

INTRODUCTION TO THE STRUCTURED SECURITIES

Eric Kolchinsky
Director, Structured Securities Group
NAIC

STRUCTURED SECURITIES GROUP



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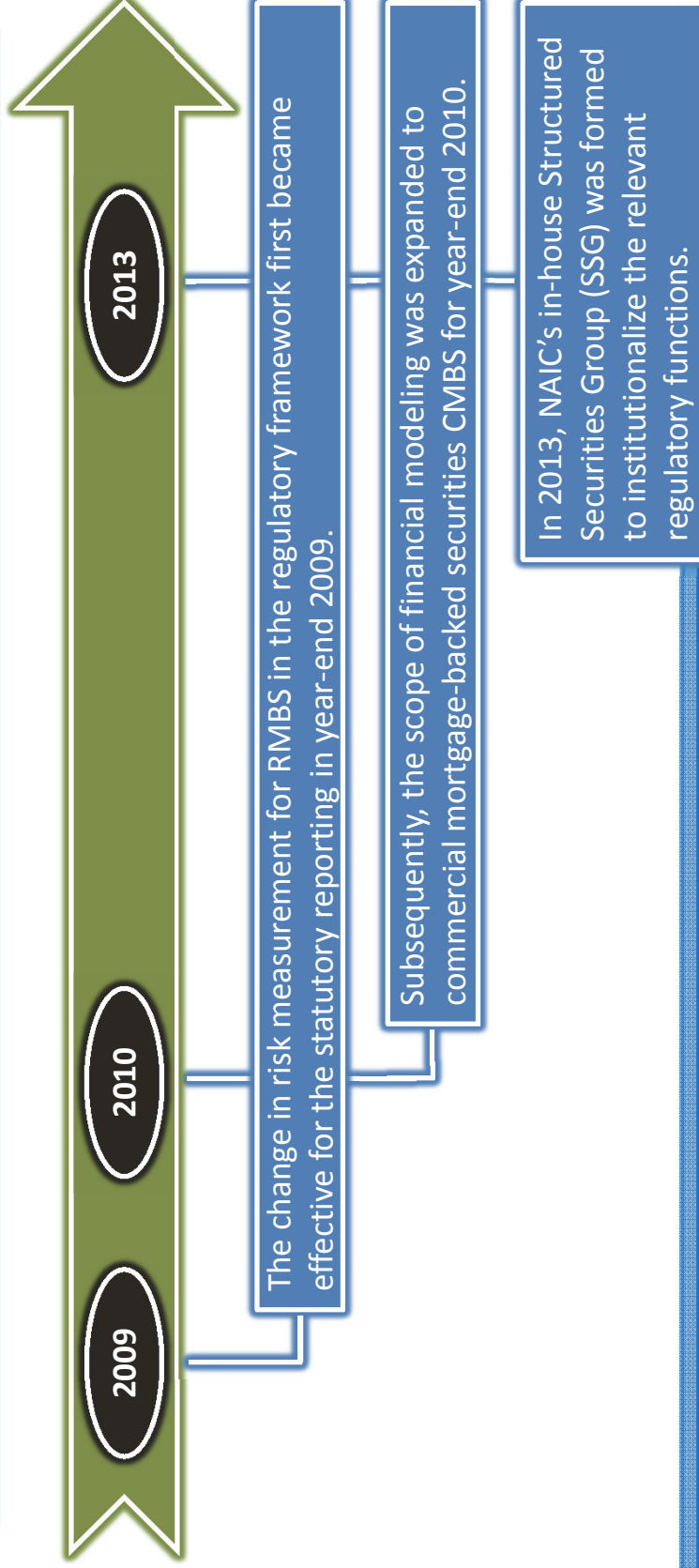
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ABOUT US

- Structured Securities Group (SSG) was formed in 2013 and is based in NAIC's New York Office.
- SSG's primary function is to oversee an annual valuation of insurance company held Residential Mortgage Backed Securities (RMBS) and Residential Mortgage Backed Securities (CMBS).
- In 2015, SSG analyzed approximately 27,716 CUSIPs consisting of 22,406 RMBS and 5,310 CMBS.

NAIC'S FINANCIAL MODELING

In 2009, NAIC responded to the impact of rating downgrades by the Credit Rating Providers (CRPs) on insurers' risk-based capital (RBC) charges amid the burst of the real estate bubble.



Insurance Industry Holdings YE '15

Collateral Type	2015 YE BACV (\$Bil)	2014 YE BACV (\$Bil)	% Change
RMBS	107.82	115.02	-6.3%
CMBS	167.12	173.93	-3.9%
Loan/CLO	52.36	51.79	1.1%
Auto	20.60	23.05	-10.6%
CTL	16.87	15.88	6.2%
Credit Card	13.79	15.82	-12.8%
Equipment Lease	13.44	13.63	-1.4%
Student Loan	8.46	7.73	9.5%
Aircraft Lease	10.27	7.01	46.5%
Trade Rec	3.45	3.34	3.3%
Other	110.55	96.98	14.0%
Total	524.74	524.17	0.1%

Source: NAIC; Schedule D1s 2014 and 2015. RMBS and CMBS included non-modeled securities.



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“OUTSOURCE AND OVERSIGHT”

- There are a number of approaches to regulatory credit analysis ranging from complete in-house solutions to complete outsourcing.
- The NAIC relies on three approaches:

	In-house	Hybrid	Outsourced
Example	SVO sourced designations	SSG	Filing Exempt
Analysis performed by	Employees	Third Party (contracted vendor)	Third Party (NRSRO)
Regulatory Quality Assurance	Yes via NAIC’s governing structure	Yes via SSG / contract with Third Party	None

ANNUAL VALUATION PROCESS



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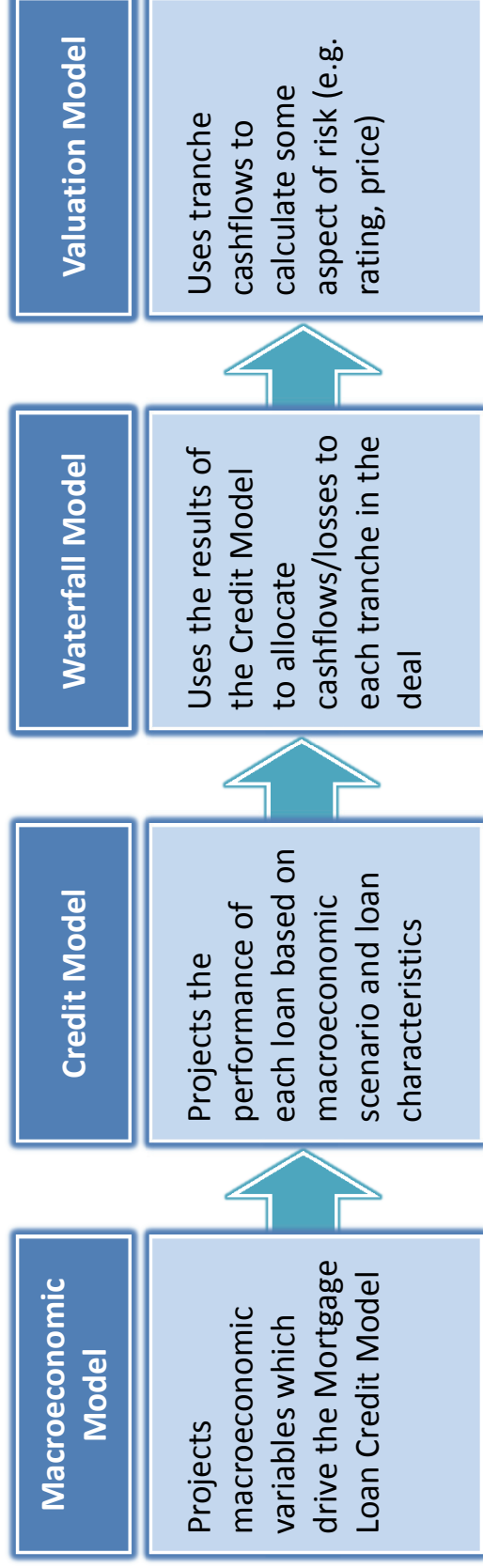
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OVERVIEW

- SSG’s operates under an “outsource and oversight” model. A vendor, currently Blackrock Solutions, is contracted to provide analysis for RMBS and CMBS.
- NAIC staff oversee all aspects of the process, including:
 - Creating macroeconomic scenarios for approval by VOS (E) TF
 - Oversight of modeling Credit Modeling including an extensive Quality Assurance process at the loan and pool level, as necessary.
 - Delivery of results to Insurers through the AVS+ platform.
- The following slides detail NAIC modeling philosophy and process.

BUILDING BLOCKS OF MODELING

Valuation or analysis of structured securities typically take the form of four distinct steps.



MACROECONOMIC MODEL

“What’s going to happen in the world?”



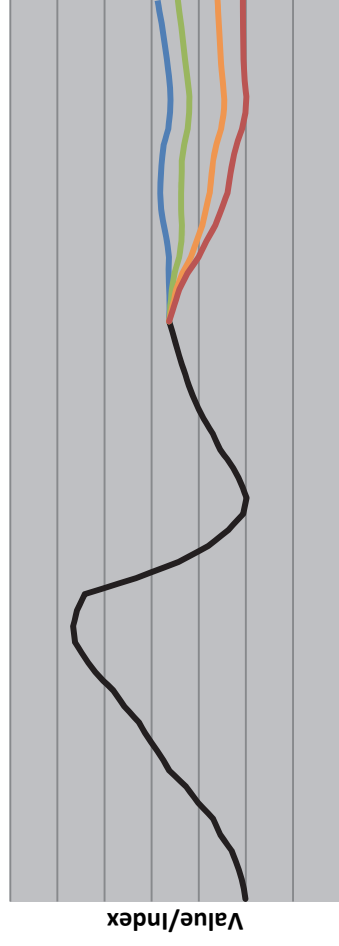
Macroeconomic Model

Projects macroeconomic variables which drive the Mortgage Loan Credit Model

Four scenarios of the NAIC:

- Optimistic
- Baseline
- Conservative
- Most Conservative

Illustrative Scenario Curves

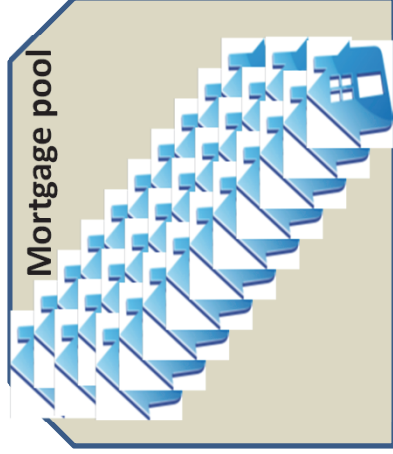
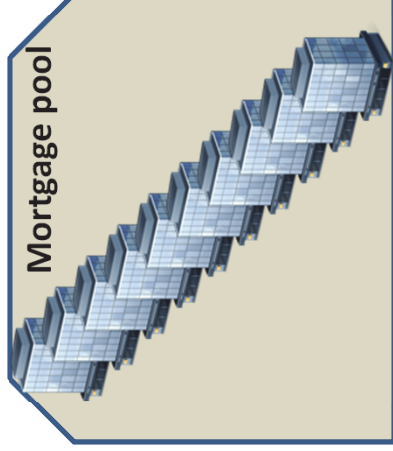


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CREDIT MODEL

“In a given macroeconomic environment, what’s going to happen to my loans?”



Credit Model

Projects the performance of each loan based on macroeconomic scenario and loan characteristics

Outputs of Credit Model:
 A time series of aggregate performance statistics including Principal, Interest, and Loss projections that are required to determine Cashflow distribution and Loss allocation

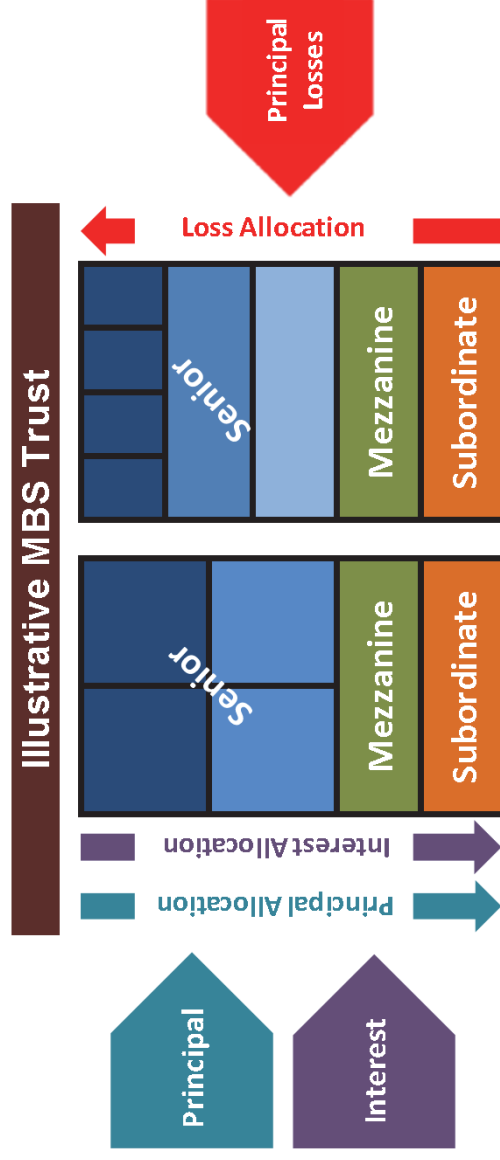
WATERFALL MODEL

“If the loans perform in a certain way, how does my investment (tranche) perform?”



Waterfall Model

Uses the results of the Credit Model to allocate cashflows/losses to each tranche in the deal



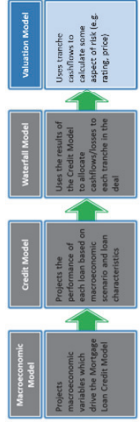
Outputs of Waterfall Model:
A time-series of cashflows for the tranche including principal and interest paid and losses taken.

VALUATION MODEL

“If the investment performs in a certain way, what does that mean?”

The valuation block takes the raw cashflows and transforms them into a form of risk/value measurement.

The NAIC currently uses Intrinsic Price defined as ‘Weighted Average of (1 – Discounted Principal Loss)’.



Valuation Model

Uses tranche cashflows to calculate some aspect of risk (e.g. rating, price)



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