



# Discussion

## Who Lends Before Banking Crises?

**Karsten Müller**  
NUS Business School

Workshop on Financial Intermediation and Corporate Debt Markets

14 October 2021



# Background

## **Financial crises are extraordinarily costly**

- Output loss following these events is never recovered (Cerra-Saxena, 2008; Reinhart-Rogoff, 2014)
- Massive social costs, including political backlash (Funke-Schularick-Trebesch, 2016; Gyongyosi-Verner, 2021; Doerr et al., 2021)

# Background

## **Financial crises are extraordinarily costly**

- Output loss following these events is never recovered (Cerra-Saxena, 2008; Reinhart-Rogoff, 2014)
- Massive social costs, including political backlash (Funke-Schularick-Trebesch, 2016; Gyongyosi-Verner, 2021; Doerr et al., 2021)

## **Credit markets are key for understanding these episodes**

- Crises tend to follow credit booms (Schularick-Taylor, 2012; Gourinchas-Obstfeld, 2012)
- Mixed evidence whether firm or household credit more important (Mian-Sufi-Verner, 2017; Jordà et al., 2020; Greenwood et al., 2020; Giroud-Mueller, 2020)
- Lending to firms in non-tradable sector (vs. tradable sector) appears crucial (Müller-Verner, 2020)
- Micro data suggest procyclical credit risk is important (Greenwood-Hanson, 2013; López-Salido-Stein-Zakrajšek, 2017; Brandão-Marques et al., 2019; Kirti, 2019)

# Background

## **Financial crises are extraordinarily costly**

- Output loss following these events is never recovered (Cerra-Saxena, 2008; Reinhart-Rogoff, 2014)
- Massive social costs, including political backlash (Funke-Schularick-Trebesch, 2016; Gyongyosi-Verner, 2021; Doerr et al., 2021)

## **Credit markets are key for understanding these episodes**

- Crises tend to follow credit booms (Schularick-Taylor, 2012; Gourinchas-Obstfeld, 2012)
- Mixed evidence whether firm or household credit more important (Mian-Sufi-Verner, 2017; Jordà et al., 2020; Greenwood et al., 2020; Giroud-Mueller, 2020)
- Lending to firms in non-tradable sector (vs. tradable sector) appears crucial (Müller-Verner, 2020)
- Micro data suggest procyclical credit risk is important (Greenwood-Hanson, 2013; López-Salido-Stein-Zakrajšek, 2017; Brandão-Marques et al., 2019; Kirti, 2019)

**But: many open questions about what exactly happens in debt markets before downturns**

# This paper

## **Zoom in on one important source of heterogeneity: lender characteristics**

- Setting: syndicated loan market
- Main lender characteristics they look at: foreign lenders and market share

# This paper

## Zoom in on one important source of heterogeneity: lender characteristics

- Setting: syndicated loan market
- Main lender characteristics they look at: foreign lenders and market share

## Method: descriptive regressions

- $y_{b,c,t} = \beta_1 \text{Lender characteristic}_{b,c,t-1} \times \text{Pre crisis}_{c,t} + \beta_2 \text{Lender characteristic}_{b,c,t-1} + \delta_{c,t} + \varepsilon_{b,c,t}$
- Mostly focus on variation within country-year pairs (with  $\delta_{c,t}$ )

# This paper

## Zoom in on one important source of heterogeneity: lender characteristics

- Setting: syndicated loan market
- Main lender characteristics they look at: foreign lenders and market share

## Method: descriptive regressions

- $y_{b,c,t} = \beta_1 \text{Lender characteristic}_{b,c,t-1} \times \text{Pre crisis}_{c,t} + \beta_2 \text{Lender characteristic}_{b,c,t-1} + \delta_{c,t} + \varepsilon_{b,c,t}$
- Mostly focus on variation within country-year pairs (with  $\delta_{c,t}$ )

## Main findings

- Before crises, lenders that are foreign or have low market shares extend credit more aggressively
- Lenders tend to have less experience with the countries and industries they lend to
- This credit disproportionately goes to riskier, smaller firms in the non-tradable sector

# My comments

- 1. Lender characteristics and the likelihood of crises**
- 2. The role of non-bank institutions**
- 3. Interest rate spreads vs. risk premia around crises**
- 4. Words of praise and the way forward**



# 1. The likelihood of crises

## **What the paper does**

- Regress loan outcomes on a pre-crisis dummy and interactions

# 1. The likelihood of crises

## **What the paper does**

- Regress loan outcomes on a pre-crisis dummy and interactions

## **What is most relevant for policy**

- Reliability of forecasts for crises or downside risks to GDP

# 1. The likelihood of crises

## What the paper does

- Regress loan outcomes on a pre-crisis dummy and interactions

## What is most relevant for policy

- Reliability of forecasts for crises or downside risks to GDP

## In my experience, these methods yield relatively similar results

- But: it would be nice to add one exercise to show this
- Model:  $Crisis_{c,t} = \delta_c + \beta_1 \Delta_3 \frac{Credit}{GDP} \times Share\ foreign\ lenders + \beta_2 \Delta_3 \frac{Credit}{GDP} + \varepsilon_{c,t}$
- Does knowing the lender composition “add value“ to standard prediction models out-of-sample?

# 1. The likelihood of crises

## What the paper does

- Regress loan outcomes on a pre-crisis dummy and interactions

## What is most relevant for policy

- Reliability of forecasts for crises or downside risks to GDP

## In my experience, these methods yield relatively similar results

- But: it would be nice to add one exercise to show this
- Model:  $Crisis_{c,t} = \delta_c + \beta_1 \Delta_3 \frac{Credit}{GDP} \times Share\ foreign\ lenders + \beta_2 \Delta_3 \frac{Credit}{GDP} + \varepsilon_{c,t}$
- Does knowing the lender composition “add value“ to standard prediction models out-of-sample?

## Conceptual question

- Is credit by foreign/low market share lenders more cyclical, or more likely source of crises?

## 2. Non-banks

### **In the paper:**

- “While 46% of the lenders are non-bank financial intermediaries, over 90% of the loans are arranged by banks. Hence, our results must be interpreted as driven by banks.”
- Makes sense, but non-banks are still interesting, especially from a policy perspective

## 2. Non-banks

### **In the paper:**

- “While 46% of the lenders are non-bank financial intermediaries, over 90% of the loans are arranged by banks. Hence, our results must be interpreted as driven by banks.”
- Makes sense, but non-banks are still interesting, especially from a policy perspective

### **Some evidence that non-bank lending is particularly cyclical**

- Kemp et al. (2018): aggregate cross-country data
- Fleckenstein et al. (2020): syndicated loan data for the US

## 2. Non-banks

### **In the paper:**

- “While 46% of the lenders are non-bank financial intermediaries, over 90% of the loans are arranged by banks. Hence, our results must be interpreted as driven by banks.”
- Makes sense, but non-banks are still interesting, especially from a policy perspective

### **Some evidence that non-bank lending is particularly cyclical**

- Kemp et al. (2018): aggregate cross-country data
- Fleckenstein et al. (2020): syndicated loan data for the US

### **How do foreign lender and market shares correlate with the share of non-banks?**

- My hunch: non-banks important in some episodes (e.g. Asian Financial Crisis)
- Would be nice to see an extension on this

# 3. Interest rate spreads vs. risk premia

**If anything, loans by foreign lenders have lower spreads before crises**

- This is despite the fact they lend more and to riskier borrowers
- Interpretation: lenders do not accurately take into account riskiness of their loan portfolio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Variable:	Avg Spread	Avg Spread Nontradable	Avg Spread Low Distance to Default	Avg Spread Small	Avg Spread High Leverage	Avg Spread Low Interest Coverage	Avg Spread Unrated	Avg Spread Private
Foreign Lender	-1.456 (-0.42)	29.178*** (2.72)	8.822 (1.21)	15.441** (2.57)	4.536 (0.66)	4.520 (0.81)	17.516 (0.10)	-485.608 (-1.30)
Pre-crisis x Foreign Lender	6.138 (1.08)	-14.739 (-0.50)	-17.738 (-1.10)	9.326 (0.79)	-6.603 (-0.52)	-14.908* (-1.73)	-315.260 (-0.83)	293.357 (0.68)



# 3. Interest rate spreads vs. risk premia

**If anything, loans by foreign lenders have lower spreads before crises**

- This is despite the fact they lend more and to riskier borrowers
- Interpretation: lenders do not accurately take into account riskiness of their loan portfolio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Variable:	Avg Spread	Avg Spread Nontradable	Avg Spread Low Distance to Default	Avg Spread Small	Avg Spread High Leverage	Avg Spread Low Interest Coverage	Avg Spread Unrated	Avg Spread Private
Foreign Lender	-1.456 (-0.42)	29.178*** (2.72)	8.822 (1.21)	15.441** (2.57)	4.536 (0.66)	4.520 (0.81)	17.516 (0.10)	-485.608 (-1.30)
Pre-crisis x Foreign Lender	6.138 (1.08)	-14.739 (-0.50)	-17.738 (-1.10)	9.326 (0.79)	-6.603 (-0.52)	-14.908* (-1.73)	-315.260 (-0.83)	293.357 (0.68)

**But: interest rate spreads  $\neq$  risk premia**

- This works against you: borrowers are observably riskier pre-crisis
- Minor suggestion: residualize spreads with regard to borrower risk (~ GZ expected bond premium)
- Might make the negative results stronger, would be a nice finding for this literature

## 4. Words of praise and way forward

### **Expertly done paper on an important topic**

- Gut feeling: Why did I not come up with this?
- Well written, well argued
- Bias: I love this type of research

# 4. Words of praise and way forward

## **Expertly done paper on an important topic**

- Gut feeling: Why did I not come up with this?
- Well written, well argued
- Bias: I love this type of research

## **Paper leaves many obvious questions unanswered (future work?)**

- Do other lender characteristics matter, e.g. size, capitalization?
- (How) do borrower characteristics matter independently of lender characteristics?
- How should we think about the composition of borrowers and lenders around crises *quantitatively*?
- How different are bond markets?

# 5. Comments for the authors

## Empirical specification

- Can you include *bank*  $\times$  *country* FE? I doubt it makes a difference, but soaks up some worries.

## Credit boom definition

- Top quartile of three-year credit/GDP growth, no crisis
- What about alternative definitions? My hunch: the “no crisis” condition throws out many episodes
- Since you’re excluding periods without crisis, isn’t your credit boom variable almost by definition the opposite of your pre-crisis variable?

## Standard errors

- They’re very small. Consider double clustering by lender and country or Driscoll-Kraay instead of clustering only by lender?



Discussion  
Who Lends Before Banking Crises?

**Karsten Müller**  
NUS Business School

Workshop on Financial Intermediation and Corporate Debt Markets

14 October 2021

