Leveraged Loans:Is High Leverage Risk Priced in?

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Motivation

- The market for leveraged loans, a type of syndicated loan that is granted to borrowers with considerable amounts of debt or high credit risk, has grown rapidly in recent years.
- The FED, OCC and FDIC jointly issued the Interagency Guidance on Leveraged Lending ("the Guidance") in 2013 and the "Frequently asked questions for implementing the 2013 guidance" (the Clarification) in 2014.
- The Clarification does not cover nonbank lenders. Consequently, nonbank lenders become main beneficiaries of the regulation and contribute to the CLO boom since 2014.
- Given that the limited comprehensive regulation, the ECB and the BoE recently issued a joint warning on the opaqueness of the leveraged loan sector and underestimate of leverage risk.

Literature Review

- The Clarification is effective at reducing bank-originated leveraged lending, which triggered a migration of leveraged lending to unregulated nonbank lenders(Kim et al., 2019, JFI; Calem et al., 2020, JFI and Schenck and Shi, 2021).
- Consistent with our paper, Abuzov et al.,(2020, AFA) find the competition between regulated banks and non-regulated banks after 2014 Clarification has seen an increase in covenant-lite structures, reducing lender protections.

Literature Review (Continued)

- Ivashina and Sun, (2011 JFE), Nadauld and Weisbach (2012, JFE) both find the spread of syndicated loan securitized is lower than the spread of loan facilities that are not securitized.
- Bord and Santos(2015, JMCB) find that institutional loan, which use laxer lending standards to underwrite the loans that eventually sell to CLOs, suffering higher risk than unsecuritized loans originated by the same banks.
- Financial covenants play a key role in monitoring borrower performance and provide lenders the right to renegotiate their loan contracts, which can significantly reduce adverse selection and moral hazard (Rajan and Winton, 1995; Bradley and Roberts, 2015; Griffin et al., 2019).

Research Questions

- Whether the lack of supervision on unregulated lenders in the leveraged loan market leads to laxer lending standards (including price terms and non-price terms)?
- What are the potential channels behind the underestimation of borrowers' leverage risk premium?
- How could we enhance current macro- or micro-prudential regulations on leveraged lending?

Data Source and Sample Construction

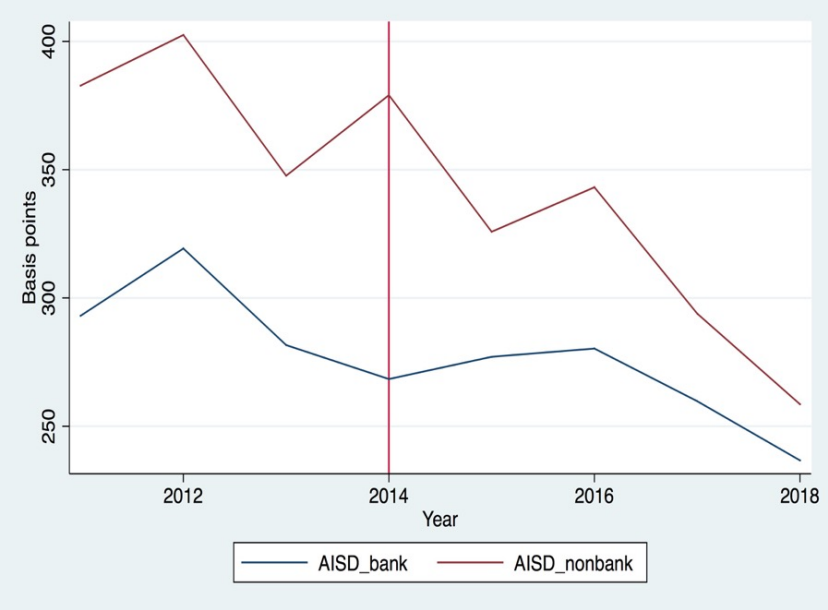
- Sample period:
  - from 2011 to end 2019
- Data source
  - Compustat, Refinitiv Eikon, LPC's DealScan
- We construct a link table connecting the two databases on leveraged loans of Refinitiv Eikon and WRDS-Reuters DealScan with the unique identifier of the LPC tranche.
- The current link table provided by Chava and Roberts (2008) contains only matches through the end of 2017. We extend the current version of the link table to the end of 2019 by using the six-digit CUSIP number
- The final sample contains 5,455 leveraged loan facilities in 3,507 deals to 1,385 U.S. nonfinancial firms.

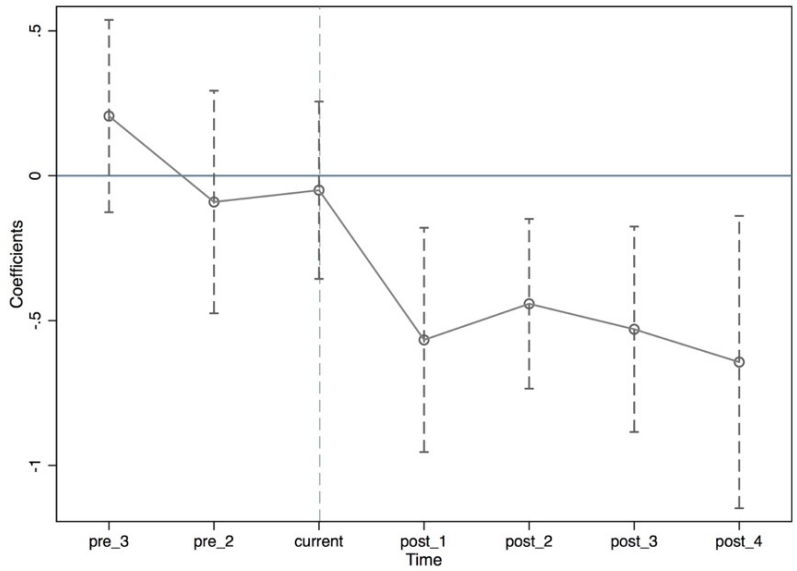
Empirical Setting

- Difference-in-differences (DiD) model

$$\begin{aligned} AISD_{i,t} = \beta_1 Leverage_{i,t-1} * Nonbank * Post + \beta_2 Leverage_{i,t-1} * \\ Nonbank + \beta_3 Leverage_{i,t-1} * Post + \beta_4 Nonbank * Post + \\ \beta_5 Nonbank + \beta_6 Leverage_{i,t-1} + \beta_t X_{it-1} + \upsilon_t + \eta_i + \epsilon_{i,t} \end{aligned}$$

Parallel Trend





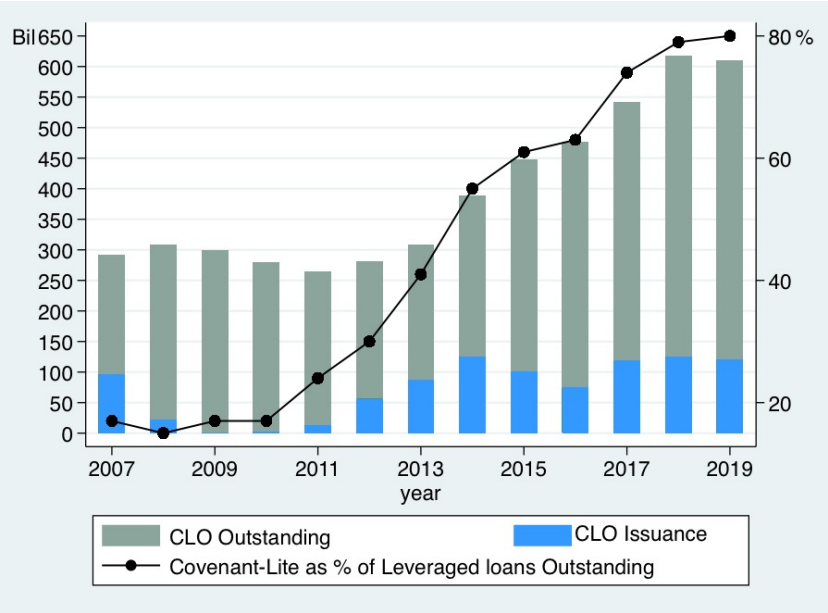
Baseline Result

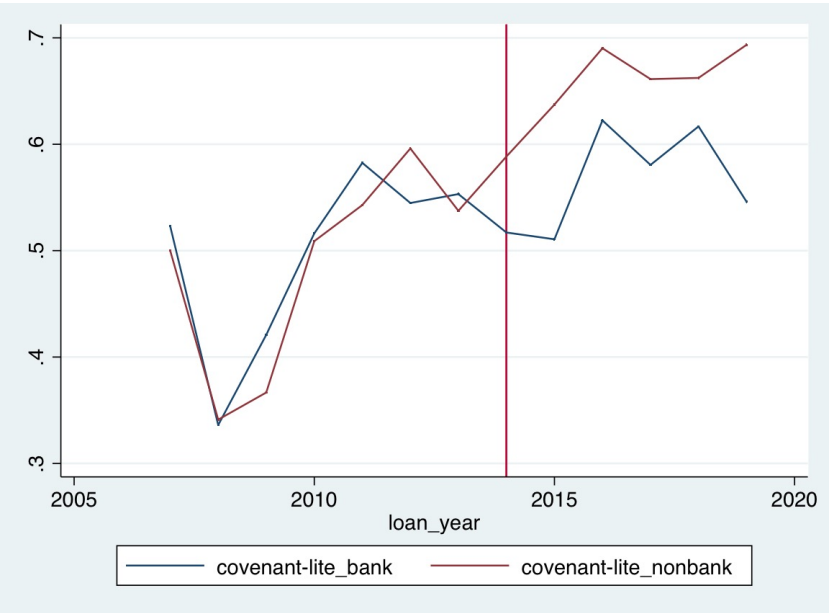
Sample:Dependent variable=AISD	Leveraged Loans	Term Loans	Revolvers
	(1)	(2)	(3)
Leverage* Nonbank*Post	-0.979**	-0.900**	-0.889**
	(0.33)	(0.38)	(0.34)
Leverage*Post	0.030	0.439*	-0.160*
	(0.12)	(0.23)	(0.07)
Nonbank*Post	37.311	32.084	31.641
	(32.72)	(34.14)	(31.18)
Leverage* Nonbank	0.131	-0.213	0.498
	(0.16)	(0.25)	(0.27)
Leverage	0.736***	0.609**	0.422***
	(0.12)	(0.23)	(0.08)
Nonbank	68.360***	79.950***	21.740
	(16.50)	(20.95)	(26.26)
Controls	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	4786	2276	2386
Adj $R\hat{2}$	0.251	0.298	0.323

DiD+PSM

Sample:Dependent variable=AISD	Leveraged Loans	Term Loans	Revolvers
	(1)	(2)	(3)
Leverage* Nonbank*Post	-1.021***	-1.522**	-1.396**
	(0.30)	(0.46)	(0.53)
Leverage*Post	0.348	1.122**	0.269
	(0.21)	(0.40)	(0.24)
Nonbank*Post	40.097	75.294*	59.276
	(29.54)	(33.01)	(46.88)
Leverage* Nonbank	-0.030	-0.269	0.865
	(0.13)	(0.16)	(0.47)
Leverage	0.568***	0.452**	0.081
	(0.10)	(0.17)	(0.22)
Nonbank	78.642***	80.588***	-0.653
	(17.50)	(11.22)	(44.09)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	2617	1370	1172
Adj $R\hat{2}$	0.290	0.352	0.360

CLO Annual Issuance and Covenant-lite Loans Issuance





Covenant-lite loans and Leverage risk premium

Sample:Dependent variable=AISD	Leveraged Loans	Term Loans	Revolvers
	(1)	(2)	(3)
Panel A: covenant-lite sample			
HighLeverage* Nonbank*Post	-80.123**	-99.652***	-76.048*
	(32.41)	(26.48)	(39.21)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	1130	560	560
Adj $R\hat{2}$	0.337	0.391	0.371
Panel B: with covenant sample			
HighLeverage* Nonbank*Post	-24.661	-67.973	-8.301
	(32.92)	(54.46)	(38.44)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	1487	810	612
Adj $R\hat{2}$	0.270	0.329	0.356

Performance Pricing and Leverage Risk Premium

Sample:Dependent variable=AISD	Leveraged Loans	Term Loans	Revolvers
	(1)	(2)	(3)
Panel A: without performance pricing sample			
HighLeverage* Nonbank*Post	-43.439*	-82.474**	-41.787
	(24.88)	(26.05)	(41.25)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	2151	1178	905
Adj $R\hat{2}$	0.291	0.357	0.354
Panel B: with performance pricing sample			
HighLeverage* Nonbank*Post	-54.865	-72.473	-56.385
	(42.90)	(60.71)	(52.28)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	466	192	267
Adj $R\hat{2}$	0.257	0.231	0.368

CLO Issuance and Leverage Risk Premium

Sample: Dependent variable=AISD	Leveraged Loans	Term Loans	Revolvers
Panel A: Highly Leveraged borrowers	(1)	(2)	(3)
Nonbank*CLO	-0.946***	-1.210***	-1.060***
	(0.26)	(0.34)	(0.20)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	695	392	282
Adj R$\hat{2}$	0.263	0.337	0.403
Panel B: Lowly Leveraged borrowers			
Nonbank*CLO	-0.270	-0.188	-0.429*
	(0.30)	(0.32)	(0.22)
Control	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Purpose FE	YES	YES	YES
Obs	1922	978	890
Adj R$\hat{2}$	0.296	0.358	0.335

Conclusion

- We directly focus on leveraged loan pricing after the Clarification and show that a higher degree of information asymmetry driven by an increase in covenant-lite loans and weaker investor protections is strongly associated with the narrowed leverage risk premium in the period of 2014 to 2019.
- The adverse selection and moral hazard associated with the high level of CLO issuance strongly explain the decline of nonbank leveraged loan spreads.
- Currently, nonbank financial institutions are subject to very limited regulatory restrictions on leveraged loan issuance. We believe our paper provides an important policy indication on the prudential regulation of the leveraged loan market and how to increase the safety and soundness of financial institutions.