

## Summary of the parallel sessions (A-F) and the panel discussion

### Summary and conclusion of session A

Chair: Enrico d'Onofrio

Credit registers are enjoying something of a "*renaissance*". All four experiences report a host of initiatives relating to this tool, which began its history several decades ago. Some countries are trying to increase its value by harmonizing the information and using the register for purposes well beyond the original one of helping banks to manage credit relations; others are introducing innovative methods and technologies; and finally, one country is currently setting up a credit register.

Within the European System of Central Banks (ESCB), the first steps towards upgrading the role of credit registers were taken in 2005 with the introduction of reciprocal data exchanges. This process continued in the following years with in-depth analyses to understand how the registers' content could be enhanced and adapted to the statistical needs of the euro area and the European Union (EU), to alleviate the statistical reporting burden and increase transparency. More recently, the process has picked up speed with concrete recommendations to improve national central bank's granular data on lenders, borrowers and credit attributes, as well as methodological issues (ESCB Task Force on Credit Registers), and with measures to support ongoing macro- and micro-supervisory tasks with a view to the forthcoming Single Supervisory Mechanism (SSM).

The experiences of Armenia and Malaysia, although they began in different periods, are now consolidated and offer interesting insights into the management and the technical/organizational solutions adopted. The high frequency of information updating in the case of Armenia (three business days) and the manner of providing services in Malaysia (in 2011 a mobile customer service coach was set up to provide greater access to the public) are impressive.

Malaysia has also described an original method of coordinating a public central credit register managed by the central bank with private credit bureaus.

Ireland – after a first experience of constructing a database on micro credit under the pressure of the economic crisis – is now grappling with a project for an information system on credit that is due to become operational by 2015. The country is aware of the need to involve statisticians in this central credit register project, as well as in decisions regarding the type of data that will maximize its usefulness. Its primary objective, however, will be to support banks and supervisory activities.

Although they differ as to state of progress and approach, all these experiences seem to have the same goal: the development of the central credit register from a single-purpose information system to a multi-purpose one. If this is the objective, we must be aware that the path will not be easy and it will present many challenges.

As statisticians a clear vision is needed to impose a holistic approach to meeting information needs, and ultimately to manage the evolution of the central credit register as part of an integrated statistical system.

The old compartmentalized approach has now run its course and there is broad agreement that “integration” is the only paradigm capable of maximizing the value of statistical databases.

Suitable organizational solutions and consistent methodological tools and technologies are needed to support the new approach. But a new culture is also necessary, one that regards information sharing as “natural” and “normal”. Only in this way will it be possible to overcome the legal, juridical and operational restrictions that characterize these systems today.

## Summary and conclusion of session B

Chair: Jesmond Pulé

The session acknowledged that many central banks and other national decision-making bodies nowadays recognize the potential offered by item-by-item data collection systems. One of these solutions is the security-by-security (s-b-s) data collection system with variants such as the s-b-s investor-by-investor model, issues of s-b-s and holdings of s-b-s statistics. These micro-databases are increasingly being used for statistical purposes in the area of monetary and financial statistics, balance of payments/international investment position and financial accounts statistics and for economic analysis and research. The *Banco de Portugal's* presentation even asserted that a level of excellence in statistical processing can be achieved with the use of such databases.

The advantages of s-b-s data are various, the most important being (a) the higher level of quality (than when statistics are transmitted by respondents on an aggregated basis), (b) reduction of reporting burden on respondents, (c) flexibility of usage, (d) prevention of data redundancy, (e) a more efficient data quality management and (f) quicker response to requests. With regards to the latter point, in fact, the Lehman Brothers bankruptcy case showed how quickly central banks can provide the required granular information on an *ad hoc* basis provided that they have at their disposal s-b-s databases. In the Portuguese case, the existence of the micro-data databases was also a key success factor for an efficient and effective response by the *Banco de Portugal* to a myriad of new data requests for monitoring the development of the financial assistance program to Portugal and the preparation of the quarterly review missions. Driven by the financial crisis of the 1990s–2000s and the most recent one, the availability of s-b-s data was also seen as crucial for monetary policy purposes. This crisis spelled out demand for such data as to help detect the imbalances that can potentially trigger instability in the financial system.

Admittedly the costs on central banks have increased since the bulk of the work has shifted from reporting agents to central banks and this was not necessarily coupled with an increase in financial and human resources. There are still certain inherent problems to reach the desired quality of the granular data, especially if the s-b-s information will one day be the potential solution for prudential supervisory requirements. Each country has its own *modus operandi* and is in different stages of developing its s-b-s systems. Moreover, countries have different operational and administrative arrangements, and sources of data. Furthermore, while some countries rely completely on the granular data transmitted by respondents, others rely on data procured from commercial data providers. Within the euro area, rather

than investing in their own databases, many countries opted to rely on the ESCB's Centralized Securities Database (CSDB) which is fed by data purchased from a number of commercial data providers coupled with input from national central banks. The latter also carry out related data quality management. Iterative processes could potentially enhance the CSDB to the quality required for prudential supervisory and macroeconomic policy purposes. However, even though this database does not have the necessary "book-keeping standard", it is still better than any individual alternative especially if "health warnings" are pre-announced. Further cooperation, especially with countries having international financial centres, would further improve the quality of the CSDB data.

Other central banks, such as the Czech National Bank, involved the supervisory body from the outset of the project to be able to satisfy the latter's needs. This co-operation also led to considerable synergies, including the avoidance of duplication in data collection. Their solution also lends itself to flexibility in the filling of unforeseen data gaps. Further plans are envisaged by the Czech National Bank in using the full potential of such a database.

In Thailand, concerted effort by the Bank of Thailand, Thailand's Ministry of Finance, other national authorities and *ad hoc* committees was the key success factor to launch the financial instrument information centre. This co-operation may even be broadened to be able to adopt common security codes, which at present are still lacking. Despite the challenges involved, Thailand's effort in this regard was still considered to be worth the investment.

As s-b-s databases improve, investment in the quality of such databases should also be coupled with enhanced staff profiles as the dimension of the work involved will change. Despite processes being shifted from reporting entities to the compilers and despite technological, administrative and operational challenges which may take some years to achieve, there seems to be unanimous agreement that s-b-s databases are still considered to be worth all the investment. Furthermore, there also seems to be a consensus towards a strategy to enhance the quality of such data for use in monetary policy and prudential supervisory policy-making. Another challenge which seems to provide further opportunities in the not too distant future is the integration of s-b-s solutions to other micro-databases, such as loan-by-loan and central credit register databases, which may even incorporate deposit-by-deposit databases.

## Summary and conclusion of session C

Chair: Timur Hülagü

The session on Central Balance Sheet Databases and Business Registers exhibited the importance of business registers and central balance sheets in measuring activities of non-financial companies. It also elaborated on "whys" and "hows" on the critical features of such databases and efficient ways of dealing with them.

Participants in the session succeeded to highlight the use and importance of these databases. More information will lead to better and more correct analysis, which in turn will allow for right policy decisions. In analyzing and estimating how firms react to monetary policy decisions one needs to control for firm specific characteristics and unobserved characteristics, which is only feasible through micro-data. Aggregated data gives a picture about the whole economy or some

sector's dynamics but conclusions based purely on these have the potential to be incomplete.

To reach an accurate picture of true financial situations of firms, at the first place, it is recommended to reach accounting documents of firms. This will lead to perform impulse response analyses of monetary policy, as well as identifying risks to financial stability. It will also enable a consolidation of data to avoid the double accounting problem.

Compiling business registers and central balance sheets will also reduce the reporting burden of companies. Without them, and without an efficient system that includes greater inter-institutional cooperation and sharing, companies will continue reporting to several authorities.<sup>1</sup> Such inefficiency also decreases the belief in statistics by many parties.

Presentations also discussed "how" to reach a better system. The need of an easy and efficient way to get data is clear. In general, the information is not easily available. Data is scattered around several different databases managed by different authorities. Here comes the importance of a great inter-institutional cooperation. Sharing data between them is also crucial. An ultimate goal can be sharing the information to everyone, as *Banco de Portugal* is seeking currently. A legal base to support such sharing and cooperation is unavoidable. To reach this status, such a system should be approved publicly with the understanding of "its importance", its "need before falling in the next crisis" and its condition as a "public good".

At the end of the day, an efficient system which allows the compilation of granular data is needed. Then, it is possible to reach distributions rather than simply aggregates, and consolidated figures as well.

Data should also be globally standardized. The world has changed and we need internationally comparable data and data capable of being integrated. Not for company data yet, but for finance, an initiative called Global Legal Entity Identifier System has been developed and being implemented under a G-20 charter. This will enable to collect real-time, granular and globally standardized financial data. In a world where a crisis can occur within small amount of time, action has to be taken much quicker than before.

And then this brings us to the point of timeliness. It may not be easy to compile firm data at a higher frequency. Quarterly data can be submitted with a lag, compilation and analysis will take some time too. This may be too late to take the right action. We need to consider ways to achieve more timely data as much as we consider other issues.

## Summary and conclusion of session D

Chair: Jean-Marc Israël

In this session Brazilian and Portuguese presentations showed mature and impressive credit registers in their respective countries. The thresholds are very low,

<sup>1</sup> This is painful for them, we received many phone calls from them at those bad times and, believe me, they don't call for just saying "hi".

€344 for the former, €50 for the latter – at the explicit request of credit institutions, which leads to an almost complete coverage. Important services are developed to give an appropriate feedback to the credit institutions in assessing the creditworthiness of their (potential) clients/borrowers. The credit registers are used for supervisory analyses but also for a wide range of other purposes, in particular for statistics (to check other datasets, to add new or more detailed breakdowns) or economic or financial stability analysis.

France presented a classification of enterprises by size with three different criteria (turn-over, total balance sheet assets and number of employees). It was concluded that this work helps to clarify what is at play and, in turn, may have a significant impact on the results. In this case, it showed that the share of credit granted to small- and medium-sized enterprises (SMEs) in France was higher than usually shown.

Cabo Verde and Malaysia showed two examples of the use of credit registers data. In the former case, the breakdowns currently available were not sufficient to analyze policy-relevant developments in non-performing loans. A task force investigated in greater depth what happened and delivered conclusions and recommendations on how to improve the register for supervisory and other policy purposes. In the latter case (in Malaysia), data drawn from the credit register enabled to identify specific developments in the credit to households for housing purposes, analyze and model what was going on and take a very focused, countercyclical policy decision to avoid a bubble in the making. Results, also measured by more recent developments in the credit register dataset, show that the impact was fast and in-depth, also mitigating the underlying systemic risk.

The presentations and discussions turned clear that linked to the increasing complexity of economic and financial developments, as well as their higher volatility in the wake of the crisis, macro-economic statistics are no longer sufficient to assess credit developments. Also, measuring the distribution/breakdowns of credit – by borrowers' categories (size, activity) or by types of loans (funding need, maturity, collateralized or not) – has become of utmost importance. Granular data are, in turn, welcome by reporting agents as they enable a feedback loop for their own decision-making on credit, their internal reporting, as well as benchmarking; reporting burden is also minimized, after a one-off cost to implement in automated systems, as changes in e.g. statistical classifications do not affect the stability of the reporting requirements.

As the criteria for the breakdowns and distribution metrics (of credit) may change, only granular data allow for making the right aggregation at the right moment in time.<sup>2</sup> This is a prerequisite for conducting in-depth timely analysis and preparing policy-making – also using more accurate (macro-prudential) tools, and measuring their impact over time.

Credit registers should not be seen in isolation. They are part of an information system for central banking and supervisory purposes. A key complementary element is the business register that enables to better assess who the counterparts (borrowers) are. Other databases may also be important such as on securities

<sup>2</sup> Knowing that the time to fruition for large projects that entail IT developments are long, often more than 2 years, with risks that the resulting dataset does not fit the needs anymore, only granular data allow getting the relevant information on time.

(issued and held), central balance sheet offices, etc. A link is needed between these datasets via common identifiers (of lenders and borrowers; possibly also loans).

## Summary and conclusion of session E

Chair: Jacques Fournier

In the session it was showed that micro-data play a major role for balance of payments compilation and analysis, as outlined in particular by the Bulgarian and Portuguese central banks. Allowing detailed cross-checking, they are particularly adapted to the balance of payments that reflect a large diversity of operations between multiple counterparts and sectors. Moreover, micro-data are necessary to answer rapidly to new questions raised by international organizations, as experienced during the crisis where financial support was often conditional to quick responses.

Still, micro-data collection is not widespread yet and may be difficult to achieve. Legal and costs barriers for accessing administrative databases can be very difficult for central banks to overcome, as explained by the Bank of Japan. Indeed, the efficient use of micro-data requires close cooperation between all concerned authorities, as underscored by the South African Reserve Bank. IT hurdles to an efficient management of complex databases have also to be kept in mind.

While these difficulties should not be underestimated, the Magyar Nemzeti Bank and the Central Bank of the Russian Federation shed light on another very important merit of micro-databases, namely the detection of fictitious transactions. Indeed, a sensible analysis of raw data, coupled with a matching of balance of payments and national accounts (or even tax information), can lead to measuring the shadow economy. In this perspective, data mirroring between countries can be very helpful.

A demanding but promising tool, micro-databases appear very useful for a number of statistical and macroeconomic purposes. However, heed should be paid to avoiding excessive costs and delivering adequate data quality.

## Summary and conclusion of session F

Chair: Gregor Bajtay

The session brought together different initiatives to obtain additional data and/or use the existing data for a different purpose. In this context, the ECB, for which, in general, published statistics are based on national aggregates compiled by national central banks (NCBs), started collecting and processing micro-data that are directly retrieved from individual economic agents. The target is to capture the essential qualitative developments underlying the behaviour of economic agents selected for the survey. The challenge of these surveys, which in general are characterized by high flexibility in the selectivity of sample reporting entities, is to retrieve *ex ante* the necessary knowledge of how to select the sample and to adjust the surveys' frequency to the need of the level of understanding of various aspects researched.

Portugal's presentation illustrates the use of payments data covering statistics' compilation and monetary and financial analysis. Payments data are relevant in a variety of domains and the implementation of the Single Euro Payments Area (SEPA) brought the opportunity for NCBs to benefit from harmonized payments' data across Europe. These data are being utilized, for instance, in the estimation of the travel item of the balance of payments, to measure the evolution of monetary and financial services in the financial integration, and to estimate private consumption in short-term forecasting.

Another experience presented by Portugal was the launching of a reporting scheme to collect data on new loans granted to non-financial corporations (NFCs) on an operation-by-operation basis. Initially collecting interest rates data, afterwards it launched a new monthly reporting scheme that encompasses more detailed information on the evolution of bank's credit to NFCs. The micro-data reporting presented several advantages as the reduction of the reporting burden, improvement of data quality, enhancement of the economic analysis by taking advantage of the integrated management of different databases, and better capacity to respond to *ad hoc* information requests. This type of solution could be applied to other statistical fields, as the deposit operations and the corresponding interest rates, for example.

The presentation from Finland exposed the joint work from the Bank of Finland and the Finnish Supervisory Authority in producing a common quarterly risk assessment for macroprudential policy decision-making. An important element was the optimization of the use of all relevant information collected by both authorities, keeping in mind the importance of being selective in the eligible data and on the danger of having too much detailed information. Some features called their attention: (i) central banks have to improve on the communication of their statistics both internally and externally; (ii) the issue of coordination and cooperation is crucial, within the central bank itself and at the national and international level; (iii) cooperation between central banks and supervisors is of key importance and needs to be strengthened; and (iv) limitations on data sharing between the two organizations need to be reduced or removed, partly in order to be able to respond to some international statistical initiatives.

The session confirmed the trend of recent years: the conversion of utilization of aggregated data into individual data. The challenge has become to achieve a common link between separated databases. This process may have an impact on changing the structure of data collection and also increase the initial cost of providing IT solutions. On the other hand, it can reduce the reporting burden, improve data quality, provide for a more efficient compilation of statistics and, last but not least, render more timely data.

## Summary of the panel discussion

Katherine Hennings

The breakout sessions covered presentations about an ample set of statistical databases developed to support policy analysis, supervision and research. The financial crises that emerged in 2007 illustrated that analysts, policy makers and regulators missed something. As a consequence, efforts were intensified to fill the

data gaps and to reinterpret the linkages between financial markets participants and the linkages between different components of financial markets.

One aspect that emerged was the relevance of granular data. The ease to collect basic granular statistics and the flexibility it allows to respond to different questions reduce the cost burden and permit the assistance of multiple users. In this context we could see the revival of central credit registers and the huge effort to build security-by-security databases. Also, other initiatives were enhanced, such as the central balance sheet databases, business registers, cross-border capital flows registers and other data repositories for statistical purposes.

The compilation of granular data allows information to be locally tailored in order to attend different users. Databases of single basic data serve to support micro-supervision analysis and enable bank supervisors to assess credit risk in supervised institutions. In addition, they also support economic analysis from central banks and financial markets analysts, as well as the research community. Therefore, micro-databases serve to a diversity of clients: central bank Board members that use economic analysis to take policy decisions, central bank analysts, supervisors, financial markets analysts, and academia members.

The experiences presented showed not only different areas of central banks working together, but frequently the joint work of a diversity of authorities. These efforts made clear the utmost importance of sharing data. It is recognized that the appropriate legal steps for a regular exchange of data serving to analytical and policy purposes is needed and that, sometimes, changes in the legal framework must be provided. This issue appeared as one of the challenges in the process of building a common database.

Considering that the data collected should attend to different purposes and users, the *praxis* raises other challenges, like the definition of a core set of information to meet main users and the definition of the attributes of statistics asked. This implies the harmonization of concepts and definitions, as well as the convergence of data coverage and data contents.

Apart from being robust and reliable, statistics compiled should be available within appropriate timeliness for timely decision-making processes. The security aspect and the feedback to respondents should also be taken into account. A clear specification of data to be collected is important for improving the quality of information received. Transparency and communication, both inside central banks and outside them, are crucial. It is important not only to make it clear the type of information required, but also explain the reason and present the results. In this context, tools and the appropriate language should be found.

Another aspect that emerged from the presentations and discussions was the increased cost for central banks to build the technological tools required. Since databases needed to store micro-data tend to be bigger than those required to store aggregate statistics, and given the fact that the use of micro-data is expected to serve different purposes, which are likely to change over time, the staff dealing with them must have special skills and training. This means a non-negligible increase in costs associated with IT and human resources for central banks. It has been proved that such costs are worth it but they ought to be well understood by the Board members. The buy-in by senior management is important, and, as suggested by a speaker, it should be granted and maintained.

Experiences also indicated that there is room for improvement. The credit registers could further explore other borrowing sectors and business deals –

household are not adequately covered, as well as inter-financial corporation lending, loans to the government sector, and the activity of “private credit bureaus”. It was also discussed the importance of extending the coverage of information sources to comply with non-bank financial institutions (hire-purchase, leasing and credit card issuing companies; government agencies (which provide credit for specific purposes), issuance companies and payment system operators.

Security-by-security (s-b-s) databases are being developed in a number of economies and their coverage is still being discussed. In the building of an s-b-s database, it is crucial to define the attributes of the debt securities to be collected. In the European Central Bank (ECB) model, each security is identified by its International Securities Identification Number (ISIN) code and defined by more than 50 individual attributes. Since geographical coverage could differ, it should be also defined. Efforts and benefits are being evaluated in face of the costs – the ampler and deeper the database coverage, the higher the costs.

Notwithstanding all these challenges, the flexibility of granular data provided analysts at central banks and supervisory institutions with a previously inaccessible picture of the state of financial markets and of the funding of the economies, and helped to develop models to estimate the developments. Therefore, granular data is a source of information that is being increasingly used in combination with the available aggregate data.