FINANCIAL INFORMATION BASED ON MICRODATA:
BANCO DE ESPAÑA CENTRAL CREDIT REGISTER EXPERIENCE

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Banco de España

V FORO DE INFORMACIÓN FINANCIERA
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1. Some background

2. From aggregated data to granular data

3. Spanish CCR main figures

4. Banco de España’s experience with CCR granular data

5. Concluding remarks
SOME BACKGROUND

- **Banco de España Regulation on the Central Credit Register (Circular 1/2013) on the collection of granular data on loans granted by credit institutions**
  - The result of a process of internal reflection aimed at improving the quality reported to the CCR triggered by the profound financial crisis

- **Main reasons behind the launching of this project:**
  - To widen the role of credit registers in the lending market beyond the traditional supervision of credit institutions
  - To strengthen its use for the proper conduct of macroprudential supervision, to preserve the stability of the financial system
  - To overcome the lack of sufficiently disaggregated information

- **The 2017 modification of the CCR Spanish Regulation:**
  - To adapt the reporting framework for the collection of granular data based on harmonized ECB statistical reporting requirements
# FROM AGGREGATED DATA TO GRANULAR DATA (1): MAIN FEATURES

<table>
<thead>
<tr>
<th>Number of features (attributes)</th>
<th>CCR 1995</th>
<th>CCR 2013(^{(1)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrowers</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>Instruments</td>
<td>5</td>
<td>235</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of granularity</th>
<th>Aggregated data</th>
<th>Instrument by instrument</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reporting threshold</th>
<th>Residents</th>
<th>Non-residents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≥ a 6.000 €</td>
<td>≥a 300.000 €</td>
</tr>
<tr>
<td>Residents</td>
<td>≥ a 6.000 €</td>
<td>0 €, with some exception</td>
</tr>
<tr>
<td>Non-residents</td>
<td>≥a 300.000 €</td>
<td></td>
</tr>
</tbody>
</table>

| Transaction traceability       | X               | ✓                        |

<table>
<thead>
<tr>
<th>Type of borrowers</th>
<th>Borrowers (legal and natural persons)</th>
<th>Borrowers (legal and natural persons) and other counterparties*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Exemptions for Reporting specific transactions</th>
<th>1. Some types of accounts: current accounts, mutual accounts, reciprocal accounts.</th>
<th>2. Non compulsory for public debt issued by Central Government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No exemptions</td>
<td></td>
</tr>
</tbody>
</table>

\(^{(1)}\) All the details of the new reporting scheme can be found in last year presentation by Lola Cano: “Recent developments of the Central de Información de Riesgos and its uses”
FROM AGGREGATED DATA TO GRANULAR DATA (2): INCREASE IN QUALITATIVE DETAILS

- Richness of **instrument attributes**. Some examples:
  - 47 values for ‘Type of product’ attribute (CCR-95: 15 values)
    - Loans: 30 values (financial credit – 23, trade receivables - 7)
    - Other instruments: 17 values
  - 45 values for ‘Purpose of the loan’ attribute (not reported in CCR-95)
    - Loans to households 13, loans to other sectors 32

- Richness of **data on amounts collected**
  - And 7 additional amounts for loans. ['Past-due principal collected in cash’, ‘Early redemption’, ‘Forgiveness or extinguishment of claim’, . . . ]

- **Traceability of instruments**. Linkages for instruments resulting from:
  - Instrument transferences
  - Restructured, refinanced, renegotiated, subrogated and separated instruments
  - Credit institution mergers

✓ **Quick response to future user requirements**
✓ **Reducing future reporting burden**
## Initial implications:

- Differences in the reporting volume under both schemes: Increasing number of borrowers and of the total exposure (due to the withdrawal of the threshold and of the exemptions)
- Break in time series, deeper at highest level of disaggregation
- Need to be cautious in the interpretability of data

### Table

<table>
<thead>
<tr>
<th></th>
<th>CIR 1995</th>
<th></th>
<th>CIR 2013</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>March-2016</td>
<td>December-2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borrowers</td>
<td>15.288.206</td>
<td>20.499.014</td>
<td>20.856.591</td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>15.259.410</td>
<td>20.282.757</td>
<td>20.636.562</td>
<td></td>
</tr>
<tr>
<td>Non resident</td>
<td>28.796</td>
<td>216.257</td>
<td>220.029</td>
<td></td>
</tr>
<tr>
<td>Number of exposures</td>
<td>26.518.210</td>
<td>39.693.649</td>
<td>42.265.206</td>
<td></td>
</tr>
<tr>
<td>(CIR 1995) / instruments (CIR 2013)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total exposure (eur $10^9$)</td>
<td>2.951</td>
<td>3.645</td>
<td>3.802</td>
<td></td>
</tr>
</tbody>
</table>
Credit institutions and specialised lending institutions. Loans granted.

- **Debtors (thousands)**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Financial institutions</th>
<th>General government</th>
<th>Non financial corporations</th>
<th>Households and NPISH</th>
<th>Non-resident</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Resident</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-Dec</td>
<td>19.380,4</td>
<td>19.037,3</td>
<td>4,9</td>
<td>6,5</td>
<td>1.011,6</td>
<td>18.014,2</td>
</tr>
<tr>
<td>2018-Dec</td>
<td>19.764,5</td>
<td>19.504,8</td>
<td>5,4</td>
<td>8,0</td>
<td>1.030,3</td>
<td>18.461,1</td>
</tr>
</tbody>
</table>

- **Outstanding amounts at end of period (€ billions, 10⁹)**

<table>
<thead>
<tr>
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<th>Households and NPISH</th>
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<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Resident</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-Dec</td>
<td>2.099,8</td>
<td>1.845,4</td>
<td>338,5</td>
<td>266,3</td>
<td>535,6</td>
<td>705,0</td>
</tr>
<tr>
<td>2018-Dec</td>
<td>2.052,6</td>
<td>1.784,1</td>
<td>318,4</td>
<td>253,7</td>
<td>510,4</td>
<td>701,6</td>
</tr>
</tbody>
</table>
A big challenge both for Banco de España and for the reporting agents:

- **Issues related with information systems**
  - Big technical challenges: Size of the databases, need to widen storage and processing capacity, etc
  - Increased number of data involved in the exchange of information with the RAs:
    - *bigger reception files*
    - *huge increase in the number of data corrections*
    - *Increasing amount of Data Quality feedback (hundred of thousands of instruments; hundred of thousands of validations results)*
  - Need to decide the model of transition: maintaining two reporting systems or switching once for all to the new one
  - Need to decide to substitute or adapt the already existing IT systems

→ *All in all: big transformation in the processes of transmission and processing credit risk data*
Issues related with the reporting agents

- Multiple areas involved in the granular reporting: attributes for same instrument are kept in different areas (accounting department vs risk department, for example)
- Difficulties in obtaining new attributes for already existing instruments (accounting information: performing status, probability of default) or for previous borrowers (enterprise size; number of employees)
- Univocal identification of the borrower could also be a difficult problem to be sorted out under certain conditions, as the implementation of AnaCredit has shown
- Risk of overburden/duplication of reporting requirements: granular vs aggregated reporting could fall under the responsibility of different areas
- Essential to share understanding on the definitions
- Need to set a logical model of all the data attributes and metrics suitable for all the regulatory requests

→ Need to reorganize the Reporting Agents internal databases for an integrated financial reporting.
Issues related to data quality management

- Moving to granular data generally involves an increase in the level of details requested. Each attribute within each operation needs to be coherent.
- Data quality controls are very different in the granular reporting:
  - requires the continuous involvement of analysts (the analytical system plays a very important role) (see diagram);
  - the involvement of power users at initial stages of implementation
  - and the implication of the reporting agents
- New Data Quality approaches:
  - Summary indicators; Reconciliation of granular data with aggregated data
  - Need to define a certain accuracy threshold

→ To get a reasonable level of data quality takes time
Comparison with other sources

Consistency checks

Plausibility

Source: 2018 CCR Annual report

FINANCIAL INFORMATION AND CCR DEPARTMENT
CONCLUDING REMARKS (1)

- Change to granular information data basis is very costly both for NCBs and for the reporting agents
- Complex technical issues emerge
- Need to enhance governance issues
- Processing such a huge amount of information requires high investment in IT infrastructure that should be accompanied by investment in human capital:
  - *Training is essential: both for the production team and the final users*
- Ensuring quality of information in the initial stages of implementation should be the main target
  - *Need to manage user expectations*
- Essential to share understanding on the definitions
  - *Need to set a logical model of all the data attributes and metrics suitable for all the regulatory requests*
CONCLUDING REMARKS (2)

- Time for the change is needed
  - *Coordinated and reasonable planning is of the essence*
  - *A collaborative approach among NCBs, reporting agents and users should be followed*
- Granular data, in comparison to the traditional aggregate statistics, cause new challenges about confidentiality

**Having a complete database is not enough. To fulfil the purposes of the wide range of users of CCR data, it is essential to ensure the veracity and accuracy of the information**
THANKS FOR YOUR ATTENTION