Using the zoom lens in banking statistics[1]

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Abstract

Since the onset of the financial crisis the ECB has put additional emphasis on the analysis of granular data for developments in bank credit, securities markets, and in the interbank market. This paper reviews some initiatives in the area of monetary and financial statistics to complement aggregated statistics with granular data referring to institutions, contracts and counterparts.

In particular, the ECB is now collecting and sharing across the Eurosystem several granular data, such as individual banks' reports and their holdings and issues of securities, as well as granular daily data to monitor the wholesale money market – protecting data confidentiality, as required. This allows better supporting the monetary policy conduct and its implementation and monitoring risks to financial stability. In addition, a major project (Analytical Credit) aims at collecting from the second half of 2018 and analysing in-depth supply and demand factors in credit developments across countries, counterpart sectors, and according to several relevant dimensions.

Granular data allow understanding economic and financial developments better, for example by running timely economic analyses of changes at different levels of aggregation such as macro-economy or sectors, or by assessing stress factors and their possible effects on financial stability.

Introduction

Since the onset of the financial crisis the ECB has put additional emphasis on the analysis of granular data for developments in bank credit, securities markets, and in the interbank market. In particular, granular data has allowed uncovering heterogeneities across the banking sector such as different distributions of developments according to the size or location of banks in the euro area.

In particular, the ECB is now collecting and sharing across the Eurosystem several granular data, such as individual banks' reports covering balance sheet items, interest rates on deposits and loans and holdings and issues of securities. In addition, from July 2016 major players report granular daily data transaction by transaction to monitor the wholesale money market. This allows better supporting the monetary policy conduct and its implementation and monitoring risks to financial stability.

Furthermore, a major project (Analytical Credit) aims at collecting supply and demand factors in developments of banking credit. Those developments will be analysed across countries, counterpart sectors, and according to several relevant dimensions. The first data will be reported in the second half of 2018.

Granular data allow understanding economic and financial developments better, for example by running timely economic analyses of changes at different levels of aggregation such as macro-economy or sectors, or by assessing stress factors and their possible effects on financial stability.

In order to support the collection and analysis of granular data on economic and financial activities and sectors, central banks in European countries jointly operate and maintain reference/master data on statistically-relevant institutions, the Register of Institutions and Affiliates Database.

1. The Register of Institutions and Affiliates Database

A prerequisite for the collection of various types of data on financial transactions is that each bank in the EU is uniquely identified and described with harmonised reference data in a common register, namely the Register of Institutions and Affiliates Database (RIAD). In this context RIAD also captures changes in the population of banks owing to mergers and acquisitions, new banking licences or closures.

Identifying each bank or other reporting agent in a unique way is of particular relevance when compiling statistics for an entire economic area, like the euro area. Lists created from RIAD allow reporting agents and compilers in each member country to properly identify foreign counterparts and allow classifying them by country of residency and institutional sector. For example, national central banks classify in RIAD each resident investment fund either as a money market fund (MMF), which belongs to the money-issuing sector, or as a non-MMF investment fund, which belongs to the money-holding sector. Thus RIAD allows a harmonised classification across all European countries.

The identifiers in RIAD also allow national central banks and ECB putting together information from several sources, such as banks' balance sheets, interest rates in loans and deposits, securities issues and holdings, money market transactions and in the future loan-by-loan data.

The RIAD reference dataset can be used in different ways for statistical purposes, such as selecting a sample of the population to be surveyed, or combining individual data or entities to group structures, or even conglomerates, building up on various criteria. For example, securities holdings statistics are compiled along the perimeter of pan-European groups of banks that are considered systemically important. All in all, RIAD constitutes a backbone both for the collection of data from banks and other reporting agents, and the later use of those data also for analytical and operational purposes within central banks. An accurate picture on who is who helps preparing policy decisions.

2. Balance sheet and interest rate statistics

Data on balance sheets and interest rates for euro area banks have been collected by the ECB on a country-by-country basis since 1999 and 2003 respectively. Traditionally, national central banks would share the data with the Eurosystem based on national aggregates only. While these aggregates remain a key component for the euro area indicators, granular data have also become important to better analyse the monetary policy transmission channel and disruptions caused by fragmentation in the markets. Hence, the ECB has established since September 2012 a regular transmission of individual data, with a view to sharing the dataset across the Eurosystem for monetary policy as well as macro-prudential and financial stability analysis, in line with the legal framework underlying the collection of statistical information by the ECB.[2] Tools and processes needed to be adapted so as to handle microdata. In addition, data confidentiality had to be protected.

Originally, from September 2012, the dataset was limited to the main items of the balance sheet and covered a panel of about 250 banks representing 70% of the euro area MFI sector in terms of total assets. The dataset then was gradually extended both in terms of indicators and of institutions. Since October 2015, the coverage has increased to about 300 banks (representing 80% of the euro area banking sector in terms of total assets) and the granularity of the indicators was extended.[3] For instance, for the balance sheet indicators a total of about 130 indicators on outstanding amounts and over 30 on transactions are made available. In particular, the dataset covers cash, loans, debt securities, money market fund (MMF) shares/units, non-MMF investment fund shares/units, equity, non-financial assets and remaining assets. On the liability side, deposits, debt securities, capital and reserves, and remaining liabilities are presented. Data are split by residency and sector of the counterparty, maturity (where relevant), purpose (for loans to households) and type (for deposits). Regarding interest rates, the dataset covers loans and deposits to euro area households and non-financial corporations (NFCs), and distinguishes between interest rates on outstanding amounts (13 indicators) and interest rates on new business (30 indicators, with the corresponding business volumes). The breakdowns broadly match those available for the balance sheet indicators in terms of maturity (or fixation period for the new business) and instrument type for deposits or purpose for loans to households. Loans to non-financial corporations are additionally made available with a split for the amount of the loan.[4]

Since its establishment, this rich dataset has enabled to enhance monetary analysis with cross-sectional studies, as the responses of individual banks to monetary policy easing and unconventional measures became much affected by their individual characteristics. The standard ECB tool sets for assessing money and credit has thus been complemented with distributional analyses and cross-sectional studies using individual data. Besides the monetary policy transmission mechanism, the microdata can also be used to study the funding conditions of banks, not least as a consequence of prudential or regulatory changes, their profitability (e.g. interest rate margins) or balance sheet structure, allowing for analyses across business models, bank types and countries.[5]

Chart 1 extends the analysis of ECB (2015b) and shows that the pass through of successive cuts in the rate of main refinancing operations to lending rates applied to NFCs was much slower for vulnerable countries than in less vulnerable ones. Comparing the distributions of lending rates of September 2011 (i.e. shortly before the first of a series of cuts in the rate of the ECB main refinancing operations (MRO) starting in November 2011) and June 2014, it appears that vulnerable countries did not experience a significant drop on the median rate (23 basis points) despite the 125 basis point reduction in the MRO rate. In contrast, this reduction was better reflected in the median rate for less

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[2] Council Regulation (EC) No 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank, OJ L 318, 27.11.1998, p. 8.

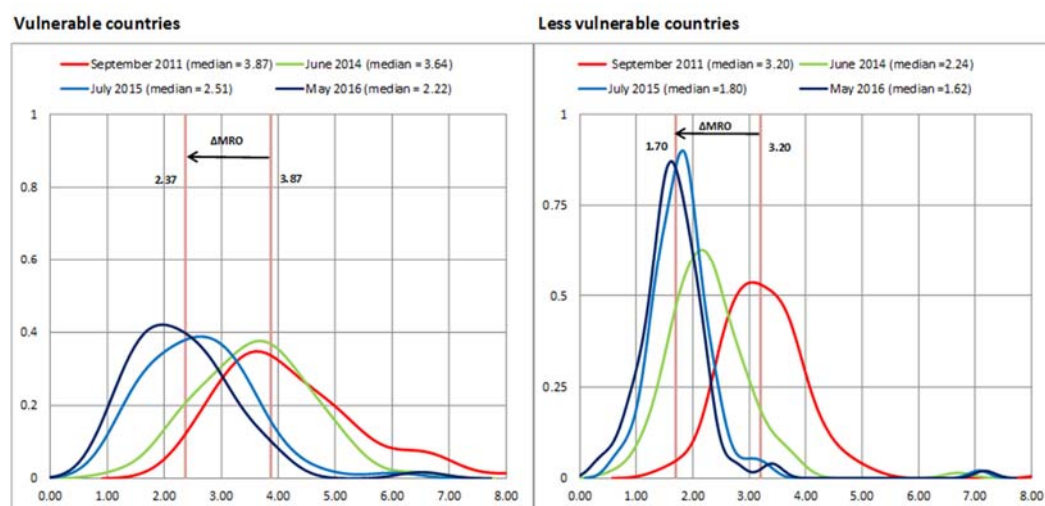[3] The last extension introduced micro-prudential supervision as one of the purposes for which the data can be used.

[4] See Israël *et al* (2016).

[5] For instance, see ECB (2014, 2015*b*, and 2016a). Much academic research has also been performed in this context; for example, see Altavilla *et al* (2016) and Holton and Rodriguez d'Acri (2015).

vulnerable countries (96 basis points). Since the new asset purchase programmes in June 2014, the reduction in borrowing costs in vulnerable countries was significant, supporting the view that the measures have helped aligning the price of credit with the intended stance of monetary policy.

Chart 1
Composite lending rates for NFCs: distribution of individual MFIs
(percentages per annum)

Source: ECB

Note: The chart shows the density of the lending rate distribution obtained from a sample of 56 MFIs in selected vulnerable countries (Ireland, Spain, Italy and Portugal) and 106 MFIs in less vulnerable countries (Belgium, Germany, France, the Netherlands and Austria) in four different periods (September 2011, June 2014, July 2015 and May 2016). The chart also shows that if the reduction in the MRO rate since September 2011 (i.e. 145 basis points) had been fully passed on to the median lending rates of that period (i.e. 3.87% for vulnerable countries and 3.20% for less vulnerable countries), the lending rate in May 2016 would have been 2.37% for vulnerable countries and 1.70% for less vulnerable countries.

3. Holdings and issues of securities

Securities statistics comprise information that is granular both in terms of institutions (i.e. bank-by-bank) and instruments (i.e. security-by-security). The granular information is collected for each bank's assets -securities holdings- and liabilities -securities issues. The collection of the data follows different processes for assets and liabilities. For assets, each bank reports its securities' holdings, which are then classified according to different criteria. For liabilities, the ECB collects available information from market sources, numbering agencies and national central banks to construct a centralised securities database (CSDB).

The CSDB contains comprehensive reference data for each security, as well as market prices, issuer and ratings information. It covers both equity and debt securities. Also investment fund shares/units issued by EU residents are registered. All securities are covered whether issued by banks, by investment funds, insurance corporations, non-financial corporations or governments. The focus is on securities likely to be held and traded by EU residents as well all euro-denominated securities, regardless of the residency of the issuer and holders. The reference data reflect different variables such as the residency and institutional sector of the issuer, coupon rates and redemption date of debt securities, corporate events, etc. The CSDB plays a dual role in the compilation of banks' securities statistics, as liabilities can directly be derived from the CSDB, while banks report assets in securities held in their portfolios, which are matched with CSDB data to assess statistical and other classifications, as well as allowing different valuations.

In addition to the monthly data for balance sheet items mentioned in the previous section, banks report their portfolio security-by-security under the framework of the securities holdings statistics. Each security is identified by a single code, which is the International Securities Identification Number (ISIN) whenever it exists. Security-by-security reporting means that the compiler receives raw information on the amount held for each security, and produces all relevant statistical breakdowns and aggregates by combining those amounts with the characteristics of each security in the CSDB. For example, securities holding statistics feed macroeconomic statistics such as external statistics (balance of payments and international investment position) and the financial accounts by sector.

Following the security-by-security approach, NCBs and the ECB classify the securities by instrument, residency and sector of the issuer, etc., in a more reliable classification than anyone made by reporting agents. In addition, different valuation of securities can be performed thanks to the CSDB for different purposes. This ensures consistency in classifying and pricing the securities reported, as well as a symmetrical recording on assets and liabilities. Furthermore, without reporting burden the ECB can compile debt securities portfolios based on, e.g., original or residual maturities.[6]

4. Daily money market transactions

Monitoring money markets is crucial for the analysis of the monetary policy transmission (as well as for macro- and micro-prudential supervision), especially in a situation of high market fragmentation. In a situation where such fragmentation was expected to remain very high, in 2014 the Eurosystem decided to establish a legal framework to collect statistical data on money market transactions.[7] This dataset provides the Eurosystem with daily, accurate, timely (in the early morning on the working day following the deal) and comprehensive data on transactions concluded by the reporting banks, which will allow an improved monitoring of the transmission of monetary policy decisions in money markets, as well as on market expectations for the future evolution of policy rates.

This new granular dataset covers four segments of the euro money markets, namely unsecured, secured, foreign exchange swaps and overnight index swaps (OIS) transactions denominated in euro. The new collection framework is based on the daily reporting of transaction-by-transaction information on unsecured and secured lending and borrowing transactions in euro with a maturity of up to one year. All foreign exchange swap transactions involving euro and OIS transactions denominated in euro must also be reported. The detailed trade data to be provided include the volume, rate, counterparty type and collateral type, together with the time at which the transaction was conducted.[8]

On 1 July 2016 the ECB started to collect statistical data from the 52 euro area banks with the largest market share in money market segments. With a view to limiting the impact of teething problems and ensuring full automation from 1 July 2016, banks had started to send data on 1 April 2016. This three-month interim period was deemed necessary to fine-tune the reporting process before the legal obligation came into force on 1 July. As shown in Chart 2, the number of transactional records already reached ca. 45,000 per day in early 2017.

The data are available at 07:30 in the morning of the next working day, allowing an early assessment to be used as input to the daily monitoring of liquidity by the ECB. The data granularity will also allow more in-depth analysis of market developments. This granularity and timeliness requires that the statistical analysis, e.g. on consistency and plausibility, is run with highly effective and automated processes, part of which will need to be developed and enhanced while gaining experience. In this regard, a full standardisation of the underlying taxonomy and data transmission format based on the ISO 20022 standard has been introduced by the Eurosystem. A set of four reporting messages and a status message containing feedback information have been jointly submitted
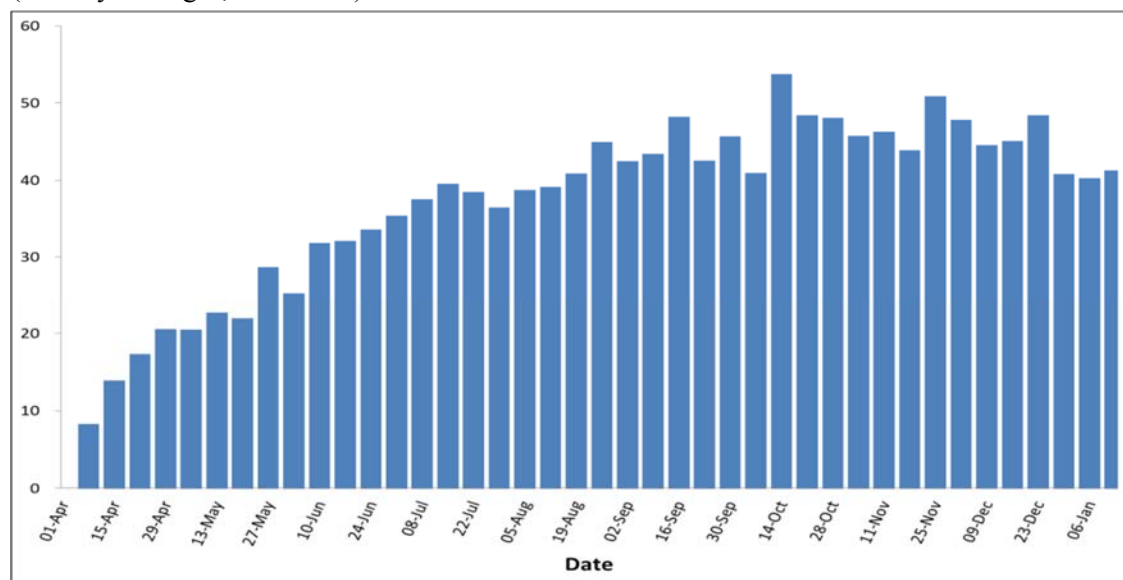
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[6]   See European Central Bank (2015a).

[7]   Regulation (EU) No 1333/2014 of the European Central Bank of 26 November 2014 concerning statistics on the money markets (ECB/2014/48), OJ L 359, 16.12.2014, p. 97.

[8]   For further information, see ECB 2016b and 2016c.

by the ECB, the Deutsche Bundesbank, the Banco de España and the Banque de France and subsequently been approved by the ISO Registration Authority.

Chart 2

Transactional records collected

(Weekly averages, thousands)

5. The Analytical Credit datasets

The ECB has adopted a strategy to develop and produce new ESCB granular statistics on credit and credit risk with the aim to support the Eurosystem in the performance of its tasks, including those related to monetary policy analysis and operations, risk management, financial stability surveillance and economic analysis and research. The granular data will also be used to produce new indicators of credit intermediation and increase the quality of existing statistical datasets.

To this end, a new statistical regulation was adopted in May 2016,[9] with a view to establishing a common, harmonised granular credit and credit risk dataset (i.e. "AnaCredit") shared between the Eurosystem members and comprising input data from all euro area countries. The AnaCredit dataset will allow to closely monitor the status of the euro area credit market, both as a whole and in specific segments, relying on complete, accurate and timely information on credit and credit risk in the financial system. The new legal framework calls upon a first stage of implementation with a focused scope, namely lending and credit lines by banks to all legal persons, in particular non-financial corporations. The scope may be later on extended to other lenders and other instruments. A phased-in approach makes the overall endeavour more manageable, while the data model, definitions and granularity of data allow any future enrichment to be processed in a forward-looking, non-disruptive manner.

Covering bank loans to non-financial corporations already in the initial phase, the AnaCredit dataset will allow a better understanding of the monetary policy transmission channel, particularly concerning small and medium-sized enterprises (SMEs) – the backbone of the European economy in terms of investment and employment opportunities. AnaCredit will provide high-quality and timely information on creditors, debtors, guarantors, and on the different credits extended (i.e. identity of the lender, of the borrower, type of credit, outstanding debt, number of days past due date, date of origination and contractual maturity, type of interest rate and currency of the credit). Such a credit

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9   Regulation (EU) 2016/867 of the European Central Bank of 18 May 2016 on the collection of granular credit and credit risk data (ECB/2016/13), OJ L 144, 1.6.2016, p. 44.

dataset calls for a reference/master dataset with accurate information on all counterparties. While lenders in the financial sector are nearly all covered within the RIAD dataset, the scope of the register will be much expanded to also cover the non-financial entities reported as borrowers or guarantors in AnaCredit.

Based on information available in AnaCredit – combined via RIAD with the Securities Holdings Statistics and the CSDB where applicable – it will be possible to assess the overall indebtedness of a given (e.g.) company and, thus, its creditworthiness. Furthermore, on the lenders' side, information on any risk mitigation measures securing the credits (e.g. credit derivatives, guarantors, financial collateral received) will help estimate the severity of losses in the event of default. Finally, the dataset will support the reliable identification of each individual creditor and debtor (e.g. name and unique ID number, address, type of obligor, firm size, sector of economic activity), as a prerequisite to capture the total indebtedness of debtors accurately, especially of those debtors with cross-border exposures.[10]

6. Conclusions

The statistics function of the Eurosystem has met new, resource-intensive demands as regards granular data for banks. Value for analysis of the data has further much increased. In particular individual data on balance sheets, interest rates and securities holdings and issues enable economists using the zoom lens to interpret aggregated developments. These demands have translated into significant operational challenges, which in turn also allowed strengthening statistical processes.

Moreover, in the near future the richness of the AnaCredit dataset combined with RIAD, also in liaison and SHSDB/CSDB where appropriate, may allow rethinking the way aggregated statistics are compiled and collected from reporting agents and, going forward, could possibly lead to a decrease in data requirements in the context of reports of balance sheets and interest rates.

An efficient data collection that enables combining the data from different frameworks is facilitated by a common register at the European level. The RIAD dataset is instrumental for creating lists that allow banks to classify their counterparts according to the country of residency and institutional sector, and for the compiling agencies to accurately classify parties in transactions and group banks and firms according to various criteria.

Furthermore, the collection of granular data from banks and other reporting agents has often been developed separately from the collection of data that feed macroeconomic statistics such as the monetary or credit aggregates. A challenge is now to help minimise reporting burden (of e.g. banks) and better servicing users with consistent aggregated and granular data. This will benefit from further integration and streamlining so that in one go banks report data for different purposes, which is the goal of the European Reporting Framework initiative. Already, this is the case of the insurance industry in Europe that reports in most countries only once for supervisory and statistical purposes.[11]

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[10] For further information, see ECB (2015*e*).

[11] There is a close connection between the insurance corporations' data collected by national central banks (NCBs) for statistical purposes under Regulation ECB/2014/50 and the data collected by national competent authorities (NCAs) for supervisory purposes under the framework established by Directive 2009/138/EC of the European Parliament and of the Council. Given the ECB's general mandate to engage in cooperation with other bodies in the field of statistics, and in order to limit the administrative burden and avoid the duplication of tasks, NCBs may derive the insurance statistics from data collected under Directive 2009/138/EC, including the national law implementing that Directive, having due regard to the terms of any cooperation arrangement between the relevant NCB and the relevant NCA. Article 70 of Directive 2009/138/EC provides that NCAs may transmit information intended for the performance of their tasks under that Directive to NCBs and other bodies with a similar function in their capacity as monetary authorities.

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