

## Special Report

# Structured Finance Default Study

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### ■ Summary

Over the past 11 years, very few defaults have occurred in rated classes of structured finance securities, including asset-backed securities (ABS), residential mortgage-backed securities (RMBS), and commercial mortgage-backed securities (CMBS). From 1989 to June 30, 2000, the annual default rate for Fitch rated structured finance securities averaged 0.01% of original principal balance. For comparison, from 1990–1999, the average annual default rate for U.S. corporate bonds equaled 0.77%.

Of more than \$1.5 trillion of securities included in the study, the cumulative default rate for Fitch rated structured finance securities totaled a low 0.05% of original principal balance. The cumulative default rate for Fitch rated ABS over the same period was 0.07%, CMBS 0.04%, and RMBS 0.02%. Each sector averaged 0.01% or less on an annual basis.

The very low incidence of default for structured finance securities supports the concept that isolating a pool of assets from an originator or seller does significantly reduce default risk. The ability to specifically quantify the risks of a pool of assets, multiple levels of due diligence, legal structure used to segregate the assets, and the lack of corporate-related event risk have all contributed to this low rate of default.

While not all of the rating agencies have published their default rates, based on Fitch's review of the market, there is no significant difference between the three agencies' structured finance rating default experience. In addition, with figures as low as 0.01% per annum, it is also clear that if there is any difference at all, that difference would be so small as to be statistically insignificant.

For example, in a separate study of domestic rated CMBS, Fitch's CMBS cumulative default rate of 0.05% compares quite favorably with Moody's Investors Service, at 0.31%, and Standard & Poor's, at 0.18%. (The results of this study differ slightly from the broader study, as international CMBS was excluded.) While the difference in rates may be notable, the figures are so low that individual occurrences of default have a significant impact on the results. In the future, one or two more defaulted transactions may swing these numbers and impact the relative placement of each agency.

### ■ Brief History of Securitization

The earliest securitized transactions were the sales of Ginnie Mae guaranteed mortgage pass-through certificates in the early 1970s, which were followed in the late 1970s and early 1980s by Freddie Mac and Fannie Mae whole loan pools. As a result of their direct or implicit government guaranties, these transactions had no credit concerns.

Although there were some isolated private securitized residential mortgage transactions in the late 1970s, modern securitization started primarily in the early 1980s when the thrift industry needed to avoid the interest rate risk that was largely responsible for the industry's poor financial condition at that time.

Securitization of mortgages also received federal support, which hastened development. Historically, U.S. government policy promoted opportunities for affordable housing and has developed many programs to do so. In 1984, the U.S. Government enacted the Secondary Mortgage Market Enhancement Act, which made it easier to create and sell mortgage-backed securities. And in 1986, the U.S. adopted legislation that provided favorable tax treatment for mortgage-backed securities in the form of Real Estate Mortgage Investment Conduits.

In March 1985, Sperry Lease Finance Corp. kicked off the asset-backed market with a \$192.5 million equipment lease securitization. Close behind were automobile deals from Marine Midland, Valley National, and Home Federal, and, later that year, the first of many auto deals from GMAC.

For the remainder of the 1980s, ABS was heavily weighted in the consumer finance sectors, primarily automobile, credit card, home equity, and manufactured housing loans. The types of assets securitized expanded throughout the 1990s to include non-investment-grade bonds and loans, health care receivables, student loans, equipment leases, franchise loans, industrial trade receivables, catastrophic risk, intellectual property rights, and many others.

There was only minimal activity regarding commercial mortgages until 1990 when the RTC began selling off its portfolio of assets seized from failed thrifts. As opposed to RMBS and ABS, which were generally secured by the best and most predictable assets of the originator, RTC deals were made up mostly of nonperforming and subperforming real estate properties. The successful sale of these transactions and the winding up of the RTC caused the market to broaden into many asset classes, including multifamily, retail, office, industrial, hotels, health care facilities, and more.

## ■ Methodology

To develop the sample pool for this study, Fitch reviewed all its rated structured finance transactions

from April 1989, which was the inception of the modern Fitch, to June 30, 2000. Data from IBCA, which was merged with Fitch in 1997, were included in the study. Data from Duff & Phelps, which was merged with Fitch in mid-2000, was excluded from the study. Since Fitch rating methodologies have been generally adopted as the rating criteria in use postmerger in both the ABS and RMBS sectors, future performance of Fitch rated structured finance transactions should be represented by the sample pool used for this study. Data from Thomson BankWatch was not included, as it was merged with Fitch in late 2000, after the cut-off date for this study.

Structured finance securities included in the sample pool were:

- Public, rule 144(a), and private placement securities.
- U.S. and international issues.

The only securities excluded from the study were:

- U.S. government-guaranteed securities.
- Asset-backed commercial paper.
- Unrated classes of certificates.

As a result, more than \$1.5 trillion of securities were included in the sample pool. Home equity and manufactured housing securities were included in the ABS subpools, but all other mortgage-related transactions were classified in the RMBS subpools.

It has been assumed that a security or bond has defaulted if a rated class of securities has had a loss allocated to it. This coincides with the Fitch rating definitions for securities rated 'DDD', 'DD', or 'D'. These three categories refer to bonds that have defaulted, with 'DDD' designating the highest potential for recovery and 'D' the lowest, i.e. below 50%.

## ■ Structured Finance Defaults

During this 11-year period, only 0.05% of all rated structured finance securities have defaulted. This results in a 0.01% annual default rate. The table on page 3 illustrates the breakdown between the sectors of structured finance, total amount of rated debt, and default rates.

To look at this data in a different view, 99.95% of the rated structured finance securities have not defaulted. This high rate of success supports the concept that isolating a pool of assets from an originator or seller significantly reduces default risk. In addition to the strong economic environment, there are several

## Structured Finance Default Rates

	ABS	RMBS	CMBS	All Structured Finance
Defaults (\$)	667,648,105	116,293,829	69,277,000	853,218,934
Total Issuance (\$)	892,352,412,430	497,874,325,000	172,337,791,076	1,562,564,528,506
Cumulative Default Rate (%)	0.07	0.02	0.04	0.05
Annual Default Rate (%)	0.01	< 0.01	< 0.01	0.01

ABS – Asset-backed securities. RMBS – Residential mortgage-backed securities. CMBS – Commercial mortgage-backed securities.

factors that contribute to this stellar default performance.

First, structured financing removes many of the risks commonly associated with corporate bonds such as mergers and acquisitions, changes in strategy, increases in leverage, and corporate litigation. By isolating the assets in a bankruptcy-remote special purpose vehicle, the default risk of the structured finance security is focused on just those risks that can impact the asset pool.

Second, structured finance securities generally go through multiple levels of due diligence and outside review. The underwriters, auditors, rating agencies, underwriters' and issuer's counsel, and investors all have an opportunity to perform thorough evaluations of the asset quality, servicing, and structure before the transaction is issued. While the intensity and variety of diligence may be cumbersome for issuers, it creates a difficult hurdle to be crossed. This hurdle naturally weeds out many weaker transactions.

And third, there have been several examples of structured finance transactions that have exhibited poorer than expected collateral performance where the originator stepped in to correct the situation. This correction has come in several forms, such as trapping residual interest in the transaction to build up reserves, purchasing underperforming collateral from the trust, subordinating servicing fees, or simply adding more credit enhancement.

These factors and the strength of the legal structure that enables the separation of assets from the issuer have allowed structured finance securities to withstand many stressful situations without causing rated debt to default. Since these factors are naturally inherent in structured finance securities, Fitch believes that default rates for structured finance securities will remain below those of similarly rated corporate bonds.

## ■ Comparison with Corporate Default Rates

To put the structured finance default history in context, Fitch compared these default rates with the default performance of the corporate bond market over the same period. For corporate performance, Fitch analyzed several of the most widely accepted corporate bond default studies by Fitch (*see Fitch Research on "High-Yield Industry Default Risk: 1999," dated April 4, 2000, available on Fitch's web site at [www.fitchratings.com](http://www.fitchratings.com)*), Professor Edward Altman of New York University's Salomon Center, Moody's, and Standard & Poor's.

These studies show that from 1990–1999, investment-grade bonds defaulted on average 0.08% per year. Non-investment-grade bonds defaulted at an average annual rate of 3.07%. With 23% of outstanding bonds rated non-investment-grade, the average annual default rate for corporate bonds as a whole works out to be 0.77%. For comparison, Fitch-rated structured finance securities defaulted on average 0.01% per annum.

It should be noted that only 5% of the structured finance market is made up of non-investment-grade securities. Recalculating the above corporate figures using the same ratio of investment-grade to non-investment-grade ratings would result in an implied corporate rate of about 0.23% per annum.

Most corporate bond default research focuses on the ratings at the beginning of a studied year and does not address defaults based on the ratings at issuance. A vast majority of corporate bonds are rated 'BB+' or lower at the time of default, partially due to ratings migration. Ratings migration also occurs within structured finance as the performance of the securitization deteriorates. However, Fitch's structured finance default study measured the true default risk of a new issue security using the default rates based on the original ratings.

Although structured transactions are not directly comparable to unsecured corporate debt, the studies

examined roughly the same period of unprecedented economic growth. Thus, while certain segments of the structured finance markets have yet to experience a weak economy, the low correlation between the two markets truly indicates the superior default performance of structured finance securities.

## ■ RMBS Bond Defaults

Of all the sectors incorporated in this study, RMBS exhibited an average annual default rate closer to zero than to 0.01%. And the cumulative default rates came in at only 0.02% of issuance. In addition to the strong economy and stable housing markets during the study period, another reason for this low default rate is the deep knowledge and information base that has developed regarding residential mortgages and their performance. As mentioned, mortgages were the first asset type securitized. With more than 20 years of research by the capital markets, the issues that cause one asset pool to perform better or worse than another are well understood and readily quantifiable. And finally, residential mortgages are inherently safe in that even the least creditworthy among us are still quite averse to losing our homes.

The distribution of defaults by original rating indicates, as one would expect, that a vast majority of defaulted bonds started out as non-investment grade.

### RMBS Default Distribution

Original Rating	No. of Defaults
'AAA'	0
'AA'	0
'A'	0
'BBB'	4
'BB'	17
'B'	31
Total	52

RMBS – Residential mortgage-backed securities.

With no exceptions, the reason for RMBS defaults was poor collateral quality. There were no observances of fraud, bankruptcy or legal issues, or failure of a third party that caused the transactions to underperform.

In total, 52 classes of debt from 34 different transactions suffered default. It should be noted that when a transaction gets severely troubled, usually more than one class of debt ends up defaulting.

It is also interesting to note that all 34 troubled deals were from only 11 mortgage originators, and 16 of

those 34 were from two, IndyMac and Saxon. This statistic is explained by the nature of the origination/securitization practice in the mortgage market.

Most mortgage finance companies are quick to securitize newly originated loan pools. And when an originator begins making loans in a new mortgage sector, or to a slightly different class of borrower, and subsequently securitizes those loans, it may take several years before the true performance of those loans begins to emerge. In the meantime, that originator may have securitized several more pools of similar quality assets. Thus, if that new sector performs worse than expected, there may be multiple securitizations that hold those assets. This is the case for both IndyMac and Saxon, where all the transactions that resulted in bond defaults were backed by pools originated between 1993–1995.

This origination problem was not limited to IndyMac or Saxon. Of the 34 transactions that resulted in bond defaults, all but three were originated during the 1993–1995 window. This statistic can be explained by the heavy competition in the mortgage market at that time. As the refinancing wave of the early 1990s halted with the rapid increase of interest rates, many mortgage finance companies were compelled to explore new territories for lending to maintain their origination volume and hit growth targets. Naturally, underwriting standards were modified and, as it turned out, modified too much.

An additional factor was that lenders tended to have large concentrations of loans to borrowers in California. This was troublesome since the early 1990s recession continued into the mid-1990s in certain parts of the West, particularly Southern California, and home prices, which had been falling through the early part of the decade, continued to do so into 1996. Thus, when borrowers defaulted, losses on those loans tended to be severe due to the low resale values of foreclosed properties.

As a result of this experience, Fitch's models are now designed to spot overheated markets and project more pessimistic market values in those locals. In addition, the past five years brought more legitimate credit scoring models to the mortgage market, which should make projecting borrower credit more reliable than in the past.

## ■ CMBS Bond Defaults

Of the \$172 billion of Fitch-rated CMBS analyzed, only two classes of debt from one transaction have defaulted, resulting in a 0.04% cumulative default rate and an average annual default rate of less than 0.01%.

### CMBS Default Distribution

Original Rating	No. of Defaults
'AAA'	0
'AA'	0
'A'	0
'BBB'	0
'BB'	1
'B'	1
Total	2

CMBS – Commercial mortgage-backed securities.

The two defaults are Structured Asset Securities Corp. 1993-C1 classes E and F, originally rated 'BB-' and 'B-', respectively. A pool of 651 mortgages acquired directly or indirectly from the RTC backed this 1993 transaction. Roughly 61% of the portfolio was concentrated in California, and, as California's economy declined in the early 1990s, the properties' performance followed suit. This was compounded by the effects of the 1994 Northridge earthquake. This combination resulted in downgrades and losses to the certificates. By the time the transaction was paid off in December 1999, class E had suffered about a 2% loss of principal, and class F had been written off completely.

## ■ Fitch CMBS vs. Other Rating Agencies

In a separate study, Fitch reviewed the universe of domestic rated CMBS up to year-end 1999, including transactions not rated by Fitch, to determine the default history of the market as a whole. In summary, only 12 rated classes of certificates in six transactions have defaulted, resulting in a cumulative rate of 0.21% by original principal balance. This study excluded credit lease-backed and international CMBS.

When comparing the market share of each rating agency to its respective default rate, Fitch has the greatest market share and the fewest defaults. Fitch has rated 59% of the total amount of rated debt, based on dollars outstanding, in 2,199 ratings. Fitch's cumulative default rate was 0.05%. (The difference between this 0.05% rate and the 0.04% reported earlier lies in the sample pool. This 0.05% result excluded international and credit-lease-backed

CMBS, which were included in the broader study.) Moody's, with a 55% market share and 1,439 ratings, had eight rated classes in four transactions that defaulted, resulting in a 0.31% cumulative default rate by balance. Standard & Poor's, with a 53% market share and 1,624 ratings, had six classes of certificates in four transactions default, resulting in a rate of 0.18% by balance.

For more information on this study, refer to Fitch Research on "Rated CMBS Exhibit Low Defaults," dated July 14, 2000, available on Fitch's web site at [www.fitchratings.com](http://www.fitchratings.com).

## ■ ABS Bond Defaults

The largest and most diverse of the structured finance sectors, ABS has exhibited a cumulative default rate of 0.07% of the almost \$900 billion issued. This works out to be the highest average annual default rate of the structured finance sectors but still just above 0.01%. As opposed to RMBS and CMBS, the ABS market has traditionally structured a large majority of securities to the 'AAA' and 'A' rating categories, with only approximately 2%–3% of new issuance in the non-investment-grade rating categories. Thus, defaults are more heavily represented by securities originally rated in the 'A' and 'BBB' categories.

### ABS Default Distribution

Original Rating	No. of Defaults
'AAA'	0
'AA'	0
'A'	6
'BBB'	12
'BB'	13
'B'	4
Total	35

ABS – Asset-backed securities.

Another factor to consider is class size. Since the original class sizes of the 'A' rated classes are usually significantly larger than 'BB' and 'B' classes, the distribution will be even further skewed to the higher rating levels.

The 35 classes of debt that defaulted were from 21 different transactions and 11 originators. Similar to the RMBS market, one-half of the troubled deals have more than one class of debt in default.

Since 22 of the 35 classes of defaulted bonds come from three originators, Aegis, AMN, and NAL, it can



also be said that when one originator gets into trouble, several of their transactions are impacted. As opposed to RMBS, most of the defaults are represented by originators whose entire business failed, not just one vintage of loan originations. Of the 11 defaulted originators in the ABS sample pool, nine have filed for bankruptcy and been liquidated. Thus, when one class of one deal goes into default, for smaller, less frequent ABS originators, it is common that every transaction done by that originator ends up underperforming.

When comparing by ABS sector, defaults are heavily represented by subprime auto transactions originated in 1995 and 1996.

## ABS Defaults by Sector

Sector	No. of Classes	No. of Deals	No. of Issuers
Subprime Automobile	25	14	6
Home Equity	6	5	3
Rental Car Fleet	2	1	1
Franchise	2	1	1

ABS – Asset-backed securities.

These subprime automobile defaults were driven by many of the same factors that caused RMBS defaults. The equity markets looked favorably upon the specialty finance company sector in the mid-1990s and heavily rewarded rapidly growing consumer lending companies. Securitization became a tool used by many subprime automobile finance companies to rapidly off-load new loan originations and book large gains on sale but retain servicing fee income. As competition heated up, originators had to continually seek out new market segments to continue their origination volume, securitization program, and earnings growth.

There were several key causes for variability in asset performance:

- **New Sectors** — lenders that had never before lent in the subprime market began originating or lenders who generally made 'B' quality loans moved into 'C' or 'D' lending (D loans being the least credit worthy).
- **Underwriting Standards Creep** — Small changes to normal underwriting criteria were enacted over time, causing new origination quality to gradually deteriorate.
- **Exceptions** — Credit policy guidelines were overruled on a case-by-case basis, occasionally adding up to a large percentage of a securitized pool originated outside of stated guidelines.

- **Servicing Errors** — Rapid growth in origination was not matched with expansion of collections and repossession staff.

Any one of these, in and of itself, may not have caused the degree of variability that was observed. As was the case for many subprime issuers, two or more of these issues were present, compounding the problem and causing performance to be well outside of Fitch's initial expectations.

As opposed to most ABS servicers, which are much larger and stronger, these subprime automobile finance companies did not have the financial flexibility to adequately service pools that had been underwritten poorly. Reliance on back-up servicing turned out to be a false hope, in that once a subprime pool has been poorly serviced, it is very difficult for another servicer to turn that pool around, and even

## Commercial Financial Services

Commercial Financial Services was an issuer of ABS from 1994–1998 with more than \$1.5 billion of securities sold. Its ABS deals were rated by Moody's, Standard & Poor's, and Fitch.

In the fall of 1998 it came to light that CFS had been significantly overstating the value of its assets, charged-off credit cards, and misrepresenting the ongoing performance of its securitizations.

At the time of the realization, Fitch downgraded the outstanding ratings to 'CC' since it was clear that with the passage of time, the securities had a high probability of defaulting, although they had not yet done so. At the same time, the ratings were withdrawn because the accuracy of the information provided by the company was suspect and the amount of information provided was insufficient to determine the true credit risk of the securities.

In the spring of 1999, CFS filed for bankruptcy protection and was subsequently liquidated. Servicing duties had been transferred to other servicers, and the flow of information to Fitch had ceased. Due to the continued lack of information, CFS securities, issued under the names Global Rated Eligible Asset Trust and Securitized Multiple Asset Rated Trust, were not included in the sample pool for this study.

the best servicer cannot make a poorly underwritten pool perform well.

As a result of this experience, Fitch takes an even more conservative stance with respect to new subprime automobile lenders proposing securitization. Only the most experienced and financially strongest originators have the quality controls and servicing flexibility in place to manage this difficult asset class.

The five home-equity loan transactions originated by Conti, General Electric Capital Corp., and Cityscape in 1996 and 1997 were fueled by many of the same issues that the RMBS defaults suffered with, except just a few years later. In the case of Conti, financial constraints at the servicer also contributed to its underperformance. The Cityscape Home Loan 1997-B targeted prime borrowers for their 125% loan-to-value program but ended up lending to subprime borrowers.

Global Franchise Trust's default in 2000 on two classes of debt was due to a single poorly underwritten and poorly structured loan that ended up suffering a total loss when that franchisee filed for bankruptcy protection.

Premier Car Rental's default in 1997 on two classes of debt was due to fraud by senior management. The company had been overstating the value of the rental car fleet to overborrow from the securitization. In addition, it was double financing some of the vehicles included in the securitization. After the trouble was identified, it turned out that the fleet was only worth about 92% of the debt outstanding, causing the overcollateralization to immediately disappear, the 'BB' rated class to be written down to zero, and the 'BBB' rated class to lose about 90% of original principal.

Recent events in the franchise, equipment leasing, home equity, and manufactured housing sectors will likely drive ABS default rates higher over the next year.

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