

To: Industry and Interested Persons
From: Mike Moriarty, Chair of the Valuation of Securities (E) Task Force
Members of the Valuation of Securities (E) Task Force
Re: Disclosure of Model and Assumptions to be used to Determine Risk - Based Capital for Residential Mortgage Backed Securities (RMBS) for the Year Ending 2009
Date: November 24, 2009

1. Introduction – On October 14, 2009 the Valuation of Securities (E) Task Force adopted a proposal that for year end 2009 reporting purposes, risk-based capital (RBC) for residential mortgage securities (RMBS) would be determined using a financial model instead of NAIC ARO credit ratings (the RMBS proposal). The RMBS proposal was adopted by the Financial Conditions (E) Committee on October 14, 2009 and adopted in turn by the NAIC Executive Committee and Plenary on November 5, 2009. On October 20, the NAIC Executive Committee authorized the NAIC staff to initiate a request for proposal process to identify financial modeling firms who could perform the assessment of insurer owned RMBS securities. The staff concluded this assignment and on November 17, 2009 recommended to the NAIC Executive Committee the selection of PIMCO Advisory to conduct the 2009 year end valuation of RMBS securities (the NAIC engagement). This recommendation was accepted. The Task Force held a regulator to regulator call on November 24, 2009 to hear a presentation from the SVO staff, PIMCO Advisory and NAIC consultants on the RFP process, PIMCO Advisory’s non-agency mortgage model and the assumptions that drive that model. This document summarizes the presentation made by PIMCO Advisory and the SVO staff to the Task Force and is released **in anticipation of a public meeting to be held November 30, 2009** at which time the Task Force will present the detailed proposal to industry representatives and other interested persons.

2. The Model – The NAIC engagement requires PIMCO Advisory to conduct a loan level analysis of US RMBS using their proprietary non-agency mortgage model. The PIMCO Advisory analytical process actually refers to and consists of four sub-steps: a macroeconomic model, a mortgage loan credit model, a capital structure model, (often referred to as a waterfall model) and a final valuation. This final valuation is used to map securities to the current RBC process. This section provides an overview of the modeling process and identifies the kind of underlying assumptions that drive it.

a. The macroeconomic model projects future macroeconomic variables, specifically home price appreciation/depreciation (HPA/HPD) and interest rates. PIMCO Advisory’s HPA/HPD median -case scenarios are derived from a market standard regional and national HPA/HPD forecast. PIMCO Advisory also projects multiple HPA/HPD scenarios around this median using a proprietary time series model. While many macroeconomic assumptions, such as employment are embedded in the market standard HPA/HPD forecast to which the model is calibrated, they are not explicit variables utilized by PIMCO Advisory’s model. Forward-looking interest rates are another primary dynamic variable. Future interest rate paths are based on implied forward money market and mortgage interest rates. The projected mortgage rate curve is a function of 5- and 10-year swap rates and credit spreads.

b. The mortgage loan credit model projects loan performance based on macroeconomic variables (HPA and interest rate forecasts) and qualitative loan characteristics. Qualitative loan characteristics include static variables such as FICO, original loan to value ratio (LTV) and property type, as well as dynamic variables such as current loan to value mortgage rate resets and others.

Mortgage prepayment, delinquency and default are modeled using a transition rate methodology. Each loan underlying the RMBS is initially classified as performing or non-performing, then projected forward as it transitions between current and delinquent states or terminates through prepayment or default. This projection is done on an individual-loan basis. The probability of a loan transitioning among these states is estimated based on historical patterns, loan-level characteristics and macroeconomic variables. These transition probabilities are calculated using sub-models segmented by collateral type (sub-prime, Alt-A, jumbo etc.) and product type (fixed rate, adjustable rate) to capture the different behavior of these mortgage types. Once the probabilities are calculated, a Monte-Carlo simulation is used in which a random drawing against these calculated probabilities determines how the loan transitions or terminates each month.

The loss severity of defaulted loans is projected based on collateral deficiency (unpaid balance less REO sales price), lost interest (accrued as servicer advances), expenses (legal, property taxes, brokerage fees), and mortgage insurance considerations. Severity is driven by the projected HPA through the current marked-to-market cumulative LTV, as well as historical severity, mortgage rates, credit profile and loan types.

The severity, prepayment and default rates are used to calculate loan-level cash flows, which are aggregated into mortgage pool-level cash flows.

c. Once generated, pool-level cash flows are passed through the capital structure model to calculate the specific security's principal losses. The model captures the set of rules that determine which bonds get paid principal and interest as mortgages pay off and which bonds take losses as mortgages default. The rules are determined by a deal's legal documents.

d. A discount rate is applied to each bond's losses to arrive at a net present value. The interest rate used to discount the bond flow will be the bond's effective coupon rate.

Valuations are calculated under multiple scenarios because many bonds are highly non-linear and may have low or zero losses under the median scenario but suffer large losses under a more stressful scenario. In the multiple scenario approach used, the mortgage credit model and capital structure model are used to calculate the present value of losses under each HPA/HPD scenario, each of which has an associated probability. The final valuation is the probability weighted present value of losses.

3. Assumptions - The Task Force, in consultation with PIMCO Advisory, consultants and SVO staff has determined that the following assumptions will be used to value RMBS:

- a. The median HPA scenario will be PIMCO Advisory's standard base case scenario.
- b. PIMCO Advisory will use its internal model to calculate four additional HPA paths (two more conservative and two more aggressive). The running of the additional paths is necessary to capture the credit convexity or "cuspiness" of the bonds.
- c. The additional HPA paths will be constructed such that the median case scenario has a 50% probability of occurring, the aggressive and the conservative scenarios each have a 22.5% probability of occurring and the most aggressive and most conservative have a 2.5% chance.
- d. The final valuation will be the probability weighted average of the present values of all losses under each HPA scenario.
- e. All losses will be discounted at the bond's effective coupon rate.

The following table summarizes the relevant probability weights for the HPA scenarios:

Scenario	Probability	Peak to Trough HPA
Most Aggressive	2.5%	-33%
Aggressive	22.5%	-35%
Base Case	50.0%	-38%
Conservative	22.5%	-41%
Most Conservative	2.5%	-61%

4. Quality Assurance/Control

In addition to PIMCO Advisory's extensive internal quality control process, the SVO and consultants will conduct quality control checks of the valuation process. These checks will help to ensure that the valuation process is of the quality required. The SVO will run both aggregate quality analytics and randomly sampled CUSIP-specific bottoms-up assessments. Additionally, the SVO has confirmed that PIMCO has appropriate procedures in place to ensure that the analysis is free from conflicts of interest.