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Capital Regulation, Monetary Policy, and the Renegotiation of International Loans

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Motivation

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Economics

Banks' Robust Capital Mitigates Risks, Regulators Tell Biden

By Jesse Hamilton

June 21, 2021, 4:28 PM CDT

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Finance

European Regulators Should Let Banks Bank

Stringent new capital requirements will choke off financing that's urgently required to build infrastructure in the developing world.

Research Question

- Do macroeconomic factors impact the likelihood of international lender renegotiation in a syndicated loan?
  - Capital Regulation
  - Monetary Policy
  - Economic Policy Uncertainty

Literature & Hypotheses

- Capital Regulation & Cross-Border lending activities
  - Ayiar, Calomiris, Hooley, Korniyenko and Wieladek (2014); Onega, Popov and Udell (2013)
  - *H1: Lenders are more likely to exit the syndicate if regulatory requirements increase in their home country*
- International Transmission of Monetary Policy
  - Brauning and Ivashina (2020a,2020b); Demirguc-Kunt, Horvath, and Huizinga (2020)
  - *H2: Tighter monetary policy in the borrower (lender) country implies that international lenders are less (more) likely to exit the syndicate*
- Economic Policy Uncertainty & Credit Supply
  - Kaviani, Kryzanowski, Maleki and Savor (2020); Barraza and Civelli (2019b)
  - *H3: Higher levels of Economic Policy Uncertainty increases the likelihood of lender exit*
- Renegotiation Outcomes
  - Roberts & Sufi (2009)
  - *H4: International lender exits negatively affect deal amount, maturity and spread*

Identification

- Differential impact of macroeconomic variables on domestic versus international lenders
- Changes Capital Regulation & Policy Rates
  - Exogenous
- Borrower country and Lender country
  - GDP per capita
  - Unemployment
  - Creditor Rights
  - Legal Origin
  - Political Rights
- Domestic lender dummy
- Borrower country and Lender country Fixed Effects

Data

- LPC Dealscan
- Compustat; Worldscope
- Barth, Capiro & Levine (2013) – Capital Stringency Index
- BIS; IMF; Central Bank websites – Policy Rates
- Baker, Bloom & Davis (2016) - Economic Policy Uncertainty
- WorldBank
- CEPII
- ARDA World Religion Project
- Djankov et. al (2007)
- International Country Risk Guide
- World Values Survey
- Hofstede Index
- Schleifer et. al (2008)

❖ 28 Borrower Countries
❖ 39 Lender Countries
❖ 4,879 Loanpaths
❖ 2,580 Borrowers
❖ 2,285 Lenders
❖ 57,239 Observations

Renegotiation

- Loan renegotiated if lead lender does not exit
- Renegotiation is conditional on participation in prior round

Borrower: Magna International Inc.

T = 0

- Loan Originated
- Syndicate formed

Bank of Nova Scotia
MUFG Bank
CitiBank
CIBC Capital Partners
BNP Paribas SA
Bank of America/Merrill

T = 1

- Loan Renegotiated
- Lender Exit/Remain
- Loan amended

Bank of Nova Scotia
~~MUFG Bank~~
CitiBank
~~CIBC Capital Partners~~
BNP Paribas SA
Bank of America/Merrill
US Bank*

T = 2

- Loan Renegotiated
- Lender Exit/Remain
- Loan amended

Bank of Nova Scotia
CitiBank
BNP Paribas SA
Bank of America/Merrill
US Bank*

Methodology

❖Logistic Regression

- Dependent Variable
  - *Exit* = 1 if the lender exits the syndicate; 0 if they remain
- Independent Variables
  - $\Delta\ \boldsymbol{Capital\ Stringency}_{L,K,T}$
  - $\Delta \boldsymbol{Lender\ Rate}_{L,K,T}$
  - $\Delta \boldsymbol{Borrower\ Rate}_{K,T}$
  - $\boldsymbol{Lender\ EPU}_{L,K,T}$
  - $\boldsymbol{Borrower\ EPU}_{K,T}$
- Controls
  - *Loan characteristics*
  - *Lender country characteristics*
  - *Borrower country characteristics*
  - *Fixed Effects*

❖ *Similar results with Linear Probability Model*

Results

Probability of Lender Exit

	(1)	(2)	(3)	(4)	(5)	(6)
	Exit	Exit	Exit	Exit	Exit	Exit
ΔCapital Stringency	**0.036***	**0.075*****	**0.077*****	**0.085*****	**0.083*****	**0.081*****
	[0.009]	[0.017]	[0.017]	[0.019]	[0.019]	[0.018]
ΔLender Rate	-0.007	-0.004	-0.007	-0.004	-0.008	0.002
ΔBorrower Rate	**-0.025**	**-0.046*****	**-0.039*****	**-0.044*****	**-0.038*****	**-0.052*****
	[-0.006]	[-0.010]	[-0.009]	[-0.010]	[-0.008]	[-0.012]
Lender EPU						0.080
Borrower EPU						**-0.122****
						[-0.027]
Firm Financial Controls	YES	YES	YES	YES	YES	YES
Country Level Controls	YES	YES	YES	YES	YES	YES
Loan Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Lender Country FE	NO	NO	YES	NO	YES	YES
Borrower Country FE	NO	NO	NO	YES	YES	YES
Observations	57,239	53,065	53,047	53,047	53,034	51,183
Pseudo R-squared	0.0154	0.0638	0.0716	0.0684	0.0749	0.0734

Robustness Tests

- ✓ Linear Probability Model with Borrower-Round Fixed Effects
- ✓ Linear Probability Model with Lender-Round Fixed Effects
- ✓ Subsample with different Lender & Borrower Countries only
- ✓ Alternative Definition of International Lender
- ✓ Excluding US lenders
- ✓ Subsample with Lender & Lender parent domiciled in the same country
- ✓ Including the Capital Stringency Gap with between lead lender and syndicate members

Summary of Findings

- **H1:** Lenders are more likely to exit the syndicate if regulatory requirements increase in their home country
  - A 1 unit increase in regulations implies international lenders are 4.2% more likely to exit
- **H2:** Tighter monetary policy in the borrower (lender) country imply international lenders are less (more) likely to exit the syndicate
  - A 1% increase in borrower rate implies a 1.8% decrease in exit likelihood
- H3: Higher levels of Economic Policy Uncertainty increases the likelihood of lender exit
  - Higher Borrower country EPU implies a lower likelihood of exit
- H4: International lender exits negatively affect deal amount

KEY
Support
No Support
Opposite Effect

Post-Renegotiation Deal Outcomes

Instrumental Variables

- Woolridge (2002) – Procedure for consistent ATE estimates given an endogenous binary variable
- 1. Instrument for endogenous binary variable in Probit model
- 2. Use fitted values as instruments in 2^{nd} stage

IV Regression

	(1) Exit	(2) ΔAmount	(3) ΔMaturity	(4) ΔSpread
ΔCapital Stringency	**0.068*** **			
	(0.009)			
ΔCapital Stringency x ΔCapital Stringency	**0.008***			
	(0.004)			
Exit		**-0.403*** **	**-0.143*** **	**-0.045**
		(0.102)	(0.046)	(0.070)
Year & Industry FE	YES	YES	YES	YES
Firm & Deal Controls	YES	YES	YES	YES
Borrower Country FE	YES	YES	YES	YES
Lender Country FE	YES	YES	YES	YES
Observations	15405	15405	15067	11868
First Stage F-Stat		209.85	206.69	178.44

Conclusions

- Greater capital stringency implies that foreign lenders are more likely to exit a syndicate when capital regulations in their home country tightens
- Lenders are less likely to exit a syndicate when policy rates in the borrower country increase, but lender country policy rates do not affect exit decisions
- We find some evidence that EPU affects the renegotiation probability; higher borrower country EPU decreases exit likelihood
- International lender exits negatively affect loan amount, and maturity, but does not affect spread