Non-bank loans, corporate investment, and firm performance

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Introduction

- Non-bank lending increased in the syndicated loan market during the recent decades.
- They concentrate in the leveraged loan market. (Ivashina and Sun, 2011)
- Following the Leveraged Lending Guidance (2013), banks retreated from the leveraged loan market. The void was filled by the non-bank institutions (Kim et al., 2018).
- We ask how non-bank lenders influence borrowers' investment behaviour and future performance.

Findings

- Non-bank borrowers have lower post-loan profitability and lower capital expenditure.
- Non-banks are more likely to impose capex restrictions. A tight restriction imposed by a non-bank induces worse outcomes.
- Firms which borrowed leveraged loans from non-banks before the crisis, suffered worse outcomes during the crisis.
- Firms which borrowed leveraged loans from banks before leveraged lending guidance, suffered worse outcomes after the guidance clarification.
- These effects are concentrated in the leveraged loan sector, and much weaker in the non-leveraged segment.

Hypothesis: Lenders of last resort

- Lim et al. (2014) propose that non-banks assume the role of lenders of last resort because their borrowers are risky. This gives non-banks bargaining power to extract rents and demand higher spreads.
- As lenders of last resort, non-banks may impose stricter non-price terms than banks would be able to. One such restriction would be to limit capital expenditure, as debt-holders do not benefit from the upside of risky investments. These restrictions may be value-reducing from the borrower's point of view, but makes debt repayments more secure.
- Non-banks are more likely to impose capex restrictions. Capex restrictions imposed by non-banks would be socially costlier.

Hypothesis: Credit supply shock

- Non-banks suffered more from the credit supply shock during the crisis.
- Unlike banks, non-banks do not receive the government subsidies during the crisis.
- A sudden credit supply shock would then have a bigger adverse effect on borrowers of non-banks.
- After the clarification of leveraged lending guidance in 2014, banks reduced leveraged loan issuance.
- Those who borrowed leveraged loans from banks before the guidance would then be adversely affected.

Data and Sample

- Sample: US loan facilities issued between 1997 and 2016 in the syndicated loan market.
- Sources: DealScan, Compustat.
- Non-bank borrowers are very different to bank borrowers - selection issue (segmented markets; Chernenko et al., 2018).
- We use propensity score matching to generate a control group of bank borrowers which is similar to the treated group of non-bank borrowers (at least, observably).

Empirical Specification

- We estimate the following regression to measure the effect of non-banks on borrower outcomes:

$$Y_{i,t+} = \beta_1 Non - bank + X_{i,t-} + \gamma_{k,t} + \epsilon_i,$$

- Y includes post-loan outcomes, ROA and capital expenditure.
- We control for the pre-loan firm fundamentals and the terms of the contract.
- We include industry-year fixed effects to control for potentially time-varying heterogeneities at the industry-level.
- Standard errors are clustered at the borrower-level.

Value effects

Table: Value effects

	ROA	*ROA*	*ROA*	*Tobin's Q*
	Leveraged loans			
Non-bank	-0.026***	-0.026***	-0.020***	-0.040
	(-5.33)	(-5.66)	(-4.06)	(-1.52)
Observations	2501	2475	2409	2380
adj. R^2	0.17	0.29	0.31	0.38
	Non-leveraged loans			
Non-bank	-0.045***	-0.021**	-0.008	-0.077
	(-3.86)	(-2.22)	(-0.95)	(-1.09)
Observations	798	787	605	603
adj. R^2	0.32	0.64	0.69	0.65
Firm controls	No	Yes	Yes	Yes
Contract controls	No	No	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes

Investment effects

Table: CAPEX

	Leveraged	Non-leveraged
Non-bank	-0.005** (-2.25)	-0.007 (-1.50)
Controls	Yes	Yes
Industry-year FE	Yes	Yes
Observations	2401	602
adj. R^2	0.53	0.68

Capex restrictions

Table: Capex restrictions

	Leveraged	Non-leveraged
Non-bank	0.109*** (7.81)	0.009 (0.47)
Controls	Yes	Yes
Industry-year FE	Yes	Yes
Observations	3118	788
adj. R^2	0.50	0.41

Table: Real effects of capex restrictions: Leveraged loans

	CAPEX	ROA
Non-bank	-0.005*	-0.025***
	(-1.89)	(-4.21)
Non-bank Bind	-0.008**	-0.023**
	(-2.17)	(-2.11)
Non-bank CapexRes	0.009**	0.028***
	(2.33)	(2.65)
Bank Bind	-0.004	0.001
	(-0.87)	(0.05)
Bank CapexRes	0.004	-0.000
	(0.85)	(-0.01)
Controls+FE	Yes	Yes
Observations	2308	2316
adj. R^2	0.53	0.31

Intention to treat: Credit supply shock

- We exploit 2007 financial crisis as the unexpected shock to credit supply.
- Sample goes from 2006/q1 to 2008/q4, with the crisis period defined as 2007/q3 to 2008/q4 (quarterly data).
- We define the non-bank lending dummy, based on a borrower's lender identity prior to the onset of crisis (2005-2006).
- We also exploit the leveraged lending guidance (the 2014 clarification).
- Same setting as before, with "Guidance" replaces "Crisis". Sample goes from 2013/q2 to 2016/q1, with the guidance period defined as 2014/q4 to 2016/q1 (quarterly data).
- We define the non-bank lending dummy, based on a borrower's lender identity prior to the guidance (2012-2013).

Table: Intention to treat: Crisis

	ROA	Capex	ROA	Capex
Non-bank Lev*Crisis	-0.012*	-0.003*	-0.001	0.002**
	(-1.69)	(-1.80)	(-0.16)	(2.11)
Bank Lev*Crisis	0.001	0.000	-0.001	0.001**
	(0.46)	(0.31)	(-0.26)	(2.34)
Controls+FE	Yes	Yes	Yes	Yes
Observations	11191	11191	14024	14024
adj. R^2	0.19	0.56	0.44	0.39

Guidance

Table: Intention to treat: Guidance

	ROA	Capex	ROA	Capex
Non-bank Lev*Guidance	0.009	0.001	-0.002	-0.002
	(1.30)	(0.85)	(-0.31)	(-0.57)
Bank Lev*Guidance	-0.010***	-0.001**	0.003*	0.001
	(-3.24)	(-1.99)	(1.67)	(1.51)
Controls+FE	Yes	Yes	Yes	Yes
Observations	5984	5984	6053	6053
adj. R^2	0.24	0.47	0.21	0.50

Concluding remarks

- We document that non-bank borrowers have lower investment and worse performance, post-loan, compared to bank borrowers.
- We document two channels for this effect:
  1. explicit restrictions in the contract (capex limits).
  2. potentially unobserved channels (as shown in the credit supply shock exercise).
- The effects are mostly concentrated in the leveraged loan sector.
- Our results seem consistent with the hypothesis that non-banks extract rent from borrowers, due to their bargaining power as the lenders of last resort.
- Policy: Regulating banks, without regulating the shadow banking sector at the same time, may not only be ineffective (Kim et al. 2018), but also value-destroying!