Do Financial Crises Discipline Future Credit Growth?

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Introduction

- The frequency of banking crises in the past 40 years suggests that there are serious deficiencies in the provision of *ex ante* discipline over financial behavior.
  - Several countries have had repeated crises.
- There isn't much research on discipline after the crisis has ended. Is there a learning effect?

Banking Crisis as Source of Discipline

- Question: Do banking crises encourage future discipline in the form of lower rates of credit growth than those prior to the crisis?
- We focus on credit growth, an important determinant of banking crises.

Literature Review

- Effect of political institutions on financial policies after the crisis:
  - Mian et al. (2014), Rosas et al. (2013), Broz (2012).
- Effect of degrees of democracy on post-crisis policy responses:
  - McCarty et al. (2013),Rosas (2009), Pepinsky (2008) Rodrik (1999).
  - Market discipline and elections: Campello (2014)
- <u>Our contribution</u>: 1)Mechanism for ex-post discipline through regulatory discipline, 2)Democracy as a conditioning factor.

DATA ANALYSIS

I. Banking Crisis as Source of Discipline:

   Credit Growth before and after a Financial Crisis

II. Sources of Variations in Pre- to Post-Crisis Changes in Credit Growth

   i. Regulatory Discipline

   ii. IMF Programs

   iii. Democracy

Data Description & Set Up

- 58 banking crisis episodes, 1977-2010 (Laeven and Valencia 2012).
- Sub-sample of 42 cases with positive pre-crisis credit growth. Why? Little room for further contraction, probably not a cause of crisis.
- Before-after design.
- Pre and post-crisis samples are based on a 4-year time window around the onset year (t):
  - Pre-crisis sample period: t-3 to t
  - Post-crisis sample period: t+4 to t+7
  - Immediate post-crisis period (t+1 to t+3) are deleted

Credit Growth: Definition

- Credit growth is the annual change in the log of real credit.
  - Real credit is private bank credit deflated by CPI.
  - Source: IFS.
- Other proxies do exist (e.g. growth of credit/GDP, growth of real credit per capita), but we focus on real credit growth for the moment, and plan to do robustness checks in the future.

Findings on Banking Crisis as a Potential Source of Discipline

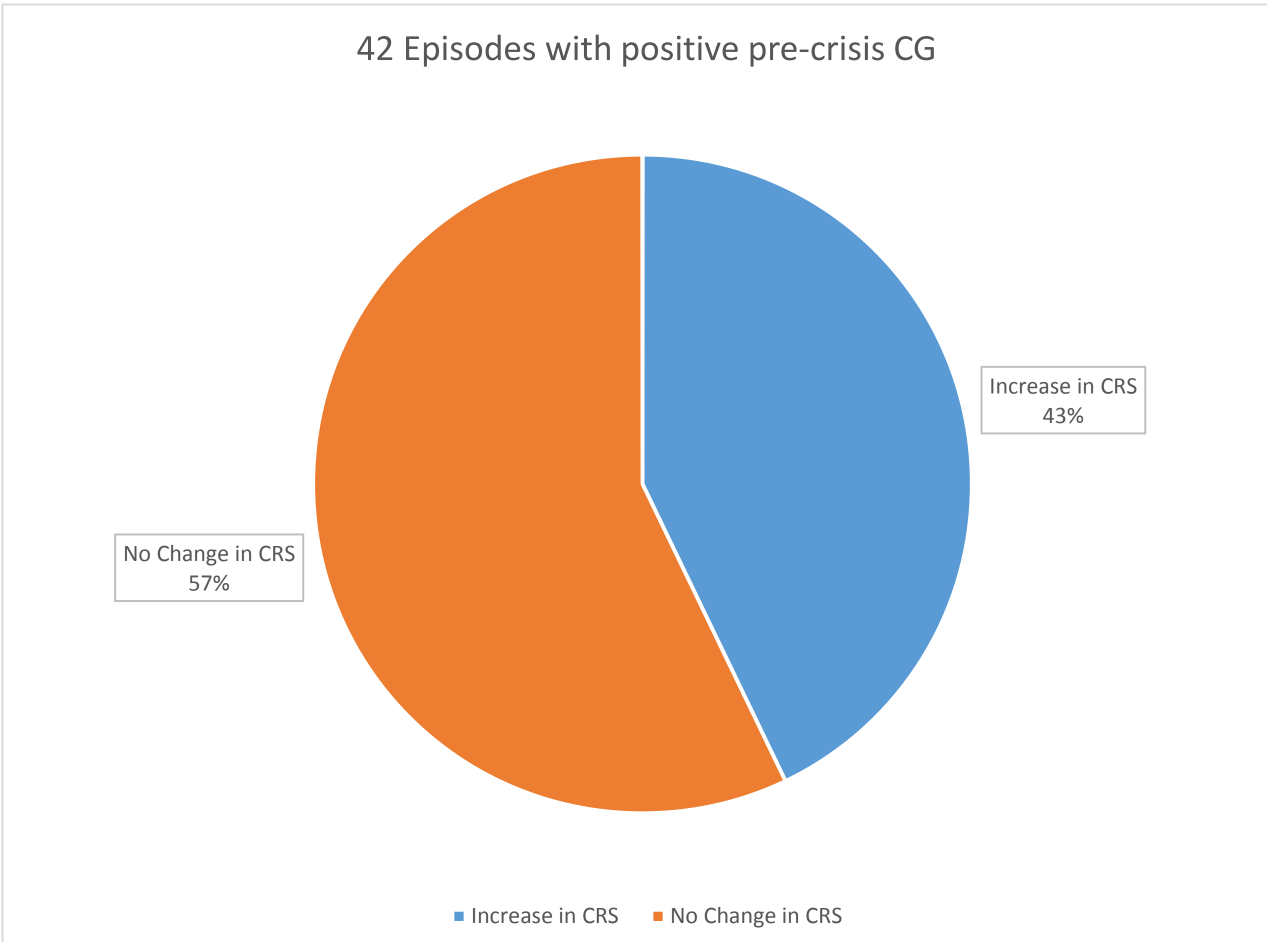
- On average rates of credit growth fell by 7.04 % points following banking crises and that these changes are statistically significant (P-value<0.001).
- There are *substantial* regional and within-region differences in rates of credit growth difference from pre- to post-crisis periods.

I. Regulatory Discipline

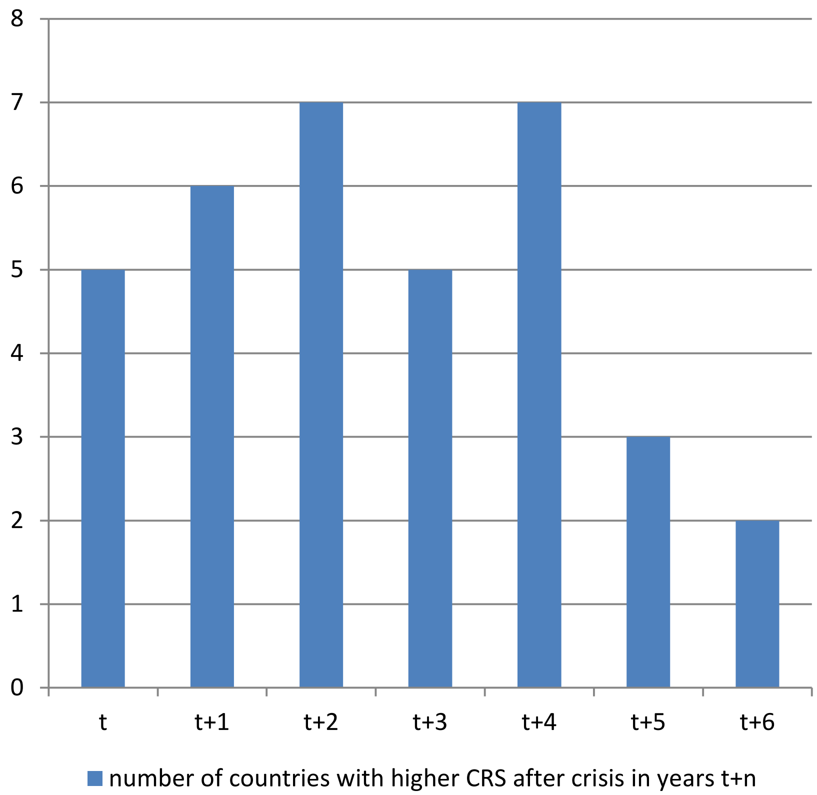
- Question: do banking crises encourage strengthening of bank capital regulation and supervision (CRS), a possible channel of discipline?
- Definition: High CRS scores are achieved if a country complies with and has adopted international standards of financial supervision and have independent regulatory agencies.
- CRS is a discrete variable (Abiad et al. 2008) with 4 possible categories:

0.00 (unregulated)	0.67 (largely regulated)
0.33 (less regulated)	1.00 (highly regulated)

Proportion of Countries with and without Post-Crisis Regulatory Changes



Post-crisis regulatory reform



- Examples of countries-years that changed post-crisis:

Sweden 91 (0 to 0.67)

Indonesia 97 (0 to 0.33)

- Examples of countries-years that did not change regulatory scores after the crisis: Argentina (80, 89), Ecuador (82), Egypt (80).

II. IMF Programs

- IMF programs following crises could be an external source of discipline.
- There is considerable dispute about the effectiveness of IMF programs
  - Bird and Rowlands 2014, Bird 2007, and Steinwand and Stone 2008.
- We find that countries with IMF programs experience a sharper drop in credit growth after the crisis compared to those that did not (10.74% vs -3.75%)
  - Potentially, a greater discipline effect.

ii. IMF Programs

- Examples with IMF and negative before-after difference in CG:
  - Philippines 97, Ecuador 98, Thailand 97
- Examples with with no IMF and positive before-after difference in CG:
  - China 98, India 93
- Note however, that countries with IMF programs have a higher pre-crisis CG average compared to countries with no IMF programs.

III. DEMOCRACY

Findings on Democracy, Credit Growth, and Regulatory Reform

- There is a significant increase in democracy scores from pre- to post-crisis.
  – Pre-crisis avg Polity score:2.75, Post-crisis avg Polity Score: 4.15 (p-value<0.05)
- There is a positive correlation between the drop in post-crisis credit growth and degrees of democracy.
  – Democracies (-7.51% points drop in CG) vs Non-democracies (-4.3% points)

Findings (cont’d)

- Democracies more likely to implement regulatory reform post-crisis

	Kolmogorov-Smirnov tests for the equality of two distributions		
	Increase in CRS post-crisis (1)	No change in CRS post-crisis (2)	Difference (1)-(2)
Average Democracy Score	5.31	1.56	3.75**

Summary and Future Plans

- Rates of credit growth tends to fall and financial regulation and supervision tends to strengthen following crises.
- There are substantial differences across countries in the responses of both credit growth and regulations.
- Preliminary results suggest that democracy plays a role.
- Future plans:
  – Complement our analysis with econometric regressions
  – Robustness checks (e.g. detrend CRS data, alternative banking crisis data from Reinhart and Rogoff)
  – There is scope to expand to other possible political and institutional factors such as the number of veto players.
  – Whether crises make future crises less likely.