Evaluating the Credibility of the European Bank Bail-in Commitment

Saturday 13th October 2018
Too-Big-to-Fail – The End?

“The Bank Recovery and Resolution Directive equips public authorities for the first time [...] to deal with failing banks, while preserving financial stability. From now on, it will be the bank's shareholders and their creditors who will bear the related costs and losses of a failure rather than the taxpayer”

Jonathan Hill
European Commissioner for Financial Stability, Financial Services and Capital Markets Union
December 2014
Bail-out Rationale

- Bank insolvency is disruptive

- Bail-outs are designed to maintain market functionality

- Bail-in is meant to do the same, but not with your money

- Bailing-in bondholders may keep the bank afloat, but can cause disruptions as well, especially in the case of senior bonds
So how credible is this?

- **Severity:** A vanilla bail-in must cover at least 8% of total assets.

- **Frequency:** The ECB has a backdoor into national insolvency pursuant to Art.32(b) BRRD
June 2017

- 01\textsuperscript{st} June 2017 – BMPS → Bail-out (4b€) on top of 2013
- 07\textsuperscript{th} June 2017 – Banco Popular → Bail-in
- 25\textsuperscript{th} June 2017 – Veneto Banca & Banca Popolare di Vicenza → Bail-out (5b€)
Literature


Conceptualizing Bail-in Credibility

- How do you quantify credibility?
- 2 Bail-in scenarios: waver and no waver
- Expected Loss-Absorption on Assets (ELAB)
- Expected value of the losses imposed on creditors
Measuring the Implicit subsidy
The TBTF discount

- Use CDS spreads for G-SIBs and Fair Value Spreads (FVS) for non-G-SIBs to extrapolate a market perceived probability of default.

\[ \Delta Y_{ij} = \left( \Delta L_{ij} - \Delta P_{ij} \right) \left( 1 - R \right) = \Delta S_i \]

\[ \Delta P_{SIB/LSB} \left( 1 - R \right) = \Delta Y_{SIB/LSB} \]

\[ \sum_{i=1}^{T} \left( 1 - L_i \right)^t \frac{S_i}{2} e^{-rt} + \sum_{i=1}^{T} \left( 1 - L_i \right)^{t-1} \frac{L_i}{2} S_i e^{-r(t-0.5)} = \sum_{i=1}^{T} \left( 1 - L_i \right)^{t-1} L_i \left( 1 - R \right) e^{-r(t-0.5)} \]
Model I

- \[ FVSCDS_{it} = \alpha + a_i + \beta_1 mdd_{it} + \beta_2 intradayreturns_{it} + \beta_3 volatility_{90it} + \beta_4 zscore_i + \beta_5 dayid_t + \beta_6 country_i + \beta_7 si_i + \epsilon_{it} \]

- We use equity derived measures of risk to control for \( \Delta L_{ij} \)
- \( \beta_7 = \Delta P_{SIB/LSB} (1 - R) = \Delta Y_{SIB/LSB} \) if \( \Delta L_{ij} = 0 \)
- We can scale this funding advantage by cumulative STD to obtain our implicit subsidy
Contingent claims model
Not the whole bail-in story

The 3 components of a hypothetical insurance policy against systemic asset shortfalls:

– Insurance premium = Implicit Subsidy
– Payout for a given Event = ELAB
– Frequency of default = Implied Volatility of Equity

We need 2 to model the other 1
Contingent Claims Model

- We can conceptualize bail-outs as a put option held by the Banks against the Government.
- The underlying is combined systemic assets gained by modelling an equity portfolio using historic equity correlations and implied volatility scaled by the debt to equity ratio.
- First developed by Oxera to measure the implicit subsidy.
The B&S model framework

1. $IS = \text{price of the option}$
2. $\text{Strike price} = (1 - ELAB) \times CA_0$
3. $\sigma = \text{implied portfolio volatility}$
4. $CA_0 = \text{underlying}$
Data
Data

Our Data: 209 trading days between 02.05.17 and 16.02.18 across 54 banks, 22 of which are SIBs

CDS Spreads, FVS Spreads and control variables
Results
## Results

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Reg1</th>
<th>Reg2</th>
<th>Reg3</th>
<th>Control Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample space</td>
<td>Full Sample</td>
<td>Post-June</td>
<td>Pre-June</td>
<td>Full Sample</td>
</tr>
<tr>
<td>Implied asset $\sigma$</td>
<td>4.26%</td>
<td>4.29%</td>
<td>4.22%</td>
<td>4.26%</td>
</tr>
<tr>
<td>Implicit Subsidy in €MM</td>
<td>7,933</td>
<td>11,287</td>
<td>6,191</td>
<td>16,317</td>
</tr>
<tr>
<td>Total Assets in €MM</td>
<td>11,867,193</td>
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<tr>
<td>Estimated Strike Price in €MM</td>
<td>11,007,718</td>
<td>11,069,069</td>
<td>10,971,675</td>
<td>11,150,987</td>
</tr>
<tr>
<td>ELAB</td>
<td>7.24%</td>
<td>6.73%</td>
<td>7.55%</td>
<td>6.04%</td>
</tr>
</tbody>
</table>
Conclusion
Implicit Subsidy

- Using our risk adjustment model we can compare the implicit subsidies before and after June 2017
- The increase in the yearly subsidy is about €8 Billion or...
Example: Unicredit

Loss-Absorption Scenario: 12%

% of original assets

Status Quo
Asset Loss
Best Case Bail-in
Restructuring
ELAB

SR Debt & higher
AT1+T2
CET1
SRF

SR Debt & higher
SR Debt & higher
SR Debt & higher
SR Debt & higher
SR Debt & higher

22.5% of original assets

10/26/2018

Paul Noller - University of Warwick
Department of Economics
How Credible is the Policy?

- No senior bail-in expected
- Self-fulfilling prophecy
- Remedy:
  - MREL & TLAC
  - Remove backdoor
Thank you for your time!