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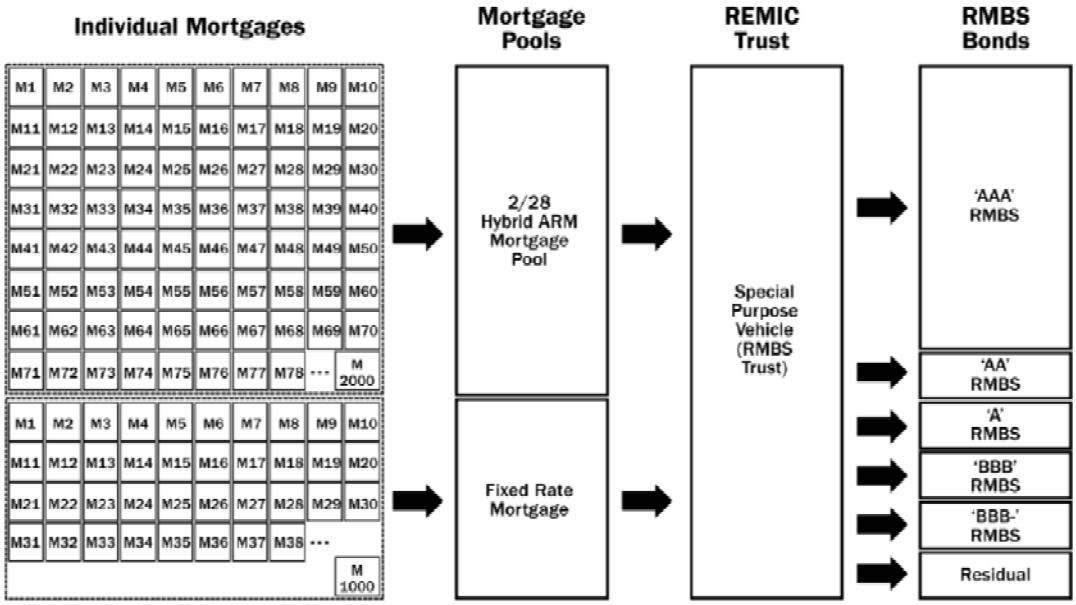
Menzie D. Chinn
Social Sciences 7418

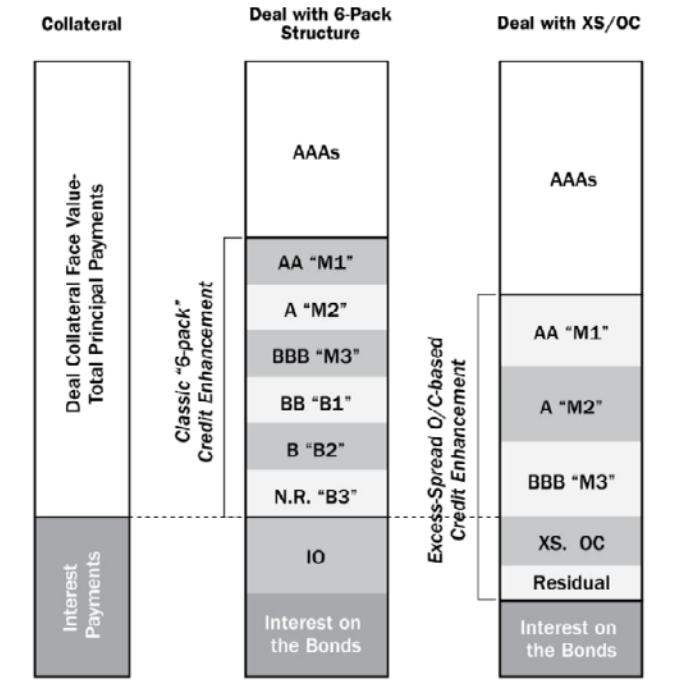
Handout on Derivatives (MBS, CDO)

Sample Subprime MBS Structure



Source: Kevin Kendra, Fitch, "Tranche ABX and Basis Risk in Subprime RMBS Structured Portfolios," Feb. 20, 2007.

Senior/Sub 6 Pack Structure vs. the XS/OC Structure



Note: The scale in Figure 1 does not accurately reflect relative size of bonds, IO or interest flow. Source: UBS

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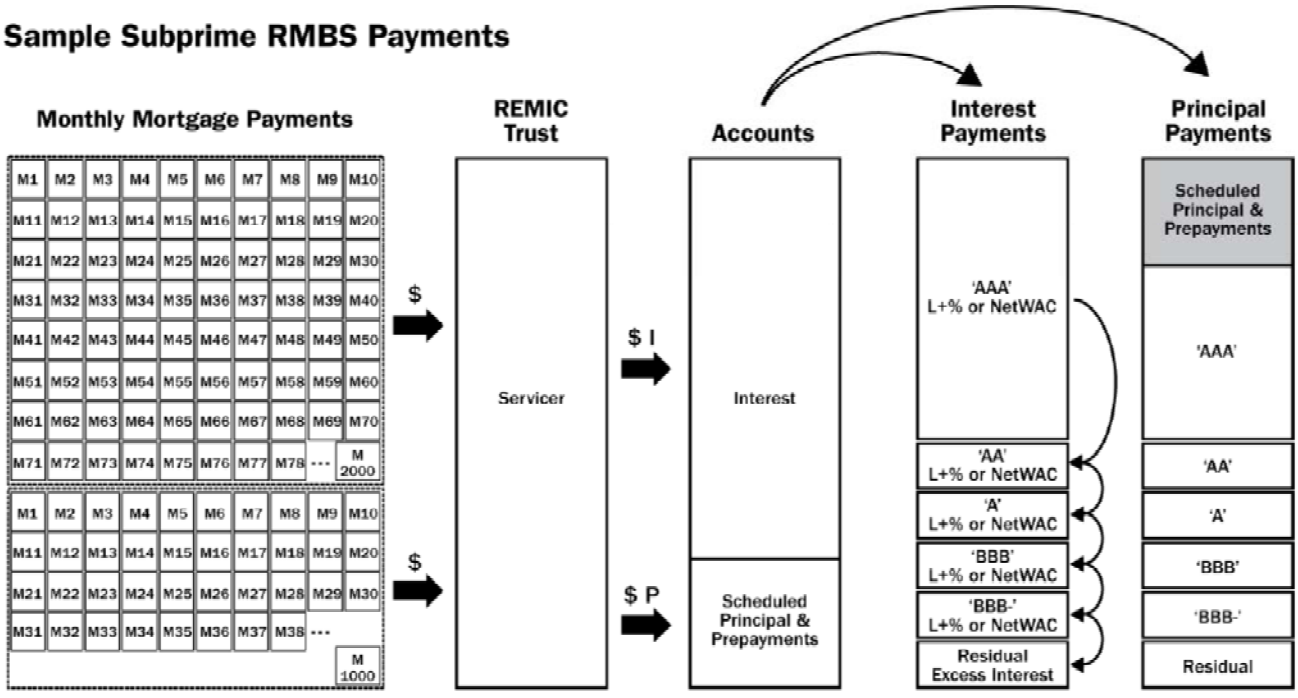
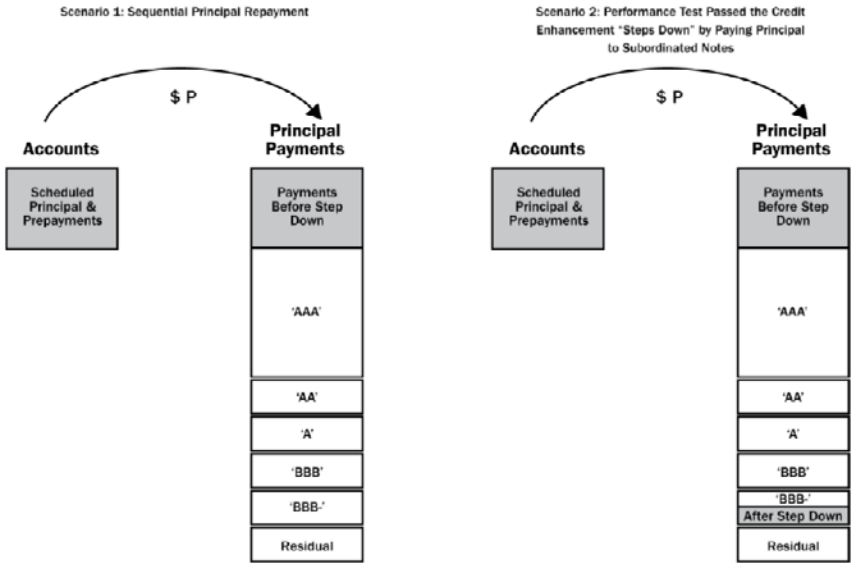


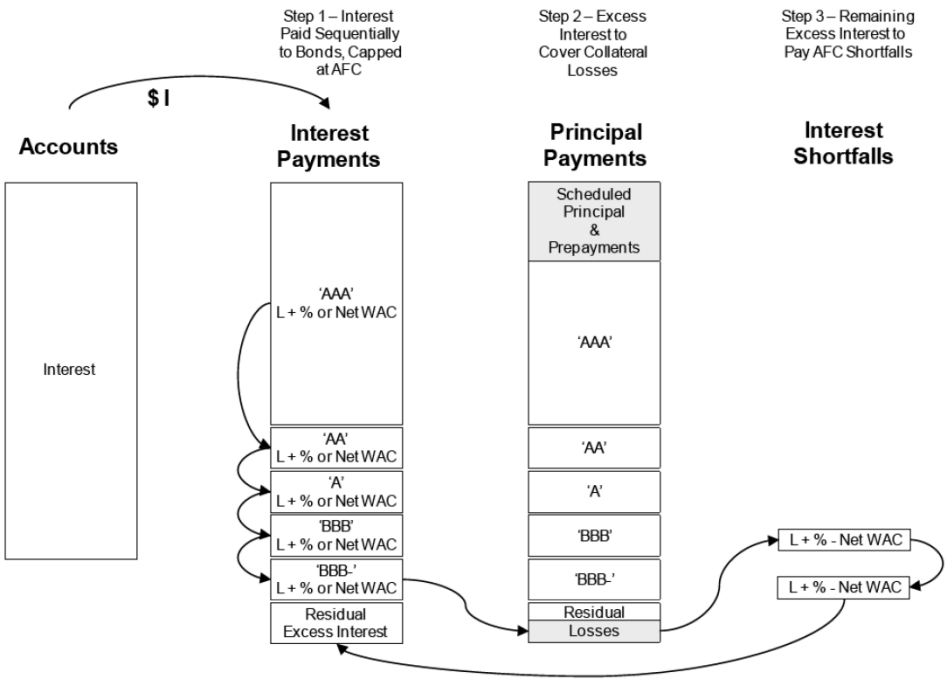
Source: Kevin Kendra, Fitch, "Tranche ABX and Basis Risk in Subprime RMBS Structured Portfolios," Feb. 20, 2007.

Sample RMBS Interest Waterfall

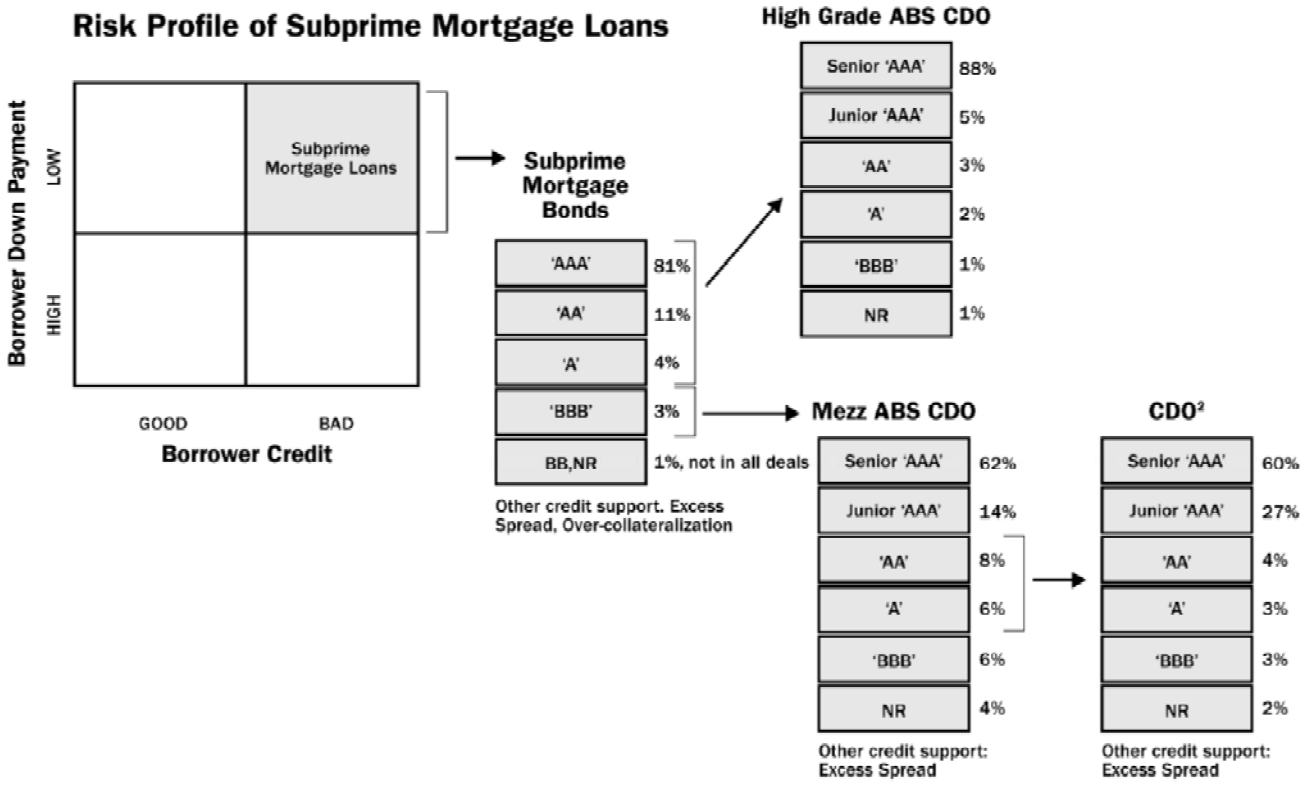


Source: Kevin Kendra, Fitch, "Tranche ABX and Basis Risk in Subprime RMBS Structured Portfolios," Feb. 20, 2007.

Allocation of Interest



Source: Kevin Kendra, Fitch, "Tranche ABX and Basis Risk in Subprime RMBS Structured Portfolios," Feb. 20, 2007.



Source: UBS, "Market Commentary," December 13, 2007.

Source: Gorton (2008)

Table 2

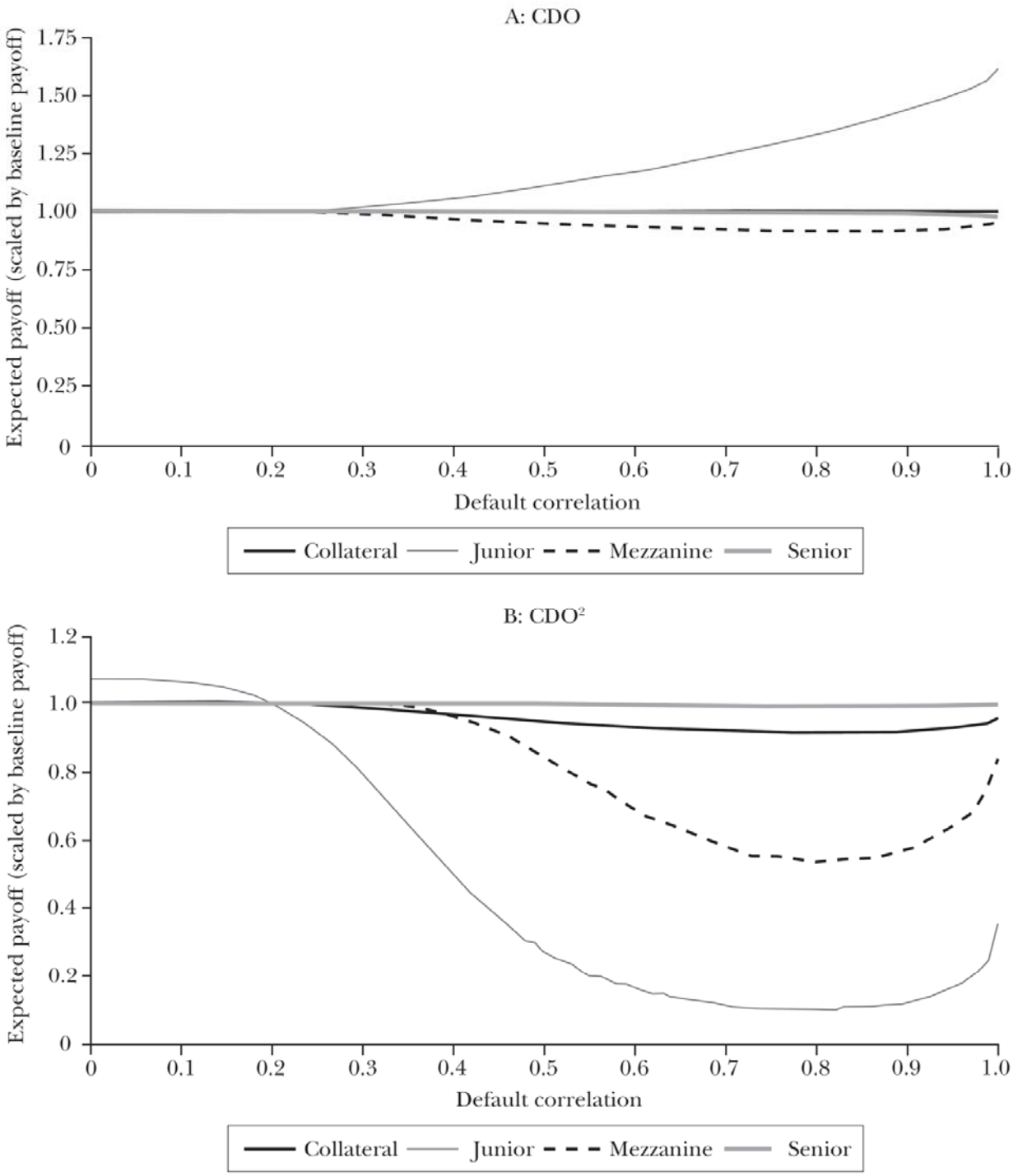
Summary Statistics for CDO and CDO^2 Tranches in our Simulation under Baseline Parameters

	Attachment points	*Default probability*	*Expected payoff*	*Rating*
CDO				
Junior	0%–6%	97.52%	0.59	NR
Mezzanine	6%–12%	2.07%	> 0.99	BBB−
Senior	12%–100%	< 0.00%	> 0.99	AAA
CDO^2 ([6, 12])				
Junior	0%–6%	56.94%	0.93	C
Mezzanine	6%–12%	< 0.00%	> 0.99	AAA
Senior	12%–100%	< 0.00%	> 0.99	AAA

Note: While the parameter values used in our simulation do not map into any particular market, they were chosen to mimic broadly the types of collateral and securitizations commonly observed in structured finance markets.

Figure 1

Sensitivity of CDO and CDO^2 to Changes in Default Correlation

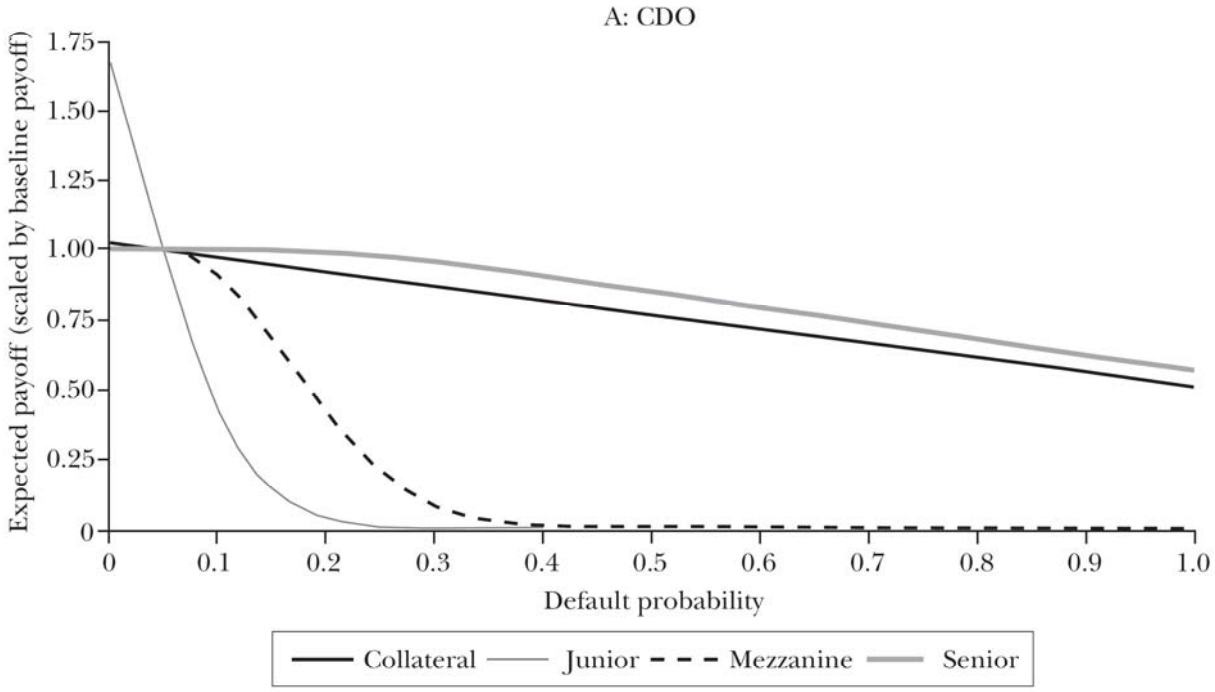


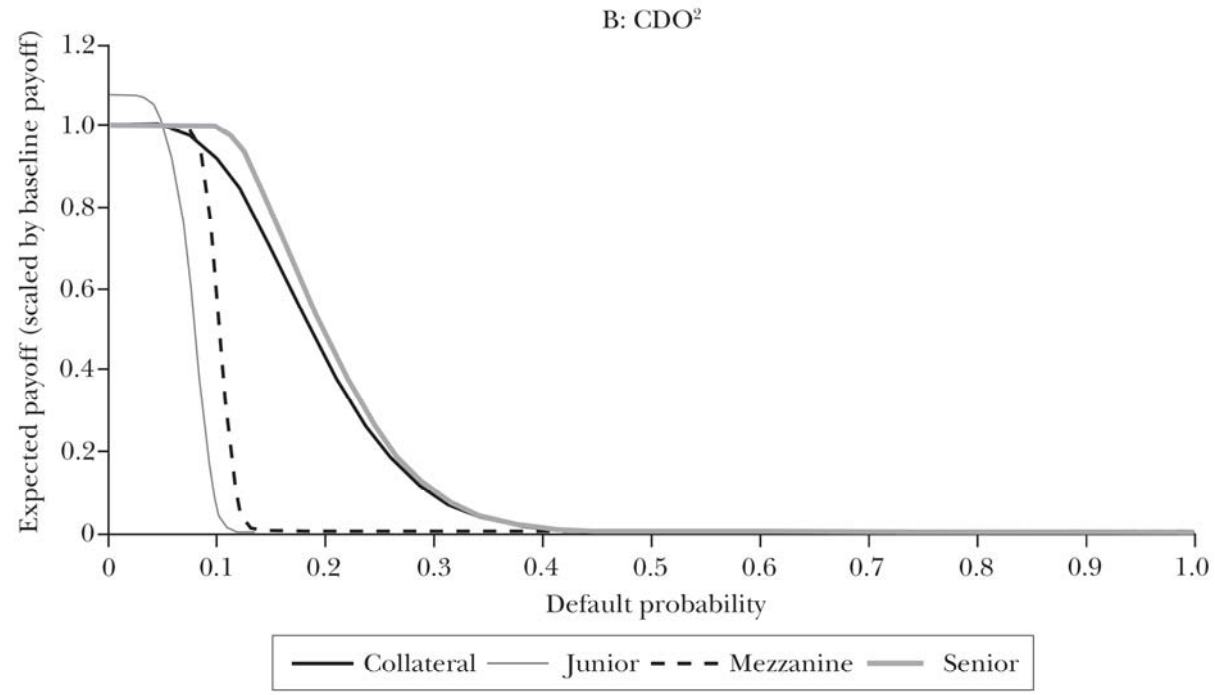
Note: Figure 1 explores the sensitivity of the original collateralized debt obligation and the CDO^2 tranches to changes in default correlation for bonds *within* each collateralized debt obligation. The correlation in defaults for bonds belonging to different collateral pools remains fixed at zero. The figure displays the expected payoff as a function of the default correlation, normalized by the expected payoff under the baseline calibration.

Assumes rho = 0.20

Figure 2

Sensitivity of CDO and CDO^2 to Changes in Default Probability





Note: Figure 2 explores the sensitivity of the original collateralized debt obligation and the CDO^2 tranches to changes in the default probability for bonds in each collateralized debt obligation. The figure displays the expected payoff as a function of the default probability, normalized by the expected payoff under the baseline calibration.

Assumes pDefault = 0.05

Source: Coval et al. (2009).