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# Why the Valuation of RMBS Holdings Needed Changing: Insurance, Risk and Capital Magazine, January 12, 2010 (www.insurancerisk.com)

The NAIC found many flaws in the way that mortgage securities held by US insurers have been rated in the past and decided on a different approach, as Michael A Cohen explains


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Last November's decision by the National Association of Insurance Commissioners (NAIC) to appoint PIMCO Advisory to assess the holdings of non-agency residential mortgage-backed securities (RMBS) signaled a marked change in attitude towards the major ratings agencies. This move by the NAIC -- the regulatory body for the insurance industry in the US, comprising the insurance commissioners of the 50 states - was aimed at determining the appropriate amount of risk-adjusted capital to be held by US insurers (more than 1,600 companies in both the life and property/casualty segments) for RMBS on their balance sheets.

**Why did the NAIC act?**

A number of problems had arisen from the way RMBS held by insurers had historically been rated by some rating agencies which are "nationally recognized statistical rating organizations" (NRSROs), though it is important to note that not all rating agencies which are NRSROs had engaged in this particular rating activity.

RMBS had been assigned (much) higher ratings than they seem to have deserved at the time, albeit with the benefit of hindsight. The higher ratings also led to lower capital charges for entities holding these securitizations (insurers, in this example) in determining the risk-adjusted capital they needed to hold for regulatory standards.

Consequently, these insurance organizations were ultimately viewed to be undercapitalized for their collective investment risks. These higher ratings also led to lower prices for the securitizations, which meant that the purchasers were ultimately getting much lower risk-adjusted returns than had been envisaged (and in many cases losses) for their purchases.

The analysis that was performed by the NRSROs has been strenuously called into question by many industry observers during the financial crisis of the past two years, for two primary reasons:

- The level of analytical due diligence was weak and the default statistics used to evaluate these securities did not reflect the actual level of stress in the marketplace; as a consequence ratings were issued at higher levels than the underlying analytics in part to placate the purchasers of the ratings, and a number of industry insiders observed that this was done.
- Once the RMBS marketplace came under extreme stress, the rating agencies subsequently determined that the risk charges for these securities would increase several fold, materially increasing the amount of risk-adjusted capital needed to be held by insurers with RMBS, and ultimately jeopardizing the companies' financial strength ratings themselves.

**Flaws in rating RMBS**

Rating agencies have historically been paid for their rating services by those entities to which they assign ratings (that reflect claims paying, debt paying, principal paying, etc. abilities). Industry observers have long viewed this relationship as a potential conflict of interest, but, because insurers and buyers had not been materially harmed by this process until recently, the industry practice of rating agencies assigning ratings to companies who were paying them for the service was not strenuously challenged.

Further, since the rating agencies can increase their profit margins by increasing their overall rating fees while maintaining their expenses in the course of performing rating analysis, it follows that there is an incentive to increase the volume of ratings issued by the staff, which implies less time being spent on a particular analysis. Again, until recently, the rated entities and the purchasers of rated securities and insurance policies did not feel sufficiently harmed to challenge the process.

**Enter PIMCO**

In late 2009, the NAIC Membership approved an initiative to create a new modelling and assessment process for non-agency RMBS for filing year 2009. The association conducted a thorough request for proposal and selection process. It initially received over 20 proposals from parties interested in performing the RMBS analysis. The selection criteria focused on identifying a firm with a "sound assessment methodology," the proven ability to process a large amount of transactions in a very short time-frame, and processes and procedures in place to address potential conflicts of interest. PIMCO (Pacific Investment Management Company), as one of the world's leading firms in investment and bond management and with extensive modeling capabilities viewed as "best in class", was a logical choice.

The firm's assignment involves the evaluation of virtually all the RMBS held by US insurers, over 20,000, by year-end 2009 to enable these insurers to report the results in their 2009 annual statement filings (which are due to be filed with the state regulators by 1 March 2010).

PIMCO's analytical process consists of four broad elements: a macroeconomic model, a mortgage loan credit model, a capital structure model (often referred to as a ‘waterfall' model) and a final evaluation:

- Macroeconomic model, which projects home price appreciation/depreciation (HPA/HPD) and interest rates; the median HPA/HPD scenarios are derived from market standard regional and national forecasts.
- Mortgage loan credit model, which projects loan performance on the above-mentioned macroeconomic variables as well as FICO (borrower credit scores), original loan to value (LTV) ratios, property type, collateral type, current LTV resets, prepayment, delinquency and default rates. Each loan underlying a RMBS is classified as performing or non-performing, and then its value is projected forward based on the myriad of variables via a Monte Carlo simulation to determine its prospects for performance/value going forward. The severity of loss on defaulted loans is projected based on collateral deficiency, lost interest, expenses and mortgage insurance considerations.
- Severity, prepayment and default rates are used to calculate cash flows at the loan level, which are then aggregated into mortgage pool-level cash flows. The pool-level cash flows are run through the capital structure model to project the specific RMBS' principal losses, which reflect mortgages' full pay-offs or defaults.
- Finally, discount rates are applied to each bond's losses to arrive at a net present value and subsequently its effective coupon rate.

Five scenarios of home price appreciation (HPA) will be evaluated, with the following likelihoods assigned - a median case of home price appreciation (50%), an "aggressive" (22.5%) scenario, a "most aggressive" (2.5%) scenario, a "conservative" (22.5%) scenario and a "most conservative" (2.5%) scenario.

Final valuations will be calculated using a weighted average of the present values of the losses under the five scenarios. The losses anticipated for the most conservative scenario are significantly worse relative to the mean than the most aggressive scenario is better than the mean, which reflects the belief that bond experience is highly non-linear and that large losses may occur under very stressful scenarios.

It is important to note that, according to the NAIC, the valuations will be used to determine its "designation" (i.e. rating) for each security a company holds and reports in its 2009 financial statement.

In the course of this process, an interesting issue might arise in terms of a company dealing with its auditors on the valuations of its RMBS holdings as determined by the PIMCO model. If a company had valued an RMBS at 90 and the new model valued it at 75 (below the 80 valuation that, if breached for longer than a six-month period, would by accounting rules trigger a downgrade and write-down), would this discrepancy and the auditor's subsequent review force the company to write the bond down and realize a loss?

**How reliable are the default-rate assumptions?**

The risk factors assigned are ultimately derived from default rates of these securities. Since these securitizations are groups of large numbers of underlying residential mortgages, and we are only two years into an era of unprecedented levels of mortgage defaults (at least since the Great Depression), the question that begs to be asked is how reliable will the default-rate assumptions used be in determining a reasonably accurate estimate of default risk, even if the analysis begins with a mortgage-by-mortgage determination of performance? This use of scenarios in the valuation process, and in particular the most conservative scenario with its expectation of large losses, certainly acknowledges the potential for unprecedented default experience in the near- and intermediate-term.

**Investor confidence in the ratings process should return**

The plan is that the ratings of these securities will be accomplished in a more thorough, accurate and objective manner. Separating the parties who are receiving the ratings from those who are hiring, paying and evaluating the rated entities can well be expected to increase the transparency of the process. Consequently, all things being equal, the confidence in the ratings by their users will be increased.

In terms of the reliability of this new analytical process, the issue of historically unprecedented default rates of residential mortgages since 2008 underlying RMBS looms large, and the questions about the accuracy of the ratings derived from them may well be raised.

Using the "most conservative scenario" in the analysis makes sense directionally, but is it negative enough? One tactic to reduce the likelihood that these securities are not overvalued (and hence underpriced and "under-risk-capitalized") could be to lower the valuation factors across the board for RMBS for any level of assumed default rate. Such a "value drift" is somewhat arbitrary, but is at the same time analogous to a rating agency assigning a "negative outlook" to a business segment because it believes that market conditions have become more unfavorable than in a previous time-frame, and that corporations operating in the current, riskier and more difficult environment will achieve lesser results and/or become financially weaker.

## Initial analysis

It is important to note that a report in the *Wall Street Journal* on 4 January quoted New York Department of Insurance officials as saying that PIMCO's preliminary analysis suggested life insurers would need to set aside only about $8.75bn to back their RMBS holdings, compared with the $14.5bn requirement the companies would have faced if regulators still relied on ratings. If this is true for life companies, lesser capital requirements would be expected to be similar to those for all companies. As the PIMCO analysis is completed, many will be watching the results and the various impacts on the insurance industry.

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