

Testimony of Jay Siegel

Before the Financial Crisis Inquiry Commission

**Credibility of Credit Ratings, the Investment Decisions Made Based on
those Ratings, and the Financial Crisis**

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INTRODUCTION

Good morning Chairman Angelides, Vice Chairman Thomas and members of the Commission. My name is Jay Siegel, and I worked for Moody's Investors Service ("Moody's") for 12 years. From 2001 until my departure from the company in April 2006, I was one of two, and then three, Managing Directors responsible for rating residential mortgage-backed securities ("RMBS").

I note at the outset that the observations and information in my testimony are largely based on data and experience related to the subprime mortgage securitizations that Moody's rated during my tenure there, and not on the broader subprime mortgage market, some of which was securitized and rated by other rating agencies, some of which was securitized but not rated, and some of which was not securitized.

With respect to the portion of the RMBS market that Moody's rated, as I will describe in more detail:

1) **Moody's identified and began commenting about the loosening of mortgage underwriting standards starting in 2003.**

Moody's observed and commented on the trends of loosening mortgage underwriting processes and escalating housing prices. Moody's began publishing on these issues in 2003 and continued thereafter.

2) **Moody's tightened its ratings criteria in response.**

Between 2003 and 2006, Moody's steadily increased its loss expectations on pools of subprime mortgage loans and the corresponding levels of credit protection for each rating level. As a result, RMBS issued in 2006 backed by subprime mortgages and rated by Moody's had more credit protection than bonds issued in earlier years. In practical terms, this meant that for a typical 2006 vintage first-lien subprime mortgage securitization rated by Moody's, more than half of the mortgages in a pool would have to default over the life of the transaction and recover only half the appraised value of the home before a Moody's Aaa-rated bond would suffer its first dollar of loss.

Moody's did not, however, foresee the severity or speed of deterioration that occurred in the U.S. housing market following that period or the rapidity of subsequent credit tightening that likely exacerbated the situation.

I. THE PROCESS OF SECURITIZING SUBPRIME MORTGAGES

The use of securitization as a financing tool has grown rapidly both in the U.S. and internationally over the past 30 years. It has been an important source of funding for financial institutions and corporations. Securitization is essentially the packaging of a collection of assets into fixed income "securities" that can then be sold to investors. The underlying group of assets is called the "pool" or "collateral."

Typically, a securitization leads to the creation of a capital structure with two or more classes of securities (or "tranches"). The class or classes at the top end of the structure have less credit risk than those at the lower end of the structure. This is because

principal allocations from the cash receipts on the underlying pool are generally allocated to pay off the investors in the top tranche before being applied to the holders of the lower tranches. RMBS are securities whose principal and interest payments are made from the mortgage payments received and collateral recoveries on thousands of mortgage loans.

Before discussing in greater detail the process of securitizing subprime mortgages, it is important to understand the role played by the various market participants:

- Subprime borrowers – borrowers who have demonstrably weak credit histories and for whom, therefore, a higher level of delinquencies and defaults are generally expected.
- Mortgage originators, or lenders – entities that make the loans, such as banks or mortgage finance companies.
- Servicers – entities that collect payments on the subprime mortgage loans from the borrowers and pursue delinquencies and defaults.
- Securities underwriters – generally banks or underwriters that structure the securitizations and sell the classes that are issued to the investors.
- Trustees – entities that are responsible for administering the securitizations.
- Investors – entities that purchase the securities. In the securitization market, the investors are typically institutional investors.

In securitizing subprime mortgages, the following steps are typical. A large number of subprime residential mortgage loans (typically thousands) are identified for securitization by the mortgage originator or a “conduit” that has accumulated mortgages from multiple originators. The originator or conduit, often with the help of the advisor (who designs the structure of a securitization), creates a new corporation, limited liability company or trust, which is the securitization issuer.¹ The originator or conduit then sells all of its legal rights, including the right to receive monthly payments on the subprime mortgages, to the trust, and retains rights and responsibilities as to the pool only to the extent established by contract with the trust. The trust is now the “owner” or “holder” of the loans. The structure of the transaction is established by contract and is usually designed by the advisor. Finally, the trust issues securities that the underwriter sells to investors. The securitization contracts obligate the trust to make monthly distributions to investors based on cash the trust receives on the loans.

Securitizations, including those of subprime mortgage loans, use various features to protect each bondholder from losses. The more loss protection (also referred to as “credit enhancement”) a bond has, the higher the likelihood that the investors holding that bond will receive the interest and principal promised to them. Some common types of loss protection are:

¹ For ease of reference, I will refer to these types of new entities as the “trust.”

- a guarantee or insurance from a creditworthy entity that all or a certain portion of the collateral losses will be covered;
- “overcollateralization,” which is the amount by which the aggregate mortgage balance exceeds the aggregate certificate balance;
- “subordination,” which means that instead of all tranches in the securitization sharing losses equally, losses are borne by classes sequentially in reverse order of seniority; and
- “excess spread,” which refers to the application of excess amounts of interest collected on the loans over the amount of interest payable on (and fees and expenses payable with respect to) the securities to cover loan losses.

Registered securities have named underwriters. Securities underwriters are expected to perform the due diligence function on the security to be issued.² Moreover, each underlying loan in a securitization would have been approved by the originator (more specifically, by a credit decision-maker known as a “loan underwriter,” a function entirely unrelated to the “securities underwriter”). A common practice is for a securitization’s underwriter to hire a due diligence firm (or to have an internal team) to investigate whether the underlying loans are in compliance with the originator’s loan underwriting criteria. The originator is generally required to buy back loans that are subsequently revealed to be in violation of representations and warranties. Accounting firms are charged with verifying that the summary information of the loan pools in the prospectus matches the underlying characteristics of the pool. In addition, in RMBS the party selling loans to the securitization trust (generally referred to as the “sponsor,” who may also be the original lender or “originator” of the loans) provides representations and warranties to the trust that each underlying mortgage loan meets the requirements of applicable laws.

A. Examples of how loss protection works

Figure 1 represents a simple subprime securitization transaction, where four classes, or “tranches,” of bonds totaling \$90 are issued and are backed by loans totaling \$100. In this structure, losses would first be applied to reduce the \$10 of overcollateralization. Only when the losses exceed the overcollateralization amount would the bond balances be affected.

² See, Securities Act of 1933, 15 U.S.C. § 77(k).

<i>Figure 1</i>	
<u>Simplified Balance Sheet for a Typical Subprime Securitization</u>	
Assets (Loans)	Liabilities (Bonds) + Net Worth
\$100 Mortgages	\$65 Senior Bond
	\$10 Mezzanine Bond #1
	\$10 Mezzanine Bond #2
	\$5 Subordinated Bond
	\$10 Overcollateralization

For example, if the losses on the pool of mortgages were \$20, as shown in *Figure 2*, then the outstanding balance of the mortgage loan pool would fall to \$80. At this point, the overcollateralization amount would fall from \$10 to zero, and the remaining \$10 of losses would result in losses for both the \$5 subordinated bond and the \$10 mezzanine bond #2. The principal amount of the \$5 subordinated bond would be reduced, or “written down” to zero, and then the \$10 balance of mezzanine bond #2 would be reduced by the remaining \$5 of losses to a balance of \$5. Losses would be applied to the bond tranches in reverse order of seniority, such that losses are not allocated to a given tranche until the balances of all tranches that have a lower priority have been reduced, or written down, to zero.

<i>Figure 2</i>	
<u>Securitization After Incurring \$20 of Losses</u>	
Assets (Loans)	Liabilities (Bonds) + Net Worth
\$80 Mortgages	\$65 Senior Bond
	\$10 Mezzanine Bond #1
	\$5 Mezzanine Bond #2
	\$0 Subordinated Bond
	\$0 Overcollateralization

Consequently, the likelihood that an investor in a particular tranche will receive both the principal and interest due on the bond depends not only on the quality of the loans in the securitization, but also on the amount of loss protection provided. The higher the seniority of a bond issued in a securitization, the greater protection it will have against losses, making it more likely to be repaid in full – meaning it is “less risky.” Conversely, the lower the seniority of a bond, the less protection it will have against losses, making it less likely to be repaid in full.

When credit ratings for subprime bonds like those in this example are assigned, the tranches generally receive progressively lower ratings as the seniority of the tranches gets lower. Each progressively subordinate bond has less loss protection because each has fewer bonds that can provide a cushion to absorb losses in case of defaults on some of the loans in the pool. Furthermore, because losses on subprime loans are generally expected to be much higher than losses on “prime” loans, a substantially greater amount of loss protection is needed in a subprime securitization for a given tranche to receive the same rating as a similar tranche of a prime securitization.

II. MOODY’S RATING PROCESS

One common misperception is that Moody’s credit ratings are derived solely from application of a mathematical process, or a “model.” This is not the case. Models are tools sometimes used in the process of assigning ratings. But the credit rating process always involves much more, including the exercise of independent judgment by the rating committee. Importantly, each rating reflects the opinion of a rating committee, and not the opinion of an individual analyst, as to the relative creditworthiness of the issuer or obligation. Although credit metrics may differ from one sector (*e.g.*, utilities) to another (*e.g.*, structured finance), Moody’s uses essentially the same rating process in all sectors. I would like to summarize the key steps in that process and explain how these steps promote the quality and integrity of Moody’s ratings.

- **Gathering Information:** The analyst or analysts assigned to a particular issuer or obligation (“**Assigned Analyst**”) begin the credit analysis by assembling the relevant information. This information may be obtained from the issuer in meetings or through other communications with the Assigned Analyst, as well as from public sources. It may be supplemented with information generated by Moody’s, including macro-economic and sector-specific data. Under the laws of the United States, and most foreign countries, issuers are able, but not obligated, to provide non-public information to credit rating agencies, such as projections, legal documents, and data about priority of claims and collateral characteristics.
- **Credit Analysis:** Once information has been gathered, the Assigned Analyst analyzes the issuer or obligation and formulates his or her view for the rating committee to consider. In doing so, the Assigned Analyst will apply relevant Moody’s methodologies, which likely will include consideration of both quantitative and qualitative factors. For example, in Moody’s Corporate Finance group, quantitative factors might include profitability, capitalization and liquidity ratios while qualitative factors might include business strategy, competitive position and management quality. In Moody’s Structured Finance group, quantitative factors may include the degree of credit enhancement provided by the transaction’s structure, the historical performance of similar assets created by the originator and borrowers’ credit history metrics. Qualitative factors could include an assessment of the bankruptcy remoteness of the entity holding the assets, the integrity of the legal structure, and management and servicing quality.

- **Role of Models:** Some mistakenly view model outputs as ratings. This view is entirely inaccurate. Model results are but one factor that may be considered by a rating committee. To presume, however, that model outputs are the “right” ratings and that any other opinion is “wrong” ignores the judgment provided by Moody’s analysts. Indeed, Moody’s analysts are encouraged to layer qualitative factors³ in their assessment of credit risk.

While quantitative models are sometimes used to assist the analysis and enhance consistency in the decision-making, Moody’s ratings take into account qualitative as well as quantitative factors and are intended to reflect the exercise of judgment about the expected creditworthiness of an obligation or entity. Moreover, each rating committee member is expected to apply his or her own independent judgment in the decision-making process. Ultimately, ratings are subjective opinions that reflect the majority view of the rating committees’ members.

- **The Rating Committee:** Moody’s credit rating opinions are determined by a majority vote of the members of a rating committee, and not by an individual analyst. Once the Assigned Analyst has arrived at a view, he or she presents it to a rating committee. The rating committee is a critical mechanism in promoting the quality, consistency and integrity of the Moody’s rating process. Rating committee composition depends on the industries or sectors that are relevant to the credit rating being assigned. Members are also selected based on expertise and diversity of opinion and are encouraged to express dissenting or controversial views and discuss differences openly. Once a full discussion has taken place, the members then vote, with the most senior members voting last so as not to unduly influence the votes of the junior members. Each member’s vote carries equal weight, and decisions are based on a simple majority of votes.
- **Monitoring:** Once a credit rating is published, it is monitored on an ongoing basis and modified if appropriate to respond to changes in Moody’s view of the relative creditworthiness of the issuer or obligation. I will defer to others in this panel to provide more details on the monitoring process.
- **Discussions with issuers and underwriters:** In rating any structured security (or, for that matter, any corporate security⁴) analysts may hold analytical discussions with issuers or their advisors. These discussions serve the dual purpose of: (a) helping Moody’s better understand the particular facts of the transaction as proposed by the issuer; and (b) clarifying for the issuer the way in which Moody’s methodologies are applied to that transaction. It should be emphasized that

³ There are many other factors including the regulatory environment and management quality that cannot readily be reduced to inputs for a quantitative model but that can have a significant impact on the relative creditworthiness of an issuer or obligation.

⁴ Similar discussions frequently take place with corporations contemplating changes in financial structures and business strategies (*e.g.*, the potential rating implication of a share buy-back program on a corporate issuer’s senior unsecured debt obligations), or with new corporate issuers to whom Moody’s has not previously assigned a rating.

Moody's analysts also meet with investors to ensure that they understand the analytical methodologies. Moody's analysts would also respond to issuer and investor requests to assist them in understanding the ratings rationale for individual securities ratings.

In circumstances where there is considerable performance history for the particular asset being securitized and where the structure has been used previously, the published methodologies may provide sufficient transparency on the analytical approach to obviate the need for detailed discussions. In contrast, there may be more general conversations about the application of methodology with issuers who are securitizing new asset classes or utilizing novel structures that are different from those that have been discussed in the published methodologies. As part of this dialogue, a sponsor underwriting a mortgage-backed security, for example, provides the composition of a pool of mortgages and the details of a particular structure and asks for the rating implications in light of the existing, published methodologies. What the underwriter does in response to the feedback – whether they decide to seek a rating of the structure presented, modify the structure or collateral pool as they see fit, or not seek a Moody's rating at all – is determined entirely by the underwriter and the sponsor. Moody's believes that these discussions help enhance overall market transparency and stability in that both issuers and investors have a better understanding of Moody's analytical thinking and its resulting ratings.

III. MOODY'S ANALYTICAL APPROACH IN RATING RMBS

The analytical methodologies, which are published and freely available on the Moody's website, consider both quantitative and qualitative factors. Importantly, our methodologies evolve as the market evolves. In rating a mortgage-backed securitization, Moody's estimates the amount of cumulative losses that the underlying pool of mortgage loans is projected to incur over the lifetime of the loans (that is, until all the loans in the pool are either paid off, including via refinancing, or default). Because each pool of loans is different, Moody's cumulative loss estimate, or "expected loss" (in statistics parlance), will differ from pool to pool.

In arriving at the cumulative loss estimate, Moody's considers both quantitative and qualitative factors. For example, during my tenure the quantitative data Moody's analyzed included, among other characteristics, on a loan-by-loan basis:

- credit bureau scores, which provide information about borrowers' loan repayment histories;
- the amount of equity that borrowers have (or do not have) in their homes;
- how fully borrowers' income and assets were documented;
- whether the borrower intends to occupy or rent out the property; and
- whether the loan is for the purchase of a home or to refinance an existing mortgage loan.

Moody's considers the range and distribution of loan-by-loan characteristics, not just pool averages. It also considers combinations of characteristics that might reflect risk concentration or risk layering (*e.g.*, a loan with both a low credit bureau score and a low amount of equity).

Analysts also consider the more qualitative factors of the asset pool, past performance of similar loans made by that lender and how effective the servicer had been at loan collection, billing, record-keeping and handling delinquent loans. Moody's assessments of projected collateral performance are geared toward estimating a range of future pool loss outcomes, including outcomes under stressful economic environments, rather than some single or "most likely" outcome. Moody's then analyzes the structure of the transaction and the level of loss protection allocated to each "tranche" (or class of bonds) issued by the structure. Based on this type of analysis, a Moody's rating committee would determine the credit rating of each tranche.

Moody's does not see individual loan files in the ordinary course of rating a transaction, and is legally restricted from information identifying borrowers or specific properties. Rather, credit rating agencies receive from the originator or underwriter credit characteristics for each loan on an anonymous basis. The originators of the loans also make representations and warranties to the trust for the benefit of investors in every transaction. While these representations and warranties can vary somewhat from transaction to transaction, they typically stipulate that, prior to the closing date, all requirements of federal, state or local laws regarding the origination of the loans have been satisfied, including those requirements relating to: usury, truth in lending, real estate settlement procedures, predatory and abusive lending, consumer credit protection, equal credit opportunity, and fair housing or disclosure. As I noted earlier, the accuracy of information disclosed by originators and underwriters in connection with each transaction is subject to the federal securities laws and regulations requiring accurate disclosure. Underwriters, as well as legal advisers and accountants who participate in that disclosure, may be subject to civil and criminal penalties in the event of misrepresentations. As a result, Moody's historically has relied on these representations and warranties.

IV. MOODY'S OBSERVATION OF AND REACTIONS TO THE WEAKENING U.S. SUBPRIME HOUSING MARKET

As mentioned earlier, because losses on subprime loans are generally expected to be much higher than losses on prime loans, RMBS backed by pools of subprime mortgages generally have a greater amount of loss protection. In addition, during the period from 2003 – 2006, Moody's observed an increase in the risk profile of subprime mortgage portfolios that Moody's was asked to review as part of the ratings process and, as a result, tightened its ratings criteria accordingly. Moody's, however, did not fully anticipate the unprecedented confluence of factors that subsequently drove the even poorer performance on subprime mortgages. The responses to the increased risks Moody's observed can be categorized into two broad sets of actions:

1) Moody's identified and began commenting about the loosening of underwriting standards starting in 2003.

Moody's published reports on these issues starting in July 2003 and throughout 2004, 2005 and 2006. Examples include:

2003: *"The credit performance of second lien mortgage-backed securities has been strong over the past five years; however, as price appreciation slows down and interest rates rise Moody's believes that there could be more volatility in the credit performance of this product and will maintain credit enhancement levels accordingly."*⁵

2004: *"Moody's expects relatively high defaults and losses for these mortgage types and has set credit enhancement levels to offset the risks."*⁶

2005: *"Because these loans are generally underwritten based on lower initial monthly payments, many subprime borrowers may not be able to withstand the payment shock once their loans reset into their fully indexed/amortizing schedule. The resulting higher default probability, which may be exacerbated with slowing home price appreciation, could have a very negative effect on home equity performance in the future."*

*"Moody's increases credit enhancement on such loans to account for the lower borrower equity and the higher borrower leverage."*⁷

2006: *"Full documentation levels fell by almost 10 percent on average per transaction from the beginning of 2004 to the end of 2005. Therefore, in 2005 not only did we see a proliferation of riskier 'affordability' products, but also a gradual weakening of underwriting standards."*

*"Moody's loss expectations on the interest-only mortgages are about 15%-25% higher than that of fully amortizing mortgages."*⁸

2) Moody's tightened its ratings criteria.

Between 2003 and 2006, Moody's had steadily increased its loss expectations on pools of subprime loans and the levels of credit protection required for a given rating level. As a result, bonds issued in 2006 and rated by Moody's had more credit protection than bonds issued in earlier years. In practical terms, this meant that for the 2006 vintage RMBS rated by Moody's more than half of the mortgages in a pool would have to default and recover only half the appraised value of the home before a Moody's Aaa rated bond would suffer its first dollar of loss.

⁵ Special Report: Second Lien Mortgages - Issuance Volume Set for Another Record-Breaking Year in 2003, July 3, 2003.

⁶ Special Report: 2003 Review and 2004 Outlook: Home Equity ABS, A HEL of a Year!, January 20, 2004.

⁷ Special Report: 2004 Review & 2005 Outlook: Home Equity ABS, HEL Volume Soars to Heavenly Heights, January 18, 2005.

⁸ Special Report: 2005 Review & 2006 Outlook: Home Equity ABS, After Another Record Year, Will 2006 Offer Less?, January 24, 2006.

CONCLUSION

In sum, Moody's undertook efforts to observe, to publicly comment, and to incorporate its views into its ratings analysis and research. Moody's also has in place policies and procedures that ensure objective credit decision-making. Many commentators think that credit rating agencies and others in the market did not fully appreciate the macro-economic environment and anticipate the magnitude of the housing market downturn. Given the information available to Moody's analysts at the time, the ratings reflected their best opinion on the future creditworthiness of the debt securities. I understand that many changes have been made to improve the performance of ratings going forward, and I believe that this and other forums can play a valuable role in assessing what additional changes may be appropriate, both to the CRA industry and to other industries in the structured finance market.

Thank you. I am happy to respond to any questions.