What do Private Equity Firms do in the Credit Markets?

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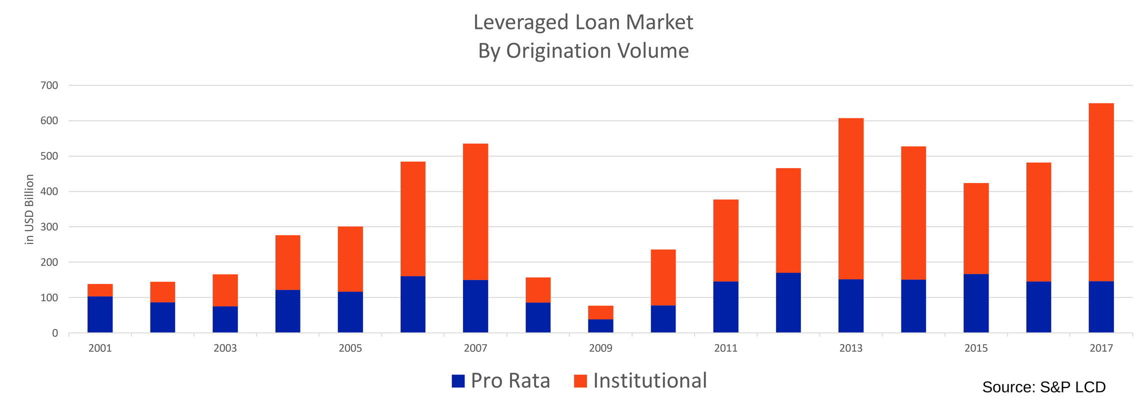
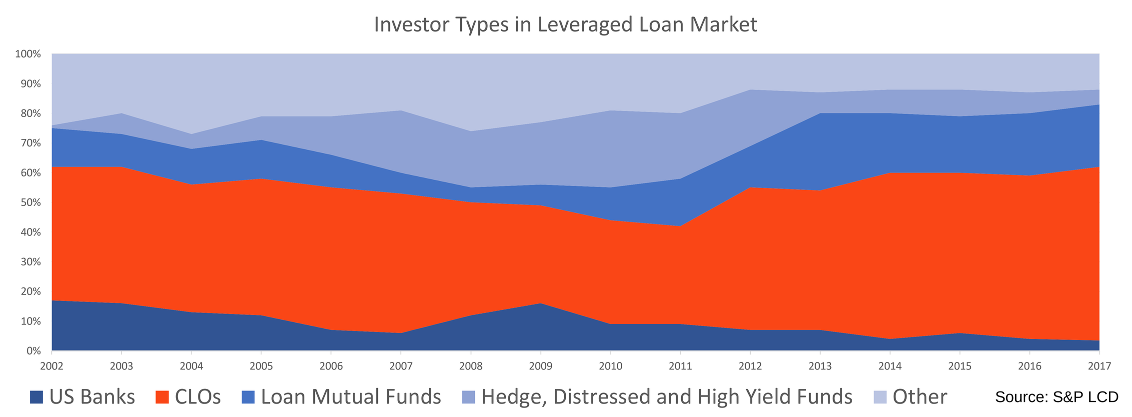
Motivation

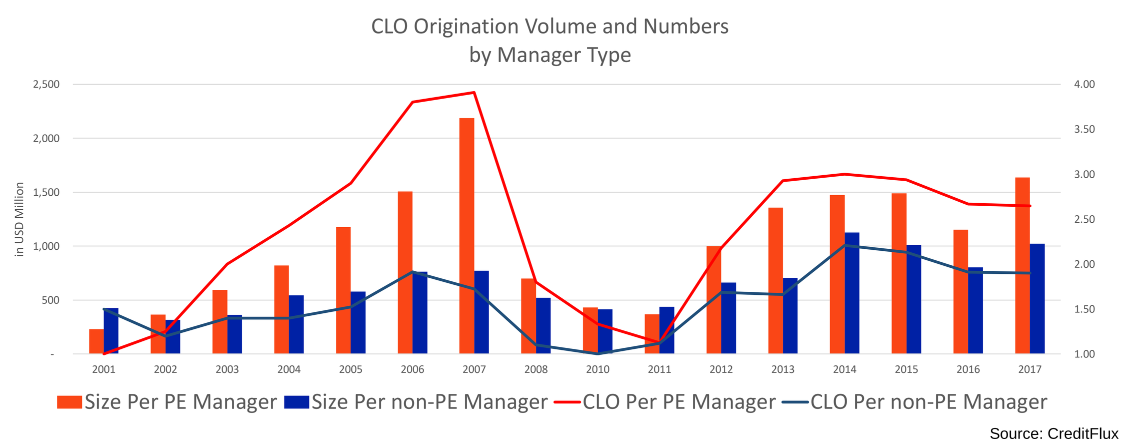
Loans that are sold to institutional investors are the biggest loan types in the US leveraged loan market, representing app. 75% of total loan volume in 2017.



Among institutional investors, securitization instruments (Collateralized Loan Obligations or CLOs) are the largest investor type, accounting for app 55% in 2017.



Private Equity (or PE) firms have been very active in the CLO market and have become the largest CLO managers (both in numbers and $ amount) in the recent years.



Traditional business of PE firms is to invest in equity and to improve efficiency of operations/management of mostly risky and private companies. A significant portion of these companies also primarily borrow from the leveraged loan market.

Are PE firms better than other types of CLO managers in managing CLO vehicles?

Contribution

Securitization is subject to Akerlof's (1970) lemon problem in which financial instruments with bad quality are used in the securitization process. In the CLO market, the literature provides mixed results with respect to the lemon problem, i.e. whether lenders securitize loans that are more likely to perform worse.

- Shivdasani & Wang (2011) find that the growth of securitization did not lead to riskier LBO deals, and securitization-backed LBO firms did not perform worse.
- Benmelech, Dlugosz & Ivashina (2012) find that securitized loans do not perform worse than non-securitized loans.
- Bord & Santos (2015) find that securitized loans underperform compared to the non-securitized loans originated by the same bank.

I argue that PE firms are informed players in the leveraged loan market. Existence of an informed player in the market is more likely to lessen the severity of adverse selection problem. My argument can explain the conflicting results in the literature.

Empirical Approach

I expect PE-managed CLOs to have different features if PE firms are more informed than other managers on average. These features include:

- Uniqueness of CLO's underlying loan portfolio
- Industry Exposure
- Default Frequency
- Equity Returns
- CLO Structure (or Skin-in-the-game)

The identification strategy is to conduct various robustness checks with CLO- & Manager-level control variables and fixed effects.

Data & Key Variables

The main data source comes from CreditFlux's CLOi platform. CLOi provides unbalanced panel (monthly) of CLOs' underlying loan portfolio, equity payments, and tranche level information.

Variable	Variable Type	Definition
Uniqueness	Dummy and Count	i. 1 if a borrower held by only one CLO manager in the first 3/6/12 months after its loan is securitized. ii. Number of Unique Borrowers in a CLO
Industry Exposure	Count and Continuous	i. Number of industries CLO invests ii. Ratio of USD-exposure to top 1/3/5 industries to total CLO size.
Defaulted Borrower	Dummy	1 if a borrower has experienced a default or has been assigned a default rating by S&P or Moody's.
Equity Returns	Dummy and Continuous	i. 1 if a CLO make an equity payment in a quarter ii. Ratio of Equity Payments to the size of initial equity tranche
CLO Structure	Continuous	Skin-in-the-Game: Fraction of Equity tranche to CLO size

The sample contains 155 CLO managers and 1,210 USD-denominated CLOs with reporting period between Jan 2008 and May 2018. Out of 155 managers, 19 are PE firms that manage 290 CLOs.

Summary Stats	Unit of Observation	N	Mean	Median	St Dev
CLO Size	CLO	1,210	504	482	176
PE CLO Size	CLO	290	532	510	194
Uniqueness – Dummy	CLO-Firm	384,337	0.02	0.00	0.14
Number of Industries	CLO	1,210	24.80	25.00	4.60
Exposure to top 3 industries	CLO	1,210	0.34	0.37	0.08
Default Dummy	Manager-Firm	91,733	0.15	0.00	0.36
Equity Payment Dummy	CLO-Quarter	17,679	0.61	1.00	0.49
Equity Return	CLO-Quarter	14,405	0.03	0.03	0.07
Equity Portion	CLO	987	10.08	9.35	3.91

Main Findings & Conclusion

	Uniqueness		Industry Exposure		Default	Equity Return in 3Y years		Skin in the Game
	Dummy (OLS)	Count (Negative Binomial)	Number of Industries (OLS)	Fraction of Top 3 Ind. (OLS)	Dummy (OLS)	Dummy (OLS)	Quarterly Return (OLS)	Equity % of CLO (OLS)
PE Dummy	0.007***	1.816***	-0.454*	0.016***	-0.018*	0.081***	0.005**	0.695**
	(2.442)	(2.926)	(-1.916)	(2.738)	(-1.840)	(3.164)	(2.215)	(2.013)
Log (1+CLO Size)	-0.014**	0.724	4.257***	-0.062***		0.220***	0.011***	-1.750***
	(-2.940)	(-1.211)	(10.623)	(-5.673)		(5.452)	(4.572)	(3.332)
Vintage FE	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Rating FE	No	No	No	No	Yes	No	No	No
Year FE	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Cluster at Month	Yes	No	No	No	Yes	No	No	No
Cluster at Quarter	No	No	No	No	No	Yes	Yes	No
Cluster at CLO	Yes	Yes	No	No	No	Yes	Yes	No
Cluster at MGR	No	No	No	No	Yes	No	No	No
Robust SE	No	No	Yes	Yes	No	No	No	Yes
Unit of Observation	CLO-Firm	CLO	CLO	CLO	MGR-Firm	CLO-Qtr	CLO-Qtr	CLO
Observations	323,712	987	1,153	1,153	73,176	9,865	9,270	987
R-Squared	0.006	0.025	0.473	0.127	0.105	0.186	0.077	0.059

PE-Managed CLOs are associated with having

- More unique borrowers in their CLO portfolio,
- Higher exposure to their top industries,
- Borrowers that have less likelihood of default,
- More frequent equity payments and having higher equity returns and
- more ex-ante skin in the game in the CLO structure.

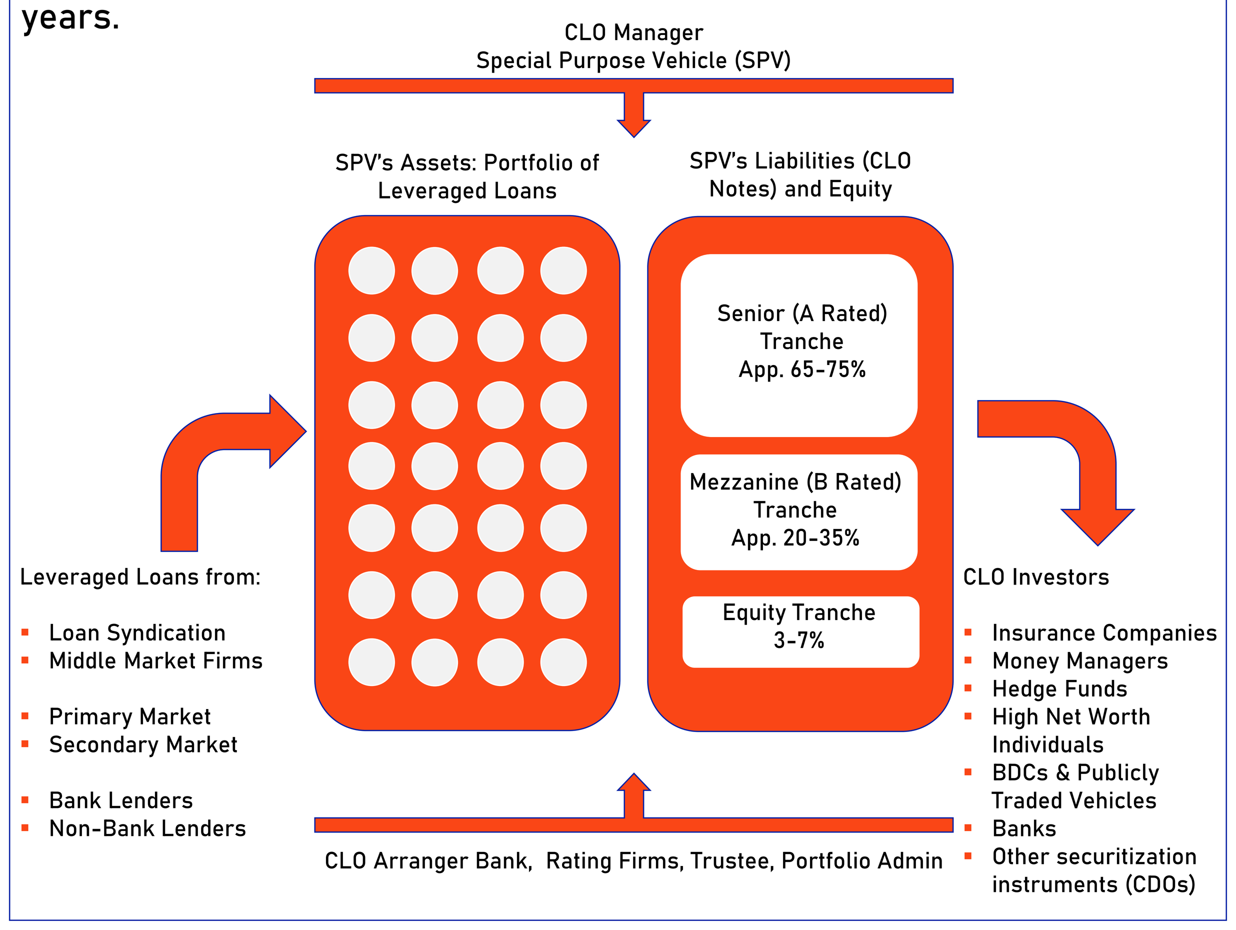
These findings are consistent with the idea that PE firms have informational advantage.

Considering heterogeneity of CLO managers, this study provides a suggestive evidence that inconsistent results found in the CLO market with respect to the adverse selection problem are due to the presence of an informed player.

Appendix: What is a CLO?

Collateralized loan obligations (CLOs) are a form of securitization where payments from multiple middle sized and large business loans are pooled together and passed on to different classes of owners in various tranches.

After confirming demand for CLO notes, arranger bank and CLO manager set up a bankruptcy-remote company, or Special Purpose Vehicle - SPV. With warehouse funding and the amount raised from investors, CLO manager starts constructing loan portfolio and then balancing the portfolio to comply with its indenture. Interest payments from the underlying loans are collected by Portfolio Administration, a subsidiary of the arranger bank in most cases, and distributed to the investors following a waterfall payment structure. CLO manager has right to control the loan portfolio but portfolio admin has a duty to distribute the payments according to CLO's indenture. A CLO typically matures in 10 years.



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