Foreign Bank Behavior During Financial Crises

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How Reliable Are Foreign Banks in Times of Crisis?

- Over the long course of history, governments have often weighed the value of foreign banks
  - Foreign banks can provide liquidity and growth. . .
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  - Allow foreign banks into their domestic financial markets?
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  - Foreign subsidiaries experiencing a crisis in their home country may repatriate capital to its parent
  - But with poorer returns at home, parents may reallocate asset portfolio to less impacted countries
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Do Foreign Banks With Crises At Home Lend Differently?

1. Central argument: Do foreign banks make different credit provision choices in a crisis when their home economies are undergoing hard times?
   - Examine lending activity of majority foreign-owned financial institutions that experienced a crisis in their home countries relative to other foreign-owned institutions that did not
   - Analysis is the general environment of the global financial crisis of 2007/08 and Asian financial crisis of 1997/98

Foreign Banks *Are* Different

- Voluminous literature on whether bank ownership affects economic outcomes (e.g. Clarke *et al.* 2005; Popov & Udell 2012; Khwaja & Mian:2008)
  - But many papers limited to a given country or region
    ⇒ We include 93 developing economies across all regions
- Some papers have examined ownership and lending with broader coverage (Claessens, Demirguc-Kunt & Huizinga 2001; Clarke, Cull & Martinez Peria 2006; Detragiache, Tressel & Gupta 2008)
  - But most employ aggregate ownership measure, or compare foreign to domestic
    ⇒ We use bank-specific measure and *only* foreign banks
- A few recent papers have are similar in spirit to ours (Wu, Luca & Jeon 2011; Peek & Rosengren 1997; de Haas & van Horen 2012a, b)
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    ⇒ We are explicitly interested in causal mechanisms

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Construction of Crisis Treatment

- Extend bank ownership database of Claessens, van Horenm Guranlar & Mercado (2008)
    - 4,496 banks of all varieties across 131 developing countries
    - Foreign ownership country defined as country of entity owning $\geq$ 50 percent bank's shares
- Classify banking crisis as those experiencing crisis in 2008, according to Laeven & Valencia (2012)
- Construct *crisis treatment* as an indicator variable for every foreign-owned bank whose main country of ownership experienced banking crisis in 2008

Difference-in-Differences Strategy

- Simple difference-in-difference

$$l_{ijk,t} = \alpha + \gamma_0 crisis_k + \gamma_1 post_t + \delta \left(crisis_k \cdot post_t \right) + \epsilon_{ijk,t}$$

- Difference-in-differences with covariates

$$l_{ijk,t} = \alpha' + \gamma_0' crisis_k + \gamma_1' post_t + \delta' \left(crisis_k \cdot post_t \right) + \boldsymbol{\beta} \mathbf{B}_{it} + \boldsymbol{\chi} \mathbf{C} + \epsilon_{ijk,t}'$$

- Matching difference-in-difference

$$\delta''' = \frac{1}{I} \sum_{i=1}^{I} \left\{ \Delta \hat{l}_{ijt}^{crisis} - \Delta \hat{l}_{ijt}^{noncrisis} \right\}$$

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Identification of the Crisis Treatment

- Only banks that were majority foreign-owned were considered in our setup
  - The appropriate counterfactual conditional for the crisis treatment
- Exclusion restriction
  - In a noncrisis setting, foreign subsidiaries respond mainly to *host*, not home, economic conditions (indirect empirical evidence)
  - Foreign subsidiaries unlikely to have precipitated crisis in host (they are small, and crisis was imported)
  - Only certain home countries underwent financial crisis (source of exogenous variation in treatment)
- Relevance condition
  - Control for observable home effects, consider alternative channels via placebo tests

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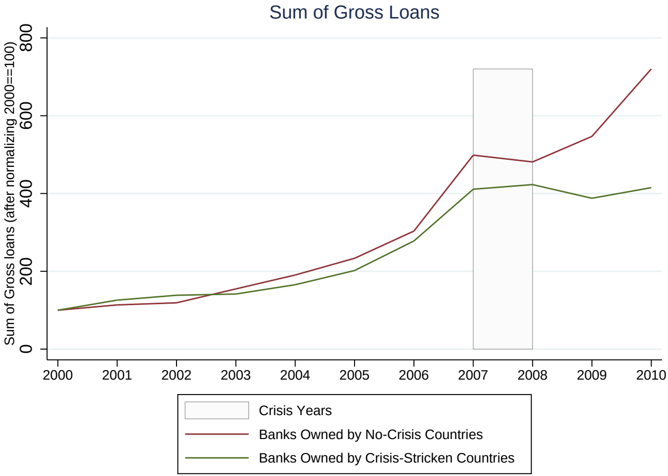
Trends in Total Loans, by Crisis Treatment



T-tests of Bank Lending, 2006 and 2009

	2006	2009	*Difference*
Crisis treatment	4.67	5.48	0.82
	(0.16)***	(0.15)***	(0.22)***
Nontreatment	5.84	6.38	0.54
	(0.13)***	(0.13)***	(0.18)***
Difference	-1.17	-0.89	-0.28
	(0.21)***	(0.20)***	(0.10)***

Baseline Results

- Simple difference-in-difference
  - Coefficients: -0.27
- Difference-in-differences with controls
  - Problem: endogeneity of covariates
  - Resolution: $\mathbf{X}_t = \mathbf{X}_{t+1}, t = 2006$, and estimate fully saturated model
  - Coefficients: $[-1.04, -1.84]$
- Matching difference-in-difference
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Robustness Checks (not all completed)

1. Additional controls and alternative measures
   - Add more bank and country covariates
   - Take 2-year average of pre- and post-crisis
   - Introduce domestic banks via diff-in-diff-in-diff
2. Falsification tests for alternative channels
   - Alter pre- and post-crisis periods to 2003 and 2006
   - Generate trade collapse measure as alternative treatment
3. Control for unobservable home and country-pair effects
   - Introduce random slopes-random intercepts model
4. Consider potential channels of transmission
   - Monetary channel in home country? Cost of wholesale funds in home country?
5. Examine 1997/98 crisis as additional case study

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Main Findings

- Corroborate finding in literature that foreign bank lending behavior is different
- Stand in contrast to finding that foreign banks can be a source of stability
- More confident that we are capturing causal effects
- Takeaway: Whether countries choose to allow foreign banks really depends on how frequently they think dual home and host crises occur

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