



insurance SUMMIT

Introduction to the Structured Securities

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Learning Objectives

At the end of this presentation, you will be able to:

- Familiarize yourself with the Structured Securities Group
- Understand Insurance company exposure to RMBS and CMBS.
- Acquaint yourself with the annual RMBS/CMBS valuation process.



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Structured Securities Group



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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.



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Our Origin

- Non-agency RMBS market suffers substantial losses and securities' downgrades.
- AIG on the brink of bankruptcy due to non-insurance subsidiary's investment in RMBS and RMBS related instruments.
- Fannie Mae and Freddie Mac taken into conservatorship by the FHFA in 2008.
- Mortgage originators sued over misrepresentations regarding the quality of the mortgages sold into RMBS transactions.
- Monoline insurers which wrote financial guarantees on RMBS and RMBS-related instruments suffer from higher than expected claims. Many are in rehabilitation.



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Impact on Insurance Regulation

- Recognition of the data and methodological shortcomings of Credit Rating Providers (CRP)
- Broader concerns about the extent of regulatory reliance on credit ratings

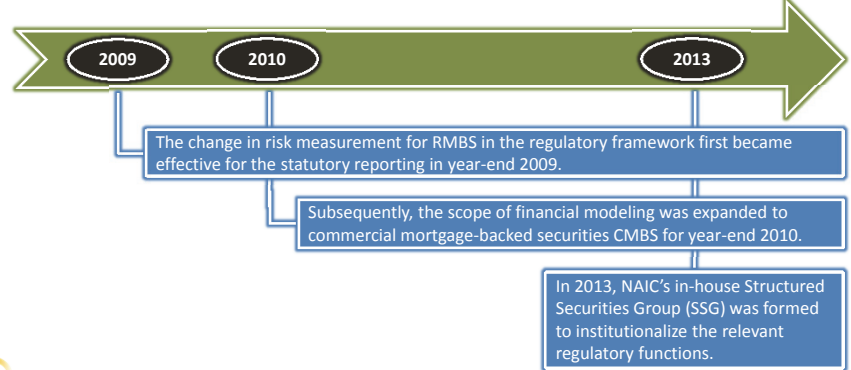


Development of an alternative methodology for measuring the credit risk of RMBS and CMBS



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.



Introduction to Structured Securities



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Introduction

- Structured Securities are fixed income investments whose source of repayment is limited to a defined and legally segregated pool of assets.
- The most common underlying assets are mortgage related – residential and commercial.
- Statutory accounting for structured securities is defined by SSAP 43R, while analytical procedures are defined by Part Seven of the Policies and Procedures Manual of the NAIC Capital Markets and Investment Analysis Office.



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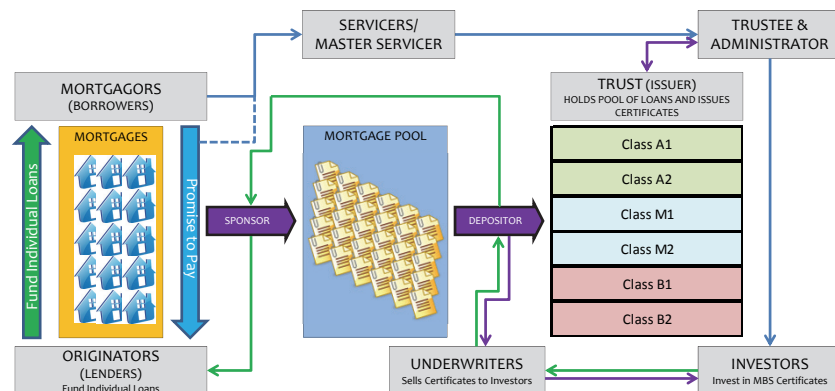
RMBS

	Residential Mortgage Backed Securities
Description	Securizations of one to four family homes, separated by borrower and loan type (e.g. fixed/ARM).
Sub-types	<ol style="list-style-type: none"> 1) Jumbo Prime – loans to borrowers typically above GSE limit 2) Subprime/Alt-A – loans to borrowers with poor credit or loans non-standard features. 3) Resecuritization – repackaging of previously issued securities.
History	Widely blamed for the recent financial crisis. Issuance of non-agency (non Fannie/Freddie) RMBS has dwindled in the aftermath.
Credit Aspects	Due to the large number of loans and privacy limitations, the analysis is statistical in nature. Several consultancies provide macroeconomic projections by MSA and loan type.



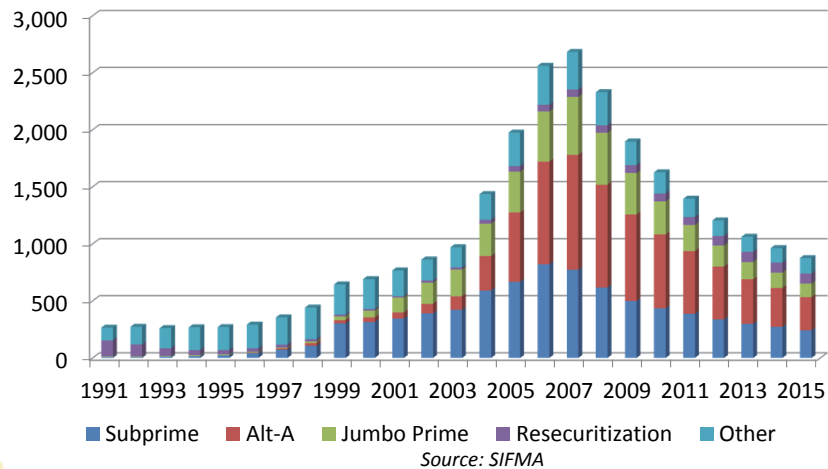
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RMBS Cash Flows



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RMBS Outstanding (\$Bil)



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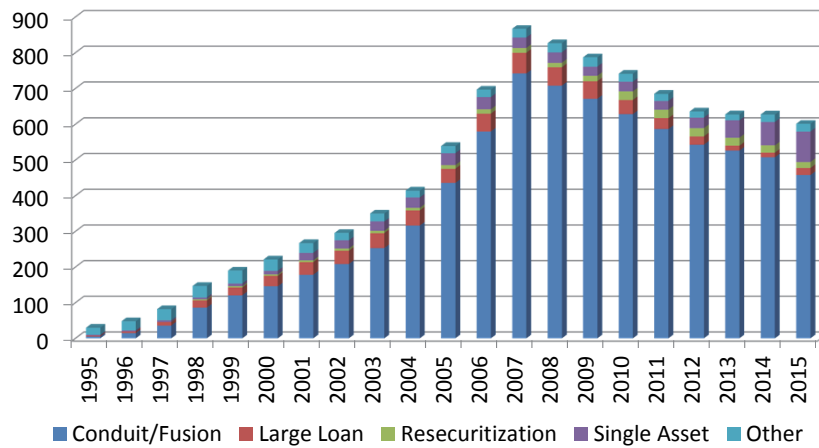
CMBS

	Commercial Mortgage Backed Securities
Description	Securitizations of commercial property, primarily 1) office, 2) multifamily, 3) retail and 4) hotel.
Sub-types	<ol style="list-style-type: none"> 1) Conduit deals include smaller a large amount of small loans 2) Fusion or Large Loan deal include a smaller number of large "trophy" properties 3) Single Asset – securitizations by a single very large property 4) Resecuritization – repackaging of previously issued securities.
History	CMBS Market traces its origins to issuances by the Resolution Trust Corp. Like the underlying market – prone to boom and bust cycles.
Credit Aspects	"Modeling plus". Smaller loans can be handled statistically, but large loans need to be analyzed with the aid of a CRE professional. Several sources for CRE relevant projections (e.g. cap rate and vacancy projections by MSA and type)



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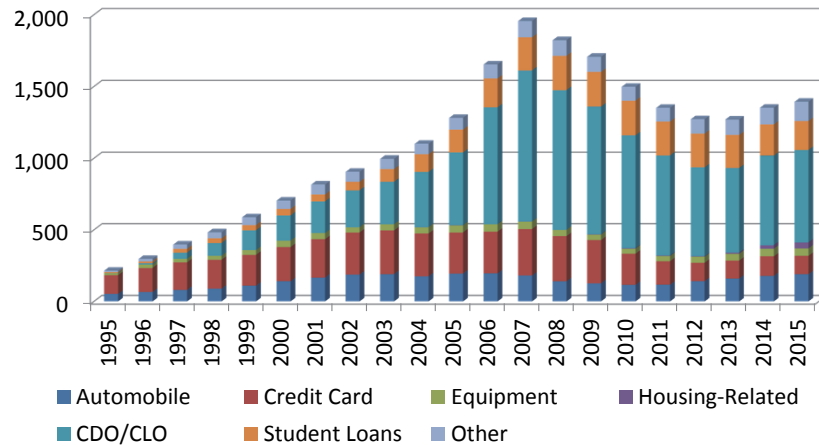
CMBS Outstanding (\$Bil)



Source: SIFMA

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Other Struct. Outstanding (\$Bil)



Source: SIFMA

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Insurance company exposure to Structured Securities



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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%

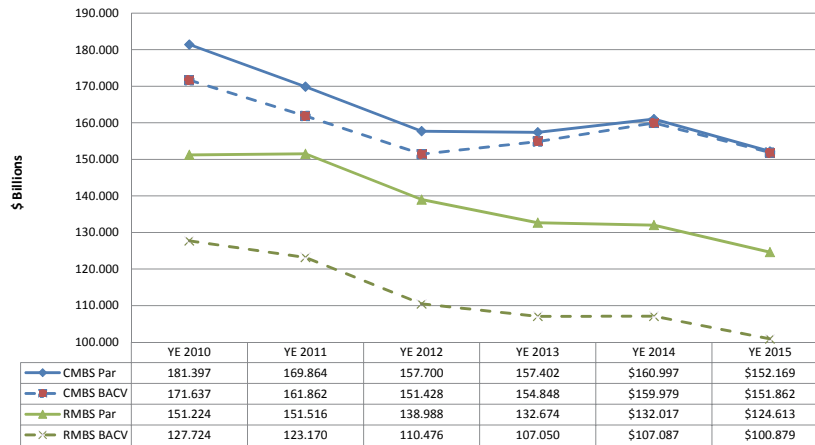
Source: NAIC; Schedule D1s 2014 and 2015. RMBS and CMBS included non-modeled securities.



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Exposure Trends

BACV and Par amounts of modeled CMBS and RMBS



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Annual Valuation Process



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Overview

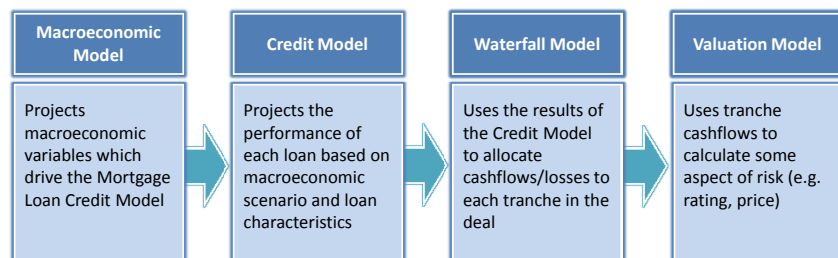
- SSG's operates under an "outsource and oversight" model. A vendor, currently Blackrock Solutions, is contracted to provide analysis for RMBS and CMBS.
- NAIC staff oversee all aspects of the process, including:
 - Creating macroeconomic scenarios for approval by VOS (E) TF
 - Oversight of modeling 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.



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Building Blocks of Modeling

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



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Macroeconomic Model



Macroeconomic Model

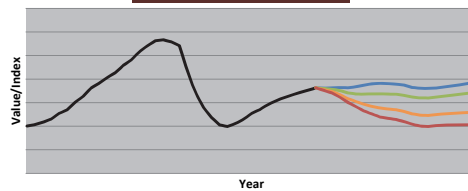
Projects macroeconomic variables which drive the Mortgage Loan Credit Model

"What's going to happen in the world?"

Four scenarios of the NAIC:

- Optimistic
- Baseline
- Conservative
- Most Conservative

Illustrative Scenario Curves



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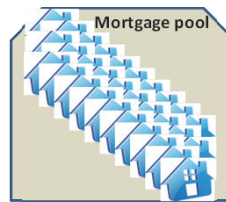
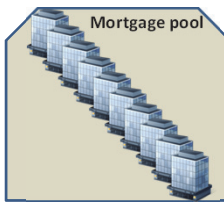
Credit Model



Credit Model

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

"In a given macroeconomic environment, what's going to happen to my loans?"



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



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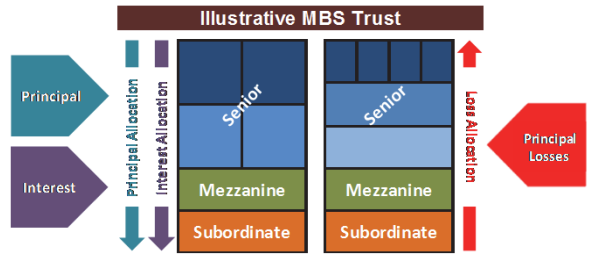
Waterfall Model



Waterfall Model

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

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



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



Valuation Model



Valuation Model

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

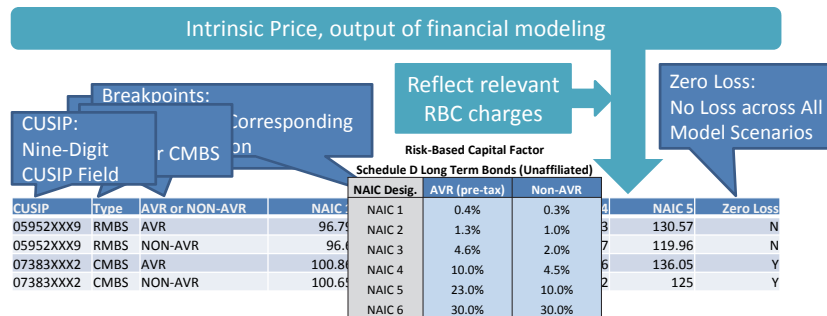
"If the investment performs in a certain way, what does that mean?"

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 $(1 - Discounted Principal Loss)$ '.



Price Breakpoints



Structured Securities results can be accessed in AVS at
<https://avsplus.naic.org/avsplus/pages/public/home.isf>

Structured Securities in AVS Tutorial
<https://naic.adobeconnect.com/a932356480/p75du85lrd/?launcher=false&fcsContent=true&pbMode=normal>



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Final Designation

CUSIP	Type	AVR or NON-AVR	NAIC 1	NAIC 2	NAIC 3	NAIC 4	NAIC 5	Zero Loss
05952XXX9	RMBS	AVR	96.79	98.89	103.53	114.93	130.57	N
05952XXX9	RMBS	NON-AVR	96.6	97.43	99.19	103.47	119.96	N

CUSIP:
0552XXX9

AVR or Non-AVR:
AVR (P&C)

Amortized Cost:
99.50

Fair Value:
95.50

- **Step 1:** If **Zero Loss security**, report **NAIC 1** with FM suffix; otherwise, apply Amortized Cost to the breakpoint values. → This security is NOT Zero Loss (It has the value 'N'); move to Step 2.
- **Step 2:** **Amortized Cost of 99.50** maps to **Initial Designation of NAIC 4** of '**NON-AVR**'.
- **Step 3:** Since it is a P&C company, the BACV to be reported is Amortized Cost (for Initial Designation 1 or 2) or lower of Amortized Cost and Fair Value (for Initial Designation 3 - 6). → **BACV Rate of 95.50** (Amortized Cost of 99.50 vs. Fair Value of 95.50)
- **Step 4:** Since it is a P&C company, the breakpoint values to be used are for '**NON-AVR**'. → When **applying BACV Rate of 95.50 to the breakpoint values (NON-AVR)**, the **Final NAIC Designation to report is NAIC 1**.

For more complete information, please refer to: [SSAP No. 43R](#), Accounting Practice & Procedures Manual, and Purposes and Procedures Manual of the NAIC Capital Markets and Investment Analysis Office.



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Conclusion

- SSG's origins lie in the recent financial crisis and the failure of structured finance ratings.
- Today, NAIC analyzes approximately 28,000 CUSIPs annually.
- NAIC continues to monitor developments in structured finance and insurance companies' exposure to these ever-changing securities.



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