment rates than the rest of the asset classes displayed, most notably student loan, timeshare, utility, prime auto, bank credit card ABS, and RMBS.

While some of these performance variations by asset class may be due to random negative shocks, a couple of patterns emerged after reviewing the distribution of sponsor types. We first look at Figure 12, which illustrates the relationship between credit performance and the distribution of sponsor rating in each asset class.

Figure 12 - Lifetime Downgrade and Impairment Rates and Share of Tranches Sponsored by Non-Investment-Grade Companies by Asset Class



Note: Securities issued during 1993-2002 are used in the analysis. The downgrade and impairment status of the securities are updated as of June 2006. Non-IG - speculative-grade or non-rated sponsors.

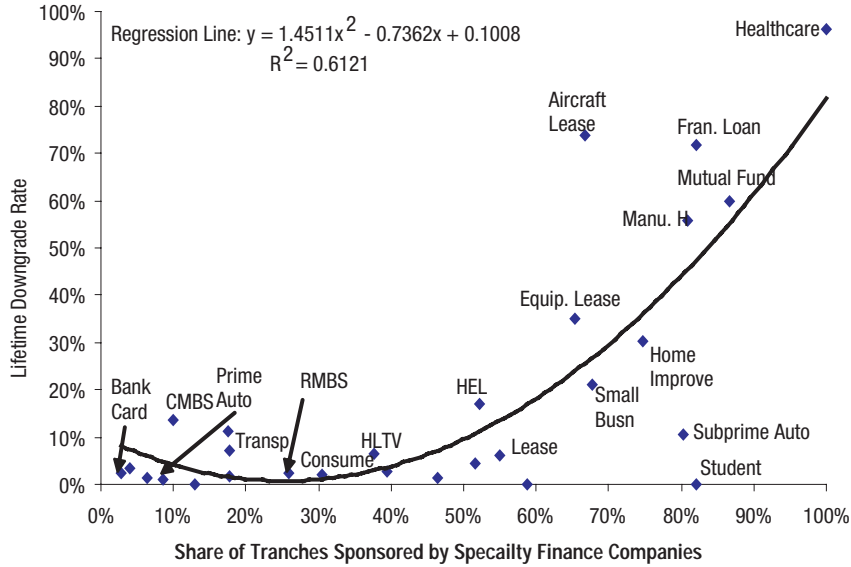
The quadratic regression lines in the two panels highlight the strong correlation between the two variables: the lifetime downgrade or impairment rate of an asset class was higher if that asset class had a larger share of tranches sponsored by speculative-grade or non-rated sponsors.

For example, the franchise loan, manufactured housing, healthcare receivables, and mutual fund fee ABS asset classes all had relatively larger shares of non-IG-sponsored tranches and experienced higher downgrade or impairment rates. By contrast, the bank credit card ABS, CMBS, and RMBS asset classes had relatively smaller shares of non-IG-sponsored tranches and experienced lower downgrade or impairment rates.

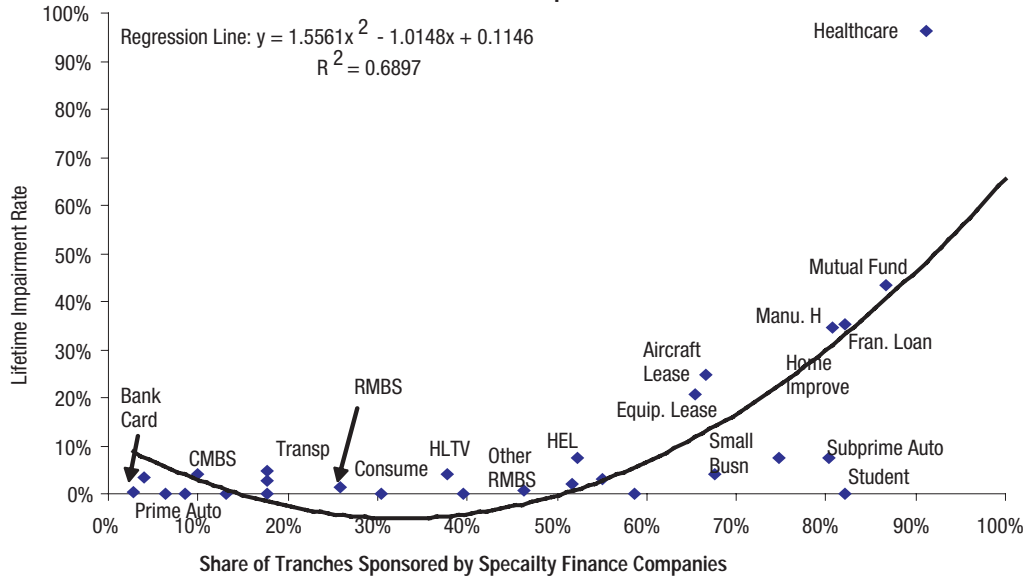
The asset classes that lie on the right and above the regression lines are not only asset classes dominated by non-IG sponsors, but also asset classes dominated by specialty finance companies. As expected, when we plotted the lifetime downgrade and impairment rates and the share of tranches sponsored by specialty finance companies in each asset class, we found similar patterns (Figure 13).

Figure 13 - Lifetime Downgrade and Impairment Rates and Share of Tranches Sponsored by Specialty Finance Companies by Asset Class

Panel 1: Lifetime Downgrade Rates



Panel 2: Lifetime Impairment Rates



Note: Securities issued during 1993-2002 are used in the analysis. The downgrade and impairment status of the securities are updated as of June 2006.

The strong correlations uncovered by Figures 12 and 13 do not imply causality. For instance, lowly or unrated companies may be forced to sponsor or have the advantage in sponsoring deals in asset classes where special knowledge is required or the assets are simply riskier than those of traditional asset classes. So we cannot discern whether the poor performance of some asset classes is due to the nature of the asset risk or the characteristics of the sponsors in these asset classes. But the dominant presence of non-IG sponsors may be a good indicator of the riskiness of an asset class and its potential performance instability.

TRANCHE PERFORMANCE BY SPONSOR TYPE WITHIN ASSET CLASS

Although the distribution of sponsor type may be a good explanatory variable for the performance of an asset class, it does not necessarily imply that sponsor type also has a strong impact on securities' credit performance within an asset class. One way to examine the impact of sponsor type on securities' performance is to regress one of the two credit variables on sponsor rating or sponsor industry dummy at the security level, with an additional sponsor distribution variable, either the share of non-IG-sponsored tranches of an asset class or the share of specialty firm-sponsored tranches in an asset class. Figure 14 summarizes the regression results.

| Figure 14 - Coefficient Estimates on Sponsor Rating or Sponsor Industry Dummy from Logistic Regressions of Impairment or Downgrade, after Controlling for Sponsor Distribution Effect of an Asset Class | | | | | | | |
|--|--|---|-----------------------------------|----------------------|--|---|--|
| | No control for sponsor distribution effect | Control for sponsor rating distribution of an asset class | | | | Control for sponsor industry distribution of an asset class | |
| | Model 1 | Model 2 | | Model 3 | | Model 4 | |
| Dependent variable | Sponsor rating dummy | Sponsor Rating Dummy | Share of Non-IG in an Asset Class | Sponsor Rating Dummy | Share of Specialty Firms in an Asset Class | Specialty Finance Company Dummy | Share of Specialty Firms in an Asset Class |
| Impairment | 0.65 | 0.17 | 3.94 | 0.14 | 3.73 | 0.31 | 3.53 |
| Downgrade | 0.68 | 0.30 | 2.97 | 0.28 | 2.87 | 0.36 | 2.74 |

Note: Bold-faced values are statistically significant. Regressions are run separately using impairment or downgrade as a dependent variable, and one of the distributional variables as an explanatory variable in addition to the sponsor rating dummy. Securities from all asset classes are included for this figure, and there is a dummy variable for each vintage as well. Non-IG - tranches sponsored by speculative-grade or non-rated companies. Deals sponsored by DLJ are excluded from the regression analyses.

In the absence of any control for sponsor distribution effects, the results from Model 1 suggest that the sponsor rating has a significant impact on the impairment probability and the downgrade probability of a security. In addition, with the share of tranches sponsored by non-IG companies or the share of tranches by specialty finance companies included as a regressor, the sponsor rating dummy continues to be positive and statistically significant.⁴²

The results reported in Figure 14 are based on securities of all asset classes, and have not explicitly controlled for asset class effect. In Figure 15 we compare the lifetime impairment rate and downgrade rate by sponsor rating among eight major asset classes.

| Figure 15 - Lifetime Impairment Rate and Lifetime Downgrade Rate by Sponsor Rating for Nine Major Asset Classes | | | | |
|--|--------------------------|----------------------|-------------------------|----------------------|
| ABS | Lifetime Impairment Rate | | Lifetime Downgrade Rate | |
| | Investment-Grade | Non-Investment-Grade | Investment-Grade | Non-Investment-Grade |
| Autos | 0.2% | 1.9% | 0.2% | 4.3% |
| Cards | 0.0% | 2.5% | 0.6% | 6.1% |
| Student | 0.0% | 0.0% | 0.0% | 0.4% |
| Specialized ABS | 5.8% | 14.1% | 17.7% | 38.2% |
| MH | 43.0% | 31.7% | 67.9% | 51.9% |
| MBS | Lifetime Impairment Rate | | Lifetime Downgrade Rate | |
| | Investment-Grade | Non-Investment-Grade | Investment-Grade | Non-Investment-Grade |
| HEL | 8.6% | 5.3% | 18.3% | 14.6% |
| HEL-DLJ | 3.8% | 5.3% | 11.1% | 14.6% |
| RMBS | 1.1% | 3.1% | 2.0% | 3.9% |
| CMBS | 4.4% | 2.1% | 14.3% | 10.4% |

Note: Securities issued during 1993-2002 are used in the calculations. The downgrade and impairment status of the securities are updated as of June 2006. Specialized ABS includes all ABS asset classes except auto, card, MH, HEL, and student loan ABS. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies.

According to the data in Figure 15, the performance of ABS securities was much stronger in the investment-grade sponsor category than in the speculative-grade or unrated sponsor category. The only exception is the MH sector, which suffered a sector-wide recession that affected virtually all deals, so that the non-IG-sponsored tranches did not perform more poorly than did those sponsored by IG companies.

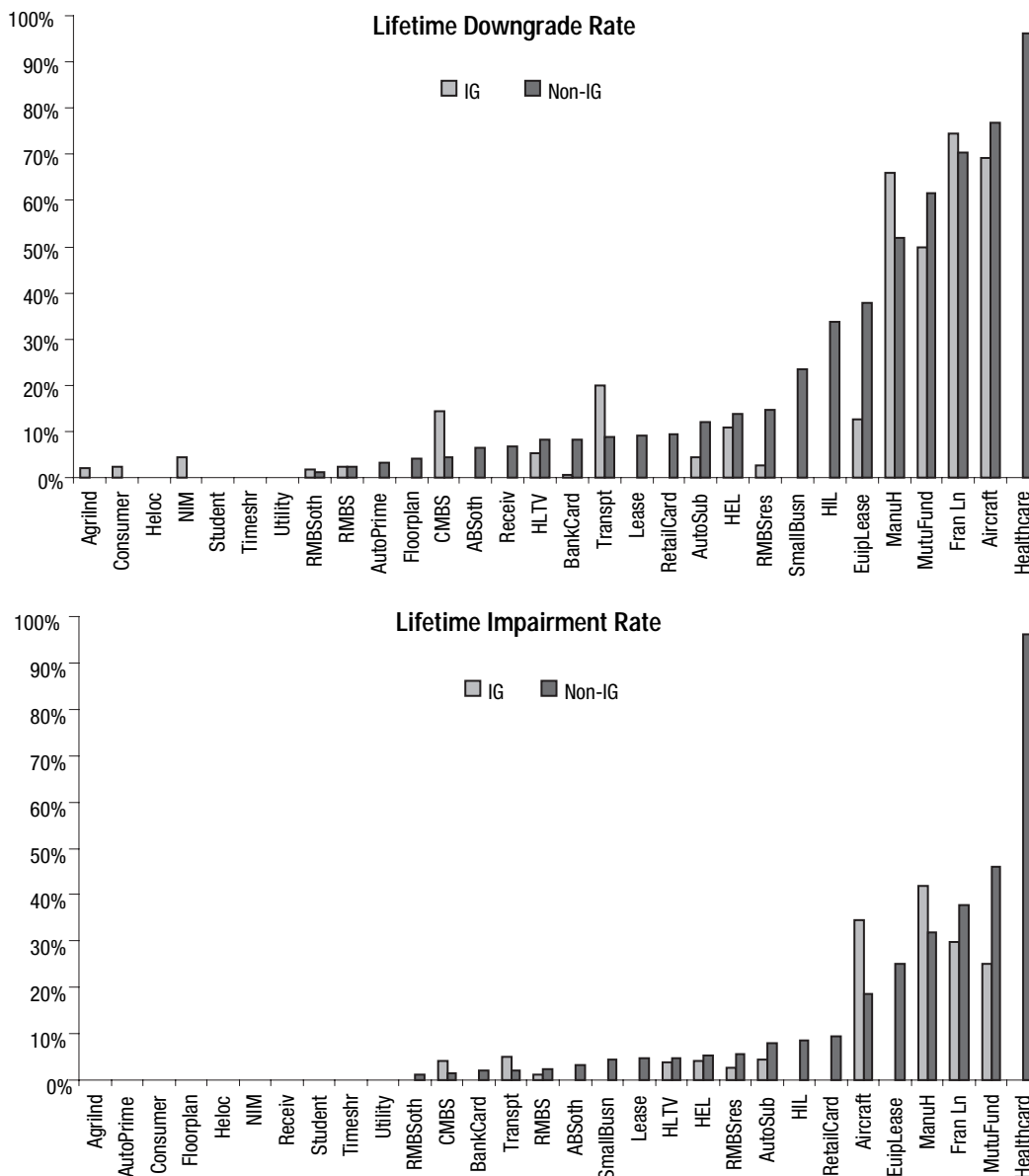
42. We did not report the results of a regression that includes both the share of NON-IG-sponsored tranches and the share of specialty finance firm-sponsored tranches because both distributional variables are highly correlated and the coefficient estimates become instable when both are included in the same regression.

For example, the lifetime impairment rate was 0.2% among auto ABS securities that were sponsored by investment-grade companies, but 1.9% for securities sponsored by speculative-grade companies. The lifetime downgrade rate was 0.6% among credit card ABS securities in the investment-grade sponsor category, compared to 6.1% in the speculative-grade sponsor category.

In the MBS sector (excl. DLJ), the performance was also better for tranches sponsored by investment-grade companies than those sponsored by speculative-grade or non-rated companies, except in CMBS.

To examine the asset class effect even further, Figure 16 reviews more performance variations at the sub-asset class level. Asset classes are rank-ordered by the impairment or downgrade rate of tranches in the non-IG category. The results are quite similar to those in Figure 15 - both lifetime impairment and downgrade rates were higher in the Non-IG category than in the IG category for the majority of sub-asset classes.

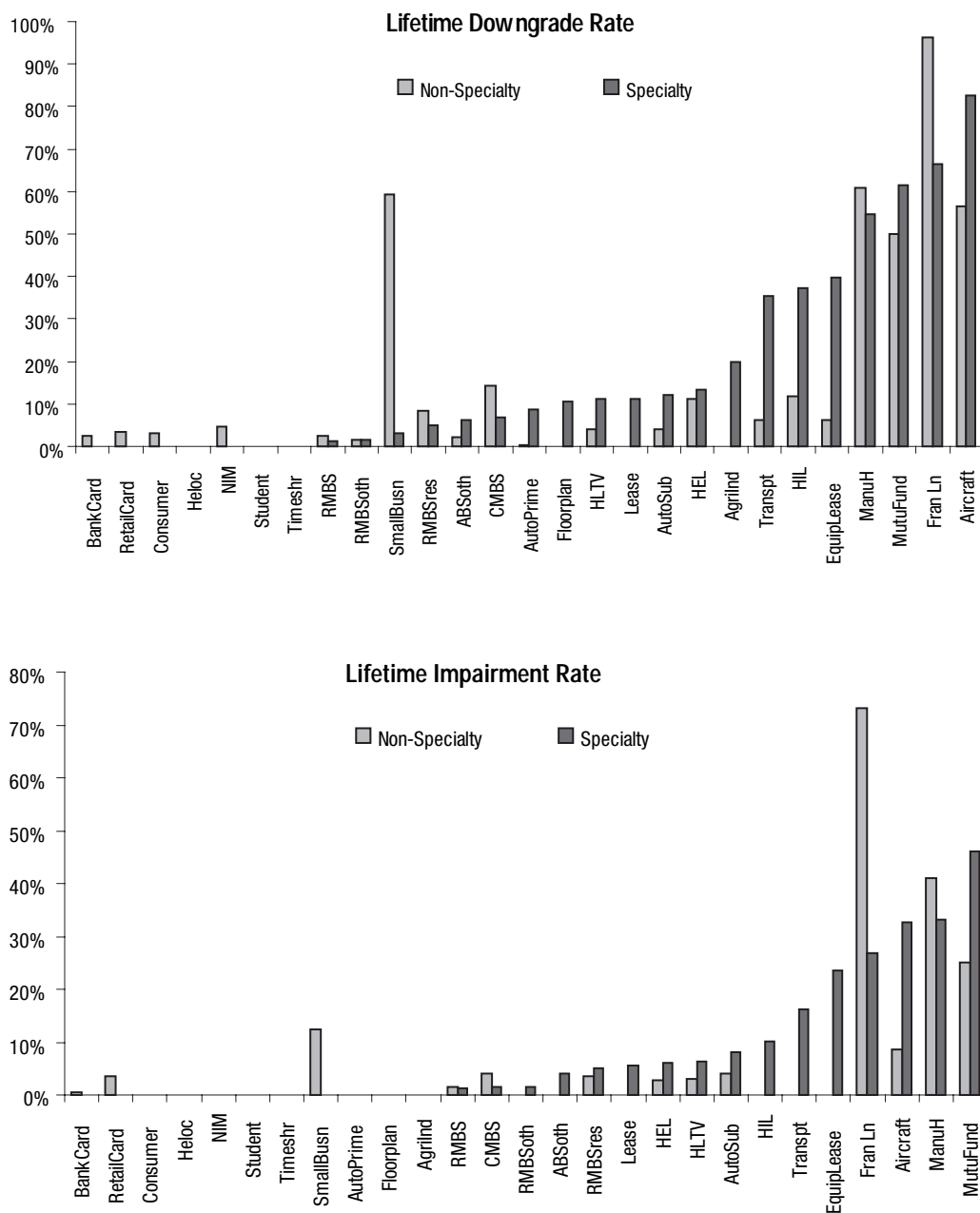
Figure 16 - Lifetime Impairment Rate and Lifetime Downgrade Rate of Sub-Asset Classes by Whether the Sponsor is an Investment-Grade Company



Note: Securities issued during 1993-2002 are used in the calculations. The downgrade and impairment status of the securities are updated as of June 2006. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies. "Transpt" include all vehicles such as trucks, RVs, rental cars, motorcycles and boats.

Figure 17 compares both impairment and downgrade rates in each sub-asset class by whether the sponsor of a transaction is a specialty finance company or is not one. For most of the asset classes, the tranches sponsored by specialty finance companies performed worse than did those by non-specialty finance companies. Relative to the number of asset classes with an opposite sponsor rating effect in Figure 16, there are more asset classes with an opposite sponsor industry effect.

Figure 17 - Lifetime Impairment Rate and Lifetime Downgrade Rate of Sub-Asset Classes by Whether the Sponsor is a Specialty Finance Company

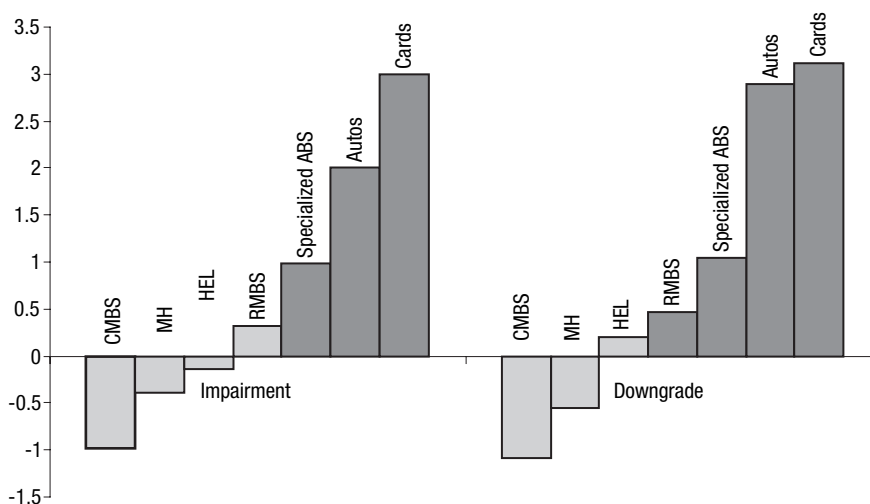


Note: Securities issued during 1993-2002 are used in the calculations. The downgrade and impairment status of the securities are updated as of June 2006. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies.

To see whether these observed performance differences within asset classes are statistically significant, we also ran logistic regression models using a security's impairment or downgrade status as the dependent variable, and sponsor

rating dummy as a regressor. The regressions were run for each of the seven major asset classes separately (we dropped the student loan ABS sector here because it had no downgrade and no impairment). We chose to run these regressions on major asset class levels rather than on sub-asset class levels because at the sub-asset class level the number of observations becomes small for logistic regressions. Figure 18 reports the coefficient estimates from these regressions.

Figure 18 - Coefficient Estimates on Sponsor Rating Dummy from Logistic Regression of Impairment or Downgrade by Asset Class



Note: Specialized ABS includes all ABS asset classes except auto, card, MH, HEL, and student loan ABS. Securities issued during 1993-2002 are used in the calculations. The downgrade and impairment status of the securities are updated as of June 2006. Each regression includes dummy variables for vintages. Deals sponsored by DLJ are excluded. The value of the sponsor rating dummy equals to 1 if the sponsor is unrated or rated speculative-grade, and 0 otherwise. Bars highlighted in dark color are statistically significant.

There are two interesting observations that can be drawn from Figure 18.

- First, the coefficient estimates on the sponsor rating dummy are statistically more significant with respect to downgrade than impairment. The estimates for the downgrade probability are significantly positive for four major asset classes (RMBS, Specialized ABS, Autos, and Cards), but the estimates for the impairment probability are significantly positive for just two asset classes (Specialized ABS and Autos).
- Second, the coefficient estimates on the sponsor rating dummy are greater and more significant in ABS asset classes (except MH) than in MBS (RMBS, HEL, and CMBS).

The observation of a negative and insignificant coefficient on the sponsor rating dummy in the MH ABS sector is interesting because it means that the particular rating of a sponsor within this troubled asset class did not have an expected impact on a security's performance. This is in contrast with the observation that a larger share of tranches from non-investment-grade sponsors in this asset class is highly correlated with the asset class' overall poor performance (as demonstrated by Figures 12 and 13).

It is not entirely clear why the coefficient estimate is negative in the CMBS sector. We suspect that this may be the result of an overwhelming share of investment-grade banks and securities firms as sponsors in this sector, and the identification of sponsors in this sector is subject to some of the ambiguities we discussed earlier with respect to the definition and classification of sponsors.

IMPACT ON PERFORMANCE BY SPONSOR TYPE AT TRANCHE RATING LEVELS

Our analysis of a sponsor's impact on performance so far has been based on all tranches regardless of their tranche ratings. Figure 19 examines the impact of sponsor rating on performance at the level of the differently rated tranches for seven major asset classes. We did not report regressions results at the sub-asset-class levels because the number of observations becomes small at tranche rating levels. The following observations are noteworthy:

- First, the figure shows that when all asset classes are combined and a regression is run at security level with both tranche and sponsor rating dummies, the coefficient estimates for the difference between non-IG-sponsored tranches and IG-sponsored tranches are statistically significant for almost all broad rating categories.

- Second, the figure also shows that when the regressions are run for each asset class, thus controlling for asset class effect, the coefficient estimates are not significantly positive at most tranche rating levels. Except in MH, HEL, and CMBS, the coefficient estimates are nonetheless positive.
- Third, the results suggest that the impact on performance from sponsor rating is stronger on downgrade risk than on impairment risk, stronger in ABS than in MBS, and stronger at the higher rating levels (especially at the Aaa level) than at the lower rating levels.

Figure 19 - Coefficient Estimates on Sponsor Rating Dummy from Logistic Regressions of Impairment or Downgrade at Each of the Five Tranche Rating Levels

| Downgrade is the dependent variable. | | | | | | | | | |
|--------------------------------------|-------------|-------|-------------|-------------|-------|-------------|-------------|--------|--|
| Tranche Rating | All Assets | Auto | Card | Special ABS | MH | HEL ex. DLJ | RMBS | CMBS | |
| Aaa | 1.55 | 9.62 | 4.13 | 2.02 | 0.06 | 8.68 | 2.86 | -13.20 | |
| Aa | 0.64 | -0.30 | 11.41 | 0.90 | -0.46 | -0.11 | -0.57 | -13.56 | |
| A | 1.20 | 11.65 | 2.61 | 0.98 | -1.42 | 0.24 | 0.05 | -14.28 | |
| Baa | 0.61 | 10.65 | 2.22 | 0.53 | -1.51 | 0.37 | 0.34 | -0.36 | |
| SG | 0.15 | -0.79 | 12.69 | -0.79 | 14.05 | -0.54 | 0.92 | -1.13 | |

| Impairment is the dependent variable. | | | | | | | | | |
|---------------------------------------|-------------|-------|-------|-------------|-------|-------------|-------------|--------|--|
| Tranche Rating | All Assets | Auto | Card | Special ABS | MH | HEL ex. DLJ | RMBS | CMBS | |
| Aaa | 1.21 | -0.13 | 10.72 | 10.49 | -1.55 | -0.37 | -0.55 | 0.22 | |
| Aa | 1.10 | -0.39 | 11.15 | 1.46 | 0.00 | -0.53 | -11.25 | 0.14 | |
| A | 1.46 | 10.97 | 10.87 | 0.72 | -0.54 | 0.54 | 0.49 | -11.66 | |
| Baa | 0.77 | 8.88 | 11.59 | 0.49 | -1.11 | 0.61 | 0.12 | -13.03 | |
| SG | 0.58 | -1.67 | 10.48 | -0.15 | 13.87 | -1.36 | 0.92 | -0.72 | |

*Note: Logistic regressions are run separately for each asset class with a sponsor rating dummy, as well as tranche rating dummies. The model also includes a dummy variable for each vintage. Bold-faced values are statistically significant. Securities issued during 1993 and 2002 are used in estimations. The downgrade and impairment status of the securities are updated as of June 2006. The model is specified as: $y=f(a1*Dummy(Aaa)+a2*Dummy(Aa)+a3*Dummy(A)+a4*Dummy(Baa)+a5*Dummy(SG)+b1*Dummy(Aaa \& Non-IG)+b2*Dummy(Aa \& Non-IG)+b3*Dummy(A \& Non-IG)+b4*Dummy(Baa \& Non-IG)+b5*Dummy(SG \& Non-IG))$, where $f(.)$ is the logistic function, and the first symbol in each parenthesis of the equation above is tranche rating and the second symbol is sponsor rating, and the value of Dummy(.) equals 1 if the combination in the parenthesis is true, 0 otherwise.*

Figure 20 reports the coefficient estimates from various regressions with a specialty finance company dummy variable, in addition to tranche rating and vintage dummies. The results are largely similar to those in Figure 19 but with two notable exceptions.

First, the specialty finance company dummy is significant at all tranche rating levels when securities of all asset classes are grouped together (the first column). Moreover, the coefficient estimates are generally greater than those on the sponsor rating dummy in Figure 19. This suggests that the sponsor industry effect is stronger than the sponsor rating effect across asset classes. Note that the coefficient estimates in the Specialized ABS category are positively significant for tranches rated above Baa, mainly as a result of the strong across-asset-class effect.

Second, except when all asset classes are grouped together (the first column) and in the Specialized ABS category, the coefficient estimates in almost all individual asset classes are no longer significant, and many are in fact negative. This is different from those in Figure 19, which uses sponsor rating as a dummy variable. In other words, the specialty finance company effect is almost always across asset class rather than a result of the type of particular sponsor within an asset class.

Figure 20 - Coefficient Estimates on Specialty Finance Company Dummy from Logistic Regression of Impairment or Downgrade at Each of the Five Tranche Rating Levels

| Downgrade is the dependent variable. | | | | | | | | |
|--------------------------------------|-------------|-------|--------|-------------|--------------|-------------|--------------|--------|
| Tranche Rating | All Assets | Auto | Card | Special ABS | MH | HEL ex. DLJ | RMBS | CMBS |
| Aaa | 2.00 | 10.59 | -9.98 | 2.18 | 0.32 | -1.46 | -0.33 | 0.41 |
| Aa | 1.09 | -0.69 | -11.89 | 0.75 | 0.19 | -0.28 | -12.83 | -0.15 |
| A | 1.16 | 3.59 | -9.89 | 1.31 | 0.03 | -0.08 | -14.21 | -11.58 |
| Baa | 0.97 | 0.63 | -11.68 | 1.40 | -0.90 | 0.25 | -1.03 | -12.23 |
| SG | 0.46 | -0.68 | na | -0.04 | 0.54 | 1.00 | -0.35 | -0.09 |

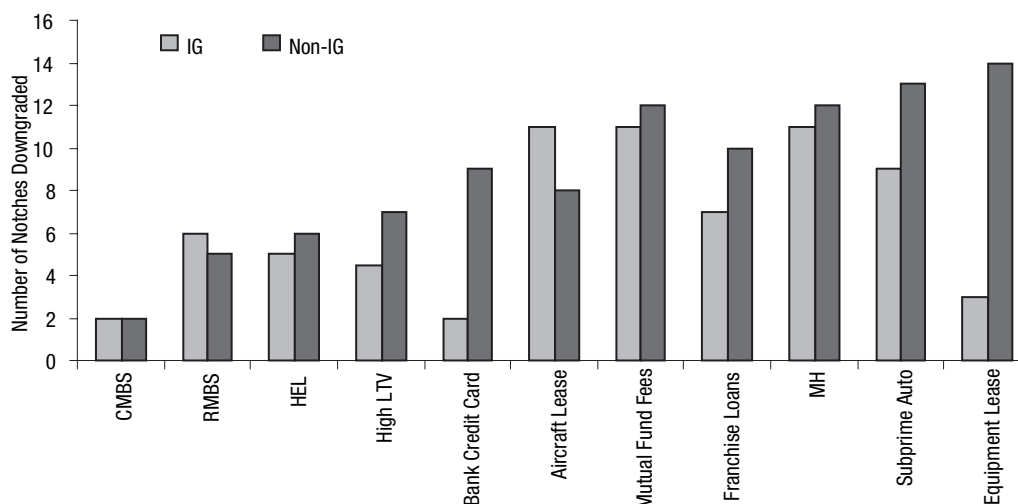
| Impairment is the dependent variable. | | | | | | | | |
|---------------------------------------|-------------|-------|--------|-------------|-------|-------------|--------|--------|
| Tranche Rating | All Assets | Auto | Card | Special ABS | MH | HEL ex. DLJ | RMBS | CMBS |
| Aaa | 1.56 | -0.11 | -8.02 | 1.83 | -2.29 | -0.26 | -0.37 | 0.15 |
| Aa | 1.69 | -1.22 | -10.90 | 1.63 | -0.02 | -0.34 | -10.65 | 0.11 |
| A | 2.09 | 11.78 | -8.01 | 1.93 | 0.95 | 0.95 | -13.01 | -9.79 |
| Baa | 1.66 | 8.36 | -10.78 | 1.97 | -0.72 | 0.79 | -0.97 | -11.01 |
| SG | 0.73 | -1.55 | na | 0.66 | 0.45 | 0.15 | -0.34 | -0.60 |

Note: Logistic regressions are run separately for each asset class with a specialty finance company dummy, as well as tranche rating dummies. The model also includes a dummy variable for each vintage. Bold-faced values are statistically significant. Securities issued during 1993 and 2002 are used in estimations. The downgrade and impairment status of the securities are updated as of June 2006. The model is specified as:
 $y=f(a1*Dummy(Aaa)+a2*Dummy(Aa)+a3*Dummy(A)+a4*Dummy(Baa)+a5*Dummy(SG)+b1*Dummy(Aaa \& Specialty)+b2*Dummy(Aa \& Specialty)+b3*Dummy(A \& Specialty)+b4*Dummy(Baa \& Specialty)+b5*Dummy(SG \& Specialty))$, where $f(\cdot)$ is the logistic function. The first symbol in each parenthesis of the equation above is tranche rating and the second symbol is sponsor industry, and the value of Dummy(.) equals 1 if the combination in the parenthesis is true, 0 otherwise.

DOWNGRADE SEVERITY BY SPONSOR TYPE

Another important component of the credit risk of structured securities is the severity of default or downgrade. Due to the lack of final loss severity information on a large number of impaired securities,⁴³ we focus on the severity of downgrades. Figure 21 compares, for all securities that were downgraded, the median number of notches changed per downgraded security (from original rating to the latest rating or the rating before withdrawal) in the two sponsor rating categories.

Figure 21 - Median Severity of Downgrade (Total Number of Notches Downgraded over the Lifetime of a Downgraded Security) by Sponsor Rating



Note: Securities issued during 1993-2002 are used in the calculations. The downgrade status of the securities is updated as of June 2006. IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies. Deals sponsored by DLJ are excluded.

43. Detailed discussions on loss severity rate of defaulted structured finance securities can be found in a number of Special Comments. For the latest study, please refer to, "Default & Loss Rates of Structured Finance Securities: 1993-2005," April 2006.

The evidence in Figure 21 shows that except in CMBS, RMBS, and aircraft lease ABS, the downgrade severity in the speculative-grade and not-rated sponsor category was greater than that in the investment-grade sponsor category. Moreover, the difference in the downgrade severity between the two sponsor rating categories varied by asset class. For some asset classes such as HEL, MH, and mutual fund fees the gap was small or non-existent. For other asset classes such as bank credit card, franchise loan, subprime auto, and equipment lease ABS, in which the impairment and downgrade rates had been substantially different between the two sponsor rating categories, the difference was very large.

Comparing Coupon Spreads by Sponsor Type

The variation of credit performance by sponsor type demonstrated in the last section suggests that deal sponsors play important roles in securities' credit performance. In this section, we continue to examine the role of the sponsor in structured finance by analyzing spread variations using a broader data sample that includes, in addition to credit card ABS, a wide range of asset classes in ABS as well as in HEL, RMBS, and CMBS. As we discussed in the introduction, some academic researchers have found that spreads are correlated with sponsor rating in credit card ABS transactions.⁴⁴ We hope the results here would shed additional light on the role of the sponsor in structured finance.

For our spread analysis, we use a more recent portion of our data sample covering securities from 1998 to 2006H1. Compared to the performance analysis, the spread analysis is more complex because spreads can vary by interest rate type, maturity, liquidity, and prepayment characteristics. One advantage of the spread analysis, however, is that there are more data observations (and more recent ones too), compared to the performance analysis (more recently issued securities cannot be used in the analysis of credit performance because of the seasoning effect). With more data, we can conduct various tests at sub-asset class levels.

The spread analysis in this section is based on an updated dataset that was first created for a December 2005 Moody's Special Comment. In that study, Moody's analyzed the relationship between coupon spread and credit performance of structured finance securities. The study found that spreads both reacted to the changes in the credit conditions in a given asset class and the overall market, and anticipated credit problems (e.g. impairment or downgrade) at the security level. As a result, spreads were much wider in some asset classes that experienced poor performance than in other asset classes that experienced strong performance. The results suggest that spreads and performance are highly correlated.⁴⁵

Using the same method employed in that December 2005 study, we define the spread to be a security's par coupon spread over a benchmark index at issuance date. Spreads of floating rate securities are measured over the one-month LIBOR. Fixed rate securities' spreads are generally measured over the 5-year swap rate except for auto loan ABS securities, the spread of which is measured over the 2-year swap rate.

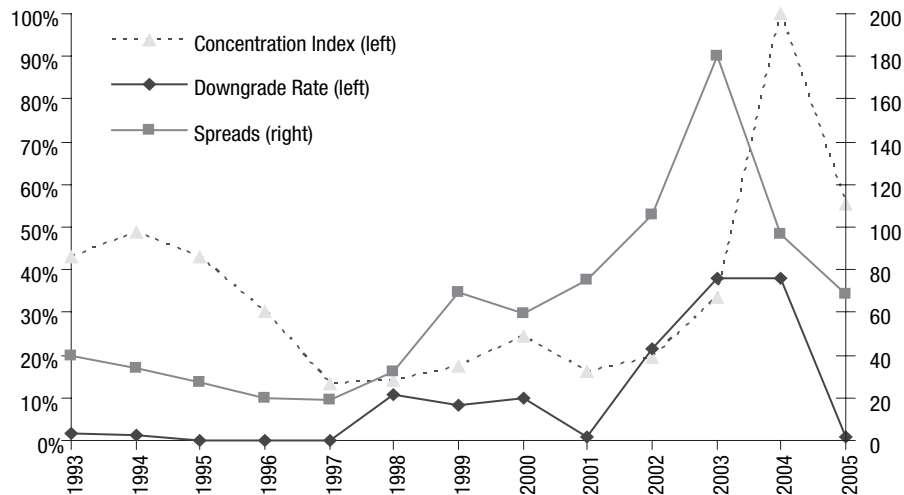
SPREAD, PERFORMANCE, AND THE ROLE OF SPONSORS: AN EXAMPLE

The relationship between spread and performance and the role of sponsor in this relationship is first illustrated using an example (Figure 22). In Figure 22, we take a closer look at the MH sector and compare three time series: the sponsor concentration index, the annual downgrade rate, and the coupon spread at issuance by vintage. Figure 22 suggests that the history of this sector can be roughly divided into three phases.

44. For example, see Higgins and Mason (2004), Gorton and Souleles (2005).

45. Moody's Special Comment, "The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance," December 2005.

Figure 22 - Average Fixed Rate Aaa Spreads of Manufactured Housing Securities by Vintage, Compared with the Sector's Sponsor Concentration Index and Annual Downgrade Rate



First, during 1993-1997, the sector was in its early development stage and very few MH securities were downgraded. The annual downgrade rate was in fact close to zero during this period. In the meantime, the average coupon spread narrowed from roughly 40 basis points in 1993 to 20 basis points in 1997, as new sponsors were attracted by the wider spreads and entered the sector. As a result, the sponsor concentration index dropped from about 50% in 1994 to 13% in 1997.

Second, during 1998-2001, the annual downgrade rates started to increase but were still relatively stable at around 10%. The spread, however, widened substantially in 1999 and the sponsor concentration also increased. Apparently at that time there were some early indications of the sector's growing credit problems such as high delinquency rates (some sponsors reduced issuance or even exited the sector).

Third, in 2002 and then 2003, the problems in the MH sector exacerbated as the economic recession hit the US economy. In December 2002, Conseco filed for bankruptcy. As the largest sponsor of MH deals, the downfall of Conseco further worsened the sector's credit problem by significantly increasing the loss severity of defaulted MH loans. Consequently, both the annual downgrade rates and spreads surged. In 2003, the average spread at issuance for Aaa reached 180 basis points, versus about 80 basis points in 2001, and the downgrade rate jumped to 40% in 2003. Very few MH deals have been issued since then.⁴⁶

This example illustrates how sponsor dynamics can influence spread and performance. One of the commonly cited reasons for this sector's credit problems is the flood of new sponsors rushing into this sector, chasing yields, causing sponsors to lower their underwriting standard and ease loan terms in order to gain market share. Consequently, loan delinquent rates mounted and losses jumped, and the credit problems ended up hurting all deals in the sector. The fact that the MH sector was dominated by speculative-grade or non-rated specialty finance companies and subsequently suffered poor performance, and the observation that the performance of MH securities was not better for investment-grade sponsors than for non-investment-grade sponsors, were a result of such sponsor dynamics in a competitive sector.

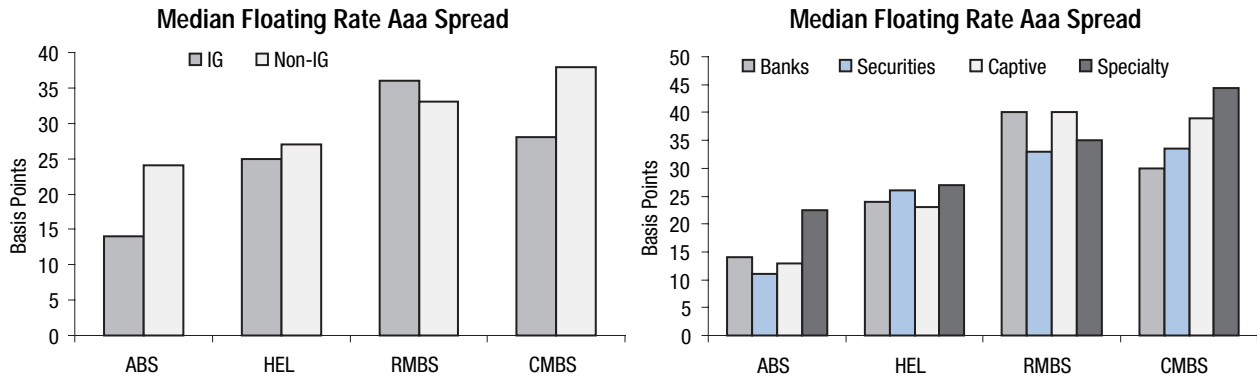
MEDIAN SPREADS AND SPONSOR TYPE

To study the role of sponsor in spread variations, we first compare spreads by sponsor rating and industry for four major sectors: ABS (excluding HEL), HEL, RMBS and CMBS (Figure 23). We focus on Aaa spreads here because the number of Aaa securities by asset class is much larger than that in other tranche rating categories. Additional results based on Baa spreads appear later in this section. It is worth emphasizing that Aaa spreads can be influenced by a variety of risk factors including,⁴⁷ among many other factors, credit performance, liquidity, prepayment, average life, and the experience of a sponsor.

46. In 2006, the market's interest in MH ABS ticked up.

47. More discussions on the determinants of spread in structured finance securities can be found in Moody's Special Comment, "The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance," December 2005.

Figure 23 - Median Floating Rate Aaa Spreads by Sponsor Rating and Industry in Four Broad Sectors, 1998-2006H1



Note: IG - tranches sponsored by investment-grade companies; Non-IG - tranches sponsored by speculative-grade or non-rated companies.

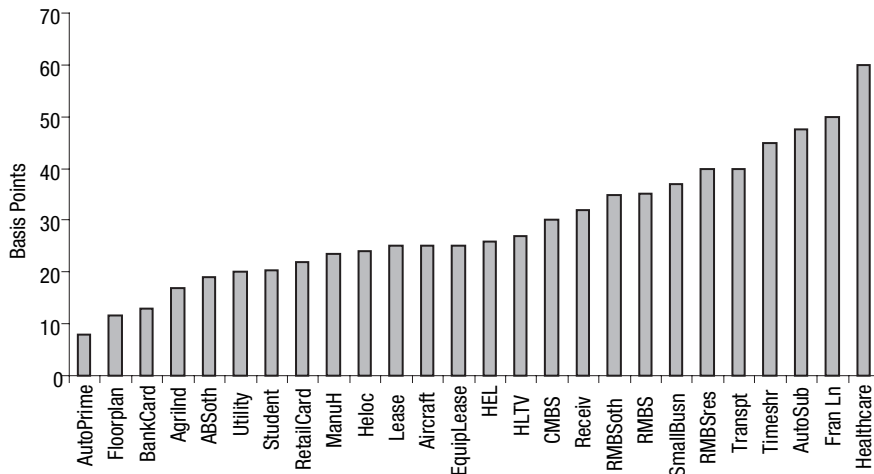
Figure 23 shows that for three of the four broad sectors, the median floating rate Aaa spreads were generally lower for investment-grade sponsors than for speculative-grade or non-rated sponsors. The difference in spreads between the two sponsor rating categories was the largest in ABS. In addition, by sponsor industry, it appears that the median spreads were higher in the specialty finance sponsor category than in other sponsor categories. The spread differences by sponsor type were generally smaller in HEL and RMBS than in ABS and CMBS. These results appear to be consistent with those from the performance analysis in the last section.

We note that, in the RMBS and CMBS sectors, because the majority of deals were sponsored by investment-grade banks or securities firms, the contrast in spreads by sponsor type may not be particularly representative. In addition, the pattern of spread differences across four sponsor industry groups is not clear. As a result, in the remainder of this section, we focus on the impact on spreads by sponsor rating.

SPREAD VARIATION BY ASSET CLASS

Just as credit performance varies substantially across asset classes, spreads also vary across asset classes. Figure 24 illustrates the wide variation of floating rate Aaa spreads across sub-asset classes.⁴⁸ For instance, two of the worst performing asset classes, franchise loan and healthcare receivable ABS, had much higher spreads than did some of the best performing asset classes such as prime auto, bank credit card, agricultural and industrial equipment ABS.

Figure 24 - Median Floating Rate Aaa Spreads by Sub-Asset Classes, 1998-2006H1



48. We again use Aaa spreads because there are more data observations at the Aaa level. Securities in some asset classes such as MH, RMBS and CMBS were predominantly fixed rate, so the floating rate spreads may not be representative.

To examine how these spreads were influenced by the distribution of sponsors in each asset class, we prepared Figure 25.

Figure 25 - Median Floating Rate Aaa Spreads and Share of Tranches from Non-Investment-Grade Sponsors by Asset Class, 1998-2006H1

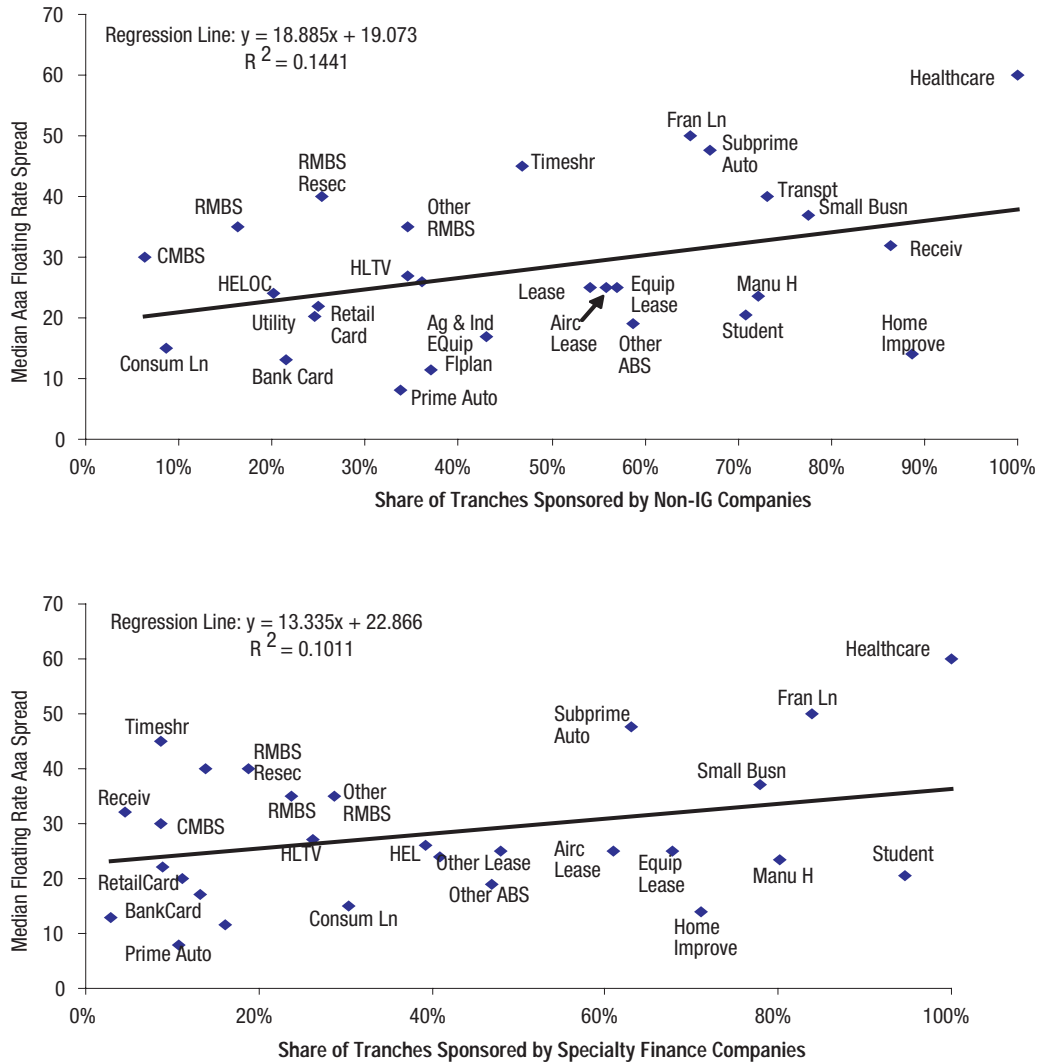


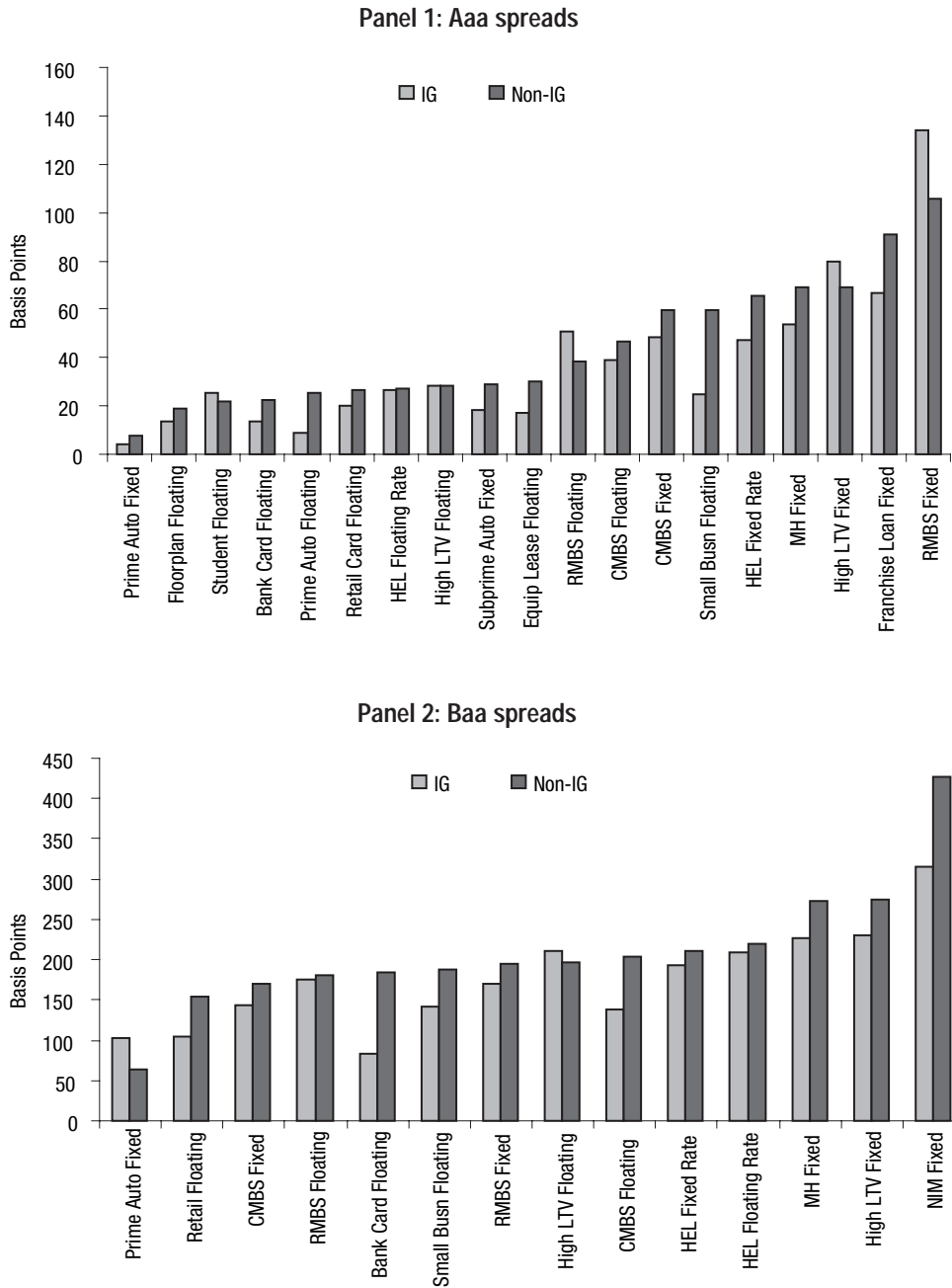
Figure 25 demonstrates that:

- The median spread of an asset class was on average higher if the asset class had a larger share of non-IG-sponsored tranches. This is exhibited by the upward-sloping linear regression line.
- The median spread was on average higher if the asset class had a larger share of tranches sponsored by specialty finance firms. The relationship, however, was weaker than that based on sponsor rating.
- The regression line in these figures does not fit as well as the quadratic regression lines did in the performance analysis (lifetime downgrade rates or lifetime impairment rates) in the last section, suggesting that either the impact of sponsor distribution on spreads is weaker than on performance, or these spreads do not measure credit performance well.

SPREAD VARIATION BY SPONSOR RATING WITHIN ASSET CLASS

The impact of sponsor rating on Aaa and Baa spreads after controlling for asset classes is shown in two panels of Figure 26, separately.

Figure 26 - Median Floating Rate Spreads by Sponsor Rating and Sub-Asset Classes, 1998-2006H1



Note: Spreads on floating rate securities are measured over the 1-month LIBOR rate. Spreads on fixed rate auto ABS securities are measured over the 2-year swap rate, and spreads on the fixed rate securities in other asset classes are measured over the 5-year swap rate. All spreads are medians during the period of 1998-2006H1. IG - tranches sponsored by investment-grade companies, Non-IG - tranches sponsored by speculative-grade or non-rated companies. Some asset classes do not have enough Baa tranche data observations and are omitted from the Baa tranche spread panel.

The contrast of the median spreads by sponsor rating grade is evident in Figure 26. The median Aaa spread was lower in the IG category than in the non-IG category for 15 of the 19 asset classes. Only in four sub-asset classes (student loan floating, High LTV fixed, RMBS floating, RMBS fixed) was the median spread found to be higher in the IG category.

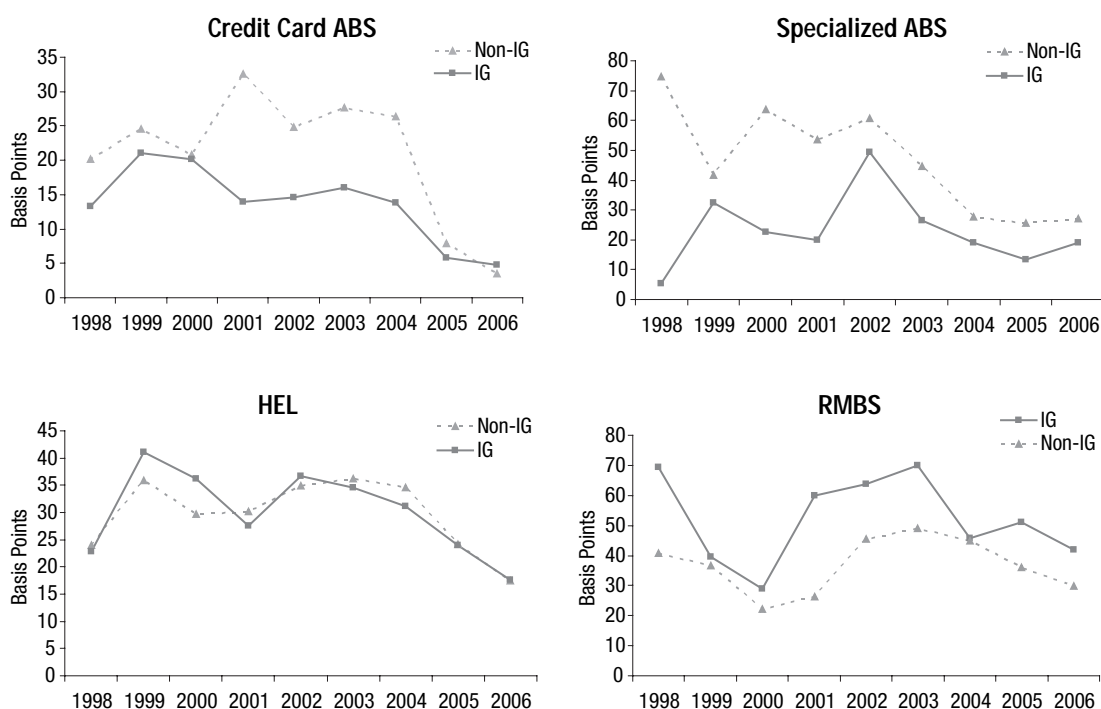
For the Baa tranche spreads, in 12 of the 14 asset classes the median spread in the IG category was lower than that in the non-IG category. The two exceptions are the prime auto fixed and HLTV floating ABS asset classes.

The difference in spread gaps across the two sponsor rating categories also varied. In some asset classes such as credit card and small business loan ABS, the median Aaa spreads were markedly different, whereas in other asset classes such as HEL and RMBS, the spread gap was much smaller.

SPREAD VARIATION BY SPONSOR RATING AND VINTAGE

Because spreads varied substantially over the period of 1998-2006,⁴⁹ it is also important to study the spread gaps between the two sponsor rating categories over time. Figure 27 plots each vintage year's median floating rate Aaa spreads for four major asset classes. The four asset classes are chosen because they had a sufficiently large number of observations over time in both sponsor rating categories. Figure 27 demonstrates a strong vintage effect on spreads, as they have declined substantially in recent years for all asset classes.

Figure 27 - Median Floating Rate Aaa Spreads by Vintage Year and Sponsor Rating, 1998-2006H1



Note: Specialized ABS includes all ABS asset classes except auto, card, MH, HEL, and student loan ABS.

In the credit card ABS and specialized ABS categories, the median floating rate Aaa spreads in the non-investment-grade category was clearly above those in the investment-grade category. Additionally, the gaps in the ABS spreads were particularly large in 1998 and 2001⁵⁰ although the gaps have fallen significantly since 2002.

Compared to the ABS spreads, the spread difference was very small in HEL, whereas in the RMBS sector, the spread in the IG category was actually higher than that in the non-IG category over the entire sample period.

49. Structured finance securities' spread volatility was discussed in detail in Moody's Special Comment, "The Relationship between Par Coupon Spreads and Credit Ratings in US Structured Finance," December 2005.

50. Tiering among sponsors may be more pronounced during less-benign credit cycles. For example, the large spread gap between the two sponsor rating categories in 1998 may be related to the credit crunch caused by the Russian financial crisis in 1998. The large gap in 2001 may be the result of the US economic recession at the time.

TEST THE SIGNIFICANCE OF SPREAD DIFFERENCES BY SPONSOR RATING

We now test the statistical significance of the spread differences by sponsor rating. To do that, we constructed a simple OLS regression model of spreads on a non-IG sponsor rating dummy variable (1 if a tranche is sponsored by a non-IG company, 0 otherwise), controlling for the vintage year effect. We ran the regression model for both floating rate and fixed rate, and both Aaa and Baa tranches first for four major sectors and then for each sub-asset class, separately.

Figure 28 reports the regression results for four major sectors. It shows that the sponsor rating impact on spreads was significantly positive for floating rate Aaa and Baa ABS and HEL securities. For fixed rate securities, the sponsor rating impact was significantly positive for ABS at the Baa rating level and for HEL at the Aaa rating level. The impact on RMBS and CMBS was not significant or opposite to the expected effect. Finally, for Baa CMBS securities, the sponsor rating appears to have had a strong impact on spreads.

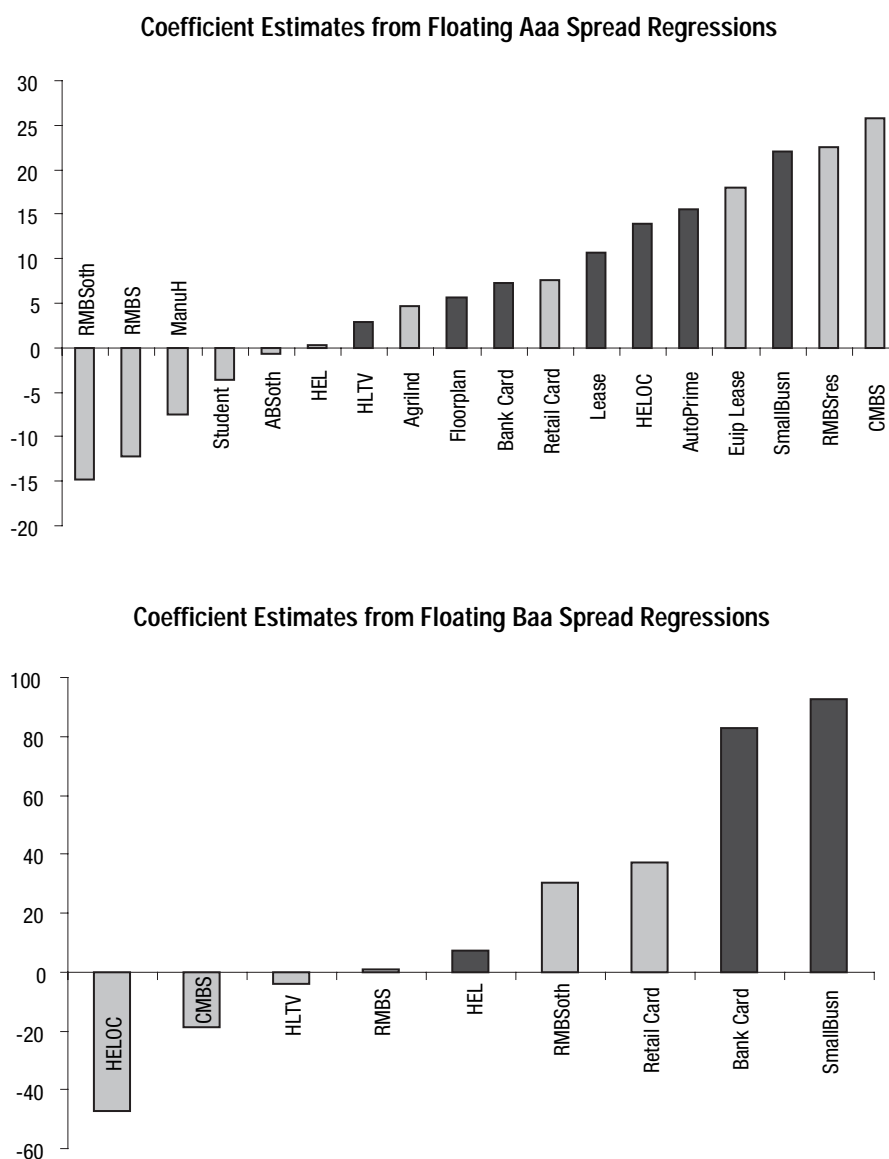
Figure 28 - Coefficient Estimates on Sponsor Rating Dummy from OLS Regressions of Spreads (bps) by Sector

| sector | Floating Rate Aaa | Fixed Rate Aaa | Floating Rate Baa | Fixed Rate Baa |
|--------|-------------------------|-------------------------|------------------------|-------------------------|
| ABS | 12.10 (1.64) | -0.62 (3.42) | 90.00 (9.58) | 41.18 (12.66) |
| HEL | 0.71 (0.36) | 9.35 (4.26) | 5.94 (2.00) | 8.44 (8.74) |
| RMBS | -12.18 (4.60) | -11.99 (3.11) | 0.91 (5.46) | 12.22 (10.80) |
| CMBS | 25.70 (20.66) | 7.43 (8.43) | -18.56 (19.79) | 21.21 (10.57) |

Note: Bold-faced estimates are statistically significant at the 95% confidence level. Standard errors are reported in the parenthesis. Securities issued during 1998-2006H1 are used in the analysis, and there is a dummy variable for each vintage in the regressions. OLS regressions are run separately by sector, interest rate type, and tranche rating

We also ran regressions for individual sub-asset classes so long as there are enough data observations in that asset class. Figure 29 shows the regression results for floating rate Aaa and Baa securities, respectively. The results for fixed rate spreads are generally consistent with the main findings in Figure 29 and are not shown.

Figure 29 - Coefficient Estimates on Sponsor Rating Dummy from OLS Regressions of Spreads by Asset Class



Note: Coefficient estimates in the highlighted (dark) asset classes are statistically significant at the 95% confidence level. Positive coefficient means the spread is wider for tranches sponsored by non-IG companies than those sponsored by IG companies. Securities issued during 1998-2006H1 are used in the analysis, and there is a dummy variable for each vintage in the regressions. Spreads are in basis points.

We make three interesting observations from Figure 29.

First, for Aaa tranches, the coefficient estimate for the sponsor rating dummy variable is positive for 13 asset classes, which include most ABS asset classes, and negative for six asset classes, which includes mainly RMBS and student loan ABS securities. Among the 13 asset classes that report positive coefficients, seven of them report a significantly positive coefficient estimate.

Second, for Baa tranches, the coefficient estimate on the sponsor rating dummy is also positive for six asset classes, and negative for three asset classes (HELOC, CMBS and HLTV). Among the six asset classes that have positive coefficients, three of them reported a significantly positive coefficient.

Third, the coefficient estimate on the sponsor rating dummy is generally higher for Baa spreads than for Aaa spreads. For example, the coefficient difference is 83 basis points for Baa versus 7 basis points for Aaa in the bank credit card category, and 93 basis points for Baa and 22 basis points for Aaa in the small business loan ABS category.

Although the absolute spread difference is larger for Baa than for Aaa, relative to the Aaa and Baa spread levels in these two asset classes (14 bps for Aaa and 83 bps for Baa bank credit card ABS securities that were sponsored by investment-grade companies, 25 bps for Aaa and 141 bps for Baa small business loan ABS securities that were sponsored by investment-grade companies), the impact of sponsor rating on spread appears to be bigger for Aaa tranches than for Baa tranches.

Concluding Remarks

The structured finance deal sponsor plays an important role in the credit performance of structured finance securities.

We find that credit performance has been on average stronger in asset classes where a high proportion of the sponsors have been banks and/or rated investment-grade; whereas, performance has tended to be weaker in asset classes where a high proportion of sponsors have been specialty finance firms and/or non-investment-grade (unrated or rated speculative grade).

The correlation of sponsor type and credit performance has been stronger across asset classes than within asset classes, meaning that the likelihood that a securitization experienced adverse credit performance is better predicted by the prevalence of certain types of sponsors within its asset class than by the nature of its own particular sponsor.

Within some ABS asset classes - such as credit card, equipment lease, and small business loan ABS - transactions of non-investment-grade sponsors underperformed other transactions; however, within most asset classes - such as student loan, HEL, RMBS, CMBS, and manufactured housing loan ABS - the impact of sponsor type on performance was modest or non-existent.

While the data reveals some interesting correlations between credit performance and sponsor type, the analysis does not discriminate among the many possible explanations for the findings, which include:

- Competitive forces may cause lower rated sponsors and specialty finance companies to be most active in market segments where collateral is risky and pool performance is hard to predict.
- Collateral performance may be inversely related to the credit quality of the sponsor since the pool's underlying obligors may be less likely to service their debts if the servicer is bankrupt.
- Agency problems may be less severe for more highly rated sponsors and for some banks, security firms, and captive finance companies if their expected long-term participation in the securitization market makes them more likely to be consistent in their underwriting standards, selection of assets, and servicing.

Appendix: A Selected List of Sponsors and Sample Distribution

A LIST OF MAJOR SPONSORS IN SOME KEY ASSET CLASSES

Top Ten Sponsors by Number of Deals Moody's Rated during 1993-2006H1, and Listed in Alphabetic Order within Each Asset Class

Auto

DAIMLERCHRYSLER AG
FORD MOTOR CREDIT COMPANY
GENERAL MOTORS ACCEPTANCE CORPORATION
HONDA MOTOR CO., LTD.
JPMORGAN CHASE BANK, NA
LEASING ASSOCIATES, INC.
MITSUBISHI MOTORS CORPORATION
NISSAN MOTOR CO., LTD.
TOYOTA MOTOR CREDIT CORPORATION
USAA FEDERAL SAVINGS BANK

Credit Card

AMERICAN EXPRESS COMPANY
CAPITAL ONE BANK
CITIGROUP
FIRST USA BANK
FLEET BANK
JPMORGAN CHASE BANK, NA
MBNA CORPORATION
METRIS COMPANIES INC.
MORGAN STANLEY/DISCOVER
SEARS, ROEBUCK AND CO.

HEL

AMERIQUEST MORTGAGE COMPANY
BEAR STEARNS COMPANIES INC.
COUNTRYWIDE HOME LOANS, INC.
CREDIT SUISSE
GENERAL MOTORS ACCEPTANCE CORPORATION
GOLDMAN SACHS GROUP, INC.
LEHMAN BROTHERS HOLDINGS INC.
MERRILL LYNCH & CO., INC.
MORGAN STANLEY
RBS GREENWICH CAPITAL

RMBS

BANK OF AMERICA CORPORATION
BEAR STEARNS COMPANIES INC.
COUNTRYWIDE HOME LOANS, INC.
CREDIT SUISSE
GENERAL MOTORS ACCEPTANCE CORPORATION
INDYMAC BANK, F.S.B.
LEHMAN BROTHERS HOLDINGS INC.
PRUDENTIAL FINANCIAL, INC.
WASHINGTON MUTUAL BANK
WELLS FARGO BANK, N.A.

CMBS

BANK OF AMERICA CORPORATION
BEAR STEARNS COMPANIES INC.
CREDIT SUISSE
DEUTSCHE BANK AG
GENERAL MOTORS ACCEPTANCE CORPORATION (GMAC)
GOLDMAN SACHS GROUP, INC.
JPMORGAN CHASE BANK, NA
LEHMAN BROTHERS HOLDINGS INC.
MERRILL LYNCH & CO., INC.
MORGAN STANLEY

A Selected List of Troubled Sponsors and Their Brief History

Green Tree/Conseco Finance Corporation

- 1975 Green Tree Acceptance Inc. is founded as a wholly owned subsidiary of Midwest Federal Savings & Loan to provide manufactured housing loans
 - 1985 Green Tree becomes an independent company after it is spun-off from Midwest
 - 1992 Green Tree Acceptance Inc. is renamed Green Tree Financial Corporation
 - 1998 Green Tree Financial Corporation is acquired by Conseco Inc. and later changes its name to Conseco Finance Corporation
 - 2002 Conseco Finance and its parent, Conseco Inc., file for bankruptcy
 - 2003 Conseco Finance's assets are acquired by CFN Investments LLC and GE Consumer Finance
Conseco Inc., emerges from bankruptcy
-

Quality Mortgage/DLJ Mortgage Capital, Inc.

- 1984 Quality Mortgage is founded as Quality Mortgage USA, Inc.
 - 1991 Calmac Funding, Inc. acquires Quality Mortgage
DLJ Mortgage Capital, Inc. receives 49% equity interest in Quality in exchange for providing funding to Quality and acting as its Conduit
 - 1992 Quality Mortgage begins originating and acquiring mortgage loans under its equity lending program
 - 1996 AMRESKO Residential Mortgage Corporation, a wholly-owned subsidiary of AMRESKO, INC., acquires Quality's assets from Calmac Funding/DLJ Mortgage Capital
 - 2000 Credit Suisse Group acquires DLJ and DLJ Mortgage Capital Inc.
DLJ is renamed Credit Suisse First Boston (USA), Inc.
-

National Century Financial Enterprises Inc.

- 1991 National Century is co-founded by Lance Poulsen, hospital executive Donald Ayers and his wife
 - 2000 National is sued by bankrupt Boston Regional Medical Center with allegations of fraud, misrepresentation and civil conspiracy
 - 2002 Lance Poulsen, chairman and chief executive, resigns from both positions
National Century along with NPF VI and NPF XII files for bankruptcy and becomes the target of FBI and SEC investigations
Clients and asset-backed securities holders of National Century allege gross mismanagement
 - 2004 National Century is liquidated
-

A Selected List of Troubled Sponsors and Their Brief History (Cont'd)

Heilig-Meyers Company

1913 Heilig-Meyers is founded

1972 Heilig becomes a public company

1996-2000 Heilig acquires several businesses and then sells most of them

2000 Heilig files for bankruptcy

2001 Heilig sells more assets and discontinues operation of many stores

Northwestern Mutual Life Insurance files a lawsuit in relation to Heilig's 1998 certificates, complaining among other allegations about Heiligs' credit and collection practices

2005 Heilig files an amended liquidation plan of reorganization to allow RoomStore, one of its businesses to emerge from bankruptcy

The Spiegel Group (Spiegel, Inc.)/First Consumers National Bank

1865 Spiegel is founded as a furniture store in downtown Chicago

1982 Spiegel is acquired by Otto Versand, the world's largest catalogue company

1987 Spiegel issues stocks in an IPO. Otto Versand retains 90 percent of the shares and is the sole voting shareholder

1989 Spiegel acquires First Consumers National Bank which opened in December 1988

1999 Financial problems started as Spiegel reports a large increase in the debt owed by its credit-card holders

2002 Spiegel plans to close a call center in Kansas

Efforts to sell its credit card business, including First Consumers, are unsuccessful

2003 Company sales decline significantly and Spiegel lays-off employees

Losses accumulate from credit card operations and Spiegel is required by OCC to end its bankcard business, operated by First Consumers National Bank; The bank is liquidated

SEC begins investigating compliance with federal securities law

Spiegel files for bankruptcy

2005 Spiegel reorganizes under a newly established parent company, Eddie Bauer Holdings, Inc.

A Selected List of Troubled Sponsors and Their Brief History (Cont'd)

NextCard, Inc.

- 1996 NextCard is founded
- 1999 NextCard issues stocks in an IPO
- 2001 Several class action lawsuits are filed against NextCard alleging that the company provided false and misleading information about its subsidiary NextBank. in SEC filings for the fiscal years 1999, 2000, and part of 2001
- 2002 Regulators with the FDIC terminate more than half a million of Visa credit card accounts at NextCard as selling them was unsuccessful
- OCC requires NextBank N.A. to shut down due to the bank's unsafe operations
- NextCard lays off most of its employees and is delisted from Nasdaq
- SEC opens an investigation into NextCard and the company files for bankruptcy
-

DVI, Inc.

- 1985 Diagnostic Ventures, inc. (DVI) is founded as DVI Financial Corp.
- 1991 DVI Financial Corp. is renamed DVI Health Services Corp.
- 1993 DVI acquires Medical Equipment Finance Corp., headed by Michael A. O'Hanlon. O'Hanlon receives millions worth of DVI stock and becomes an executive VP and a board member of DVI as well as the president of DVI Financial Services, a unit of DVI
- DVI Health Services Corp. is renamed DVI, Inc.
- 1994 O'Hanlon is appointed DVI's president and COO
- 1995 O'Hanlon becomes DVI's CEO
- 1997 O'Hanlon's international lending expansion and failure to securitize the added contracts cost DVI over \$100 million in shortfalls and DVI turns to Fleet National Bank for a loan
- 2003 Deloitte & Touche resigns from DVI's account and DVI's March quarterly report is rejected by the SEC as it has not been reviewed by its independent auditor
- DVI's net income shrinks as the company files restatements for 2002 and first nine months of 2003
- DVI files for bankruptcy and begins sale of its assets
- A class action lawsuit is filed on behalf of shareholders against Michael A. O'Hanlon, CEO and President and Steven R. Garfinkel, Executive Vice President and CFO
- 2004 Fleet National Bank files a lawsuit against DVI alleging that the company provided double-pledged collateral to support its loan
- Garfinkel's employment with DVI is terminated
- Bankruptcy court approves DVI's liquidation plan
-

A Selected List of Troubled Sponsors and Their Brief History (Cont'd)

Metris Companies Inc.

- 1994 Metris, a direct marketer of consumer credit products is formed by Ronald N. Zebeck as a unit of the catalog retailer Fingerhut Corporation
- 1996 Fingerhut sells nearly 20 percent of its stake in Metris through an IPO and holds the remaining shares
- 1998 Fingerhut spins-off Metris selling the remaining of its shares to Fingerhut shareholders
- 2000 Class action lawsuits are filed against Metris and its wholly owned subsidiary Direct Merchants Credit Card Bank N.A. alleging that Metris made misleading solicitations and charged its cardholders with illegitimate fees
- 2002 Several class action lawsuits are filed by shareholders against Metris alleging that the company failed to timely reveal a report it has received from the OCC concerning its banking subsidiary's exposure to subprime cards' risk
- Ronald N. Zebeck, CEO and chairman of Metris is fired by the board without a stated reason
- 2003 SEC begins investigating Metris about loan-loss allowances in 2001 and subsequent years
Metris receives a subpoena from OCC asking for certain documents
- 2004 The OCC requires Metris to produce additional documents related mainly to executive compensation. A possible target is Metris' founder and former CEO, Ronald N. Zebeck, who was fired in 2002
- 2005 Metris is acquired by HSBC Finance Corporation
-

United Companies Financial Corp (UCFC)

- 1946 UCFC is founded as a lender to soldiers returning from World War II
- 1990 UCFC acquires Foster Mortgage Corporation
- 1993 USFC sells most of Foster Mortgage Corporation's assets as the subsidiary experiences high level of mortgage prepayments and deteriorated performance
Foster is in payment default under its primary credit facility and goes bankrupt with the remaining assets being liquidated
- UCFC begins selling securities backed by its consumer home equity loans to generate additional revenue
- 1996 UCFC sells its subsidiaries United Companies Life Insurance Company and United General Title Insurance Company
- 1999 UCFC files for bankruptcy
- The company sells its mortgage origination subsidiary, UC Lending Corporation, to Aegis Mortgage Corporation
- J. Terrell Brown, CEO and president, and Dale E. Redman, CFO are sued by investors who claim that management hid company's debt and misled investors as to the financial condition of the company and the credit quality and performance of the loans it originated
- 2000 UCFC sells its servicing operation to EMC Mortgage, a wholly owned subsidiary of Bear Stearns, and disposes of the rest of its assets
- 2003 A lawsuit is filed by the bankruptcy trustee for United Companies Financial Corp. against Deloitte & Touche, the company's auditors., alleging the auditors should have known about a UCFC's accounting error that forced it to take an enormous write-off in 1999 leading to its bankruptcy
-

A Selected List of Troubled Sponsors and Their Brief History (Cont'd)

Commercial Financial Services (CFS)

1986 CFS is founded

1998 Moodys downgrades its rated CFS deals citing deteriorated collections and questionable servicing practices

An anonymous letter is received by credit rating agencies and warns that CFS has exaggerated the performance of its receivables by reselling delinquent accounts to Ditmat Inc., an affiliated company;
CFS deals are downgraded and most of them are later withdrawn

Oklahoma State Securities department opens an investigation arguing that CFS, the Tulsa based company, is in violation of the Oklahoma Securities Act

Founders and principal managers of CFS, Jay L. Jones, Bill Bartmann and Kathryn Bartmann resign and CFS file for bankruptcy

1999 CFS closes its business and sells its assets

Enterprise Mortgage Acceptance Co. (EMAC)

1996 EMAC is founded

2001 EMAC is shut down by majority owner Koch Industries

2002 Teachers Insurance and Annuity Association (TIAA) along with several insurance company investors sue EMAC alleging that it misrepresented its lending practices and masked borrowers payment difficulties

A similar lawsuit is filed by ING Investment Management along with other insurance companies claiming in addition that EMAC used a shell company to dispose of its nonperforming assets

Additional lawsuits were brought against company executives and Majority holder Koch Industries

Distribution of Sponsors, Deals, & Tranches by Asset Class

| Sub-Asset Class | Count in the Population (1993-2002) by | | | | | Count of Downgrades (as of June 2006) by | | | | | Lifetime Downgrade Rate by | | |
|-----------------|--|------|---------|------------------|---------------------|--|------|---------|------------------|---------------------|----------------------------|-------|---------|
| | Sponsor | Deal | Tranche | Deal per Sponsor | Tranche per Sponsor | Sponsor | Deal | Tranche | Deal per sponsor | Tranche per Sponsor | Sponsor | Deal | Tranche |
| ABS Other | 32 | 51 | 93 | 1.6 | 2.9 | 3 | 4 | 4 | 1.3 | 1.3 | 9.4% | 7.8% | 4.3% |
| Agri & Ind | 7 | 39 | 78 | 5.6 | 11.1 | 1 | 1 | 1 | 1.0 | 1.0 | 14.3% | 2.6% | 1.3% |
| AirCraft Lease | 14 | 21 | 69 | 1.5 | 4.9 | 8 | 13 | 51 | 1.6 | 6.4 | 57.1% | 61.9% | 73.9% |
| Auto Prime | 51 | 305 | 543 | 6.0 | 10.6 | 2 | 2 | 6 | 1.0 | 3.0 | 3.9% | 0.7% | 1.1% |
| Auto Subprime | 20 | 77 | 122 | 3.9 | 6.1 | 5 | 12 | 13 | 2.4 | 2.6 | 25.0% | 15.6% | 10.7% |
| CMBS | 66 | 331 | 2687 | 5.0 | 40.7 | 28 | 106 | 367 | 3.8 | 13.1 | 42.4% | 32.0% | 13.7% |
| Bank Card | 44 | 589 | 1184 | 13.4 | 26.9 | 5 | 14 | 27 | 2.8 | 5.4 | 11.4% | 2.4% | 2.3% |
| Retail Card | 21 | 87 | 178 | 4.1 | 8.5 | 1 | 2 | 6 | 2.0 | 6.0 | 4.8% | 2.3% | 3.4% |
| Consumer Loan | 7 | 19 | 46 | 2.7 | 6.6 | 1 | 1 | 1 | 1.0 | 1.0 | 14.3% | 5.3% | 2.2% |
| Equipment Lease | 28 | 62 | 188 | 2.2 | 6.7 | 4 | 14 | 53 | 3.5 | 13.3 | 14.3% | 22.6% | 28.2% |
| Floorplan | 17 | 77 | 107 | 4.5 | 6.3 | 1 | 1 | 2 | 1.0 | 2.0 | 5.9% | 1.3% | 1.9% |
| Franchise Loan | 10 | 27 | 145 | 2.7 | 14.5 | 8 | 19 | 104 | 2.4 | 13.0 | 80.0% | 70.4% | 71.7% |
| HLTV | 18 | 38 | 167 | 2.1 | 9.3 | 5 | 8 | 11 | 1.6 | 2.2 | 27.8% | 21.1% | 6.6% |
| HEL | 72 | 570 | 2483 | 7.9 | 34.5 | 34 | 177 | 425 | 5.2 | 12.5 | 47.2% | 31.1% | 17.1% |
| Home Improve | 8 | 26 | 79 | 3.3 | 9.9 | 5 | 21 | 24 | 4.2 | 4.8 | 62.5% | 80.8% | 30.4% |
| Healthcare | 2 | 15 | 27 | 7.5 | 13.5 | 1 | 14 | 26 | 14.0 | 26.0 | 50.0% | 93.3% | 96.3% |
| Heloc | 9 | 21 | 46 | 2.3 | 5.1 | 0 | 0 | 0 | na | na | 0.0% | 0.0% | 0.0% |
| Lease Other | 27 | 67 | 129 | 2.5 | 4.8 | 1 | 2 | 8 | 2.0 | 8.0 | 3.7% | 3.0% | 6.2% |
| Manu H | 24 | 162 | 760 | 6.8 | 31.7 | 21 | 121 | 425 | 5.8 | 20.2 | 87.5% | 74.7% | 55.9% |
| Mutual Fund | 3 | 12 | 30 | 4.0 | 10.0 | 2 | 8 | 18 | 4.0 | 9.0 | 66.7% | 66.7% | 60.0% |
| NIM | 13 | 38 | 38 | 2.9 | 2.9 | 1 | 1 | 1 | 1.0 | 1.0 | 7.7% | 2.6% | 2.6% |
| RMBS | 86 | 1187 | 3897 | 13.8 | 45.3 | 21 | 56 | 90 | 2.7 | 4.3 | 24.4% | 4.7% | 2.3% |
| RMBS Other | 28 | 51 | 138 | 1.8 | 4.9 | 2 | 2 | 2 | 1.0 | 1.0 | 7.1% | 3.9% | 1.4% |
| RMBS Resec | 29 | 95 | 225 | 3.3 | 7.8 | 5 | 7 | 16 | 1.4 | 3.2 | 17.2% | 7.4% | 7.1% |
| Receiv | 15 | 15 | 18 | 1.0 | 1.2 | 1 | 1 | 1 | 1.0 | 1.0 | 6.7% | 6.7% | 5.6% |
| Small Busn | 17 | 50 | 99 | 2.9 | 5.8 | 3 | 8 | 21 | 2.7 | 7.0 | 17.6% | 16.0% | 21.2% |
| Student Loan | 26 | 105 | 201 | 4.0 | 7.7 | 0 | 0 | 0 | na | na | 0.0% | 0.0% | 0.0% |
| Timeshr | 6 | 7 | 23 | 1.2 | 3.8 | 0 | 0 | 0 | na | na | 0.0% | 0.0% | 0.0% |
| Transpt | 15 | 85 | 176 | 5.7 | 11.7 | 5 | 12 | 20 | 2.4 | 4.0 | 33.3% | 14.1% | 11.4% |
| Utility | 22 | 27 | 27 | 1.2 | 1.2 | 0 | 0 | 0 | na | na | 0.0% | 0.0% | 0.0% |
| All | 737 | 4256 | 14003 | 4.2 | 11.9 | 174 | 627 | 1723 | 2.8 | 6.6 | 23.6% | 14.7% | 12.3% |

Note: In this study, a structured finance security experienced a downgrade if the security's latest rating at the end of our study period (June 30, 2006), or the rating before withdrawal if the rating has been withdrawn, is lower than the rating at issuance. Only securities issued between 1993 and 2002 are used in the credit performance analysis. The lifetime downgrade rate is the number of downgraded securities divided by the total number of securities in each asset class category.

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