

Upgrading monetary and financial statistics in the wake of the financial crisis
– **There's life beyond aggregate data¹**

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Abstract

The Great Financial Crisis and the ensuing unconventional monetary policy response from central banks have increased the demand for comprehensive, high quality and more detailed statistics. In this context, traditional aggregate statistics have proved insufficient to monitor and interpret the multiple aspects of the monetary transmission mechanism and the evolution of credit to companies and households. This paper presents the recent developments that have occurred in *Banco de Portugal* in the area of monetary and financial statistics as a response to these new challenges. In a nutshell, it was considered important to complement the traditional aggregate monetary and financial statistics with more granular data, so as to increase the flexibility and timeliness of the data, while fomenting the integration of micro and macro level information. This strategy allowed for, *inter alia*, the development of (i) new or upgraded statistics, (ii) easier and faster responses to *ad hoc* requests and (iii) more user-tailored analyses – all features that have proved essential for effectively addressing the challenges posed by the *post* financial crisis.

Keywords: monetary policy; central bank's statistics; monetary and financial institutions' balance sheet; credit analysis

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¹ The analysis, opinions and findings of this paper represent the views of the authors, which are not necessarily those of the *Banco de Portugal* or of the Eurosystem.

1. Introduction

The Great Financial Crisis (GFC) has underscored the gaps in the availability of key information for policy making and for the timely assessment of risks in and across countries. In fact, several aspects of the economic and financial developments, and particularly, the accumulation of risks and imbalances in some sectors and/or financial instruments, were not easily identified by the traditional aggregate statistics.

In 2009, the G-20 Finance Ministers and Central Bank Governors, having recognised the existing limitations, endorsed a set of 20 recommendations to close the data gaps identified in order to support enhanced policy analysis (the so-called “G20 Data Gaps Initiative²”). Several of the Recommendations focused on improving the data available on the financial sector and financial institutions given the central role that the monetary and financial sector represent to economies, and its part on the GFC. Monetary and financial statistics (MFS) are particularly relevant in supporting policy making, specifically that of a central bank – they deliver an absolutely critical set of information that provides a comprehensive picture of monetary developments, contributes to the monitoring of the transmission mechanism of monetary policy, helps assessing financing conditions in different sectors of an economy and monitoring financial integration.

In this paper we will present the main developments that have recently occurred in the area of MFS in *Banco de Portugal* (hereinafter referred to as the “Bank”). Some developments were a response to euro area policy initiatives, such as the creation of the Single Supervisory Mechanism (SSM) or the decision to establish a European analytical credit System (AnaCredit³), but, mostly, they are the continuation and deepening of a strategy based on a rich ensemble of granular databases and on the integration of such databases. This strategy allows to complement the traditional aggregate monetary and financial statistics with more detailed data, which increases the flexibility as regards the compilation of new statistics and a more rapid response to *ad hoc* data requirements from the users, while fostering the integration of micro and macro level information.

These efforts have been producing results, as put forward in this paper. In Section 2 we will provide a brief review of the impacts the Single Supervision Mechanism and the pursuit of unconventional monetary policy in the euro area, in the perspective of a national central bank’s statistical function, Section 3 delves on the main developments in the Banks’ MFS and presents some examples of the results that we have obtained and Section 4 concludes.

2. The Single Supervisory Mechanism and unconventional monetary policy – a brief review

As work progressed on the G-20 Data Gaps Initiative, policy necessities did not wait for the identified data gaps to be filled. On the contrary, partly as a response to the GFC, several policy initiatives have been put forward and the demand for comprehensive, high quality and more detailed statistics has been made even more evident. In the euro area two developments have been particularly relevant in stressing the need to go beyond the aggregates in the domain of MFS: (i) the pursuit of unconventional monetary policies by the European Central Bank (ECB) and (ii) the creation of the SSM.

Unconventional monetary policies

Following the GFC, central banks around the world moved beyond their traditional operating framework and implemented unconventional monetary policies. These policies include zero or negative reference rates, long-term liquidity provision to banks and expanded asset purchase programs.

² For more background information on this initiative please see:

[http://ec.europa.eu/eurostat/statistics-explained/index.php/G20_Data_Gaps_Initiative_\(DGI\)_%E2%80%93_background](http://ec.europa.eu/eurostat/statistics-explained/index.php/G20_Data_Gaps_Initiative_(DGI)_%E2%80%93_background)

³ The name AnaCredit stands for “Analytical Credit Datasets”.

In order to thoroughly understand how these unconventional monetary policies affect the funding conditions for households and non-financial corporations (NFCs) and the overall economic prospects – *i.e.*, how the monetary transmission mechanism works under these new circumstances – there has been a call from economists and policy makers for unconventional data, which are not aggregate but granular. As highlighted by Ms Sabine Lautenschläger⁴, member of the ECB Executive Board, “*conducting (...) unconventional monetary policy is rather difficult when decisions have to be taken on the basis of conventional data, i.e. traditional aggregate statistics*”.

Traditional aggregate statistics, although of high quality and internationally harmonised, refer to the average of the distributions and, hence, are not the most adequate to explore the heterogeneity hidden behind the aggregates. In fact, given that in many situations it is the tails of the distribution that provide the most important information, it is clear why these data became crucial in the context of the recent GFC.

For instance, an overall growth in credit to NFCs, which could typically be interpreted as a positive development in the credit markets after a financial crisis, may in fact hide significant differences in the evolution of credit to different types of NFCs. Particularly, the funding may only be directed at large, established firms, while small and medium sized NFCs may have been left out, or, similarly, funding may be flowing to firms with a top-tier credit rating while the rest of firms may be facing constraints to their activities because of a lack of credit. In such cases, looking only at the aggregates or looking into the detailed granular data may lead to very different conclusions by policy makers in terms of policy stance and the risks that may be building up to financial stability.

Single Supervisory Mechanism

As part of the answer to the GFC, and with the ultimate goal of building a stronger and sounder banking system in the euro area, the EU decided to establish a single supervisory mechanism in the euro area, involving the national supervisors and the ECB⁵. This Eurosystem’s newly entrusted financial supervision demands high quality and harmonized data from all the banks established in the euro area and has benefited significantly from exploring important synergies with the statistical reporting. In fact, integrating both functions – bank supervision reporting and banking statistics – allows reaping large benefits, which positively affect both the data compilers and the reporting entities: the former benefit from the existing infra-structure and the expertise accumulated over time; the latter benefit from a reduced reporting burden through the mitigation of data redundancies and overlapping.

In order to maximize the synergies, new bodies were created at the European level. In particular, the recently created Working Group on Supervisory Statistics is tasked with the collection, production and dissemination of supervisory data harmonised under the European Banking Authority’s Implementing Technical Standards and any other additional supervisory data necessary for the SSM. Additionally, the Statistics Committee endorsed the creation of the Task Force on European Reporting Framework (TF ERF), following a recommendation by the “*Groupe de Réflexion*” on the integration of statistical and supervisory data, thus recognizing the importance of data requirements harmonization. According to its mandate, the TF ERF shall design integrated reporting schemes, covering a wide range of different statistics, namely credit institutions balance-sheet statistics, money and interest rates, securities holdings and credit statistic, while liaising with SSM structures and other groups to maximize the potential of its work.

⁴ Lautenschläger, S. (2016).

⁵ The SSM started in the 4 November 2014. For more information on banking supervision in Europe please see <https://www.bankingsupervision.europa.eu/home/html/index.en.html>.

The data needs of the SSM can thus be seen as an interesting opportunity to maximize synergies between supervision and statistical activities. Mr Pedro Duarte Neves, Vice-Governor of *Banco de Portugal*, identified three areas in which such synergies may be achieved⁶:

“(i) Concerning data collection and information systems, integrating the reports for both functions will generate large benefits, not only for the data compilers but also for the reporting entities. In this context, highly granular data collection schemes are proving to be fundamental.

(ii) A wide range of analytical studies, which have been crucial for supervision and financial stability, benefit significantly from micro data. These analyses reveal the heterogeneity hidden behind aggregate numbers and allow for a better understanding and monitoring of the financial system, thus providing the supervisor a closer and more comprehensive perspective of the financial sector and of its relations with the other sectors in the economy.

(iii) The core supervisory data, granular credit data and ad-hoc data sets, collected and treated by statistics, will generate value not only for the direct supervision but also for the horizontal functions of the SSM, including sector-wide reviews and for identifying trends and emerging risks.”

3. Beyond the aggregates – granular data in *Banco de Portugal*

The use of integrated micro-databases for statistical purposes constitutes the cornerstone of the Bank’s long-term strategy as regards not only the statistical function, but also other areas within the central banks’ competencies – *inter alia* monetary policy, financial stability, supervision and research. The following databases play a vital role in such a strategy:

- a) The Central Credit Register (CCR), which contains granular information on credit on a borrower-by-borrower basis (and, in some cases, including details that provide loan-by-loan information) with a virtually full coverage.
- b) The Central Balance Sheet Database (CBSDB), which holds accounting and financial information covering almost exhaustively the existing resident NFCs.
- c) The Securities Statistics Integrated System (SSIS) database, a security-by-security and investor-by-investor system of both securities holdings and issuances. SSIS complements the CCR data on loans with data on securities and, from a portfolios’ perspective, it is a powerful tool to measure the exposure of banks and non-banks to specific issuers; also, putting together the information contained in SSIS and CCR provides a more complete overview of the exposure and indebtedness of the financial system as a whole.

In addition, following a data request in the context of the Economic and Financial Assistance Programme to Portugal⁷ and, to better assess current credit conditions of the NFCs sector and monetary policy transmission, the Bank started collecting individual data on new bank loans and their respective interest rates. This new database covers all new operations starting with reference period December 2014 (in its initial stage it was confined to banks with monthly volumes of new loans of €50 million or higher). Combining these individual data with reference data and data available in other databases, we are able to study how interest rates vary according to the characteristics of the firms.

⁶ Neves (2014).

⁷ For more information on the Portugal’s Economic and Financial Assistance Programme please see: <https://www.bportugal.pt/en/page/efap-and-post-programme-surveillance>.

The Portuguese Central Credit Register – a multipurpose tool

Central credit registers are a fundamental tool that facilitates the monitoring of credit risk and its evaluation by banks when granting new credits and allows an overview of credit exposures and the level of indebtedness of both resident and non-resident borrowers *vis-à-vis* national financial intermediaries.

The compilation of comprehensive statistics on credit granted is one of the various goals of the Portuguese CCR. With this in mind, credit instruments and other variables related to the classification of loans are defined in such a manner that they are meaningful for economic analysis. Also, borrowers have to be classified according to proper statistical criteria (*e.g.*, by institutional sector, sector of economic activity, firm size and region of residence). Since the participating institutions only report the borrowers' identifications (*i.e.*, their taxpayer numbers), the statistical classification of the resident borrowers is made in the Bank, mostly by means of a business register.

Statistical information based on the Portuguese CCR data is made available to users on a monthly/quarterly basis. In both cases, the main focus is loans granted by the financial sector to the resident entities classified as NFCs, non-profit institutions serving households and households.

The set of statistical indicators disclosed monthly includes:

- a) Outstanding amounts of loans granted and the correspondent annual change of rate;
- b) Overdue loans ratios;
- c) The percentage of borrowers with overdue loans.

These indicators are compiled for borrowers belonging to the NFCs and households sectors. In the former sector, information is also broken down by firm size. Furthermore, there is a specific set of indicators related to the evolution of credit to exporting companies – this information allows to monitor the access of credit to NFCs which have a significant share of its business with non-resident counterparties and may thus be more insulated from domestic woes. In case of households, a breakdown according to the purpose of the loan is also included. Data using the above-referred metrics are provided for non-profit institutions serving households without additional breakdowns.

More detailed information is disseminated on a quarterly basis, both for the outstanding amounts of regular loans and for loans in default. In the latter case, two indicators are published: overdue loans ratio and percentage of borrowers with overdue loans.

In the case of NFCs, for the referred metrics, data is further broken down by:

- a) Region of residence of the company headquarters (according to NUTS⁸ classification);
- b) Economic activity sector (according to NACE⁹ sections);
- c) Brackets of total amount of loans per borrower.

As to households, data are further broken down by:

- a) Purpose of the loan;
- b) Region of residence (according to NUTS classification and by municipality);
- c) Brackets of total amount of loans per borrower.

⁸ Nomenclature of Territorial Units for Statistics.

⁹ Statistical Classification of Economic Activities in the European Community.

The Bank has recently enlarged the set of statistical indicators on loans that are compiled on the basis of CCR data¹⁰, and has published such information starting on the 1st quarter of 2016. Additional breakdowns of the loans granted by the financial sector have been made available:

- a) Information related to the main financial products, loans' original and residual maturities and guarantees has been included;
- b) Loans granted to non-financial corporations are broken down by corporation size and a distinction is made between public and private corporations;
- c) Indicators about the relationship between entities of the financial sector and their credit clients and about the activity of the CCR has been introduced.

The high-quality figures that can be obtained from specific breakdowns of CCR credit data are of great importance for economic analysis and for quality control. In addition, the use of the CCR has made it possible to reduce the reporting requirements in the context of the Bank's MFS, thus alleviating the participants' reporting burden and curtailing data redundancy.

The impact of AnaCredit in the Portuguese CCR

In order to obtain a better overview of the level of indebtedness of the borrowers across European Union Member-States the European System of Central Banks has been exploring, since 2007, the potential statistical use of CCRs. In particular, it sought to understand to which extent their content may be enhanced and adapted to euro area and European Union statistical needs, to minimise the statistical reporting burden and to increase transparency.

Against this background, the ECB launched the so-called AnaCredit project in 2011, together with experts from both the statistical and credit registers' areas of a number of euro area and non-euro area national central banks. Following this avenue, a joint Statistics Committee / Financial Stability Committee Task Force on Analytical Credit Datasets (co-chaired by the Banco de Portugal) was established in 2013. The overarching aim of this task force was the setting up of a long-term framework for the collection of harmonised granular dataset on bank loans in the euro area.

With a view to fulfilling the AnaCredit's requirements, the Portuguese CCR will be redesigned and will adopt a new philosophy: a loan-by-loan basis. Although the first stage of AnaCredit will comprise only loans granted by banks to legal entities, the Portuguese CCR will keep the current coverage both in terms of participating institutions and borrowers¹¹.

The redesign of the Portuguese CCR is not only due to the need to adapt to the AnaCredit's requirements; rather, there will be a paradigm shift for the Bank in which the CCR will be the single entry point for all credit data that is reported to the Bank, thus creating a multipurpose hub of credit information that will be used by the several functions of the Bank.

In-house credit assessment system

The Bank has recently taken decisive steps towards further exploring the informational potential of the CCR and balance sheet databases by developing an in-house credit assessment system (ICAS)¹². This system will provide the Bank with its own internal credit risk assessment system, thus reducing its dependence on external sources. Against the background of the recent economic and financial crisis and the shortage of assets liable to be used as collateral in monetary policy operations, these systems have recently been gaining importance within the Eurosystem, as can be seen by the increasing number of

¹⁰ For more information, please see:

https://www.bportugal.pt/sites/default/files/anexos/documentos-relacionados/pr_22_2016_crc.pdf.

¹¹ For more details on this project and on the Portuguese CCR as a multipurpose tool please see Matos (2015).

¹² <https://www.bportugal.pt/en/comunicado/press-release-banco-de-portugal-new-house-credit-assessment-system-icas>.

national central banks that have introduced them. In fact, at the current juncture, a more pressing business case for ICAS stems from monetary policy purposes, for which ICAS will provide an evaluation of debtors' credit notation.

But the benefits of such a system are not exclusive to monetary policy. In fact, there is a broad range of advantages to different business areas, in particular regarding financial supervision and stability. First and foremost, for financial supervision the credit notations derived from ICAS could be used as a benchmark to gauge those provided by institutions with their own internal notation system. Furthermore, the computation of sectoral default probabilities could also be envisaged, providing a useful input for stress-testing. As to financial stability, the monitoring of developments of the non-financial sector (and the potential building-up of imbalances) would benefit from an indicator of NFCs credit risk, which could serve, at least, two purposes: (i) to identify situations of potential financial fragility in a set of companies of a particular economic activity sector; (ii) to contribute to assess other risks stemming from the NFCs sector. Other business areas such as economic analysis and statistical functions would also stand to gain from ICAS's outputs.

4. Conclusions

The Great Financial Crisis and the ensuing response from central banks have increased the demand for comprehensive, high quality and more detailed statistics. In this context, traditional aggregate statistics have proved insufficient to monitor and interpret the multiple aspects of the monetary transmission mechanism and the evolution of credit to companies and households. The *Banco de Portugal*'s statistical function has been following a strategy based on the integrated management of micro-databases and has recently deepened this strategy in the area of monetary and financial statistics. Complementing aggregate data with more granular data is not only an answer to the need for more flexible and detailed information, it is also a movement towards a more efficient and reliable system. Particularly, when it is possible to substitute the several reports of aggregate data representing different perspectives on a given reality (for instance, credit), with a single report of granular data. In those instances, of which the Portuguese Central Credit Register is an example, central banks can have one multipurpose granular database, consistent and coherent, which can be used by the several functions of the Bank, with each one of those functions analysing the granular data by its own perspective thus increasing not only the flexibility of the data, but also the efficiency of the reporting systems.

References

Branco, J. S., Lima, F., Monteiro, O. (2015). What changed in financial intermediation in the aftermath of the crisis? – evidence from Portugal. Supplement 1|2016 to the Statistical Bulletin, Banco de Portugal.

Drumond, I., Lima, F. (2016). How to keep statistics' customers happy? Use micro-databases!. Irving Fisher Committee Bulletin No. 41, Proceedings of the IFC Workshop on "Combining micro and macro statistical data for financial stability analysis. Experiences, opportunities and challenges", Warsaw, Poland.

European Central Bank (2015). The role of the central bank balance sheet in monetary policy. Economic Bulletin, Issue 4/2015.

Lautenschläger, S. (2016). Central bank statistics: moving beyond the aggregates. Eighth ECB Statistics Conference.

Lima, F., Mota, S. (2016), Unconventional monetary policy – is there a call for unconventional statistics?. Eight IFC Conference.

Matos, J. C. (2015), The Portuguese Central Credit Register: a powerful multi-purpose tool, relevant for many central bank's functions. Irving Fisher Committee Workshop hosted by Narodowy Bank Polski.

Neves, P. D. (2014). Enhancing the synergies between the SSM and statistical reporting. Seventh ECB Statistics Conference.