

How to increase quality in the Central Banks statistical business process? *The experience of Banco de Portugal*



BANCO DE PORTUGAL
EUROSYSTEM

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Statistics





Micro-databases in *Banco de Portugal*

How to integrate micro-databases

Exploring micro-databases and their integration to increase quality

Statistical communication

Conclusions



Financial innovation and the globalization experience created new and more demanding challenges to the statistical function



We have learned with the global financial crisis that **aggregate figures** are not sufficient to fully grasp developments in the global economy



So, they must be complemented with **micro-data**, which enable to explore and drill down the heterogeneity hidden behind aggregate numbers



Banco de Portugal



Confronted with the need to adapt to these new requirements the Bank has developed a **number of initiatives** in order to increase the efficiency of its statistical systems management without compromising the quality of the statistical production

The use of **micro-data** and **transaction-by-transaction reporting** covering different statistical areas and the **integration** of different reporting systems



Improves the availability of timely information, leaving behind some of the shortcomings associated with the conventional data collecting systems



The granular nature of such information and a good coverage of the relevant sources increased flexibility as regards the compilation of new statistics, getting on-time responses to *ad hoc* data requirements and users' requests

This flexibility

Allows for a significant **reduction of the reporting burden**

Increases the ability of the **system to deal with changes in the statistical requirements**

Facilitates **changes in the reporting scheme**

Prevents **data redundancy**

Leads to the definition of **more efficient mechanisms** to explore data and compile statistics

Enables a **more efficient** data quality management

Improves the responsiveness to **ad hoc requests**

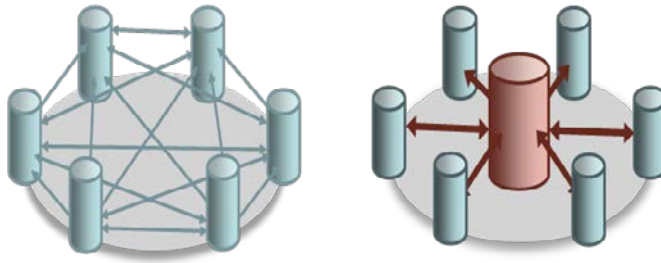


The micro-databases available in the *Statistics Department*

1. **Securities Statistics Integrated System** (security-by-security and investor by investor database)
2. **Central Credit Register** (information about credit on a borrower-by-borrower basis)
3. **Central Balance Sheet Database** (information accounting and financial information covering the population of non-financial corporations)
4. Database to collect individual data about the **new bank loans and respective interest rates**
5. **Balance of payments system** (transaction-by-transaction database for the non-financial corporations with transactions with non-residents)
6. Information reported for **supervision purposes** (accounting data)



How to integrate micro-databases



To obtain the maximum potential of these databases, it is essential to take the additional step and, instead of viewing them as isolated data repositories, link them in a single fully integrated high granular data system

Banco de Portugal implement an integrated information system supported by a **Business Intelligence architecture**

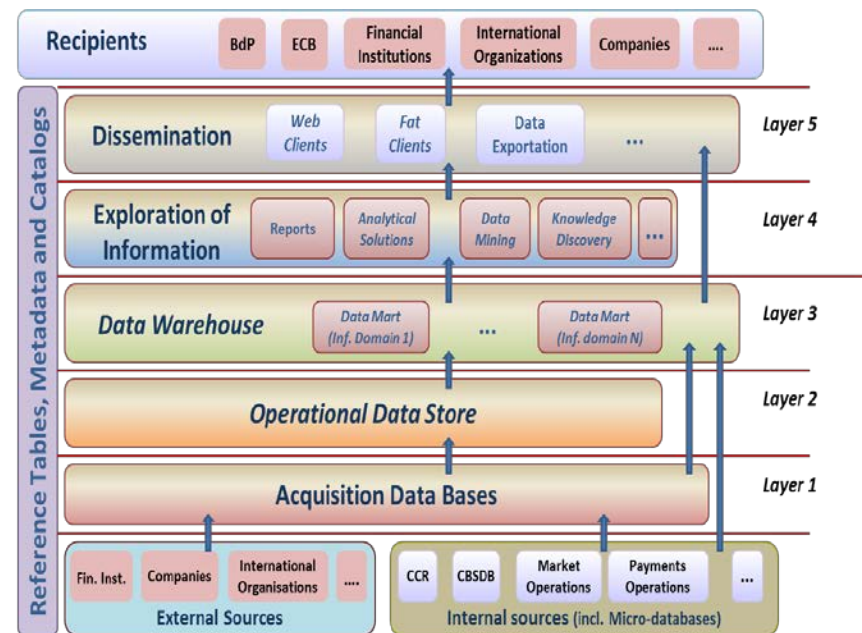
- ✓ to integrate data from various statistical fields
- ✓ to cross-check and share data from different statistical sources
- ✓ and to ensure the linkage, coherence and quality of the compiled statistical results



How to integrate micro-databases

The Bank developed an **information management model** to ensure the quality, auditability and manageability of the data

The **information architecture is based in five layers** where the border between the information management and the exploration and analytic activities occurs from the 3rd to the 4th layer





The use of micro-database and transaction-by-transaction reporting enables a better data quality management

The use of **administrative sources** requires certification, to guarantee good approximation to statistical concepts and good level of quality in the information



Principle 8 – Appropriate statistical procedures

Public commitment on European Statistics by the ESCB

Information reported on an **individual basis** enables an easier and a more efficient and effective exploration of the elementary data among different sources



Principle 10 – Cost-effectiveness

Public commitment on European Statistics by the ESCB

It's possible because...



All databases are managed in the *Statistics Department*



The cross-assessment of information can be performed either on elementary data or on aggregated data



The **Banco de Portugal** has set procedures to promote more efficient global compilation processes, **to control the overall quality** of the individual statistics and to cross-check the information reported

Principle 8 – Appropriate statistical procedures
Public commitment on European Statistics by the ESCB

We can cross-check...

Monetary and financial statistics

Balance of payments statistics

Securities statistics

Central credit register

Central balance sheet



The overall cross-checking test is the

compilation of Financial accounts

(ensuring consistency among statistics)



All these approaches allowed...

- ➔ changes in the organization of the financial institutions in order to cope with the high quality reporting requirements of the Banco de Portugal
- ➔ a reduction in the reporting burden
- ➔ a better data quality management
- ➔ a greater efficiency to statistical exploration supported in more flexible tools
- ➔ to enhance the overall consistency of the statistics produced in the various domains in the Statistics Department
- ➔ to lead to higher quality standards and efficiency



One of the main purposes of the Statistics Department of the Banco de Portugal is to ensure the production of high quality statistics aiming at fully meeting users' needs

By providing more complete and detailed statistics the Banco de Portugal **increases transparency** and **promotes statistical communication**



Dissemination of statistics based on micro-database, requires that statistical dissemination must be in accordance with the confidentiality rules in order to preserve confidence in the statistical system

Principle 15 – Accessibility and clarity

Public commitment on European Statistics by the ESCB



Banco de Portugal has started a **new project to disseminate statistical information** to allow an easy and quick access to a wide range of statistical series and indicators



Statistical Portal



To disseminate statistical data and metadata based on the standardization of all the statistics domains around the same concepts and information structures, so that the statistical information disclosed should be clear and comprehensible, in charts, tables and info graphics that facilitate the analysis and allow a correct interpretation of the economic results



The use of micro-databases and transaction-by-transaction reporting has enormous advantages

1. good population coverage,
2. reduction of the reporting costs
3. more efficient data quality management
4. greater efficiency to statistical exploration
5. more complete and detailed statistics
6. faster response to ad hoc data requirements
7. robust data in integrated information solutions
8. an integrated information system supported by a BI architecture is essential
9. strong impetus to deepen the coordination among all staff involved in the statistical production

Statistics win !



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**THANK YOU FOR YOUR
ATTENTION**

