Discussion: Firm Heterogeneity, Credit Spreads, and Monetary Policy by Anderson and Cesa-Bianchi

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MFS 13th Workshop, Northwestern
May 18, 2019

What is the paper about?

Research Question

- Do financial frictions (i.e., financial accelerator) matter for the transmission of monetary policy
- Focus: heterogeneous response of monetary policy shocks

Literature

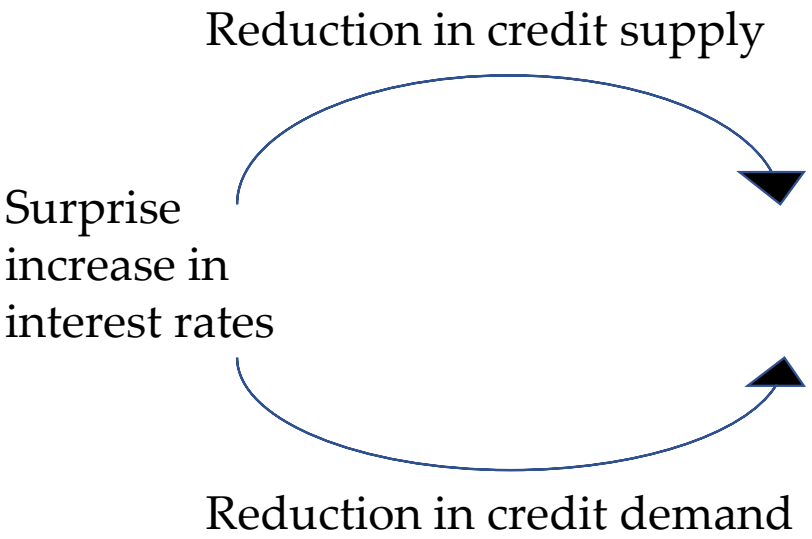
- Conflicting evidence for role in the transmission of monetary policy

Idea

- Bond prices allow for better identification of credit supply vs. credit demand effects

  Available at high frequency
  Available for a large cross-section of non-financial firms
  Mappable to firm fundamentals

Transmission of monetary policy



Decrease in credit

Mechanisms:

Tightening of debt financing constraints

Due to borrower
E.g., Decrease in collateral values

Due to investors' beliefs/sentiments

Due to intermediary health

Predictions: Lower Q & **Higher** Price

Mechanism:

Higher discount on investment's future payoff

Predictions: Lower Q & **Lower** Price

Exercise

- State-of-the-art monetary policy shock identification
- Carefully construct monetary surprise shocks
- Option adjusted credit spreads orthogonalized
  - Firm fundamental credit risk
  - Residual "Excess bond premium" (Gilchrist and Zakrajsek 2012)
- Findings: monetary tightening leads to
  - An overall increase in credit spreads
  - A larger response for high-leveraged firms
  - Response mostly due to excess-bond-premium movements

Comments

Very nice paper: clearly articulates and tackles identification issues

Crowded literature

- Relative to existing literature learned that increases in credit spreads come from highly levered firms

  Authors interpret this fact through BGG financial accelerator model

  Other work (Crouzet-Mehram and Ottonello-Winberry) find less strong evidence for financial accelerator response

Interpretation of results

- Through which financially constrained economic player does monetary policy operate?
- How important are firm-based financial friction stories?

Interpretation of results

- Most of the credit spread response is due to the response of the "excess bond premium"
- Indicative of non-standard financial frictions

  Standard BGG-friction: external finance premium depends on firm fundamentals (i.e., leverage, size)

- Investors' risk appetite
- Constrained intermediary

Investors risk appetite

- Excess bond premium interpreted as sentiment measure (Lopez-Salido Stein Zakrajsek 2017)
- Pflueger Siriwardane Sunderam 2018
  - When risk-appetite is low investors demand higher compensation for risky stock relative to low-vol stocks
  - Show that risk-appetite measure does not load on monetary policy shocks
- Suggests intermediary channel

Intermediary asset pricing interpretation

Story

- Intermediaries are the constrained agents (Gilchrist-Zakrajsek 2012 interpretation)
- Intermediaries are in the business of maturity transformation

  $\Rightarrow$ Interest rate risk exposure (Begenau-Piazzesi-Schneider 2015)
- Higher interest rates lower equity valuation for banks - net worth shock (English- Van Den Heuvel-Zakrajsek 2018)
- Shock to net-worth lowers intermediaries risk-bearing capacity (He-Krishnamurthy 2013 & Brunnermeier-Sannikov 2014)
- Results in higher borrowing costs for firms (Siriwardane 2019)
- Heterogenous (high and low leverage firms) bond response driven by Value-at-Risk constraints (Adrian-Shin)

Study subsamples that vary with the slack of the banking sector

Firm-based financial friction stories

- Small role suggested by finding that most of the spread response driven by excess bond premium response (i.e., unrelated to firm fundamentals that could predict default risk)

Table 5 Expected Default and Excess Bond Premium

	(1)	(2)	(3)
Dep. Variable:	Spread (Δs)	Expected Default ($\Delta \hat{s}$)	Exc. Bond Premium ($\Delta \hat{\nu}$)
MP surp. (ϵ^m)	25.25***	5.15***	20.10***
	(1.65)	(0.61)	(1.57)
R-squared	0.036	0.041	0.033
Observations	279,280	279,280	279,280

- But also show (Table 6) that excess bond premia respond more for highly levered firms?

Role of leverage

Table 6 Expected Default and Excess Bond Premium: Heterogeneity

	(1)	(2)	(3)	(4)
Dep. Variable:	Expected Default ($\Delta\hat{s}$)		Exc. Bond Premium ($\Delta\hat{\nu}$)	
	Leverage continuous	High Leverage	Leverage continuous	High Leverage
MP surp. x Lev. ($\epsilon^m \times L_j$)	4.12***		9.36***	
	(0.93)		(2.21)	
MP surp. x High Lev. ($\epsilon^m \times \ell_j^{High}$)		2.27***		14.74***
		(0.75)		(3.55)
R-squared	0.327	0.326	0.318	0.318
Observations	278,938	278,938	278,938	278,938

- Leverage predictive of losses: expected default response
- Orthogonolization done properly, then (3) and (4) suggestive of sophisticated intermediary constraint story (e.g., working through constraints)

GZ: Orthogonolization

- Spreads regressed on distance to default, age, issuance size, duration, coupon (75% R^2)
- Distance to default measure uses face value of all short term and half of the long term
- Potentially underestimates leverage of high-levered firms
- I would have expected firm-level "financial frictions" to show up in default risk measure
- Tricky as some of default risk predictors are also correlated with measures of financial constraints (size and leverage)

Definition of financially constrained firms (1)

- Bond sample selects largest firms

  Largest firms tend to be most credit-worthy by traditional measures (size/age/credit rating)

  Standard way of financial constrained status: no credit rating

Table: Compare size distribution of sample in paper with general sample

	Mean	25%	50%	75%	95%
Compustat full sample	9,952	116	554	2,494	26,620
Compustat avg. leverage	0.23	0.19	0.20	0.24	0.30
Paper low leverage sample	56,427	11,208	30,277	67,243	
Paper high leverage sample	36,432	7,570	19,136	44,033	

Definition of financially constrained firms (2)

- Compustat: leverage increasing in size
- Bond sample: leverage decreasing in size

  Little economic variation in degree of financial constraints (leverage)

  Would not interpret high leverage firms (in the bond sample) as constrained

  They are more risky - or ended up being highly levered after series of bad shocks

  Note: regressions should not pick up higher risk if properly orthogonalized

- Makes it difficult to test firm-level financial friction story
- Arguably large fraction of financially constrained firms are not listed

Conclusion

Very interesting paper that takes identification seriously

- Financial frictions matter!

  Financial frictions of investors, intermediaries, and borrowers?

Bond price data have many advantages but also limit sample of firms

$\Rightarrow$ largest and least financial constrained firms

In some sense, the ideal setting to focus on intermediary constraints