Insurance companies and the growth of corporate loans' securitization

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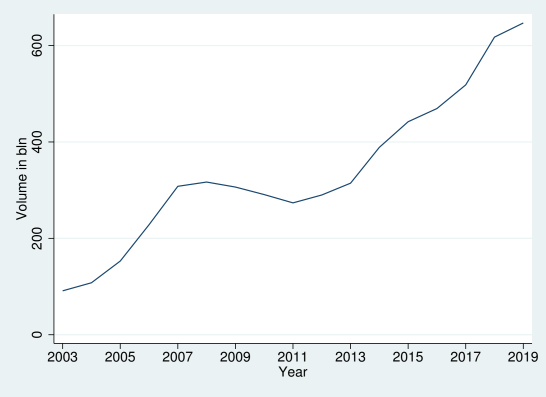
A Spectacular Growth of the Market for CLOs

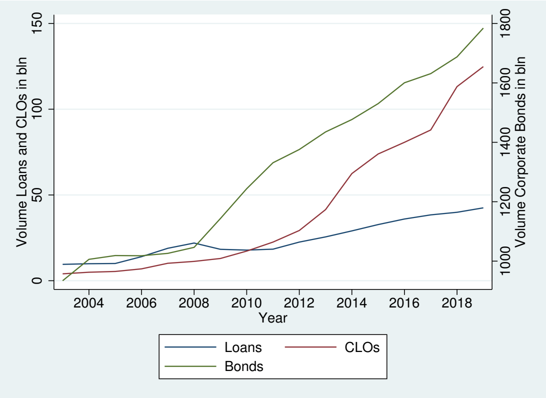
Figure: U.S. CLOs Outstanding (billions of dollars)



Insurance Companies' Growing Investments in CLOs

Between 2009 and 2019, insurance companies' investments in corporate bonds and loans increased by 56% and 132%, respectively. During the same time period, CLO investments increased by 863%. That growth was characterized by a preference for mezzanine tranches rated Aa, A or Baa.

Figure: Insurance Companies' Investments in Corporate Loans, CLOs, and Corporate Bonds



Overview

Objective of the paper

Investigate the role that insurance companies have played in the growth of corporate loans' securitization and identify the key factors behind this role.

Data

Insurance companies' investments in CLOs and corporate bonds at the security-company-year level from the financial statement filings submitted to the NAIC.

Main findings

1. Insurance companies search for yield:
    - Conditional on the asset type and capital requirement, they invest more in CLOs and corporate bonds offering higher yields.
    - Incentives to search for yield stem from
        - the capital adequacy regulation's coarse definition of risk
        - the similar treatment of corporate bonds and CLOs.
    - Search for yield is more prevalent within CLO investments.

Overview

2. This search for yield behavior translated into a preference for CLO over corporate bond investments.
    - CLOs other than triple-A tend to carry higher yields than corporate bonds with the same credit rating.
    - Conditional on credit rating, insurance companies tend to
        - purchase a higher portion of CLOs compared to corporate bonds
        - allocate a larger share of their portfolio to CLOs the larger is the difference in yields carried by the two asset classes.
    - Insurers' market share of corporate bonds decreased somewhat during 2003-2019, whereas that of CLOs increased by a factor of five. That increase was driven by mezzanine tranches rated investment grade, whose market share went from 5% in 2009 to 44% in 2019.
    - The demand for mezzanine tranches plays a critical role in the origination of CLOs.

Overview

3. Insurance companies' proclivity towards CLOs, especially mezzanine tranches, has important implications for the design of CLO deals:
    - CLO deals with higher insurers' investments:
        - have a larger share of mezzanine tranches rated investment grade
        - have a riskier pool of collateral loans
        - have a larger fraction of debt tranches with a fixed-rate coupon
        - are more likely to be tailor made repackaged CLO deals.
    - Exploit the 2010 reform on the capital treatment of insurers' investments in CLOs to shed light on the direction of causation.
    - CLO equity holders have benefited from insurance companies' preference for CLO mezzanine tranches.

Insurance Companies' Capital Regulation

Search for yield is fostered by three features of capital regulation:

1. A coarse definition of risk for capital charges on assets with different credit qualities (Becker and Ivashina, JF 2015).
2. A similar treatment of different asset classes, such as CLOs and corporate bonds (in contrast to banking regulation).

   The risk-based capital charge is determined according to a mapping from credit ratings.

	RBC charge (%)			
NAIC Designation	Life (pre-tax)	Life (post-tax)	P&C and Health	Credit Rating
1	0.40%	0.30%	0.30%	Aaa, Aa, A
2	1.30%	0.96%	1.00%	Baa
3	4.60%	3.39%	2.00%	Ba
4	10.00%	7.38%	4.50%	B
5	23.00%	16.96%	10.00%	Caa
6	30.00%	19.50%	30.00%	Ca, C

3. The 2010-2018 regulatory reform which allowed insurers, under specific circumstances, to report some CLOs in a lower NAIC designation than what implied by the rating mapping.

Insurance Companies Have a Preference for the Riskiest CLO Tranches within a NAIC Designation

	(1)	(2)	(3)
Dependent variable	New holding as percentage of total volume outstanding		
Yield (%)	0.067**	0.003	-0.011
	(0.02)	(0.01)	(0.01)
dummy CLO		4.680***	6.641**
		(0.86)	(2.59)
dummy CLO x Yield		1.114***	0.598**
		(0.22)	(0.26)
dummy Reform x Yield			0.024*
			(0.01)
dummy Reform x dummy CLO			-2.567
			(2.58)
dummy Reform x dummy CLO x Yield			0.708**
			(0.33)
Capitalization x Yield			
Asset controls	Yes	Yes	Yes
NAIC designation x Year FE	Yes	Yes	Yes
Security type (CLO or bond) FE	Yes	No	No
Type insurer FE	Yes	Yes	Yes
Insurer x Year FE	Yes	Yes	Yes
Two-way clustering	Insurer, Year	Insurer, Year	Insurer, Year
N	1691393	1691393	1691393
R^2	0.292	0.299	0.300
F-stat	25.318***	32.32***	25.199***

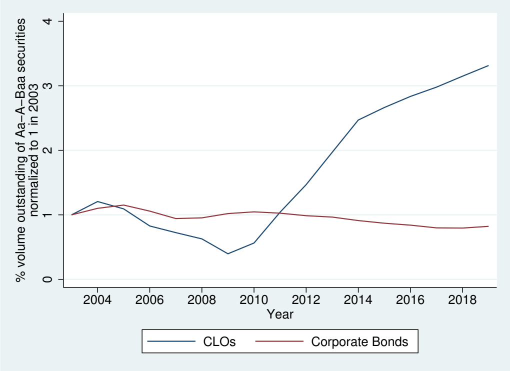
CLOs Are More Attractive than Corporate Bonds for Insurance Companies

Insurers' search-for-yield behavior translated into a preference for CLOs over corporate bond investments. This preference is strictly related to the yields differential between the two asset classes.

Sample		Assets with Aaa, Aa, A and Baa rating
Dependent variable	Yield (%)	New holding as percentage of total volume outstanding
dummy CLO		-0.684
		(3.73)
Rating=Aaa x dummy CLO	0.238	
	(0.27)	
Rating=Aa x dummy CLO	0.473***	
	(0.11)	
Rating=A x dummy CLO	0.927***	
	(0.11)	
Rating=Baa x dummy CLO	1.556***	
	(0.14)	
Yield CLO/Yield Bond ratio		0.563
		(0.39)
dummy CLO x Yield CLO/Yield Bond ratio		7.909**
		(2.87)
Asset controls	Yes	Yes
Rating	-	Yes
Type insurer FE	Yes	Yes
Insurer x Year FE	Yes	Yes
Two-way clustering	Insurer, Year	Insurer, Year
N	1275763	1276043
R^2	0.682	0.310
F-stat	38.091***	31.976***

Insurance Companies Have a Preference for CLOs over Corporate Bonds

Figure: Insurance Companies' Market Shares of CLOs and Corporate Bonds with Aa, A or Baa Rating Normalized to 1 in 2003



Implications for the CLO Market

CLO deals in which insurance companies hold larger investments have a larger share of mezzanine tranches rated investment grade, have a riskier pool of collateral loans, have a larger portion of debt tranches with a fixed-rate coupon, and are more likely to be repackaged CLO deals.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Aa-A-Baa Tranches as % of CLO			Weighted Average Spread	Fixed-rate Tranches as % of CLO	Repackaged CLO
% of CLO held by ICs	0.355**	0.000	0.289**	0.006**	0.424***	0.005**
	(0.17)	(0.00)	(0.11)	(0.00)	(0.11)	(0.00)
dummy Reform x % of CLO held by ICs		0.365*				
		(0.18)				
Year>2009 x % of CLO held by ICs			-0.366**			
			(0.13)			
% of CLO held by ICs Benefit Reform			-0.216			
			(0.14)			
% of CLO held by ICs Benefit Reform x % of CLO held by ICs			-0.001***			
			(0.00)			
Year>2009 x % of CLO held by ICs Benefit Reform			0.055			
			(0.39)			
Year>2009 x % of CLO held by ICs Benefit Reform x % of CLO held by ICs			0.011***			
			(0.00)			
Manager x Issuance Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering	Manager, Year	Manager, Year	Manager, Year	Manager, Year	Manager, Year	Manager, Year
N	1703	1703	1703	1051	1703	1703
R^2	0.521	0.531	0.628	0.874	0.461	0.466
F-stat	4.572**	2.849*	-	6.152**	14.891***	6.130**

Concluding Remarks

- Using data on insurers' investments in CLOs and corporate bonds, we document that insurance companies search for yield, that is, conditional on the asset type and capital charge, they invested more in securities offering higher yields.
- This search for yield behavior translated into a preference for CLOs vis-à-vis corporate bonds, and towards mezzanine tranches rated investment grade within the CLO asset class.
- As a result, by the end of 2019 insurers account for about half the investor base of CLO mezzanine tranches rated investment grade, hereby influencing the issuance and design of CLO deals.