Basel III & large exposures implementation in LAC

Dr. Serafín Martínez Jaramillo joint work with Yazmín Pérez

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Disclaimer

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Latin American Journal of Central Banking Studies

- Published only in English
- New Governance
- Searching partnership with an international academic publisher
- New editorial process
Outline

- Basel standard and other prudential measures in LAC
- Measuring and controlling large exposures
- Large exposures calibration model (Mexico)
- Large exposures standard in the region
Basel standards and other prudential measures in LAC
# Implementation overview in LAC

## Basel Standards / Macroprudential Measures

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Implementation overview in LAC

- Regional survey sent to CEMLA-ASBA members (31 jurisdictions).

- Objective: Taking stock on the implementation of the Basel III standards in the Latin America and the Caribbean region, with emphasis in the large exposures framework.

- Five sections: a) Standards current stage; b) Standards specifications; c) Large Exposure Standard, d) Banking System Structure, and e) References

- Sample: 20 jurisdictions were analyzed
  - 17 responses were received
  - 3 jurisdictions’ data collected through public information review
    - Aruba (Supervisory directives, [LINK])
    - Bolivia (Room to Manoeuvre: How Developing Countries Can Tailor Basel Standards Emily Jones, Thorsten Beck, and Peter Knaack [LINK])
    - Chile: (Implementación de Basilea III SBIF 2018 [LINK])

Data: CEMLA regional survey, February 2019
## Implementation overview in LAC

### Pillar 1

#### Quality and level of capital
- 80% of the sample has implemented standards for capital definition and calculation of minimum capital requirements.
- 40% have implemented conservation and/or counter-cyclical buffers.

#### Risk coverage
- 55% have at least one type of credit risk standard.
- Market risk has been covered by 60%.
- Almost half of the sample has a standard to mitigate operational risk (45%).

#### Containing leverage
- 35% are considering implementing a leverage ratio and 45% have already implemented it.

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<th>Conservation Buffer</th>
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<th>Credit Risk SA</th>
<th>Credit Risk IRBA</th>
<th>Securitisation</th>
<th>Counterparty credit risk</th>
<th>Market Risk SA</th>
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Implementation overview in LAC

- **Pillar 2**
  - Risk management and supervision
    - In 70% of the sample there is a legal and regulatory framework for the supervisory review process, of those, 43% have implemented the Basel standard.
    - 40% of the sample is considering the implementation of the Interest Rate Risk in the Banking Book standard.

- **Pillar 3**
  - Market discipline
    - 45% have disclosure requirements. 25% of the sample is under the Basel III standard and 15% under a domestic standard.
Implementation overview in LAC

**Liquidity**
- 90% of the sample has at least one type of liquidity coverage.
- 65% have implemented the Liquidity Coverage Ratio and 30% the Net Stable Funding Ratio.
- 55% have at least one type of credit risk.

**Large exposures**
- 50% have legislated on large exposures and 10% are considering it.

**Other prudential measures**
- 40% have implemented loan-to-value ratios (mostly related to real estate).
- Reserve Requirements are used as prudential measures on 65% of the sample.

---

**Jurisdiction**
- **Argentina**
- **Aruba**
- **Belize**
- **Bolivia**
- **Brazil**
- **Cayman I**
- **Chile**
- **Colombia**
- **Costa Rica**
- **Cayman I**
- **El Salvador**
- **ECCB**
- **Guatemala**
- **Guyana**
- **Mexico**
- **Panama**
- **Paraguay**
- **Peru**
- **Uruguay**
- **Venezuela**

**Other**
- **LCR**
- **NSFR**
- **Large exposures**
- **Exposure limits**
- **RR domestic prudential S**
- **L-t-V Domestic prudential S**

---

**Basel Standard**
- **Domestic standard**
- **Proportionality approach**
- **Under consideration**
- **Not adopted**

---

**CEMLA**

Center for Latin American Monetary Studies
Large exposures framework
Measuring and controlling Large Exposures

- 2014: Basel Committee on Banking Supervision (BCBS) finalized the Supervisory framework for measuring and controlling large exposures (LE)

- This standard aims to “limiting the maximum loss a bank could face in the event of a sudden counterparty failure to a level that does not endanger the bank’s solvency”.
  - Eliminating large exposures across operations and banks’ books, introducing identification and calculation rules and reducing the bank’s eligible capital base.
  - Fundamental premise: mitigate systemic risks arising from interlinkages of financial institutions and concentrated exposures
  - Complementing the risk-based capital standard.

- LE has implications for:
  - Banking system
    - Banks exposure limits
    - Banks business model
  - Financial authorities
    - Monitoring, definitions and data requirements
    - Monetary policy implementation
LE framework

Scope
- Limited to losses incurred due to a default of a single counterparty
  - Linked investments
  - Single counterparties
  - Linked counterparties

Limits
- 25% of Tier 1 capital
- 15% when G-SIB-to-G-SIB.
  - Bank must report its 20 largest exposures

Connected counterparties
- Control relationship
- Economic interdependence
LE framework

CRM techniques
- Guarantees
- Credit derivatives
- Financial collateral
- On-balance sheet netting

Exposure values
- All exposures as defined under the risk-based capital framework are subject to the LE framework

Treatment for specific exposure
- Sovereign
- Central bank
- Intraday-intrabank
- Public sector entities
- Covered bonds
- CCP
- Securitization vehicles
- Collective investment undertaking
- Other structures
Calibrating limits for large interbank exposures from a system-wide perspective

LE calibration model

- Objective
  - Calibration framework based on network analysis is useful to assess the benefits of using tighter limits to reduce contagion risk.

- Motivation
  - Failure of a large and highly interconnected bank may lead to substantial losses and contagion in the financial system.
  - A tighter limit on interbank large exposures (LE) is a useful tool to mitigate contagion risk.

- Contribution
  - First comprehensive calibration of interbank exposures from a system-wide perspective based on actual interbank exposures.
  - Capture the strategic behavior of banks by introducing three different bank’s behavioral responses in the presence of tighter limits.
LE calibration model

Data

- Daily Mexican interbank proprietary data (2008-2012)
- Limit applies solely for aggregate bilateral interbank exposures
  - Exposure measure:
    - Exposure in the Mexican interbank market
    - Uncollateralized interbank lending
    - Holdings of securities issued by bank counterparts
    - Credit components that arise in derivative transactions
    - Exposures measured after credit risk mitigation
    - FX exposures not included (since these are cleared by CLS Bank)
  - Capital measure:
    - Tier 1 as measure of bank’s capital
    - Deductions of Tier 1 capital in line with Basel III
LE calibration model

- In the absence of observed interbank exposures (partial/missing information):
  - Maximum entropy

LE calibration model

- Methodology: Contagion Mechanism

- Sequential default algorithm\(^2\) (three-step process)

  1. A bank \(i\) fails by assumption due to an unknown reason;
  
  2. Any bank \(j\) fails if it has a large bilateral exposure to bank \(i\) such that its CR < 8% threshold. CR for any bank \(j\) that is exposed to bank \(i\) failure as:

\[
CR_j = \frac{RC_j - \theta_{ji} \times x_{ji}}{RWA_j - w_{ji} \times \theta_{ji} \times x_{ji}},
\]

where

- \(CR\) is bank’s \(j\) capital ratio
- \(RC_j\) is bank’s \(j\) regulatory capital
- \(\theta_{ji}\) is the loss given default of bank’s \(j\) exposure to bank \(i\), (i.e. \(\theta_{ji} = 100\%\))
- \(w_{ji}\) is the regulatory risk-weight for interbank exposures, (i.e. \(w_{ji} = w = 20\%\))
- \(x_{ji}\) is the exposure of bank \(j\) to bank \(i\)

  3. Additional round occurs if a bank \(k\) fails due to contagion in step 2. Contagion stops when no additional banks go under the 8% threshold.

\(^2\)Algorithm suggested by Guerrero-Gómez and López-Gallo, 2004
LE calibration model

- Banks’ behavioral response with a tighter limit
  - If limit is reduced from x% to y%, how would be the banks’ response?
  - Two extreme scenarios (polar scenarios) for banks’ behavioral responses
    (real-world network would lie between them).
    - Inter-bank exposures of z% exceeding the y% limit could reduce its exposure to y% and leave the (z-y) % excess amount in its account with the central bank
    - Inter-bank exposures of z% exceeding the y% limit could reduce its exposure to y% but increase exposure to other banks so that interbank balance sheet does not change.
  - For modelling allocation inter-banks lending process, Lending Preference Index was used.

As proposed by Cocco et al. (2009)
Lending Preference Index (LPI)

Measures the intensity of lending activity between banks

\[ LPI_{L,B,t} = \frac{\sum_{i \in t} F_{i \rightarrow B}^L}{\sum_{i \in t} F_{i \rightarrow all}^L} \]

A feature of this index is that if \( L \) is an important lender for \( B \), then \( LPI \) should be close to one.

An index with a low value highlights a weak relationship between a given pair of banks.

In practice banks lend to each other for different reasons and show a preference to lend to specific banks. In Mexico, SIB and non-SIBs find it hard to establish new lending relationships with other borrowers and show a preference to lend to specifics banks.
LE calibration model

- Allocation mechanism

In a 120-day LPI analysis, two possible allocation cases were identified

- Partial allocation: we assign only the amount that is possible to be reassigned without breeching the individual limit,
  - A remainder occurs when the receiver bank does not have enough capacity to take its corresponding excess exposure
  - Remainder is kept at the bank’s current account with the central bank

- Full: we assign the excess exposure as much as possible, while the remainder is re-allocated evenly on any remaining banks counterparts that have capacity to take the excess exposure.
  - Diversify the excess exposure as much as possible among the bank’s counterparts

- In both cases, additional links are created
- However, artificial lending relationship occur solely in full allocation
LE calibration model

Allocation mechanism

In practice:

- Assume interbank market comprises five banks, A, B, C, D and E
- LPI of bank A to its 4 counterparts (i.e., B, C, D, E) are 50%, 30%, 15% and 5% respectively
- Assume that the single exposure that breaches the limit by an amount ‘x’ is the exposure of bank A to bank B
- Excess exposure x can be reassigned in the following way:
  - 60% to bank C (i.e., 2 \times LPI_{A,C})
  - 30% to bank D (i.e., 2 \times LPI_{A,D}), and
  - 10% to bank E (i.e., 2 \times LPI_{A,E})

Full amount x is allocated among bank A counterparts

- Some counterparts may not be able to absorb their full excess amount
- Partial we leave the remainder at the central bank (i.e., out of the network)
- Full we redistribute the remainder among the counterparts that have spare capacity
LE calibration model

- Type of large exposure limits and interbank exposures

Benchmark

SIB 1 \(\leq 100\%\) \(\rightarrow\) SIB 2

\(\leq 100\%\) \(\rightarrow\) Non SIB 3

Non SIB 3 \(\rightarrow\) Non SIB 4

SIB 2 \(\leq 100\%\) \(\rightarrow\) Non SIB 4

Option 1

SIB 1 \(\leq 25\%\) \(\rightarrow\) SIB 2

\(\leq 25\%\) \(\rightarrow\) Non SIB 3

Non SIB 3 \(\rightarrow\) Non SIB 4

SIB 2 \(\leq 25\%\) \(\rightarrow\) Non SIB 4

Option 2

SIB 1 \(\leq 25\%\) \(\rightarrow\) SIB 2

\(\leq 25\%\) \(\rightarrow\) Non SIB 3

Non SIB 3 \(\rightarrow\) Non SIB 4

SIB 2 \(\leq 25\%\) \(\rightarrow\) Non SIB 4

Option 3

SIB 1 \(\leq 10\%\) \(\rightarrow\) SIB 2

\(\leq 25\%\) \(\rightarrow\) Non SIB 3

Non SIB 3 \(\rightarrow\) Non SIB 4

SIB 2 \(\leq 25\%\) \(\rightarrow\) Non SIB 4

Option 4

SIB 1 \(\leq 10\%\) \(\rightarrow\) SIB 2

\(\leq 25\%\) \(\rightarrow\) Non SIB 3

Non SIB 3 \(\rightarrow\) Non SIB 4

SIB 2 \(\leq 10\%\) \(\rightarrow\) Non SIB 4

Option 5

SIB 1 \(\leq 10\%\) \(\rightarrow\) SIB 2

\(\leq 25\%\) \(\rightarrow\) Non SIB 3

Non SIB 3 \(\rightarrow\) Non SIB 4

SIB 2 \(\leq 10\%\) \(\rightarrow\) Non SIB 4
LE calibration model

- Interbank exposures to Tier 1 capital for the period of March 2008 to July 2012
LE calibration model

- Completeness Index (March 2008 to February 2012)
LE calibration model

Results

Loss Statistics for the shock that arises from the idiosyncratic failure of each individual bank

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican regulatory limit</td>
<td>SIB-to-any bank, Non SIB-to-any bank</td>
<td>SIB-to-any bank (25%)</td>
<td>SIB-to-Non-SIB, Non SIB-to-any bank</td>
<td>SIB-to-Non-SIB, Non SIB-to-Non SIB</td>
<td>SIB-to-any bank, Non-SIB-to-any bank</td>
</tr>
<tr>
<td>Limit as a % of Tier 1 Capital</td>
<td>100%</td>
<td>25%</td>
<td>20%</td>
<td>15%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Panel A

| Maximum number of bank failures in a single contagion case | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SIB failure due to contagion | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-SIB failures due to contagion | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Panel B

| Share of assets compromised due to contagion | 18% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

- Risk of contagion occurs solely under the current LE limit in Mexico.
- The risk of contagion disappears when the limit is reduced to 25% of Tier 1.
- Result holds when even under different bank’s behavioral responses. In part, this is a consequence of the highly capitalized Mexican banking system.
LE calibration model

Results

Stress testing and bank’s behavioral responses for Option 1: 25% generalized tighter limit

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Option 1</th>
<th>Option 1: Partial</th>
<th>Option 1: Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican regulatory limit</td>
<td>SIB-to-any bank, Non SIB-to-any bank</td>
<td>SIB-to-any bank, Non SIB-to-any bank</td>
<td>SIB-to-any bank, Non SIB-to-any bank</td>
</tr>
<tr>
<td>Limit as a % of Tier 1 Capital</td>
<td>100%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Panel A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum number of bank failures in a single contagion case</td>
<td>11</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>SIB failure due to contagion</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Non-SIB failures due to contagion</td>
<td>9</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Panel B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum value of failed bank assets to sum of assets</td>
<td>43%</td>
<td>27%</td>
<td>44%</td>
</tr>
<tr>
<td>Panel C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of arcs</td>
<td>263</td>
<td>263</td>
<td>467</td>
</tr>
<tr>
<td>Average degree</td>
<td>9</td>
<td>9</td>
<td>15.3</td>
</tr>
<tr>
<td>Completeness index</td>
<td>23%</td>
<td>23%</td>
<td>39%</td>
</tr>
</tbody>
</table>

- A 25% limit is no longer enough to contain the risk of contagion.
- Panel A: at least one SIB fails due to contagion.
- Panel B: Share of assets destroyed by contagion increase from 27% to 44%.
- Panel C: Degree of interconnectedness increases significantly for partial and full cases.
LE calibration model

Results

Stress testing and bank’s behavioral responses for Option 2: Tighter limits on Non SIB-to-SIB

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Option 2</th>
<th>Option 2: Partial</th>
<th>Option 2: Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican regulatory limit</td>
<td>SIB-to-any bank (25%)</td>
<td>SIB-to-any bank (25%)</td>
<td>SIB-to-any bank (25%)</td>
</tr>
<tr>
<td>Non SIB-to-SIB</td>
<td>Non SIB-to-SIB</td>
<td>Non SIB-to-SIB</td>
<td></td>
</tr>
<tr>
<td>Limit as a % of Tier 1 Capital</td>
<td>100%</td>
<td>25%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Panel A

- Maximum number of bank failures in a single contagion case:
  - Benchmark: 11
  - Option 2: Partial: 14
  - Option 2: Full: 12

- SIB failure due to contagion:
  - Benchmark: 2
  - Option 2: Partial: 2
  - Option 2: Full: 2

- Non-SIB failures due to contagion:
  - Benchmark: 9
  - Option 2: Partial: 12
  - Option 2: Full: 10

Panel B

- Maximum value of failed bank assets to sum of assets:
  - Benchmark: 43%
  - Option 2: Partial: 43%
  - Option 2: Full: 48%

Panel C

- Total number of arcs:
  - Benchmark: 263
  - Option 2: Partial: 405
  - Option 2: Full: 685

- Average degree:
  - Benchmark: 9
  - Option 2: Partial: 13.8
  - Option 2: Full: 25.3

- Completeness index:
  - Benchmark: 23%
  - Option 2: Partial: 35%
  - Option 2: Full: 65%

- A tighter limit on Non-SIB-to-SIB is not enough to mitigate contagion.
- Even though number of bank failures is larger under *partial* than *full*, share of assets destroyed by contagious defaults is larger for *full* allocation.
LE calibration model

Results

Stress testing and bank’s behavioral responses for Option 3: Tighter limits on SIB-to-SIB exposures

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Option 3</th>
<th>Option 3: Partial</th>
<th>Option 3: Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican regulatory limit</td>
<td>SIB-to-Non-SIB, Non SIB-to-any bank (25%)</td>
<td>SIB-to-Non-SIB, Non SIB-to-any bank (25%)</td>
<td>SIB-to-Non SIB, Non SIB-to-any bank (25%)</td>
</tr>
<tr>
<td>SIB-to-SIB</td>
<td>100%</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>SIB-to-SIB</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel A

- Maximum number of bank failures in a single contagion case:
  - SIB failure due to contagion:
    - Benchmark: 2, Option 3: 0, Option 3: Partial: 0, Option 3: Full: 2
    - Non-SIB failures due to contagion:

Panel B

- Maximum value of failed bank assets to sum of assets:
  - Benchmark: 43%, Option 3: 2%, Option 3: Partial: 2%, Option 3: Full: 5%

Panel C

- Total number of arcs:
  - Average degree:
    - Benchmark: 9, Option 3: 9, Option 3: Partial: 9, Option 3: Full: 13.4
  - Completeness index:
    - Benchmark: 23%, Option 3: 23%, Option 3: Partial: 23%, Option 3: Full: 34%

- A tighter limit on SIB-to-SIB exposures reduce contagion for the partial and the no allocation.
- Maximum value of failed bank assets to sum of assets remains low.
- There is a non-linear effect in the full allocation case.
Results

Stress testing and bank’s behavioral responses for Option 4: Tighter limits for SIB-to-SIB and Non SIB-to-SIB

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Option 4</th>
<th>Option 4: Partial</th>
<th>Option 4: Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit as a % of Tier 1 Capital</td>
<td>100%</td>
<td>25% 15% 10%</td>
<td>25% 15% 10%</td>
</tr>
<tr>
<td>Mexican regulatory limit</td>
<td>SIB-to-Non-SIB, Non SIB-to-Non SIB (25%)</td>
<td>SIB-to-Non-SIB, Non SIB-to-Non SIB (25%)</td>
<td>SIB-to-Non-SIB, Non SIB-to-Non SIB (25%)</td>
</tr>
<tr>
<td>SIB-to-SIB</td>
<td>Non-SIB-to-SIB</td>
<td>SIB-to-SIB</td>
<td>Non-SIB-to-SIB</td>
</tr>
</tbody>
</table>

Panel A

- Maximum number of bank failures in a single contagion case
  - 11 5 5 5 6 6 7 10 10 13
- SIB failure due to contagion
  - 2 0 0 0 0 0 0 0 0 1
- Non-SIB failures due to contagion
  - 9 5 5 5 6 6 7 10 10 12

Panel B

- Maximum value of failed bank assets to sum of assets
  - 43% 1.5% 1.5% 1.5% 1.5% 1.5% 3.1% 3.8% 3.8% 15.7%

Panel C

- Total number of arcs
  - 263 263 263 263 405 425 429 685 734 779
- Average degree
  - 9 9 9 9 13.9 14.3 14.4 25.3 26.5 28
- Completeness index
  - 23% 23% 23% 23% 36% 36.5% 37% 65% 68% 72%

A tighter limit for both SIB-to-SIB and Non SIB-to-SIB is not effective in reducing contagion in the full allocation case.

The non-linearity in the full allocation case as measured by the share of defaulting assets due to contagion persists.
LE calibration model

Results

Stress testing and bank’s behavioral responses for Option 5: 10% generalized limit

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Option 5</th>
<th>Option 5: Partial</th>
<th>Option 5: Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican regulatory limit</td>
<td>SIB-to-any bank, Non-SIB-to-any bank</td>
<td>SIB-to-any bank, Non-SIB-to-any bank</td>
<td>SIB-to-any bank, Non-SIB-to-any bank</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limit as a % of Tier 1 Capital</th>
<th>100%</th>
<th>25%</th>
<th>25%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum number of bank failures in a single contagion case</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SIB failure due to contagion</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-SIB failures due to contagion</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Panel B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum value of failed bank assets to sum of assets</td>
<td>43%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Panel C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of arcs</td>
<td>263</td>
<td>263</td>
<td>394</td>
<td>661</td>
</tr>
<tr>
<td>Average degree</td>
<td>9</td>
<td>9</td>
<td>13.4</td>
<td>24.3</td>
</tr>
<tr>
<td>Completeness index</td>
<td>23%</td>
<td>23%</td>
<td>34%</td>
<td>62%</td>
</tr>
</tbody>
</table>

- A generalized 10% limit fully eradicates contagion risk even for the full allocation case.
- Efficiency costs may be especially large for Non-SIBs
- There is a need to study Non-SIB funding.
- Non-SIB-to-any bank exposures are relatively large.
- A generalized 25% limit will reduce Non-SIB funding provided by Non-SIBs on average from 80% to 55%.
- An exemption of LE limits for small banks may be desirable.
LE calibration model

Conclusions

- A limit of 25% of Tier Capital is enough to contain the risk of contagion under regular conditions.
- A limit of 25% of Tier Capital is not enough under a severe stress scenario.
- A limit of 20% solely for SIB-to-SIB exposures reduces the risk of contagion under the *no allocation* or *partial allocation* scheme.
- A limit of 10% fully eradicates contagion.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in the risk of contagion</td>
<td>Regulatory disclosure of the identity of SIBs</td>
</tr>
</tbody>
</table>

- In case of tighter limits for small banks, more research is needed
  - Failure of small bank does not bear the same cost as the failure of large bank.
  - Funding requirements of small bank are large due to their relatively small capital base.
  - Small banks may face difficulties in obtaining financing during periods of stress.
Large exposure standards in LAC
Large exposure standards in LAC

**Argentina**

*Basel standard (2014 LE standard)*

- Counterparties limits: 15% (10% if exposures are covered with preference guarantees)
- Interbank limits: 25%
- Challenges: Economic interdependence criteria scope

**Brazil**

*Proportionality approach (2014 LE standard)*

- Single-client exposures (Counterparties, interbank and DSIB-to-DSIB limits): 25% of Tier 1 Capital for institutions allocated to Segments 1-4 and 25% of Simplified Capital for Segment 5.
- The total amount of large exposures is limited to 600% of Tier 1 Capital.
- G-SIB to another G-SIB are limited to 15% of Tier 1 Capital. Currently, no institution of the SFN qualifies for a G-SIB.

**Colombia**

*Domestic standard*

- Counterparties limits: 10% of technical equity, if the only guarantee is the debtor's assets.
- 25% technical equity, only if the operations have sufficient guarantees or sufficient assurances to cover the risk that exceeds 5% of the equity.
- 25% technical equity, as long as the excess is for infrastructure projects financing (highway concessions-fourth generation)
- Interbank limits: 30% technical equity
- Challenges: Apply proportionality and supervision
# Large exposure standards in LAC

<table>
<thead>
<tr>
<th>Country</th>
<th>Domestic Standard</th>
<th>Counterparties Limits</th>
<th>Interbanks Limit</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECCB</td>
<td></td>
<td>25% of Tier 1 Capital</td>
<td></td>
<td>Application of proportionality, scope of application of elements of the Basel framework along with supervisory implementation challenges, including data collection and analysis as well.</td>
</tr>
<tr>
<td>Mexico</td>
<td>Counterparties limits: is variable and depends on each institution capitalization index, between 12% and 40% of Tier 1 Capital.</td>
<td>100% of Tier 1 Capital (If these are subsidiaries of foreign financial entities, this limit will apply to the controlling entity and its subsidiaries as a whole).</td>
<td></td>
<td>Economic interdependence criteria scope.</td>
</tr>
<tr>
<td>Peru</td>
<td>Regulations do not consider a combined limit for large exposures.</td>
<td>LE limit (at a maximum 10% for uncollateralized exposures) is conservative compared to international standards.</td>
<td>Additional Capital Requirements Regulation additional capital for single name concentration risk considering the top 20 exposures.</td>
<td></td>
</tr>
</tbody>
</table>
## Large exposure standards in LAC

### Uruguay
**Domestic standard**

- Counterparties limits: 20% of regulatory capital. If the target bank is BBB + or higher: 35% of the regulatory capital.

- 15% of regulatory capital for legal, natural person or economic group, legal persons or economic groups rated BBB + or higher: 25% of regulatory capital.

### Aruba
**Domestic standard**

- Limits to any one client or group of connected clients may not exceed 25% test capital \((\text{Tier 1} + \text{Tier 2 capital})\)

- Large loans, *that comprise credits which equal 15% of a credit institution’s test capital may not exceed 600% of its test capital*

### The Bahamas
**Domestic standard**

- Single exposure limit: 25% of its capital base.

- Non-capital investments in securities of a single issuer: 10% of capital base.

- Counterparties limit: 15% of its capital base.

- Aggregate limit: Non-exempt large exposures, 800% of its capital base.
Regional challenges on LE implementation

- Monetary policy
- Data to start with
- Supervision/monitoring
- Definition of connected counterparties
The information model at Banco de México

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Information collected by Banco de México

Information collected by other authority

Alejandro Gaytán, Banco de Mexico

The information Model of Banco de Mexico and International Data Initiatives

Presented in the CEMLA Meeting on Financial Information Needs for Statistics, Macroprudential Regulation and Supervision in Central Banks of LAC Mexico, May 2014
Thank you!