The Countercyclical Role of National Development Banks

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Introduction

1. Motivation and literature review
2. Data description
3. Econometric results
4. Conclusions and policy implications

Motivation

- **Development finance:** NDBs play an important role in economic development, especially in less developed countries

- **Countercyclical credit policies:** NDBs can ***also*** counteract credit slowdowns during recessions or crisis times and mitigate private banks' procyclical lending

Literature review on NDB

- Many policy papers argue for countercyclical policy:
  - UN-DESA (2005); Griffith-Jones and Ocampo (2008); Gutierrez et al. (2011); de Olloqui (2013); Rudolph (2010); Griffith-Jones and Gottschalk (2012); World Bank (2012).
- Summary statistics paper: De Luna-Martinez and Vicente (2012)
- Case studies (our book)
- No papers based on econometric evidence for NDB.
  - Exception for State-Owned Commercial Banks: Brei and Schclarek (2013), Bertay et al. (2015), Cull and Martínez Pería (2013) and others.

Scope for an econometric paper on NDB

Data description

- Fitch-BankScope: consolidated and unconsolidated financial statements of deposit-taking banks and national development banks from 31 Latin American and Caribbean countries
- Selection based on registry of licensed banking entities; majority-owned subsidiaries are excluded
- The final sample includes 336 banks, of which 14 are national development banks, 31 public banks, 157 domestic Banks, and 134 foreign Banks.
- Annual data, between 1995-2014 (2835 observations)
- Banking and currency crises: Leaven and Valencia

Table 1: Composition and characteristics of the database

Region	No. of banks	No. of dev. banks	No. of foreign banks	No. of public banks	Total assets, 2014 (bil. USD)	Growth of lending (%)[1]
Caribbean	65	4	27	4	26.9	8.0
Central America	99	3	51	4	626.5	11.4
South America	172	7	56	23	3270.5	12.9
Average/sum*	336*	14*	134*	31*	3923.9*	10.8

Table 2: Bank-specific characteristics across bank types

Bank type	National development banks	Foreign banks	Domestic private banks	Local public banks
Number of banks	14	134	157	31
Total assets, end-2014	424	994	1448	1058
Interest income on loans/loans	11.34	20.56	15.95	15.41
Non-interest income/income	13.04	20.31	21.42	29.45
Return on equity	5.21	12.59	14.28	16.13
Liquidity ratio	8.17	18.76	16.18	18.02
Government securities/assets	16.56	12.30	13.47	22.14
Lending growth, normal times	3.42	11.72	14.42	6.06
Lending growth, crisis	10.33	9.42	12.31	15.36

Econometric setup

The econometric model is as follows

- $\Delta L_{ijt} = \alpha_1 \Delta L_{ijt-1} + (\alpha + \alpha^* C_{jt}) + (\alpha_{DB} + \alpha^*_{DB} C_{jt}) DB_{ijt} + (\alpha_{PB} + \alpha^*_{PB} C_{jt}) PB_{ijt} + (\alpha_{FB} + \alpha^*_{FB} C_{jt}) FB_{ijt} + \beta X_{ijt} + \gamma M_{jt} + u_i + \varepsilon_{ijt}$

ΔL_{ijt}: Real growth rate of lending,

C_{jt}: Crisis dummy; DB_{ijt}, PB_{ijt} FB_{ijt}: Bank type dummies

X_{ijt}: Bank-specific (size, ROE, capital, NPLs, liquidity)

M_{jt}: Macro (real GDP growth, inflation, interest rate, depreciation)

Differential lending response

	Domestic banks, $DB_{ijt} = 0$	Development banks, $DB_{ijt} = 1$
No crisis, $C_{jt} = 0$	$\Delta L_{ijt} = \alpha_1 \Delta L_{ijt-1} + \alpha$	$\Delta L_{ijt} = \alpha_1 \Delta L_{ijt-1} + \alpha + \boldsymbol{\alpha_{DB}}$
Crisis, $C_{jt} = 1$	$\Delta L_{ijt} = \alpha_1 \Delta L_{ijt-1} + \alpha + \boldsymbol{\alpha^*}$	$\Delta L_{ijt} = \alpha_1 \Delta L_{ijt-1} + \alpha + \boldsymbol{\alpha^*} + \boldsymbol{\alpha_{DB}} + \boldsymbol{\alpha^*_{DB}}$

- The model allows to investigate differential lending responses of the different types of banks during normal and times of crisis
- If $\boldsymbol{\alpha_{DB}}$ is sig. positive: DB lend at a higher growth rate than domestic banks in **normal times**
- If $\boldsymbol{\alpha_{DB}} + \boldsymbol{\alpha^*_{DB}}$ is sig. positive: DB lend at a higher growth rate than domestic banks in **times of crisis**

Econometric results

	Dependent variable: Growth rate of lending							
	Macro model		Bank type model		Bank-specific model		Pooled OLS	
	(I)		(II)		(III)		(IV)	
	Coeff.	Std. error	Coeff.	Std. error	Coeff.	Std. error	Coeff.	Std. error
α	6.704***	1.330	9.362***	1.634	9.359***	1.561	7.903***	1.432
α_{DB}			-10.31**	4.157	-6.153*	3.586	-7.636**	3.218
α_{FB}			-3.398**	1.406	-2.962**	1.291	-1.920	1.256
α_{PB}			-5.456***	2.033	-3.377*	1.952	-4.513***	1.653
α^*			-3.259**	1.407	-3.190**	1.364	-2.324*	1.398
α^*_{DB}			13.10***	4.215	10.60**	4.212	8.716**	4.127
α^*_{FB}			2.818	2.157	2.090	1.996	-0.005	1.891
α^*_{PB}			10.29***	2.662	6.663***	2.324	6.909***	2.215
Macro controls	Yes		Yes		Yes		Yes	
Bank-specific controls	No		No		Yes		Yes	
Bank-fixed effects	Yes		Yes		Yes		No	
Observations	2733		2733		2733		2733	
Banks	336		336		336		336	
Hansen	0.155		0.146		0.205		R^2 = 0.14	
AR2	0.730		0.701		0.591			

Discussion of results

- ***Normal times:***
  - (Average) domestic bank expanded lending at a growth rate of $\alpha = 9.36$ percent per year
  - National development banks: $\alpha + \alpha_{DB} = 9.36 - 6.15 = 3.21\%$
  - Foreign banks: $\alpha + \alpha_{FB} = 9.36 - 2.96 = 6.4\%$
  - Public banks: $\alpha + \alpha_{PB} = 9.36 - 3.38 = 5.98\%$
- ***During crises:***
  - Domestic banks: $\alpha + \alpha^{*} = 9.36 - 3.19 = 6.17\%$
  - National development banks: $\alpha + \alpha^{*} + \alpha_{DB} + \alpha^{*}_{DB} = 9.36 - 3.19 - 6.15 + 10.60 = 10.62\%$
  - Foreign banks: $\alpha + \alpha^{*} + \alpha_{FB} = 9.36 - 3.19 - 2.96 = 3.21\%$
  - Public: $\alpha + \alpha^{*} + \alpha_{PB} + \alpha^{*}_{PB} = 9.36 - 3.19 - 3.38 + 6.66 = 9.45\%$

Possible explanations for countercyclical behavior during crisis

- NDB and public banks' objective not only to maximize profits given risk but also avoid crisis and credit crunch
- Dev and Pub banks are more likely recapitalized; govts have more resources than private bankers during crisis
- Dev and Pub banks suffer less deposit withdrawals and rollover problems of ST instruments; govts higher credibility during crisis
- Dev have better funding structure (more equity and LT funding, less deposits): less risk of liquidity problems and freeze of refinancing

Conclusions and policy implications

- Effectiveness of countercyclical lending by NDB:
  - **Size** with respect to financial system
  - **Governance structure** in order to be well run to be able to act
  - **Financial strength (also govt.)** to be able to act in stress situations
  - **Coordination** with other govt. agencies

- Need for special and innovative credit lines that suites companies in crisis times (not focus only on capital investment but also on working capital and liquidity management).

- Credit lines for infrastructure projects that increase productive and export capabilities also advisable.

Thanks!

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