The road to integrate micro databases

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• Microdata: Why?
• Micro databases managed @ BdP’s Statistics Department
  • The Securities Statistics Integrated System (SSIS)
  • The Central Credit Register (CCR)
  • The Central Balance-Sheet Database (CBSD)
  • Interest rate on new loans to NFC (MIR)
• New concept on data usage and integration
Producing high-quality and timely monetary and financial statistics is a key responsibility of National Central Banks (NCBs)

Ensuring that NCBs statistics remain fit-for-purpose implies:
  • keeping pace with financial innovation,
  • assessing the statistical impact of innovations at the earliest possible stage, and
  • making the necessary amendments in a well-timed manner,

without overburdening the reporting agents and by using more efficiently the data already available
Banco de Portugal has been making use of the advantages entailed by the use of micro databases and item-by-item reporting:

- reducing respondents’ burden
- enhancing quality control
- cross checking elementary/raw data
- taking advantage of the centralised management of these databases
- improving responsiveness to ad hoc information requests
The different micro-databases managed by the Banco de Portugal are frequently combined to obtain more integrated perspectives of the financial conditions of the various sectors of the economy.

- In economic research and financial stability analysis
- In the conception of who-to-whom analysis
- To address additional user data needs

The integrated use of these databases make use of a common infrastructure for reference data, in particular a business register.

A *business intelligence* architecture, comprehending a statistical data warehouse, is being developed to foster and facilitate the integration of data.
Micro databases managed @ BdP’s Statistics Department

- Securities Statistics Integrated System (SSIS) (s-b-s/ i-b-i)
  - Securities holdings and issues
  - MFI statistics
  - BOP and IIP statistics
  - Financial accounts statistics

- Central Credit Register (CCR)
  - MFI statistics
  - Financial accounts statistics

- Central Balance Sheet Database (CBSD)
  - NFC statistics
  - BOP and IIP statistics
  - Financial accounts statistics

- Interest rates on new loans to NFC – individual operations (MIR)
  - MIR statistics
  - Exploratory statistics and analysis
The SSIS

- SSIS (since 1999)
- Custodians
- Equity and debt securities
- Investor-by-investor
- Flows and stocks (monthly)
- Own portfolios
- Security-by-security (ISIN code)
The SSIS

**Inputs**

**SSIS - Issues**
- EURONEXT
- Securities Market Commission
- General Government
- *Interbolsa* (ISIN NNA)
- Commercial Databases
- Financ.Institutions (Intermediaries)
- NF Corporations (issuers abroad)

**SSIS - Portfolios**
- MFIs, dealers and brokers
- Banco de Portugal
- Securities Market Commission
- Other resident entities

**Outputs**

**SSIS - Issues**
- Issues in PT
- Residents’ issues abroad

**SSIS - Portfolios**
- MFIs securities portfolios
- Investment Funds statistics
- FVC / Securitisation statistics

**Transactions**

**Positions**

**Domestic Securities Database**

**Foreign Securities Database**

**Balance of Payments**
- PT portfolio invest. abroad
- Foreign portfolio invest. in PT
- Portfolio investment income

**Financial Accounts**
- Securities other than shares, excl. financial derivatives
- Shares and other equity
The CCR

Administrative database created in 1978 to provide credit-related information to the participants for their assessment of the risks attached to extending credit.

Use of CCR data for statistics: business register, data quality control, complementary data, separate statistical outputs

Use of CCR data for banking supervision and regulation: assessment of credit risk and concentration of risk exposures both at micro and macro level, improvement of on-site inspection practices

Use of CCR data for economic research and monetary policy: structural analysis, identification of loans used as collateral in Eurosystem financing operations
Information on actual or potential liabilities related to loans granted by the reporting institutions to all type of credit clients (natural or legal persons, resident and non resident)
Inter-bank loans, securities and financial derivatives are excluded

Reporting Institutions
- Banks, savings banks and mutual agricultural credit banks (MFIs)
- Other non-monetary financial institutions that grant credit
- Public agencies that grant credit
- NFC buying loans from the resident financial sector

The CCR
The CCR in figures

- 50 € reporting threshold
- 194 reporting institutions
- 15 different types of loans
- 440 thousand corporations registered
- 7.4 million private individuals registered
- 20 million records reported per month
Ranking of Public Credit Registry Coverage - TOP 20

1983
Beginning of CBSD (BdP Annual survey)

1990
Changes in accounting. Beginning of a new CBSD series

1997
Quarterly survey (BdP)

1999
CBSD joined the Statistics Department; Start cooperation with INE

2000
IES. All companies

2005
Start to publish in the Statistical Bulletin

2007
Changes in accounting

2009
Start publishing “Central Balance-Sheet Studies”

2010
Sector Tables Long Time Series

2011
New time series based on extrapolation

2013
Enterprise and Sector Tables (“feedback”) were sent to +300 thousand companies

2014
The CBSD
Sources of information:

Quarterly data
ITENF – Quarterly Survey

Companies

Annual data
IES – Annual Survey

Ministry of Justice

Ministry of Finance
Before and after comparison:

**Companies (level of adherence)**
- **Before**: 5%
- **After**: 100%

**Formats**
- **Before**: Mostly automatic
- **After**: Totally automatic

**Timeliness**
- **Before**: 10/12 months
- **After**: 6.5 months

**Level of detail**
- **Before**: + 600 items
- **After**: + 3,000 items

ONE FORMAT — Informação Empresarial Simplificada (IES)
<table>
<thead>
<tr>
<th></th>
<th>QUARTERLY DATA</th>
<th>ANNUAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Cooperation</td>
<td>INE, BP</td>
<td>MF, MJ, INE, BP</td>
</tr>
<tr>
<td>Mandatory</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Format</td>
<td>100% electronic</td>
<td>100% electronic</td>
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<tr>
<td>Timeliness</td>
<td>1.5 months</td>
<td>6.5 months</td>
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<tr>
<td>Sample / Coverage</td>
<td>3,600 NFC / +40% (Turn)</td>
<td>+350,000 NFC (all)</td>
</tr>
<tr>
<td>Nr. Items</td>
<td>80</td>
<td>+3,000</td>
</tr>
<tr>
<td>Content (Non-consolidated data)</td>
<td>General features Balance Sheet Income statement External trade</td>
<td>General features Balance Sheet Income statement Notes on the accounts External trade Additional information</td>
</tr>
</tbody>
</table>
Launch of a new collection system for individual data on interest rates and amounts for new loans to NFC followed a request from research and financial stability internal users.

Data collection started in July 2012, reference period June 2012 (smaller institutions were exempted).

Only loans to NFC are covered, data is reported for all individual new business and NFC are individually identified.

Very useful data for analysing further the costs of NFC banking financing (Research Department / Statistics Department - MFS in collaboration with CBSD).

This data collection system is now extended to all reporting MFIs (since December 2014) and the aggregated reporting was dropped.
Business architecture: statistical value chain

Core tasks
- Acquisition
- Processing
- Exploration
- Disclosure

Support tasks
- Acquisition control
- Production Management
- Exploration Management
- Disclosure Management
- Reference data management
- Metadata Management
- Methodological development / Statistical audit

New concept on data usage and integration
New architecture framework

Three layers approach built on:

- A data warehouse
- Centralised reference tables (countries, currencies, business register, …)
- A common IT platform
New concept on data usage and integration
For an efficient use of micro data and to fully explore its value for statistical compilation and analysis **two major requirements** do exist:

- Comprehensive and up-to-date business register

- Flexible tools to explore the information, namely if combining different micro data-sources: data warehousing and data mining
Thank you for the attention!

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