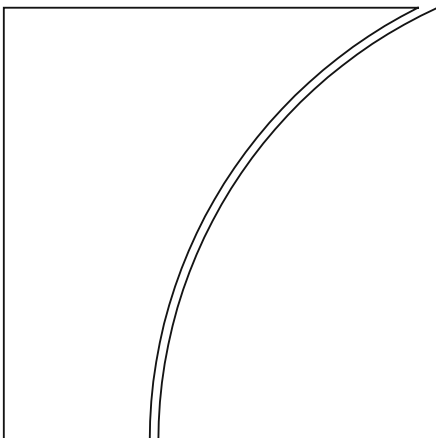Irving Fisher Committee
on Central Bank Statistics

IFC Report

No 1

Data-sharing: issues and
good practices

Report to BIS Governors prepared by the
Task Force on Data Sharing

January 2015

BANK FOR INTERNATIONAL SETTLEMENTS

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[1]    The views expressed in this document reflect those of the contributors and are not necessarily the views of the institutions they represent.

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# Executive summary

Ensuring and improving data-sharing between statistical and supervisory authorities has become more important in recent years. The financial crisis that erupted in 2007 underlined the usefulness of the data these authorities collect and the merits of sharing them. Supervisors, monetary and other macro policymakers need to have access to a wide range of information to facilitate a holistic approach in analysis. While objectives and mandates may differ, analysts and decision-makers in the relevant agencies should ideally have access to all pertinent available information. In this report "data-sharing" refers to data collected from banks by national central banks or other competent national authorities.

Central bank statistical departments are often the promoters of data-sharing, and of related data cooperation more generally. Their objective is to support better policymaking. Data-sharing and cooperation facilitate this by: (i) providing a comprehensive and coherent picture for policymakers; (ii) building a holistic and multifaceted picture and promoting cross-fertilisation; (iii) enhancing data quality; and (iv) reducing reporting burdens and banks' reluctance to provide data, in particular new data. It is therefore important that these benefits and the best practices to achieve them are argued more strongly, including in the public sphere. Bringing them to the attention of other stakeholders such as supervisors and macroprudential authorities as well as reporting agents would be beneficial. Countries' experiences also suggest that it can be helpful for central bank statistical departments to proactively propose their services to supervisors as a way to facilitate data-sharing and data cooperation.

There is a need to create a new culture of data-sharing and cooperation. Political support at the highest levels (eg parliaments, treasuries or systemic risk boards) can be instrumental in promoting data-sharing and raising awareness of its benefits. As highlighted in the UK example, the move to greater data and information-sharing can be greatly facilitated if it is authorised and advertised from the top down. Promoting this business case will produce rewarding improvements for policymakers.

Data-sharing and data cooperation may not be easy to initiate. Obstacles may have to be addressed which require effort and a common willingness to cooperate, especially at the beginning. Therefore perseverance is essential in attaining these objectives.

This report describes some data and cooperation business models that have been implemented in a number of countries. These could be used as benchmarks, although starting points in data-sharing and cooperation differ and tailor-made solutions will have to be found in each country.

The report outlines a range of good practices and practical guidance, which are intended to serve all countries and organisations that wish to improve data-sharing and cooperation irrespective of the existing arrangements:

Good Practice 1 – Establish appropriate communication with stakeholders and seek proper institutional endorsement. It is important to establish a dialogue on the benefits of data-sharing on the basis of a catalogue of existing data collections and their possible uses. Establishing a single governance body with an overview of both statistical and supervisory data has a positive impact in sharing information with full knowledge of the facts.

Good Practice 2 – Ensure a clear legal basis to support data-sharing. Data-sharing may happen in the absence of an explicit legal framework, but this can lead to asymmetrical information, which can be disastrous in crisis situations, and ad hoc treatment of users with different tasks. A long-term solution should be pursued by seeking high-level institutional support for a clear legal foundation. If the existing legal framework does not allow for data-sharing for institutions' statutory tasks, the removal of all obstacles to statistical use and cross-checking of data should be sought.

Good Practice 3 – Establish fully fledged cooperation at all levels. It is of utmost importance that cooperation and dialogue among all parties involved be fostered, including within the same organisation, across agencies or with reporting agents, in order to achieve synergies and aim at common goals to facilitate data-sharing. Cooperation may help to streamline reporting burdens and decrease information asymmetry even if there are challenges in establishing a clear legal basis to support data-sharing.

Good Practice 4 – Collect common data using joint methodological and technical standards. Collecting granular data which can meet all user needs is important in promoting the benefits of sharing while avoiding some of the impediments. In fact, the legal constraints – if any – on data-sharing would fall away if both statisticians and supervisors had access to the same granular data source. This is facilitated by consistency of concepts, classification, methods and reporting standards. Statisticians may assist in data and quality management.

Good Practice 5 – Ensure sound measures to protect confidential information. Even when data are shared, they need to be protected, and key to this are eg secure IT infrastructures as well as confidentiality agreements and procedures for granting and monitoring access rights. Confidential data could also be transformed in different ways (eg anonymisation) before being shared, although such a fall-back solution may not be a preferred option considering in particular its implied costs.

Good Practice 6 – Formalise governance and cooperation arrangements. This can include introducing a memorandum of understanding (MoU) or similar formal arrangements which set out common rules to which institutions should adhere. The report gives practical guidance for compiling an MoU.

It is important that support be sought from newly established authorities responsible for macroprudential supervision or financial stability boards. Their work also requires timely and quality system-wide indicators on banking activities that need to be brought together from all available sources, irrespective of who the official owner of the underlying micro data may be. Given the number of possible stakeholders in data-sharing, the report illustrates the clear synergies to be gained from centralising data collection in the central bank statistical function.

# I.  Introduction

The financial crisis has made it crucial for central banks to deepen their understanding of the monetary policy transmission mechanism and to strengthen their growing role in financial stability analysis and/or macroprudential policy. This has necessitated the collection of additional banking data beyond those included in traditional money and banking statistics. Relevant information is generally available from supervisors. In the same vein, banking supervisors may benefit from traditional banking data collected by the central bank statistical function, which is increasingly being collected on a granular basis. This may provide supervisors with a complementary source of information. Reciprocal access to both sets of data can help central banks and supervisors to jointly build a comprehensive and coherent picture of developments in the banking and financial system and the risks that may arise.

The IFC membership survey conducted in 2012 indicated that many central banks consider the sharing of banking data  to be a real challenge. The reasons mentioned in the survey responses included legal constraints, a general reluctance to share confidential data and resource/reporting burdens. At the same time, the survey highlighted a number of benefits to enhancing bank data-sharing at both the national and the international level. The IFC Task Force on Data Sharing was established[1] to take stock of existing practices for data-sharing between supervisors and statisticians. The Task Force decided to carry out case studies to gain insights on ways that have been, or are being, used to overcome various constraints. It was also to elaborate practical guidance on improving data-sharing. Nineteen IFC institutional members opted to join the Task Force, representing different regions as well as both major financial centres and emerging and developing economies (Annex 1 lists the members of the Task Force).

Based on its work, the Task Force has prepared this report, which is structured as follows. Section II clarifies the terminology used. Section III outlines the general benefits of, and Section IV the impediments to, supervisory and statistical bank data-sharing. Section V describes existing national practices and covers aspects of data cooperation that go beyond mere data-sharing. Section VI identifies good practices and practical guidance, and Section VII concludes.

While this report focuses on data-sharing and cooperation between supervisors and central bank statisticians at the national level, the Task Force expects that its findings would also help to improve data-sharing practices at the international level, or to support tasks performed by other national authorities (non-bank regulatory and supervisory authorities, national statistical institutes, other supervisory authorities and ministries).

# II.  Scope

Supervisors and central bank statisticians address data requests to a largely overlapping reporting population, on the basis of two different policy requirements.

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[1]  The IFC Task Force terms of reference have been endorsed by the Governors and the IFC Executive.

While the two sets of data may be similar from a methodological point of view, they tend to measure developments in the banking system from different angles.

*Statistical information* is collected from individual banks and then aggregated to compile monetary and credit aggregates as well as cross-border banking flows and positions for balance of payments (BOP) and international investment position (IIP) statistics. All banks *operating* in a given country, irrespective of whether they are domestic or foreign, report data on a "solo" residency basis. The collection is based on international statistical standards, in particular the IMF Manual on Monetary and Financial Statistics.[2] Additional statistical information is also collected for the BIS international banking statistics by residency/location[3] that cover, amongst others, claims and liabilities on and to non-residents broken down by instrument, bank type, counterparty sector, currency and country of residence of the counterparty.

*Supervisory information* includes mainly data to measure credit, market and operational risk as well as indicators of solvency and liquidity.[4] In general, supervisors do not use aggregated information but rather information at the level of individual institutions. However, unlike users of statistical information, supervisors need data to be consolidated at the group level.[5] The Basel capital requirements form the basis for supervisory reporting in most countries. This also applies to the BIS consolidated banking statistics.

"Data-sharing" in this report should be understood as the sharing of banking data between supervisors and central bank statisticians, whether it takes place between two organisations or within the same organisation, eg between different central bank departments. Data-sharing should also be understood as the process of disseminating or granting access to data in the wider context of any statistical data collection exercise (see Section V). The broader process also involves data processing (eg data management, including data quality), analysis and evaluation.

## III.   Benefits of data-sharing

Data-sharing results in a number of benefits, in particular more comprehensive information for all decision-makers, coordination and cross-fertilisation across data collectors, better-quality data and a reduction in reporting burden.

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[2]    www.imf.org/external/pubs/ft/mfs/manual/index.htm.

[3]    www.bis.org/statistics/bankstatsguide.pdf.

[4]    They allow the calculation of risk-weighted assets and Tier 1 capital as well as indicators of market and operational risk. They may also include liquidity ratios, leverage ratios, large exposures and off-balance sheet risks.

[5]    Some information at the solo level for subsidiaries and branches, both local and international, may also be required.

## More comprehensive information for all decision-makers

Data-sharing allows monetary, macroprudential and microprudential analysis and policy to benefit not only from more data but also from more comprehensive, more detailed and more consistent data. The benefits of data-sharing are therefore not one-way. Sharing their respective data provides decision- and policymakers with additional evidence-based information:

- *Microprudential supervisors* benefit from access to statistical information which they would not collect otherwise. Statisticians increasingly collect granular data (loan-by-loan/security-by-security data on issuance and holdings) which can improve understanding of risks and cross-border and intra-institutional linkages. They could also be useful in case of resolution or bail-in. In addition, statistical information may be the only source of information for business model analysis to identify market shares and how banks make their profits as well as on branches' activities. Finally, while supervisors may often be more interested in banks' latest reports and the related quantitative or qualitative background information on the risk profile and solvency of individual institutions, having  consistent statistics in the form of time series may be useful, for instance for stress testing. Long series (ie those over periods of 20, 30 or more years) are typically needed to develop forecasts of stress based on past experience of strains.

- *Financial stability and macroprudential policymakers* benefit from access to supervisory data. The increasing involvement of central banks in financial stability and macroprudential tasks requires that analysts obtain access to this information. Supervisory data represent a powerful tool for identifying and assessing systemic risks. This is reflected, for instance, in the Financial Stability Board's (FSB) work on identifying and assessing systemic risk (mainly models of systemic linkages and interconnections) and related information needs. On the basis of these developments, it is increasingly acknowledged that recurrent firm-specific data are needed to support two main components of systemic risk assessment: macro stress testing[6] and network analysis[7].

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[6]  As part of their work to assess systemic risk, macroprudential authorities conduct stress testing that is normally **top-down** by which they analyse the potential impact of different shocks on components of the banking/financial sector by using specific models. The macro stress testing differs from the bottom-up stress testing carried out by supervisors, which is conducted at the level of individual financial institutions to assess the impact of shocks on the institutions themselves, though results can also be aggregated to get an overall picture (as eg in the recent EU-wide stress tests). While the macro stress testing is undertaken at the aggregated level, it requires balance sheet and P&L data relating to individual financial institutions. It is possible to use public data for this purpose, but the availability of supervisory data significantly increases the relevance and usefulness of macro stress testing.

[7]  Another important element of macroprudential authorities' work to assess systemic risk is the analysis of interconnections along different dimensions (institutions, sectors and countries). The crisis has shown that the nature and magnitude of systemic risk in the financial sector largely depends on the degree of "interdependence" or "interconnectedness" between financial institutions and between markets. This interconnectedness involves regulated and unregulated financial institutions, market infrastructures and financial instruments. The assessment of interconnectedness does not focus on the individual institutions or sectors but is based on their so-called "network", notably the concentrations of exposures and systemic linkages between them that could represent risks and vulnerabilities affecting the stability of the entire system. These exposures and interlinkages jointly characterise the financial network and its channels of transmission. Analysing

- *Monetary policy analysts* benefit from access to supervisory data. The need to monitor and identify impairments in the transmission process of monetary policy has increased following the crisis. Information on individual banks' profitability, adequacy of capital balance sheet quality and liquidity ratios allow for better insights on credit supply constraints that hamper transmission mechanisms. Data on large and cross-border exposures allow a better understanding of the distribution of risks and propagation within the banking system and the economy. In addition, as regards the implementation of monetary policy, information on credit institutions' financial soundness is relevant for conducting monetary policy operations and in emergency lending situations in order to assess the institutions' viability. Such information also supports central banks' investment operations.

## Holistic view based on cross-fertilisation

Increasing financial stability concerns and greater awareness of the interconnectedness of the financial system require a holistic analytical framework to capture the complex, multidimensional nature of financial activity.

Data-sharing allows the silo approach to financial analysis to be abandoned. It supports coordination and cross-fertilisation across functional areas and can contribute to better transparency and accountability of authorities. Overall, it allows users to draw conclusions which could not be drawn if data were kept in silos. Sharing expertise and obtaining a better understanding of how data are used can also enhance skills in both functional areas , irrespective of whether they are inside the same institution or in different institutions. Better evidence-based information will be the result.

## More coherent and better-quality data

Data-sharing, in particular if done at firm level, helps to improve the coherence and quality of the data methodologies, and the comparability of data, data standards and definitions. It makes it easier to address inconsistencies in data across sources and identify errors in the reported data. Differences in coverage, valuation and other aspects can be reconciled through an integrated approach.

Furthermore, central banks' increasing role in macroprudential policy has given rise to a need to ensure a coherent framework for integrating macro and micro information. Data from different sources should tell the same story – or at least, if they tell different stories the reasons for this should be understood. Access to both sets of data (supervisory and statistical) allows for a better understanding of possible differences.

the network requires firm-level information on positions between financial institutions as well as their interaction.

## Reduced reporting burden and reluctance by banks to provide necessary (new) data

Data-sharing enables reporting agents to report only once, thus minimising the reporting burden, especially if authorities also streamline data requirements (ie templates and report forms). Data-sharing is generally supported by the industry because of this reduction in reporting burden.

If the authorities concerned do not fully recognise the reduction in reporting burden as an important objective of data-sharing, they could run the risk of increasing duplication of reporting, potentially resulting in lower data quality and less cooperation from respondents.

Data-sharing by the relevant authorities in accordance with legal arrangements can also alleviate the need to develop new data. It may give authorities more bargaining power when asking for new requirements and make reporters more willing to provide additional data. Overall, taking respondents' burden into account can decrease reporting errors, contribute to higher data quality and make it easier to develop new statistics.

## IV. Impediments to data-sharing

Identifying good practices in data-sharing requires an understanding of the major impediments to the process, which vary in nature and are often interlinked. These include legal and confidentiality constraints as well as organisational, cultural and technical factors.

## Legal and confidentiality constraints

Statistical and supervisory data are generally collected under separate legal frameworks which each have their own strict rules on confidentiality. This can give rise to the following obstacles:

- *The legal frameworks may restrict data-sharing to support only specific tasks or uses.* Legal frameworks tend to be more restrictive with regard to the sharing of information for purposes other than those for which the information was originally collected. In addition, the legal basis for exchanging confidential information typically relates to statutory tasks, leaving specific functional tasks (eg statistical data collections) outside the scope of possible data exchange. This situation is problematic, especially for central banks that do not have supervisory responsibilities  but may still need supervisory information, even if only in aggregated form, to support their financial or macroprudential tasks.

- *The legal frameworks may allow data-sharing but limit it to specific conditions*, for example: (i) that the recipient authority be subject to effective sanctions in case of a breach of confidentiality; (ii) that reporters give prior consent to allow sharing of information; or (iii) that an MoU exist between the authorities that sets out in detail the data-sharing agreement and applicable protection measures. Engaging in data-sharing under such restrictions may be burdensome.

- *The legal frameworks may give rise to a variety of interpretations, resulting in a legal vacuum or a reluctance to share data.* For instance, what type of information can be shared? Who approves what can be shared? The lack of clear answers to such questions may lead institutions to act on the safe side and be reluctant to share data.

- *Some legal frameworks may foresee restrictive "blanket" confidentiality rules that cover all types of information, irrespective of whether there are real risks of a breach of confidentiality.* All information is then labelled and treated as confidential, and any breach in the rules may have a severe impact on the trust relationship with the authority sharing the information and with reporting agents. This may affect their subsequent willingness to report data. Blanket confidentiality rules may confuse what is truly confidential and what needs strong protection with what is possibly market-sensitive or simply inconvenient. They also make data-sharing more cumbersome.

## Organisational, cultural and technical aspects

Apart from legal and confidentiality constraints, various organisational, cultural and technical factors can play an important role in impeding data-sharing:

- *Impediments due to organisational setting:* When different departments or organisations are in charge of defining data requirements, fragmented reporting often results, especially if the data collection is also carried out by different departments and authorities. This may lead to a lack of awareness of what others collect, why and how they do so, and to a lack of cooperation.

- *Impediments due to behaviour:* Data-sharing may significantly affect the sense of ownership and trust of the staff involved. There may be a fear of misinterpretation or misuse of the data or a lack of awareness of the confidentiality rules in place. For the respective organisations themselves, there may also be a sense of ownership that can impact their perceived independence to design and prioritise own requirements. There may also be a sense of power relating to information and a perceived risk of losing "intelligence". Hence, the parties involved may refrain from sharing data unless there is a specific legal requirement to do so.

- The complexity and expertise required in various areas often leads to a *silo or narrow approach*. Various types of expertise are needed to address legal and confidentiality issues, and understand supervisory and statistical concepts/methodologies, statistical techniques, information and communication technology and dissemination tools. Efforts to understand what other experts mean require openness.

- The *perceived or real cost* may also hinder data-sharing as it may affect resources and efficiency, in particular at the early stages. Lack of expertise and technical aspects also represent a challenge in data-sharing. This may be exacerbated if there are no perceived reciprocal benefits to data-sharing.

- *IT challenges* are often underestimated. A lack of interoperable technologies and unifying architectures, standards and terminologies may represent serious obstacles. The standard for exchanging (supervisory) micro data is often XBRL, whereas SDMX is usually the standard for exchanging more aggregated statistical data. This is particularly true where IT systems have been developed

separately. Supervisors may need to engage in new tasks such as data management and statistical compilation, especially if confidentiality constraints do not allow data to be exchanged at the micro level. Supervisors may not have the expertise in compiling statistical information such as aggregates and time series. Again, they may refrain from engaging in any sharing of information as costs may outweigh their perceived benefits. Fortunately, new "big data" technologies can offer increased data-sharing possibilities as some accept a wide range of formats without a need for prior harmonisation. Reaping the benefits of these technologies requires technical expertise, which may be more available at central bank statistical departments than at supervisors.

# V.  Current practices

Practices with respect to data-sharing between central bank statistical departments and bank supervisors differ significantly from country to country. In some cases, data-sharing is part of broader data cooperation between the organisations involved.

## Data-sharing

Data-sharing arrangements have been established in many countries. They may take the form of internal or external dissemination agreements depending on whether the collection is performed by different authorities or by different departments within the same authority. The Task Force investigated practices in sharing of data at the aggregated and individual levels, with the latter being subject to more impediments. It also investigated both types of data-sharing: statistical information provided to supervisors; and supervisory information provided to monetary policy, financial stability and macroprudential policymakers.

In terms of sharing aggregated statistical data with supervisors, all central banks seem to have established such a data flow except the ECB and in Saudi Arabia, while in Ireland, Tunisia and Japan such data-sharing only takes place on a partial basis. The situation is similar for sharing data in the opposite direction: in all countries except Germany and Saudi Arabia, supervisors share aggregated data with statisticians. In France, large data-sharing has been agreed in 2014 and will be implemented in 2015.

Cross-country comparisons are cumbersome and should be interpreted with caution. However, Table 1 below indicates that access to individual micro data depends not only on the type of information but also on the task at hand and the type of end user.

A fully fledged sharing of individual micro data is not implemented in many cases. Where such data-sharing takes place, access is generally provided to relevant parties on a need to know basis. In some cases, data-sharing arrangements focus on regular exchanges, in others only on ad hoc exchanges. In some other cases, sharing may only take place in the form of reports and/or analysis.
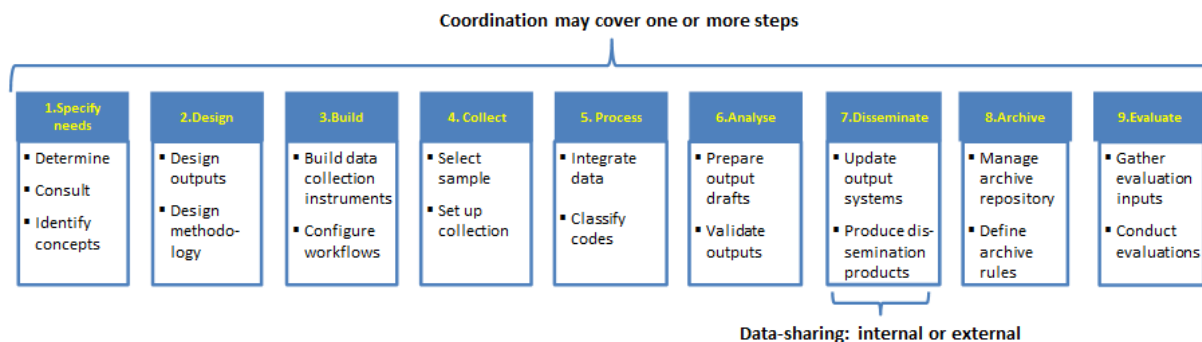
## Access to individual data by type of user
Table 1

| | Access to micro statistical information | | Access to micro supervisory information | | |
|---|---|---|---|---|---|
| | Supervisors | Macro-prudential | Statistical function | Monetary policy | Macro-prudential |
| Armenia | Yes | Yes | Partial | Partial | Yes |
| Brazil | Yes | Yes | Yes | Yes | Yes |
| Canada | Yes | Yes | Yes | Yes | Yes |
| Chile | Partial | Yes | Yes | Yes | Yes |
| ECB | No | Partial | No | No | Partial |
| Finland | Yes | Yes | Yes | Partial | Yes |
| France | Yes | Partial | Partial | Partial | Partial |
| Germany | Yes | Yes | No | No | Yes |
| Ireland | Partial | Yes | Partial | No | Yes |
| Italy | Yes | Yes | Yes | Yes | Yes |
| Japan | Partial | Partial | Partial | Partial | Partial[1] |
| Korea | Yes | Yes | Yes | Yes | Yes |
| Luxembourg | Yes | Partial | Yes | Partial | Partial |
| Malaysia | Yes | Yes | Partial | Partial | Partial |
| Saudi Arabia | | | | | |
| Serbia | Partial | Yes | Partial | Partial | Yes |
| Tunisia | Partial | Partial | Partial | Partial | Partial |
| Turkey | Yes | Partial | Partial | Yes | Yes |
| United Kingdom | Yes | Yes | Yes | Partial | Yes |

[1] The Financial System and Bank Examination Department (FSBED) of the Bank of Japan (BOJ) collects individual information including balance sheet data from banks for its function of ensuring financial system stability, parts of which are identical to information the supervisory authority collects. The information is shared with the BOJ's Policy Board, which is responsible for both monetary and financial stability functions of the BOJ, and is also used to serve as inputs to compile and publish financial statistics.

## Broader cooperation

The Task Force noted that data can be exchanged between bank supervisors and central bank statisticians in the broader context of data cooperation between these organisations. Any data collection process comprises a number of steps, including: (i) the specification and design of the data needs; (ii) the collection and processing of the information; and (iii) the dissemination and evaluation of outputs. Table 2 shows the detailed steps in this process. Data-sharing falls under step 7, ie data disseminaton.[8] But other steps in the data collection process can also be coordinated.

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[8] When the process reaches this phase, data collectors prepare dissemination products depending on the users of the data. Leaving aside the technical means used to disseminate these products, products may comprise data that are: (i) disseminated widely to the public (this mainly applies to the statistical work as in general statistical information is not only collected to support

| Collection process for supervisory and statistical data[1] | Table 2 |
|---|---|

**Coordination may cover one or more steps**

| 1.Specify needs | 2.Design | 3.Build | 4. Collect | 5. Process | 6.Analyse | 7.Disseminate | 8.Archive | 9.Evaluate |
|---|---|---|---|---|---|---|---|---|
| ▪ Determine<br>▪ Consult<br>▪ Identify concepts | ▪ Design outputs<br>▪ Design methodology | ▪ Build data collection instruments<br>▪ Configure workflows | ▪ Select sample<br>▪ Set up collection | ▪ Integrate data<br>▪ Classify codes | ▪ Prepare output drafts<br>▪ Validate outputs | ▪ Update output systems<br>▪ Produce dissemination products | ▪ Manage archive repository<br>▪ Define archive rules | ▪ Gather evaluation inputs<br>▪ Conduct evaluations |

**Data-sharing: internal or external**

[1] The table largely derives from the statistical business model developed by the Joint UNECE/Eurostat/OECD Work Session on Statistical Metadata (METIS), www1.unece.org/stat/platform/display/metis/Generic+Statistical+Business+Process+Model.
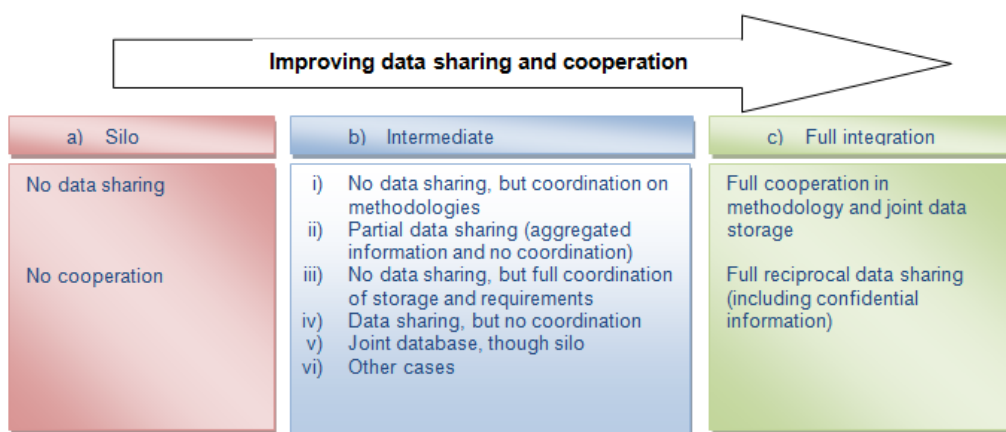
A few countries cooperate in the design of data requirements as well as in the storage of data, for instance through the establishment of a joint database. In Italy and Armenia, such a joint database has been established by the central bank. A joint database has been established in Canada, but the endeavour has been coordinated among various authorities. In Finland and France, a joint database has also been established between the central bank and the supervisory authorities. However, while in France reporting requirements have been fully integrated and coordinated, in Finland the detailed reporting requirements are not coordinated. It is interesting to note that in France, even if an integrated collection and storage has been implemented, data-sharing between statisticians and supervisors is not considered optimal and could be further improved (see Annex 6 for case studies). This means that cooperation in designing and storing data may be envisaged even though data-sharing at the micro firm level is limited, for instance by legal constraints. Other areas of data cooperation can be beneficial to data collectors in terms of improved data quality management, cross-fertilisation and reduced reporting burdens.

## A few considerations on data-sharing and data cooperation

While the long-term benefits of full cooperation and data-sharing may already have been recognised in a few countries, awareness of the benefits of such a coherent framework has increased since the recent financial crisis. The figure below shows that practices in individual countries can fall within a range having as its two extremes (a) a silo model in which partial individual statistical data are available to supervisors and macroprudential users, with no other users having access to individual supervisory information; and (c) full integration/cooperation with reciprocal data-sharing, including full cooperation on methodologies/reporting forms. An example of full integration is Canada, where the single centralised data collection is supported by a common cooperation framework.

policymaking, but also for the public at large); (ii) disseminated on the basis of restrictive rules, eg both within the same institution and across institutions, depending on legal constraints and/or agreements (external and internal dissemination).

Most countries  fall in the intermediate category (b) characterised by partial information-sharing solutions (or even no data-sharing) but coordination in terms of methodologies or storage arrangements. This is the case, for example, of France and Tunisia, where the data collection is done on a common platform but the statistical and supervisory data are partly separated by a Chinese wall, resulting in a solution that is only partially integrated (however, in France obstacles have been overcome in the course of 2014). Another example of an intermediate solution is Brazil, where there is full data-sharing in both directions and common data storage solutions, but the cooperation on designing reporting requirements was not fully implemented until recently.

**Improving data sharing and cooperation**

| a)  Silo | b)   Intermediate | c)   Full integration |
|---|---|---|
| No data sharing<br><br><br>No cooperation | i)   No data sharing, but coordination on methodologies<br>ii)  Partial data sharing (aggregated information and no coordination)<br>iii) No data sharing, but full coordination of storage and requirements<br>iv)  Data sharing, but no coordination<br>v)   Joint database, though silo<br>vi)  Other cases | Full cooperation in methodology and joint data storage<br><br>Full reciprocal data sharing (including confidential information) |

While case (c) may require additional action to improve data-sharing and cooperation, in all other cases improvements may be pursued. In fact, even where data-sharing is already implemented, such as Chile and Korea, improvements are still sought. In Chile enhancements are envisaged in terms of formalising the information exchanges in an MoU and centralising the reporting requirements and database system. In Korea more confidential data exchanges are being prepared by developing a procedure for more secure data-sharing.

It is useful to note that the exact scope of data-sharing and cooperation may be independent of institutional settings. Indeed, even in countries where the monetary policy and supervisory functions are performed by two separate institutions, full data-sharing and cooperation may take place.

# VI.   Good practices and practical guidance for data-sharing

There is no "one size fits all" starting point for data-sharing, and data cooperation is different in each country. However, some good practices and practical guidance may help improve the situation. The benefits of data-sharing are generally clear in the minds of statisticians, but the same is not always true for the end users of statistics. Statisticians therefore should be proactive, and may need to initiate the process.

Before suggesting or embarking on coordination and/or data-sharing with other parties, a few key questions may be considered:

- Where do we stand in terms of data-sharing and overall cooperation between statisticians and supervisors? How could they be improved? Is data-sharing justified?

- What is the ultimate policy objective of data-sharing and cooperation?

- Have the potential benefits and risks been assessed?

- What would be entailed, and is the effort required proportionate to the issue to be addressed?

- Are there alternative ways of achieving the objective?

Clarifying these issues may help in communication with other stakeholders. Against this background, the following good practices and practical guidance may be of use.

## Good Practice 1 – Establishing appropriate communication with stakeholders and seeking proper institutional endorsement

Good communication with relevant parties and clear presentation of the benefits accruing to policymakers are essential. Then, proper institutional endorsement is needed by all parties involved as data-sharing and cooperation may require, especially in the initial phases, dedicated human and IT resources. Political support at the highest levels (eg parliament, the treasury or systemic risk board) would help to get informed endorsement of data-sharing and its benefits. Once the political support is ensured, efforts to build a culture of information-sharing and cross-fertilisation at the operational level can be pursued. This requires good communication from management to all staff levels.

### Practical guidance

- Establish a dialogue on the benefits of data-sharing. The initial communication will require informal discussions on the benefits of data-sharing at the staff and management levels of the various institutions and departments involved. This initial discussion could begin with a stocktaking of existing data collections and a discussion of the rationale for collecting particular types of information by different authorities. This might naturally lead to identifying the scope of data for which sharing may be envisaged, realising the benefits of data-sharing and identifying the impediments to doing so. The different parties involved need to understand collectively the benefits of data-sharing and how to overcome impediments to it. At that stage, the level of ambition (reciprocal exchange of data, setting up of a joint database, coordination of reporting forms etc) and form of cooperation (formal or informal) could be determined.

- Establish a single senior committee or governance structure with an overview of both the statistical and supervisory data. This is already in place at the Bank of Italy and US Federal Reserve.

- Sometimes senior management or executives might become involved at the beginning of the process to address cost-sharing considerations. In a second step, data-sharing could be supported at a proper institutional level as it is essential to have buy-in at the senior management level.

- Sometimes political support may be achieved only when special events occur that make the need for data-sharing clear. The case study in Annex 4 illustrates the developments in data-sharing and access in the United Kingdom which were affected by exceptional events. This highlights that it is beneficial for statisticians to proactively communicate with supervisors about the benefits of data-sharing in normal times.

## Good Practice 2 – Ensuring a clear legal basis for data-sharing

In order for all decision-makers to reap the full benefits of data-sharing and cooperation, a legal framework supporting fully fledged reciprocal data-sharing arrangements is essential. Such a framework could allow regular data-sharing at firm level or micro level if deemed necessary to support the tasks of the authorities concerned. If changes in the legal framework cannot be pursued to achieve this, good practice would encourage clarifying the existing legal framework and understanding what can and cannot be shared. In any event, as noted above, a legal framework preventing the sharing of confidential information does not hinder other areas of data cooperation.

Practical guidance

- In a legal framework that supports the sharing of information, the scope of data-sharing may still need to be clarified, as well as who decides what to share and how often.

- If the framework does not support or is silent on data-sharing, an exchange of information may still take place, at least at the aggregated level. As a longer-term solution, changes to the legal basis may be pursued. This would require high-level institutional endorsement and may require embarking on a complex legislative procedure (especially if it requires the involvement of external stakeholders such as parliament). If this path is chosen, changes to the legal framework should not only support data-sharing in general but also remove specific obstacles to sharing confidential information to support the tasks of official third parties. This would allow relevant users and policymakers in the macroeconomic, macroprudential and microprudential domains to obtain the "full picture" needed for their analysis.

- If there is no proper legal basis for data-sharing to support specific statutory tasks, then the removal of legal barriers could be sought to support statistical tasks and data cross-checking. Supervisors may not have the required expertise in data management and compile aggregate data in cases where confidential micro data may not be used. The lack of legal provisions may prevent supervisory authorities from engaging in any data-sharing agreement, even for aggregated data.

- Legal frameworks may also need to ensure that the right balance is found between the need for confidentiality and the possibility of data-sharing to support specific tasks, in normal times as well as in crisis situations.

## Good Practice 3 – Establishing fully fledged cooperation at all levels

Data-sharing requires cooperation and agreement among all involved parties. There are also benefits in cases where no data-sharing takes place but cooperation is established, for example, in streamlining data requirements addressed to reporting agents in order to decrease the reporting burden, or in establishing an integrated database (to which access is tailor-made depending on the user). Any type of agreement entails organising the cooperation between parties and the communication with staff members involved.

Cooperation and dialogue among parties within the same organisation or across authorities are important. Reporting agents may also need to coordinate on issues such as data collection from banks, reporting formats and technical standards.

### Practical guidance

Depending on the scope, the cooperation may need to be organised at various levels.

At the strategic level:

- While discussion may develop and strategic decisions may be taken before institutional endorsement is sought, further discussions may take place on a regular basis to keep up with changes and possible enhancements to the initial arrangements. Furthermore, if confidential data are shared on an ad hoc basis, there may be a need to spell out more formally how data-sharing should be shaped and who should have access to what type of information. These discussions would need to take place at the strategic level via an inter-agency or interdepartmental committee which may also develop workable arrangements.

At the working level:

- A contact person from each party involved could be appointed.

- An information campaign could be conducted to ensure that relevant officers are familiar with all arrangements, including data, metadata and any IT infrastructure/software used.

- Joint activities such as joint training seminars, staff exchanges or internships could be organised in order to enhance the mutual relationship.

- Regular meetings could be organised to share methodologies and validation experiences, review or propose new information requirements or regulations, share analysis and promote a common quality assessment of the information provided by reporters, discuss foreign regulations as well as international or other supervisors' legal initiatives, share good practices on the treatment of confidential information and develop ways to share information from third parties.

- Joint dissemination of new statistics or new methodologies could be organised.

- Results of international experiences of both institutions (eg LEI initiative, IFC meetings and seminars) could be shared.

- Quality management of data could be performed (eg by developing and ensuring consistent quality management instructions, automated data validation at the system level and similar revision policy rules).

## Good Practice 4 – Collecting common data using joint methodological and technical standards

It is recognised good practice for the collection of granular data to meet all user needs. Granular data can be collected for statistical or supervisory purposes. If these data are collected for both purposes, legal constraints may fall away as it may no longer be a matter of supervisors exchanging data with statisticians, or vice versa – both would use the same source. This might help resolve the present dilemma in which legal constraints inhibit sharing but reform is difficult because the legal arrangements are fragmented. In Europe (at least in the euro area/Single Supervisory Mechanism), collecting common data would also be consistent with the recommendation of the Groupe de Réflexion on the Integration of Statistical and Supervisory Data (GRISS) for a European Reporting Framework.

### Practical guidance

Depending on the overall objective for the common data collection covering all user needs, some or all of the following issues may need to be addressed:

- The use of standard concepts, classifications and reporting agents, and a common methodology across sources, promotes coherence, which is an important component of quality. Closer cooperation between institutions and the integration of data sources is also thereby encouraged even for countries where any form of data-sharing is precluded for legal reasons or where other preconditions for sharing may not be fully established. Exchanges on methodologies and cooperation on defining reporting forms can already be a significant help (see the example of France in Annex 6). Implementing such cooperation can help minimise reporting agents' reporting burden. Note that coherence does not necessarily imply full numerical consistency, but rather consistency of methods and collection standards. In some jurisdictions, statisticians have already done extensive work on detailed methodologies, metadata, definitions and glossaries, as well as on bridging matrices between supervisory and statistical reporting (see also Annex 9 for a description of the mapping between the supervisory and statistical reporting standards in Europe). The involvement of reporting agents may also be of relevance in this area. In any event, integrated granular data models may help to address the obstacle of lack of knowledge of regulatory and statistical concepts.

- Statisticians may assist supervisors with data quality management, saving them time, as well as the translation of user requirements into data models. Statisticians may also have greater independence and credibility to produce politically sensitive indicators.

- Cooperation may focus on various IT aspects (eg IT tools, software and/or experience in managing databases). If data-sharing is involved, exchanging data may necessitate a mapping from XBRL to SDMX standards as well as the development of a common data dictionary. This requires resources and close cooperation (see Annex 9).

- Establishing integrated collection and IT storage could also be envisaged, even if the legal framework does not support data-sharing. The lack of a legal basis may not completely hamper the implementation of this solution as tailor-made access rights may be implemented in accordance with legal constraints. An

integrated granular data model may help address a lack of knowledge in regulatory reporting and/or statistical classification as raw data are simpler and may help to foster cooperation and respective "intelligence".

- The scope of data-sharing could be defined and may be revisited over time. Even if data-sharing at the aggregated level can be pursued, supervisors may not have the required expertise in aggregating information. Closer cooperation in data management and quality may facilitate data-sharing.

- Cooperation on the analysis of the data may help break silos. It may also help to understand what type of supervisory and statistical data are available and how they could be useful for analysis by others. This may facilitate understanding of others' responsibilities, build trust between departments and/or authorities and help fine-tune any future, more ambitious, cooperation agreement.

## Good Practice 5 – Ensuring sound measures to protect confidential information

Even if the legal framework supports the exchange of confidential information and its protection from undue disclosure, there may still be practical hurdles to sharing such data. Authorities may need to build up trust and reach a common understanding of measures to safeguard confidentiality.

Practical guidance

- A secure and efficient IT solution will facilitate and smooth the data-sharing process over its entire cycle, through collection, processing, analysis, storage and dissemination. In most cases, challenges in sharing data are due to incompatible data sets, thus data conversion or reformatting using specific software may also be required. Procedures may have to be put in place to monitor and detect/track access to confidential data.

- Dissemination may need to be based on a "need to know" principle, which should be agreed among parties to ensure the appropriate level of access and prohibit use of the data for unspecified purposes. Determining access would remain the responsibility of the actual data owner, who would determine the degree of confidentiality and the access rights of users. The latter could be controlled in a generic way for certain categories of users or on an ad hoc basis upon demand. Access may have to be monitored and reviewed periodically.

- Employees with access to confidential information may be asked to sign specific confidentiality agreements.

- Audits of security practices may have to be performed.

- Confidentiality measures may distinguish between levels of sensitivity of the information (eg personal data, market-sensitive data that can have a crucial influence on individual entities or the financial market). Agreement on various sensitivity levels may need to be reached among parties involved in data-sharing and appropriate actions may need to be taken to ensure the non-disclosure of confidential information.

- The authorities may need to obtain prior approvals for data-sharing from reporters when collecting their reports.

- Data could be made available in their original form or transformed in different ways. Confidential data may be anonymised. A list of practical tools to facilitate access to confidential data is available in <u>Annex 8</u>.

## Good Practice 6 – Formalising governance and cooperation arrangements

Good practice is to enter into a formal arrangement such as an MoU, agreement or protocol/service level agreement that sets out common rules to which the organisations involved would adhere. This arrangement would typically explain the background and scope of cooperation and data-sharing, establish responsibilities of the different parties involved and set up a coordinating and monitoring body.

A governance document should be drafted in clear and concise language that is easily understood. It should be noted that drafting and adhering to such an agreement does not in itself imply any legal obligation. However, an agreement can help in justifying data-sharing and demonstrate that there has been proper consideration and documentation of the relevant compliance issues.

### Practical guidance

The document could detail the following:

- The organisations that will be involved in the agreement
- Type of data and terms of the agreement[9]
- Benefits of the agreement and use of data
- Basis for cooperation or data-sharing
- Information on governance and form of cooperation
- IT: use of common data standards and protection measures
- A review of data-sharing arrangements

Annex 7 provides a more detailed description of this type of agreement.

It is important to realise that putting in place a formal arrangement may discourage authorities from further enhancing the data-sharing model. It should be recognised that the objectives and practices of data-sharing may have to be adapted over time. Hence, an MoU would also spell out how changes in data-sharing/cooperation arrangements as well as the governance of the MoU would be handled in future. Model review clauses and arrangements could be adopted to ensure flexibility of future cooperation (eg to collect new data or to adapt them in case the legal basis is enhanced). Any formal governance document could be confidential or made public. Making it public would have a number of advantages, in particular that of informing banks about how data-sharing takes place and is governed.

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[9] There may also be a need for greater clarity on the details of the provision as the law may be general and still open to interpretation. If the legal provisions support data at aggregated level, what is to be considered an aggregate? If the legal framework allows data sharing under special circumstances, these circumstances may be spelt out. What is the retention period for data shared?

# VII. Conclusions

This report has looked at data sharing between central bank statistical departments and bank supervisors. It suggests that such data-sharing should be viewed in the broader context of cooperation in the collection, compilation and dissemination of statistical and supervisory banking data. The report illustrates the clear synergies to be gained from centralising data collections through the statistical function of the central bank, but other models of cooperation can also be efficient. In any case, central banks' growing role in financial stability policy and increasing responsibility for macroprudential supervision and support for financial stability boards should be taken into account. These new tasks require timely and quality system-wide indicators on banking activities that need to be brought together from all available sources, irrespective of the official owner of the underlying micro data.

The integration of various large micro databases is an important new development that affects the scope of data-sharing and cooperation. It allows information from different sources to be linked, greatly improving the analytical capabilities of users and analysts. Central bank statistical offices are studying and implementing such solutions and exchanging information on useful approaches in this area.[10] It is important that these benefits and the best practices to achieve them be argued more strongly, including in the public sphere. Bringing them to the attention of other stakeholders such as supervisors and macroprudential authorities as well as reporting agents would be beneficial. Countries' experiences also suggest that it can be helpful for central bank statistical departments to proactively propose their services to supervisors as a way to facilitate data-sharing and data cooperation.

The need to create a new culture of data-sharing and cooperation is highlighted. Political support at the highest levels (eg parliaments, treasuries or systemic risk boards) would help to get informed endorsement of data-sharing and its benefits. As highlighted in the UK example analysed in Annex 4, the move to greater data- and information-sharing can be greatly facilitated if it is authorised and promoted from the top down. Promoting this business case will produce rewarding improvements for policymakers.

Data-sharing and data cooperation may not be easy to initiate. Obstacles may have to be addressed which require effort and a common willingness to cooperate, especially at the beginning. Therefore perseverance is essential in attaining these objectives.

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[10]    See J Cadete de Matos, A Schubert and P Van den Bergh, "Key points of the Porto Workshop on Integrated Management of Micro-Databases", IFC Bulletin, no 37, www.bis.org/ifc/publ/ifcb37_keypoints.pdf.

# Annex 1: List of members of the IFC Task Force on Data Sharing[11]

| | |
|---|---|
| European Central Bank[12] | Aurel Schubert (Chair) |
| | Nicole De Windt (until March 2014), Mariagnese Branchi (Secretariat) |
| Bank for International Settlements | Paul Van den Bergh / Bruno Tissot (IFC Secretariat) |
| | |
| Central Bank of Armenia | Lusine Harutyunyan |
| Central Bank of Brazil | Katherine Hennings |
| Bank of Canada | Trevor Sabean (until December 2013), Marllena Chitu |
| Central Bank of Chile | Gloria Peña |
| Bank of Finland | Laura Vajanne |
| Bank of France | Christian Pfister |
| Deutsche Bundesbank | Leif Lengelsen |
| Central Bank of Ireland | Joe McNeill |
| Bank of Italy | Francesca Monacelli |
| Bank of Japan | Naoto Osawa |
| Bank of Korea | Jooyung Lee |
| Central Bank of Luxembourg | Shirin Madani-Beyhurst |
| Central Bank of Malaysia | Hock Chai Toh |
| Saudi Arabian Monetary Agency | Ibrahim Binmayouf |
| National Bank of Serbia | Jelena Maravic |
| Central Bank of Tunisia | Ridha Douma |
| Central Bank of the Republic of Turkey | Timur Hulagu (until November 2013), Ahmet Adnan Eken |
| Bank of England | Ben Dubow |

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[11]    This report benefited from the valuable assistance provided by Emma Claggett (Editorial Services).

[12]    Colleagues that contributed to this report also include: Paul van der Ark (ECB) for Annex 9.

Cutoff date: 30 September 2014

# Annex 2: Data-sharing in the area of banking information – summary of responses to the 2012 IFC Membership Survey

The 2012 IFC membership survey examined the collection and sharing of data in the area of banking information. The results showed that the legal power to collect certain types of banking data depends on whether or not the banking supervisory task is performed by the central bank itself or by a separate supervisory authority. It should be noted that 57% of respondents indicated that central banks have such supervisory responsibilities.

The division of tasks also seemed to have a bearing on the extent to which data are exchanged at the national level. The survey indicated that when the banking supervisory tasks are performed by the central bank, full sharing of data takes place in 57% of cases, while partial sharing of data occurs in 43%. When the banking supervisory tasks are performed by a separate authority, the extent to which data are shared appeared to be lower, with only 44% for full data-sharing and 56% for partial data-sharing. The main obstacles to data-sharing were similar in both setups:

- Legal constraints: 31% when the task is performed by the same authority; 40% when the task is performed by two separate institutions

- Inconsistencies in data requirements (eg in definitions, coverage, IT systems) 31% when the task is performed by the same authority; 20% when it is performed by separate authorities

Regarding data-sharing at the international level, the survey asked about the main obstacles to sharing individual banking data with international organisations. Of the respondents, 74% claimed that legal constraints are the biggest hurdles, in particular banking secrecy laws or other legal provisions safeguarding the confidentiality of information. Other reasons mentioned were:

- Reluctance of supervisors/central banks to share confidential data collected for other than legal or contractual reasons (29%)

- Strong concerns voiced by financial institutions for fear that it may hamper their strategic management (19%)

- Significant reporting burden, particularly in compiling data in internationally standardised form, and in constructing new IT systems needed for submitting data (17%)

- A need to request permission from reporting agents

The results indicated that data-sharing at the national and international levels depends on a variety of factors: the statistical domain, the authorities involved in the collection and exchange of information, the legal framework and the confidentiality of the information. Indeed, central banks use a wide range of financial and economic statistics, and often the collection and compilation of information is fragmented among various stakeholders.

Data-sharing was considered by many central banks to be a real challenge. Improvements would be welcomed and beneficial as they might also respond to the challenge of reducing the burden on reporting agents. In the area of banking, the

survey indicated a rather low level of data-sharing among authorities. As a result, a rather high percentage of central banks and supervisory authorities collect data directly twice. However, the question that arises is whether the duplicate collection takes place because smooth data-sharing is not feasible or the other way around, ie no data-sharing takes place because data are collected directly by authorities that need them separately for the performance of their own tasks.

Overall, the survey indicated possible ways to enhance data-sharing at both the national and international levels. At the national level, the following suggestions were put forward:

- Bilateral or multilateral MoUs (50%)

- Changing national legislation (45%)

- National agreement translated into regulations or practices (36%)

- General national agreement on data-sharing (35%)

- Best practices or guiding principles on data-sharing (29%)

At the international level, almost two thirds of the respondents agreed that "international agreement on sharing data that is then translated into national laws, regulations or practices" and an "international treaty on data-sharing" would be the best solutions (62% and 47% of respondents, respectively). The proposal to create, or assign to an existing authoritative international statistical organisation, the role of designing, or at least endorsing, a set of practices/guidelines relating to data-sharing was supported by 35% of the respondents. Furthermore, to overcome secrecy/confidentiality constraints, the most popular solutions cited were: limiting data-sharing to aggregates (31% of the responses), having an international organisation warehouse the data and distribute them, or aggregates, as appropriate, and using technological solutions to mask individual names (17%).

# Annex 3: Terms of reference of an IFC Task Force on Data Sharing

The 2012 IFC Membership Survey confirmed the need to improve data-sharing between statistical organisations at the national and international level. In particular, efforts need to be made to overcome confidentiality constraints and obstacles to the exchange of data. Consequently, the IFC has agreed to set up a Task Force to review practices concerning data-sharing.

The Task Force is mandated to take stock of existing practices regarding the sharing of data, in particular with respect to banks' balance sheets and activities. Case studies would provide insights on ways that have been, or are being, used to overcome different constraints. Practical guidance on improving data-sharing may then be elaborated.

The starting point of the work of the Task Force will be the 2013 IFC Membership Survey, which will be dedicated specifically to data-sharing practices. This exercise may provide insights on practical ways that have been, or are being, used to overcome different constraints. Bilateral contacts with IFC members may also be established where deemed relevant. In addition, particularly concerning data-sharing at the international level, experience with existing and newly established data-sharing exercises in the area of banking could be reviewed, including the legal arrangements.

The Task Force will be chaired by IFC Executive member Mr Aurel Schubert of the ECB. Each Committee member will be able to nominate one member of the Task Force. However, the final composition of the Task Force will be decided by the IFC Executive in order to ensure a balanced representation of IFC members of different regions as well as developing, emerging and developed countries. Also, the size of the Task Force will need to remain manageable. The expertise of the Task Force needs to be as broad as possible. Therefore, if appropriate, the Chair of the Task Force may invite other relevant parties, such as legal experts and bank supervisors, to attend meetings. In addition, the Task Force may be opened to selected observers of relevant international bodies.

The Task Force will be a temporary group. One or two physical meetings may be organised, but a substantial part of the work will be conducted electronically (eg via e-mail and the eBIS room of the IFC).

The secretarial support for the Task Force will be provided by the ECB, which will liaise and coordinate with the IFC Secretariat at the BIS.

The Chairman of the Task Force will keep the IFC Executive informed of progress being made. He will also inform the Committee of the progress of its work at the 2013 Committee meeting. The Task Force will deliver its final report towards the end of 2013.

# Annex 4: Benefits of data-sharing – the UK experience

## Background on the UK authorities

The benefits of data-sharing derive from its ability to promote the authorities' objectives. The examples in this note cover a period of a few decades in which the allocation of objectives between different authorities has changed. Notably, the responsibility for banking supervision transferred in 2001 from the Bank of England (BoE) to the Financial Services Authority (FSA), which became both prudential and conduct supervisor for all types of authorised financial services firms in the UK. Then on 1 April 2013 the FSA was abolished and replaced by the Prudential Regulation Authority (PRA) and Financial Conduct Authority (FCA) as described below.

In addition to these organisational changes, the objectives of the UK authorities have also evolved and increasingly been written into statute law. Despite all these changes, the current objectives of the various authorities are a good starting point for evaluating the costs and benefits of data-sharing.

This section describes the objectives of the UK authorities and how they are allocated. It provides some brief details on the main kinds of data received by the authorities and how they share them.

## Protecting and enhancing the stability of the financial system[13]

This is an objective of the BoE and primarily falls to its Financial Policy Committee (FPC) supported by the work of BoE's macroprudential analysts, as well as the PRA and FCA. The BoE does not have a power to collect data but can require the PRA or FCA to provide it with data they collect. The BoE and its supporting macroprudential analysts will use regulatory data from the PRA and FCA, as well as statistical data collected by the BoE for monetary policy purposes.[14]

## Promoting the safety and soundness of regulated firms[15]

This is an objective of the PRA which relates to deposit takers (mainly banks), insurers and certain of the largest investment firms. The PRA has significant powers under domestic and EU legislation to collect data on a variety of topics which support this objective, including on firms' capital, liquidity and counterparty exposures. These data can be shared with the BoE (must be shared, if relevant to the Bank's financial stability objective) and its supporting macroprudential analysts and other parts of the BoE working on monetary policy, as well as the FCA.

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[13]   Bank of England Act 1998 as amended by the Financial Services Act 2012.

[14]   Macroprudential analysts and the PRA also use data collected by BoE on a voluntary basis to contribute to the BIS international banking statistics.

[15]   Financial Services Act 2012.

## Protection for consumers and protecting and enhancing the integrity of the UK financial system[16]

These are objectives of the FCA. The objectives relate to all kinds of financial services firms authorised in the UK including deposit takers, insurers, investment firms, lenders which do not accept deposits and financial advisers. Like the PRA, the FCA has significant power to collect data and does so on matters relating to authorised firms' conduct in retail and wholesale markets as well on individual transactions in the capital markets. These data can be shared with the PRA, the FPC and its supporting macroprudential analysts and other parts of the BoE working on monetary policy.

## Price stability[17]

The BoE has this objective which primarily falls to its Monetary Policy Committee (MPC) supported by the work of BoE's macroeconomists. Related to this objective, the BoE has the power to collect information including statistical data from banks and building societies. The BoE shares these data with the PRA, the FCA and macroprudential analysts supporting the FPC (and for financial stability purposes, can share them with the Treasury, the ECB and other countries' finance ministries, central banks and financial regulators). While macroeconomists typically do not require access to the detailed, firm-specific confidential data discussed here, data-sharing may help meet this objective, at lower cost both to the authorities and to reporting institutions.

## Example 1: BCCI

One major incident shaping the attitude of UK authorities (particularly supervisors) to data-sharing was the collapse of the Bank of Credit and Commerce International (BCCI) in July 1991. BCCI, one of the 300 or so branches and subsidiaries of foreign banks operating in London, failed because of widespread fraud. The failure of the UK branch caused thousands of retail customers as well as 28 local authorities (municipalities) to lose deposits.

The incident was the subject of a government-sponsored inquiry ("the Bingham Inquiry") and close parliamentary scrutiny. Part of the problem with BCCI was a complex international group structure that made effective supervision difficult. The Bingham report identified constraints on the sharing of information with countries outside the EU and between authorities in the UK.

Such problems were a factor behind the development of recommendations by the Basel Committee on Banking Supervision for greater access of host-country supervisors to information from home-country supervisors.[18] In subsequent years, UK authorities have been active participants in agreements to exchange information with fellow supervisors. For example, the FSA – the UK prudential and

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[16]   Financial Services Act 2012.

[17]   Bank of England Act 1998.

[18]   "Supervisory authorities should possess the right to gather information from the cross-border banking establishments of the banks or banking groups for which they are the home country supervisor". Minimum Standards for the Supervision of International Banking Groups and their Cross-Border Establishments. BIS (1992).

conduct supervisor or all UK-authorised firms from January 2001 to March 2013 – participated in memoranda of understanding, covering information exchange with over 40 non-UK organisations. These MoUs have been carried over by the PRA and FCA. These MoUs do not create binding legal obligations but set out the expectations of participants for appropriate sharing of information.[19]

The Bingham Inquiry also highlighted internal communication as a weakness of the Bank. Failure to share information within supervision and with other areas made it more difficult to join the dots to see the problems relating to BCCI. As a result, the BoE "set out a whole series of instructions [to staff] about what sort of information should be passed across the Bank."[20] These instructions clarified that, legally, the Bank was viewed as one institution and that something that was known to one part would be presumed to be known to all parts. The instructions encouraged staff to be proactive in considering what information they need to share or what information they may need from other parts of the organisation. They reminded staff that the Bank had an excellent record of not disclosing confidential information and that the Bank's culture of trust should ensure that information flows freely and safely within the organisation.

## Example 2: Financial crisis 2007–08 – domestic developments

Before this crisis, individual institutions' regulatory data was not routinely and systematically shared outside Supervision, although the relevant legal gateways existed to permit sharing when necessary. At the time of the 2007–08 crisis, banking supervision was the responsibility of the FSA.

An early government response to the crisis was to pass the 2009 Banking Act. This Act did not change the legal gateways between the BoE, PRA and FCA but did bring about two important changes increasing the motivation for information-sharing, and in particular for the BoE to get systematic access to regulatory data.[21] These were:

- the creation of the new Special Resolution Regime (SRR) as part of the BoE; and

- the BoE being given a new Statutory Financial Stability Objective.

The creation of the SRR increased the BoE's responsibility to understand how far any UK-authorised bank was from needing to be resolved. This required systematic risk analysis across the population, supported by the appropriate data.

As a result of these changes the BoE commenced the Banking Sector Monitoring (BSM) Project to provide financial stability analysts with ongoing systematic access to the regulatory data.[22] BSM remains the main tool of financial

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[19]   The PRA international MoUs are available at
       www.bankofengland.co.uk/about/Pages/mous/international.aspx.

[20]   BoE Governor Robin Leigh Pemberton in oral evidence to the House of Commons Treasury and Civil
       Service Committee, 4 November 1992.

[21]   The Banking Act did, however, introduce a new "financial stability" gateway for data sharing from
       the BoE to the Treasury.

[22]   Internal BoE presentation to Centre for Central Banking Studies, "Banking sector monitoring, a data
       warehouse approach".

stability analysis for regulatory data and consideration has been given to how its use may be extended to the new PRA.[23]

The crisis also promoted the systematic sharing of institutions' statistical data for financial stability purposes. Some of these data are contained in the BSM tool. The statistical data have proved particularly useful for financial stability purposes because they identify banks' exposures to the UK and economic sectors within it in a way which at present is not available in the regulatory data.

Such data have been useful in understanding systemic banks' common exposures for risk analysis and in the design of macroprudential policy instruments. For example, sectoral statistical lending data has proved valuable in the design of the BoE's Funding for Lending Scheme, which aims to sustain bank lending at a time of weak economic outlook and tightened regulatory capital and liquidity requirements.[24]

## Example 3: Financial crisis 2007–08 – international developments

The financial crisis also highlighted the need for a new kind of information-sharing between supervisors. Until the crisis, the practice of UK and other supervisors was to determine the need for regular supervisory data-sharing on the basis of colleges of supervisors focused on individual firms. The limitation of this approach is that it prevents supervisors from understanding the wider linkages of any one firm to the financial system. A bank's supervisor (or college of supervisors) will understand to whom that bank is exposed, but they may not have a full picture of the exposures of other banks to that institution.

This led to the sharing of counterparty exposure data on 19 of the largest global banks through a mechanism organised by the Senior Supervisors Group (SSG) – a group of 13 supervisors, including the FSA, in major developed economies that are home to the largest banks. The arrangements were established rapidly in response to the failure of Lehman Brothers in 2008.

The mechanism established by the SSG pools data from the contributing firms to allow interconnections and common exposures to be understood. Such information can be useful for both crisis management (understanding the impact of a failure of firm X) as well as ongoing monitoring of the financial system.[25]

This exercise has now been placed on a more formal footing with the BIS providing the data hub and an expanded set of data being shared, and shared to a greater extent, on the basis of a multilateral framework agreement.[26] The PRA and BoE currently report data for three globally systemically important banks (G-SIBs) into this hub. For the first time, supervisors will receive confidential data on global banks that may not be significant direct participants in their jurisdiction. Such access to these data is important, however, because of the indirect effect the failure of these firms could have.

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[23]     Bank of England Annual Report 2012.

[24]     The Funding for Lending Scheme, Bank of England Quarterly Bulletin, 2012 Q4.

[25]     Lessons Learned from the SSG Counterparty Data Collection Exercise. FSB Data Gaps Workshop, 2 May 2012.

[26]     FSB Press Release, April 18, 2013.

## Example 4: The abolition of the FSA and creation of the PRA and FCA

In July 2010 the newly elected UK government announced its intention to abolish the FSA and replace it with separate conduct and prudential regulators – the FCA and PRA. The government was keen that the newly created regulators cooperate closely on information and data-sharing.

To this end, an MoU was drafted between the FCA and PRA and subjected to public consultation.[27] The stated purpose of the MoU is to ensure that regulatory reporting processes for those firms supervised by both the PRA and the FCA are efficient for the regulators themselves and firms. The arrangements aim to ensure that these "dual-regulated" firms are only asked to submit data sets once and, to help achieve this, the regulators will share data where it is appropriate to do so. Another aim is to support the regulators' objectives of protecting consumers and ensuring the safety and soundness of firms. For this reason, some data are also shared on firms that are not dual-regulated to ensure that each regulator has a complete view of the market.

The arrangements have had very significant practical short-term benefits. Much regulatory data for banks continues to be collected via the FCA's GABRIEL data collection system and stored in a data warehouse shared with the PRA. These arrangements will be reviewed in the longer term. However, in the short term this willingness and ability of the authorities to share data greatly eased the transition from the FSA to the FCA and PRA, avoiding a very challenging task of carving up strategic systems in short order and avoiding significant costs and risks to supervision.

Aside from the sharing of systems and data, another key action to promote a joined up approach is that the BoE/PRA participate in the data governance of the FCA relating to the approval of new regulatory data requests and vice versa. In this way each organisation is aware of the forthcoming proposals to collect data of the other and can coordinate to avoid unnecessary duplication.

Clearly the reform bringing the PRA into the BoE has had benefits for data-sharing between those functions. Organisational and system changes mean that supervisory data (including those collected ad hoc) are increasingly discoverable to macroprudential analysts, for example.

A final benefit of this reform is that it has enabled the BoE to merge the data management function for the PRA into its Statistics Division – now the Statistics and Regulatory Data Division (SRDD). This facilitates the sharing of data and best practices between both sides of the Division, reducing costs and increasing the quality of statistical outputs produced. For example, SRDD has begun to look into the differences between published mortgage statistics collected for monetary policy

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[27]  The MoU gives prominence to the arrangements for data sharing. The MoU states, "Exchange of information will take place at many levels. Information available to one regulator (including regularly provided regulatory data) that is relevant to the responsibilities of the other regulator will be shared when requested. In addition, if one regulator considers that information it has gathered would be of material interest to the other, it will actively offer such information to the other. Not all information will be shared because that is unnecessary and would overwhelm each regulator with information that was not central to its mission." Annex 2 to the MoU covers regulatory data sharing and cooperation; see the Appendix below.

purposes and mortgage statistics it publishes based on data collected for regulatory purposes.[28] In the shorter term, this can contribute to better quality statistics. In the longer term, costs to firms and the SRDD will fall if common inputs can be used to meet both statistical and regulatory needs.

## Legal constraints to data-sharing

Information-sharing in the UK is subject to similar legal constraints as exist in other jurisdictions. The most relevant UK legislation (both autonomous and implementing EU directives) affecting the sharing of the BoE's regulatory and statistical data is included in Annex 2 of the BoE's Statistical Code of Practice. This legislation (supplemented by Regulations) sets out gateways between different supervisors and between supervisors and the BoE.

Gateways for confidential statistical and regulatory data-sharing with the Office of National Statistics and central government departments, including the Treasury, exist, although some are very limited in their application. Information disclosure outside the gateways (examples of which are provided above) is a criminal offence.

## Conclusions on preconditions for data-sharing

From the examples above (BCCI and financial crisis), it is clear that the preconditions for data-sharing are determined at the highest levels of organisational management and government, typically in response to a notable failure. The move to greater data and information-sharing must be authorised and promoted from the top down.

A second precondition is to build the culture of information-sharing at the operational level, in line with the expectations of top management. Within the UK this culture is supported by a long period of practice since BCCI. In the short term, a culture of sharing and cooperation between the FCA and PRA/BoE may be facilitated, in that the staff of each organisation until so recently worked under one roof. Whether this changes in future remains to be seen.

A further precondition is technology. Within the BoE/PRA, a single enterprise-wide document management system greatly facilitates information-sharing between supervisors and macroprudential analysts. SRDD ensures that data collected from more than one firm are systematically available. The technology challenge is rather to make all those data easy to analyse. Between the FCA and PRA the legacy of a single data warehouse possibly implies greater data-sharing than is necessary to support the functions of each organisation. As noted in the FCA/PRA MoU, "Not all information will be shared because that is unnecessary and would overwhelm each regulator with information that is not central to its mission". This may imply some further review of arrangements between the FCA and the PRA over time.

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[28]   Bank of England, Changes to the FSA Statistics on Mortgage Lending following the creation of the PRA and FCA, 1 March 2013.

## Appendix 2 of the FCA-PRA MoU on Regulatory Data

1.  The regulators will routinely share regulatory data available to one, where it is relevant to the responsibilities of the other.

2.  Data will be shared according to the following principles:

    - the ability of a regulator to obtain data should not be constrained

    - the approach should be as efficient as possible for both firms and the regulators

    - the approach must maintain data security.

    - the importance of data integrity and accuracy will be recognised; and

    - the process of data management should be flexible, including in response to potentially rapidly changing requirements

3.  Each regulator will be responsible for validation and quality checking, as well as data collection in a timely and efficient way.

4.  The PRA and FCA will consult each other on changes to regularly collected data/forms.

5.  The PRA and the FCA will consult each other on:

    - shared data definitions; and

    - deciding on, agreeing and approving the management of data systems to allow for the efficient sharing of data between the regulators

6.  They will establish a forum for consultation on issues regarding existing data sets and introducing new data sets.

7.  A Bank Group/FCA data management committee will meet on a quarterly basis and will be responsible for ensuring that practice and working processes accord with the framework and principles set out above, as well as considering the need for any amendments to these arrangements.

# Annex 5: National practices of institutional and organisational arrangements for data collection

All central banks have the legal basis to collect statistical information from banks whether or not they also perform supervisory tasks. Statistical departments generally play an important role, although in some cases some information may also be collected by other departments or authorities.

Institutional arrangements for the collection of banking information     Table A

| | Statistical information | Supervisory information |
|---|---|---|
| Armenia | Statistical Department | Statistical Department |
| Brazil | Department of Economics/Financial System Monitoring Department | Financial System Monitoring Department/ Department of Economics |
| Canada | Statistical Department | Supervisory Authority |
| Chile | Statistical Department and Supervisory Authority | Supervisory Authority and Statistical Department |
| Germany | Statistical Department | Supervisory department central bank on behalf of the Supervisory Authority |
| Finland | Financial Stability and Statistical Department | Supervisory Authority |
| France | Statistical Department | Supervisory Authority |
| Korea | Statistical Department | Supervisory Authority |
| Luxembourg | Statistical Department/Supervisory Authority in copy | Supervisory Authority/ Statistical Department in copy |
| ECB[1] | Statistical Department | Supervisory Authority |
| Ireland | Statistical Department | Supervisory Department |
| Italy | Statistical Department | Statistical Department |
| Japan | Research and Statistics Department, Financial System and Bank Examination Department, and Financial Markets Department (of Bank of Japan) | Supervisory Authority[2] |
| Malaysia | Statistical Department | Supervisory Department and Statistical Department |
| Saudi Arabia | Supervisory Department | Supervisory Department |
| Serbia | Statistical Department | Supervisory Department |
| Tunisia | Sup, Statistical depart, other department of the central bank,[3] Ministry of finance, banking association | Supervisory Department, Council of financial market[4] and Ministry of Finance[5] |
| Turkey | Statistical Department | Supervisory Authority |
| United Kingdom | Statistical Department | Supervisory Authority and Statistical Department |

[1] Availability of supervisory information at the ECB will change in the coming months in view of new supervisory tasks given to the ECB. [2] The Financial Services Agency is a legal supervisory authority which conducts on-site inspections and collects banking information. The Financial System and Bank Examination Department of the Bank of Japan, which conducts off-site monitoring and on-site examinations under the contract between the BOJ and banks, also collects banking information to monitor and analyse financial stability. [3] Financial Stability and Monetary Policy. [4] For financial market monitoring purposes. [5] For public banks' control purposes.

The collection of supervisory information differs widely. Statistical departments may not always collect this information, even in the cases where the central bank is responsible for banking supervision (in these cases other departments are involved). When the central bank is not the supervisor, supervisory authorities or other regulatory authorities, ministries, banking associations or deposit insurance funds may collect the information.

# Annex 6: Case studies of data-sharing and cooperation models

## Brazil

The Central Bank of Brazil (BCB in Portuguese), is responsible for both monetary policy and financial system supervision. In this context, the Department of Economics works together with other BCB departments in the compilation of statistics. Banking information is collected directly from banks by the Financial System Monitoring Department (Desig), which belongs to the BCB's Supervision Area, but also by the Department of Economics (Depec), which is part of the Economic Policy Area. Usually, Desig focuses on financial stability issues and Depec on macroeconomic data; statistics are compiled by those departments accordingly.

### Governance

Regarding banking data for macroeconomic analysis, the Department of Economics specifies the statistics, their attributes, as well as the templates and, together with the Financial System Monitoring Department, the regulation necessary to require the information from the financial system. Desig compiles its own statistics, which are based mainly on the Credit Information System (in Portuguese, SCR), a credit register with granular information on every loan of more than BRL 1,000 (roughly USD 400). SCR is a powerful database from which Depec also obtains relevant sets of credit statistics (with eg regional and sectorial breakdowns). In this case, information and data received go to a database managed by Desig, but Depec has full access to them, individually or aggregated, without any need for authorisation. The balance sheets of banks and/or conglomerates, as well as the specific accounting lines, can also be accessed by Depec without any special authorisation. This procedure avoids overloading the banking system with duplicate reporting. It also obliges the BCB to organise (and optimise) its statistical demands. The same applies in the opposite direction, as Desig also has full access to data provided by banks to be compiled by Depec.

### Data-sharing

Both individual and aggregated data from the Department of Economics are shared with supervisors, especially because the supervisors have free access to the data in their own databases. Supervisors share their data with the Department of Economics which is allowed to access individual and aggregated balance sheet data to compile its own statistics and to conduct its own research.

Cooperation in the design of the statistical requirements is not fully integrated, but the level of cooperation is considered sufficiently integrated.

Data storage is fully integrated.

Similar procedures are followed with other departments, eg the Department of Banking Operations and Payment Systems (Deban) for payment system information.

### Main challenges

The BCB does not face challenges sharing data with the Supervision Area. Improvements should be worked on with other institutions like the Securities Exchange Committee (CVM in Portuguese), the Pension Fund Agency (Previc) and

the Insurance Agency (Susep). These institutions' data are needed for the compilation of Sectoral Financial Accounts statistics.

## Canada

Data collection in Canada follows a highly integrated approach with the Office of the Superintendent of Financial Institutions (OSFI), the Canada Deposit Insurance Corporation (CDIC) and the Bank of Canada (BoC) sharing and administering a single centralised data collection system.[29] This integrated approach, dating back to the 1970s, collects all routine[30] supervisory and statistical information required by the three agencies, and where possible ensures this data fits into a conceptually coherent framework.

### Governance

This joint data collection is supported by an established governance framework and agreed principles and schedules for managing returns/data requests. The primary committee responsible is the Financial Information Committee (FIC), which consists of representatives from the three agencies, and is mandated to support cost-effective collection of data from financial institutions. The FIC currently meets on a quarterly basis, to engage in discussions and develop action plans to meet the FIC mandate. The OSFI (Director, Data Management) chairs the FIC. This committee also executes the annual "housekeeping" cycle, the process by which changes are made to existing returns and communication to filers and the technical implementation of required changes is done. The committee adheres to an agreed set of principles to guide the process for implementing changes and resolving disagreement.

- FIC data and returns are shared amongst all FIC agencies. Each return has an agency administrator who, on behalf of the FIC, "holds the pen" to maintain the return template and instructions and who is the primary point of contact for questions. Each section of a return has a specific agency responsible for providing detailed requirements and ongoing support for those data points.

- The FIC partners work together to align business requirements where possible, to coordinate the data "ask" to reporting institutions, and to reduce duplication or "near-duplication" of data points collected.

- Before bringing forth data requests to the FIC, each FIC agency gets approval for its financial data requests or changes using the agency's internal data governance structure. Issues requiring further input are escalated within each agency, and may require further cross-agency discussion.

- No FIC agency can deny the new data request of another agency. FIC members are expected to challenge and debate the request if they have concerns. Similarly, no FIC agency can change or remove existing data points from any FIC return without agreement from other FIC partners.

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[29]  Joint system currently known as the Tri-Agency Database System (TDS) being renewed with a new system, the Regulatory Reporting System (RRS), due for implementation in 2013/14.

[30]  At times, ad hoc data requests which are collected outside of the system are required.

## Technical system

The data collection system is a shared, web-based application capable of collecting and validating all supervisory and statistical returns. The system has metadata management and validation capabilities with an ability to accept and process high-volume data returns with the required validation rules. The system is hosted by the BoC, but is jointly administered by the BoC and the OSFI, with the CDIC as a data recipient. All costs associated with maintaining the system (business and IT support) are shared equally by the three agencies. A Memorandum of Understanding between the three agencies outlines services provided in support of the system and associated cost. The system enables constant uploads of collected data to partner agencies as well as associated meta- and operational data with respect to return submission status, history etc. The system is used as a data collection tool, with data analysis largely performed internally at the three agencies using downstream analytical tools, warehouses etc.



Hosted by the Bank of Canada
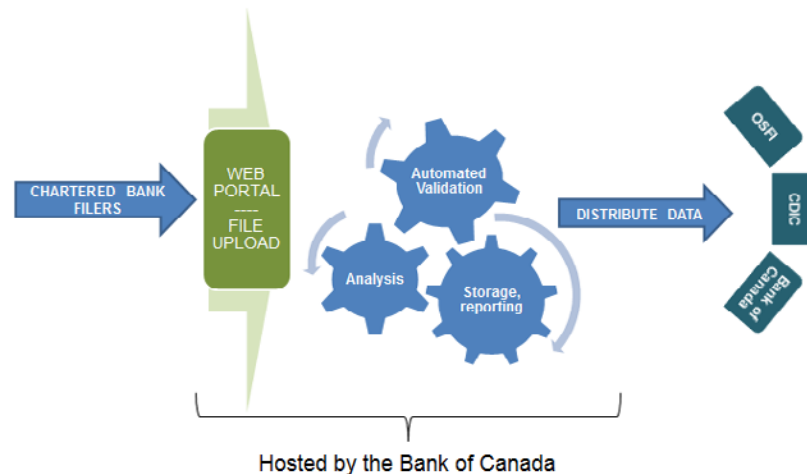
## Quality management

Data quality assurance with respect to collected data is managed through a number of approaches:

- Agency partners, where possible, work together to develop and ensure consistent instructions. All instructions are managed and translated by a single agency, the OSFI (consistent translation is an important consideration in Canada as all instructions are made available in both English and French).

- Automated data validation at the system level. This includes standard validation of detail summing to aggregates as well as cross-return and inter-period validation. Notably, Canada has limited experience with automating plausibility checking of data.

- Manual analysis of key statistical data points to review individual bank movements relative to industry-wide growth, volatility relative to expectations etc. Identified irregularities are followed up directly with the reporting bank for either confirmation or re-submission. Downstream users of data at times

identify reporting concerns which are then relayed back to the data analysis team for investigation.

Benefits/constraints

Data requirements and priorities across the three agencies can diverge; this can require extensive consultation and effort to arrive at the ultimate data "ask" from banks. In isolation, this can give the impression of lost efficiency. That said, over the longer term, different agencies' perspectives on requirements (eg relative differences in importance of time series, level of detail, importance of data from large versus smaller institutions) can improve the overall data collection process. Further, a joint system allows for shared cost and reduced duplication of effort across the three agencies, while facilitating data-sharing. Finally, the joint approach is seen as efficient for filing institutions which benefit from reduced reporting burden, thanks to a lack of redundant data collection, and a joint agreed schedule for delivering new requirements (rather than dealing bilaterally with multiple agencies with varying schedules).

## Chile

Institutional framework

- Both the Central Bank of Chile and the Superintendency of Banks and Financial Institutions have a legal mandate to share banking information within the limits of their powers. For the central bank, the information is used for the compilation of statistics, to support monetary, microprudential and macroprudential policies, and to facilitate economic, financial and financial stability analysis.

- The Superintendency can request information on behalf of the central bank.

- Both institutions participate in the Financial Stability Board, created in 2011, which promotes a global analysis of the systemic risk and appropriate coordination among the Chilean supervising authorities. The Chilean FSB comprises the Minister of Finance, the Superintendent of Securities and Insurance, the Superintendent of Banks, the Superintendent of Pensions and the Governor of Central Bank (advisory role).

- Both institutions are currently working on a service level agreement that sets out the procedural aspects of the mutual cooperation process.

Current situation

- Coordination and the sharing of analysis takes place with regular meetings and formal protocols listing all the information exchanged.

- Regular exchange of information.

- For legal reasons, it is not feasible to share certain information (eg information from third parties, such as non-financial corporations, security-by-security data from the Central Securities Depository).

Main challenges

- To promote data-sharing among the supervisory entities, highlighting the benefits.
- To consolidate the current collaboration process through an MoU.
- To establish a unique reporting system.
- To establish a common database system.

## France

A partially integrated system of data collection and storage was set up in 2010 by the Banque de France and the Autorité de contrôle prudentiel et de résolution (ACPR), the authority in charge of prudential supervision and resolution of credit institutions, insurance companies and investment firms. This system is called SURFI (Système Unifié de Reporting Financier).

In SURFI, three types of data are collected from credit institutions, insurance companies and investment firms: prudential, statistical (monetary) and accounting data. Against this background, there are opportunities for data-sharing:

- Prudential data are used only by the ACPR.
- Statistical data are mainly used by the Banque de France DG Statistics for the compilation of monetary, financial and external statistics (balance of payments and international investment position) as well as for the compilation of the BIS banking statistics, but the ACPR may also require some statistical data for its own use.
- Accounting data (eg balance sheet statements) are used by both institutions.

The French legal background allows for data-sharing: the Monetary and Financial Code (Code monétaire et financier) defines the Banque de France's responsibilities and powers and gives it the capacity to exchange confidential data when necessary for the performance of its duties. Article L141-6, paragraph IV, of the Monetary and Financial Code provides the legal basis for data-sharing, and states the related practicalities.

Governance

The ACPR is chaired by the Governor of the Banque de France. The staff members are shared by both institutions and can thus switch from one institution to the other. However, the ACPR is legally distinct from the Banque de France.

Data collection is performed via the ONEGATE platform, which is operated by Banque de France DG Statistics. However, the organisation of statistical and supervisory reporting from credit institutions, insurance companies and investment firms is completely separated by a Chinese wall. It is thus a partially integrated system, where each institution (Banque de France and ACPR) has automatic access only to the data which are relevant for it. Data that are relevant or useful for both institutions are shared. Specifically, only ACPR analysts have access to microprudential data, while Banque de France statisticians have only partial access to them, for statistical purposes. Moreover, they are not allowed to disclose the data to which they have access outside DG Statistics.

However, secondary quality checks, compilation, use of analytical tools and dissemination of data are conducted separately. In DG Statistics, a dedicated unit, the Databases and Dissemination Division (Service des bases de données et de la diffusion), manages the dissemination of statistical data.

## Technical system

SURFI collection of credit institution, insurance company and investment firm data takes place through the ONEGATE system, an online platform for reporters that the Banque de France developed in 2010 in cooperation with the National Bank of Belgium. It is a single web portal, accessible through the Banque de France's website which, thanks to a secure login/password, enables each reporter to upload requested data. ONEGATE was designed to simplify reporters' tasks as much as possible, as well as to ensure high-quality data collection for both the Banque de France and the ACPR. In addition, the e-SURFI documentary website shows all the information necessary for reporters.

As regards data submission, ONEGATE enables online application, file upload and A2A remote data transmission.

Once the data are acquired, both the ONEGATE and the SURFI systems perform a series of automated checks:

- Formal checks: accreditation procedures, electronic signatures, format of data files etc.

- Internal consistency checks: mostly detail summing to aggregates.

By contrast, plausibility (or external consistency) and data quality checks are performed outside the SURFI system, mainly by the ACPR and the Banque de France's DG Statistics, but also by other Banque de France DGs. Identified irregularities are then followed up directly with reporters by each department.

Once they have performed the requested reporting, remitters get immediate feedback from ONEGATE: acknowledgment of receipt and, depending on whether automated controls have detected irregularities, a data validation message or an error message detailing the anomalies found.

On the ONEGATE management side, the system allows for data follow-up (eg latecomers, missing data, irregularities).

## Data quality management

Supervisory reporting and statistical reporting are largely integrated. The reporting scheme is by and large harmonised across the Banque de France and the ACPR. A single taxonomy has been developed for the SURFI data collection, for both statistical and prudential information. The shared data collection system avoids redundant reporting schemes.

The IT architecture offers a combination of flexibility and robustness in the management of the information system:

- The IT tools provide enough leeway for statisticians and supervisors to implement data collection for specific needs.

- The IT system ensures consistency between the different needs. Harmonisation of the definitions, data-sharing and different layers of controls ensure cross-

fertilisation of different interventions. (For example, when some data are edited by statisticians, the global quality of the information system is improved, which benefits supervisors.)

## Benefits and constraints

Falling in between a decentralised and a fully integrated data-sharing model, the joint data collection of the Banque de France and the ACPR offers clear benefits in terms of efficiency: respondents avoid redundant reporting schemes while the relevant data are accessible to each institution and partly shared (eg accounting data). At the same time, compilers benefit from cost reduction thanks to a unique data collection system.

Moreover, compilers can avoid the risk of inconsistency between redundant reporting schemes. In terms of confidentiality, reporters' possible concerns about the Banque de France potentially having access to their individual data are taken into account thanks to the Chinese wall separating the use of statistical and prudential information.

Moreover, data-sharing will be significantly enhanced as of 2015 via the setting-up of a new "mirror database" managed by the Bank's DG Statistics and fed mainly by prudential and statistical micro and aggregated data. Access rights granted on a need to know basis will allow internal users from all departments, including Statistics and Banking Supervision, to benefit from this enlarged intelligence device for their analysis. A governance scheme has been defined to ensure the protection of confidentialty, if and when legally necessary, while promoting data-sharing to the maximum extent possible.

## Germany

### Institutional framework

Data collection, processing and dissemination at the Deutsche Bundesbank relates to different functions. As the central bank of Germany, the Bundesbank is part of the Eurosystem, contributing to euro area, European and international statistics. Nationally, it is assigned with producing primary or secondary statistics on a range of topics, namely banking, finance, balance of payments, IIP statistics and financial accounts. The Bundesbank has important tasks in the field of banking supervision, jointly with the ECB and the Federal Financial Supervisory Agency (BaFin). In 2013, the Bundesbank was given important macroprudential functions at the national level.

Data collection according to each of these broad assignments has a different and largely independent legal basis. These legal bases constitute separate regimes under which data may (or may not) be passed on for the fulfillment of certain tasks. In addition, the assignments have generated separate chains of data collection and evaluation on the institutional level, where the exchange of micro level information has been the rare exception, rather than the rule.

Apart from the barriers created by the separate legal foundations for data collection, there is rather strict data privacy legislation. In formal terms, German data privacy protection laws do not impose essential limitations in addition to and beyond the confines established by European legislation. Yet their interpretation by courts and practitioners has been especially strict in the past, largely due to an incisive decision by the constitutional court on the legitimacy of the national census

in 1983, asserting a constitutional right to data privacy of each individual. The census had to be modified and was delayed five years.

## Data-sharing: problems and issues

Independent chains of data collection and evaluation, while guaranteeing a smooth functioning both for macro statistics and for supervision, have been found unsatisfactory, especially after the onset of the financial crisis in 2008, when it became important for decision-makers to consistently and reliably receive all the relevant information on certain economic entities. Furthermore, the new financial stability and banking supervision tasks of the ECB and the national central banks make it necessary for existing data to be reorganised quickly to answer new questions, and shared with other cooperating institutions, within the limits of existing legal restrictions. The established system of independent silos has to be overcome. For quite some time, however, there has been a tradition of data-sharing for the purposes of academic research. Research data needs enjoy a special status in German data protection legislature, and for more than a decade, the Research Centre of the Deutsche Bundesbank has devoted much time and energy to enable academic research on Bundesbank micro data, by both internal and external researchers.

## IMIDIAS: A hub for micro data at the Deutsche Bundesbank

In 2013, the Board of the Deutsche Bundesbank gave a strong and broad mandate to the Statistics Department:

- to establish an integrated interdepartmental information system for analytical and research purposes;

- to define governance and roles;

- to develop a Research Data and Service Centre (RDSC);

- to develop a statistical microdata warehouse (House of Micro Data); and

- to step up active support for research projects.

More specifically, the Board approved the integrated microdata-based information and analysis system (IMIDIAS) initiative, aiming at a coherent solution to these requirements. IMIDIAS is a pragmatic approach that leaves the core production system untouched and keeps data management decentralised. Going fully to bottom-up data integration may be desirable on methodological grounds, but it is in conflict with the duties of ongoing data production. A centralised approach would create a vast number of problems that would have to be addressed at the same time, and is liable to meet with internal impediments.

Briefly, IMIDIAS is meant to perform data integration ex post, using the finalised and quality-controlled process data as a sources layer for a statistical data warehouse, the House of Micro Data (HoM). In the HoM, data are integrated on the basis of joint reference data and made accessible by means of an SDMX superstructure. On this basis, a newly created Research Data and Service Centre (RDSC) offers data and analysis services, for analysts and researchers. The ultimate aim of IMIDIAS is to make available what is already there, in a consistent, effective, cost-efficient and user-friendly way, for designated purposes and complying with strict confidentiality rules.

### The House of Microdata (HoM)

The HoM, currently under construction, will offer the services of a fully fledged statistical data warehouse for microdata, largely reusing and reinterpreting existing structures. This makes the implementation cheap, relatively fast and riskless. As a technical basis for data storage and retrieval, the Bundesbank ZIS (time series information system) infrastructure is utilised. Access rights will be graduated and assigned on an individual level. Internal analysts will be able to directly access the data in the HoM, in accordance with the graduated access rights. The data are kept using the worldwide ISO standard SDMX. Apart from its generic advantages as a standard for data transmission widely used in the communication between providers of statistical information, SDMX has two specific features: it is well known and accepted on all levels, and the SDMX key families providing codes for data embody much of the metadata which have to be collected to make the micro information useable. SDMX-classified sets of reference data on statistical units will serve as a backbone for the integration of data from different sources.

### The Research Data and Service Centre (RDSC)

The Research Data and Service Centre is being built up to act as an intermediary between data providers and data users with access on a need-to-know basis – analysts and researchers. It converts the multi-dimensional and often redundant information in the HoM into flat files useable for scientific and policy analyses. Research and analysis data sets are developed, tabulated, user friendly documented and archived. The RDSC offers advice and clarification of access rights, also solving anonymisation issues. For externals it processes applications, distributes scientific use files, creates the opportunity to work on-site, offers remote computing and safe rooms in cooperating research data centres. The RDSC will be instrumental in coordinating the future evolution of IMIDIAS.

### Governance

Though both of its major infrastructure components, the HoM and the RDSC, are situated in the Statistics Department of the Bank, the scope of IMIDIAS is interdepartmental and comprehensive, offering bankwide services. The strategic decision-making body is a steering committee, comprising the heads of departments and the head of the RDSC. The steering committee decides on the content of the HoM, ie on what data from Statistics, Supervision, Markets, Research or other areas will be processed and loaded onto the common platform, as a "golden copy". This is a time-consuming and and labour-intensive process, making a conscious selection necessary. The selection will be made on the basis of a costs and merits procedure. The steering committee will evaluate the annual plan of the RDSC and determine its longer-run targets. Data access will be graduated, according to data type and role of the user, following the legal restrictions for data use. If an important user group is not allowed to access relevant microdata, it will often be possible to generate suitable aggregates. The data work is decentralised. Importantly, areas remain fully in charge of "their" data. Departments will nominate "data experts", responsible for contact and communication within the IMIDIAS system. Data experts will be in charge of metadata, reference data, quality management and documentation.

## Italy

Different national laws and European Regulations entitle the Bank of Italy (BI) to collect from banks and other institutions all the information it needs to fulfil its various tasks. With regard to the sharing of these micro data, as a general principle Article 7 of the Banking Law states that all supervisory information is protected by professional secrecy also in respect to governmental authorities. However, the same set of laws and regulations allow the communication of these data to explicitly identified entities and for specific reasons which must be declared when submitting a data request and then examined by the BI.

For example, according to the Banking Law, BI, Consob (the securities and market supervisor), IVASS (the insurance supervisor), COVIP (the occupational pension funds supervisor) and the UIF (the financial intelligence unit) exchange information to facilitate the performance of their respective responsibilities and may not invoke professional secrecy in their dealings with each other; the BI may exchange information with national (and foreign) deposit guarantee schemes on the condition that confidentiality is ensured. The BI also cooperates and may exchange information with AGCM (the Competition Authority) for matters relating to the application to banks of the competition law and, in particular, in regard to transactions involving bank mergers and acquisitions. Lastly, a European Regulation (CE 2533/98 and sub. emend.) allows the exchange of individual statistical data (other than the information collected for supervisory purposes which remains covered by professional secrecy) between the BI and the national statistical office as long as it serves the purpose of improving the production of European statistics.

This framework has resulted to be a proper basis for effective cooperation among public authorities on matters concerning the day-to-day exercise of responsibilities as well as to set policy and regulatory lines. In all these occurrences the receiving supervisors and authorities are, under Italian (and EU) law subject to stringent confidentiality requirements comparable to those applicable to the BI and its staff.

### Governance

Provided that each data-sharing scheme between the BI and another authority is soundly based on legal foundations, the actual operational details (ie type of data, frequency, deadlines, means of transmission, operational units in charge of data transmission and reception) are formalised in specific arrangements such as Protocols or Memoranda of Understanding. Changes to the data flows are possible over time to the extent that they are then formalised in the arrangement.

From the organisational point of view, there is no single governance model related to the data-sharing. With regard to the cooperation with:

1.  the National Statistical Office, a Coordination Committee has been established in the Protocol with the aim of reinforcing the cooperation in the sharing of information owned by the two institutions. For the BI, the Committee is composed of members of the Statistics Department. The Committee meets at least quarterly to discuss common statistical strategies and needs.

2.  the CONSOB, a Strategic Committee has been established with the primary task of discussing common supervision issues. To put the strategies in practice and improve the cooperation between the two authorities, a Technical Committee

meets on a quarterly basis. Issues related to the data-sharing are discussed in the Committee whose members, for the BI, are from the Supervision Directorate. Internal coordination between the Supervision and Statistics Departments is therefore sought when data-sharing issues are discussed.

3. other national authorities (eg national deposit guarantee schemes), one organisational unit in the Supervision Directorate is in charge of dealing with other national authorities. The formal and legitimate grounds for the data needs are therefore assessed by this unit in cooperation with the Statistics Department.

In all cases, the production of the data flows is performed by the Statistics Department.

With regard to internal governance, the BI's Statistics Committee coordinates the statistical needs of the user departments (mainly Research and Supervision) and determines the Bank's dissemination policy. When assessing the information needs, the Committee also examines the needs of external authorities with a view to both minimising the reporters' burden and optimising the Bank's data collection and production.

## Technical implementation

The data are collected on the basis of a multidimensional data model which encompasses the different user needs and are stored in the company-wide statistical data warehouse. The data warehouse has been designed to be used for multiple purposes across the Bank (ie research, supervision, payment system surveillance, statistical publications, statistical flows for external entities) and for any category of information such as quantitative, qualitative reported data as well as data quality management indicators.

The data warehouse is governed by a unique data dictionary with harmonised concepts. It is hosted on a common technological platform and it can be consulted with the same tools regardless of the category data. With the same metadata managing software and by means of the transformation rules in the data dictionary, we are able to compute any complex statistical multidimensional or time series output on the basis of the different reported data. The output can be statistical flows for external parties, additional data warehouse tables with ready to use statistics or a publication.

The data flows are disseminated through a dedicated internet platform from which the authorities can download their data. The platform is secure, and to increase the security level the micro data flows are also protected by specific encryption procedures.

## Data quality management

The quality of collected data is ensured by an articulated process which starts from the definition of the extraction rules ("PUMA2 tables") which reconcile the BI's data collection model with the internal data of the reporters. In this way we ensure a common understanding of the definitions across reporters. Once the data are extracted, a set of agreed formal and integrity checks can be performed by the reporters by using our online application before sending the data in order to produce as clean a data set as possible. When the data are acquired by the BI, they are submitted to a large number of formal and quantitative automated checks; negative results are quickly transmitted as "error messages" to the reporters (A2A).

Many plausibility checks are also regularly performed manually and communicated to reporters via e-mail or phone.

Revisions are sent by reporters both as a response to the BI's input and on the initiative of the banks. Revisions can be accepted for any period, although the large majority and the most relevant revisions are usually acquired within two months after the reporting deadline. Revisions of older dates are nonetheless common. The data warehouse is updated with all revisions acquired day by day.

In consideration of the existence of the revisions for past data, data flows for external parties are produced no earlier than 50–60 days after the reporting deadline. This allows enough time for the quality of the information to consolidate. However, in order to also consider later data corrections, each statistical flow also contains the latest update of previously produced data. The time depth of this "refresh window" is indicated in each agreement.

This scheme requires that all efforts to ensure the highest possible data quality are made well within the given refresh window so as to keep the authority's database aligned with the BI's database as much as possible. Should an important revision exceptionally take place outside the refresh window, we allow for a one-off special refresh of previously reported data.

The BI bears the cost of the data production on the account that a reciprocity agreement is in place with each authority, and in turn receives the information it needs for its institutional activity free of charge.

## Challenges of the integrated solution

In principle all data can be shared provided there is a legal basis. From the operational point of view, however, it is more difficult for the provider to deal with data which are collected, on the basis of the integrated approach, mainly to be used by the receiving authority and which are of limited internal use. In this case it is more difficult to put in place sophisticated plausibility checks due to a more limited sensitivity to the data; even closer cooperation is needed to build the necessary experience to support the data quality assurance.

## Korea

### Legal foundation

- The Bank of Korea (BOK) has compiled major economic statistics since 1950, based on the Bank of Korea Act.

- According to Article 86 of the Act, regarding the collection and compilation of statistics etc, "the Bank of Korea may, when necessary for the formulation of its monetary and credit policies, collect and compile statistics on money and banking, public finance, prices, wages, production, the balance of payments and other basic economic statistical series, and conduct economic research and for such purposes request any materials or information from the Government organisation and any juridical or individual person."

- And according to Article 94 of the Act, "The Minister of Finance, The Bank of Korea and the Financial Services Commission may, when it is deemed necessary for the formulation of policy, request materials from each other. Each authority shall comply with the request unless it has a particular reason for not doing so."

## Formalisation of MoU between institutions

- The BOK has chosen MoUs as the type of data-sharing agreement it prefers for ongoing data-sharing between institutions.

- The BOK signed an MoU on financial information-sharing with the four financial authorities: the Ministry of Strategy and Finance (MOSF), the Financial Services Commission (FSC), the Financial Supervisory Service (FSS) and the Korea Deposit Insurance Corporation (KDIC).

- This MoU came into effect from September 2009, for the purpose of promoting close cooperation among the organisations and minimising the reporting burden.

- The original MoU has been revised, however, to expand the scope of data-sharing and to improve the sharing procedure, and a new, amended version has been in force since September 2012.

## Major features of MoU

- Purpose: the purpose of the MoU is to promote effective conduct of each institution's business and to minimise banks' reporting burdens.

- Target data to be shared: the MoU defines the target data to be shared as all periodic and occasional reports submitted by financial corporations, and the processed data such as indexes and ratios that the institutions make from these original reports. Excluded are data whose sharing is prohibited by law, based upon protection of confidentiality, and data approved for exclusion by the Interagency Council (see below) for special reasons.

- Procedure for data-sharing: the MoU prescribes the procedure for data-sharing as follows:

  a) All work processes related to data-sharing should be based on official documents.

  b) Requests for data-sharing should be processed so that the data-sharing is accomplished within 10 business days, or three business days in case of emergency.

  c) If the data requested are confidential, the institution requested to provide them must offer the relevant data after deleting individual information or converting the original data to make them appropriate for sharing.

  d) When the data requested do not exist, the requesting institution can ask that they be newly collected.

  e) Data that have not been sufficiently validated should be shared on the understanding of reduced data quality.

  f) Asking financial corporations to submit reports they have already submitted to any of the five financial authorities is not permitted.

- Limitations on use: the information provided should not be used for other purposes than each institution's own.

- Transferring data: information is exchanged via the authorities' electronic systems. For example, the BOK has an Information Process System (IPS) for managing and uploading reports it receives from financial corporations or that it makes. Likewise, the FSS has a Financial Information Sharing System (FISS)

and the KDIC a Financial Information Analysis System (FIAS). These systems make financial information-sharing more efficient and convenient.

- Protecting confidentiality: the MoU also stipulates ways to protect the confidentiality of financial information:

  a) The authorities must obtain prior approval for data-sharing from financial corporations when collecting their reports.

  b) They must take appropriate actions to ensure non-disclosure of confidential information that can have a crucial influence on individual financial corporations or the financial market as a whole.

  c) They must also set up regulations prohibiting staff with access to confidential information from disclosing it or using it for private benefit.

- Mediation of disagreement: under the MoU, there is an Interagency Council empowered to promote effective cooperation and mediate disagreements. The Interagency Council comprises the vice presidents of each institution.

## Main challenges

- To have more and better occasional reports, in real time. This should especially be the case when crisis-related information is needed just before and during crisis and where banking supervisory tasks are performed by a separate authority.

- To develop a protocol covering the secure sharing of personal data (identifiable) to enable more exchanges of confidential data.

## Tunisia

### Institutional framework

- The Central Bank of Tunisia (CBT) is in charge of banking supervision.

- Data on balance sheet and off-balance sheet transactions are transmitted by banks to the Supervisory Department on the basis of a related circular of the CBT to banks of July 1993.

### Current situation

- Cooperation in designing and collecting banking data (banks' accounting statements) takes place mainly between the CBT's Supervision Department and Statistical Department. In addition, the Financial Stability Department is currently participating in the upgrade of the reporting system.

- The storage of the data is separate (no single database).

- Some internal arrangements for data exchange between the departments are in place and are approved by the CBT Executive Board. However, the sharing does not cover all categories of data. For example, all departments in charge of supervision, statistics, financial stability and monetary policy have access to banks' accounting statements, but not to individual supervisory data. The latter are shared only occasionally or on a need to know basis after the approval by the CBT Executive Board.

# Annex 7: Elements of a Memorandum of Understanding / Protocol on data-sharing

In general, an MoU on Data-Sharing would establish a set of common rules to which the organisations involved would commit to adhere. The agreement should be drafted in clear and concise language that is easily understood. Drafting and adhering to an agreement does not in itself provide any form of legal obligation. However, an agreement can help in justifying data-sharing and demonstrate that there has been proper consideration and documentation of the relevant compliance issues.

As a minimum, the document would address the following:

## Purpose and benefits of the data-sharing

- The document should clearly explain the purpose of the data-sharing and may also cover the benefits.

## Organisations that will be involved in the data-sharing

- The document should clearly identify all the organisations that will be involved in the data-sharing.

- It may also contain procedures for including additional organisations in the data-sharing arrangement and for dealing with cases where an organisation needs to be excluded from the sharing.

- Contact details of relevant responsible officers.

## Type of data to be shared and terms

- The document should explain the types of data sets that will be shared. This may also clearly specify whether data are confidential or not, and whether the data should be anonymised prior to the sharing.

- The description should be detailed as the access to data may need to follow certain rules depending on whether it concerns aggregated, non-confidential, data or confidential data that may be accessed only by certain officers on a "need to know" basis.

- The conditions under which the data are shared (freely or on a cost recovery basis) should be made explicit.

- The document may also clarify the use of information in case the use is restricted for specific purposes (eg to support the respective statutory tasks of the organisations involved).

- The restriction to non-commercial use can be specified, if required.

## Use of data

- The document should state that no party shall be held responsible for the use of the data that is made by the other parties.

- It should also state that the transmission of data to third parties should be allowed with the prior approval of the organisation in charge of producing the data and in accordance with the confidentiality rules.

## Basis for sharing

- The legal basis for the data-sharing should be clearly explained. There may be a legal duty to share certain types of data. Even if there is no legal requirement to share data, the document should explain the legal power that allows the data to be shared.

- If consent is to be a basis for the exchange of data, then the agreement could provide a model consent form and explain how it is obtained. If need be, it should also address issues related to the withholding or retraction of consent.

## Information governance

- The document should deal with the main practical problems that may arise when sharing data. This should ensure that all organisations involved in the sharing have detailed advice about which data sets may be shared and the corresponding decision-making process.

- The document should explain what to do when an organisation receives access to shared data. In particular, it should ensure that one staff member or organisation takes overall responsibility for ensuring that the individual can gain access to all the shared data easily. Although decisions about access will often have to be taken on a case by case basis, the document should give a broad outline of the sorts of data that will normally be allowed to be released and ensure that the data being shared are accurate, for example by requiring a quality check. However, the quality check should not be an obstacle to the timely transmission of the data.

- The organisations involved should use compatible data sets and record data in the same way. The agreement could include examples showing how particular data items should be recorded.

- The organisations should set common rules for the retention and deletion of shared data items and procedures for dealing with cases where different organisations may have different statutory or professional retention or deletion rules. They should also have common technical and organisational security arrangements, including for the transmission of the data and procedures for dealing with any breach of the agreement and security systems in place that guarantee the data confidentiality should be specified.

- The organisations should also agree to have a procedure in place for assessing the ongoing effectiveness of the data-sharing initiative and of the agreement governing it.

- It may be appropriate to attach the rules for the permissions to access certain data items, so that only certain staff members, eg ones who have received appropriate training or specific approval, or have signed a specific confidentiality awareness form, can access the information.

## IT: use of common data standards and protection measures

- The document should provide details on the IT infrastructure used to transmit, store and protect data. There are various ways to share data, including depositing them with a specialist data centre, data archive or data bank making them available online via a project or institutional website. The document

should specify whether data should be used only on-site or the procedure for staff members in the receiving authority to obtain access.

- The document should stipulate ways to protect the confidentiality of financial information:

  - The authorities may need to obtain prior approval for data-sharing from reporters when collecting their reports.

  - They must take appropriate actions to ensure non-disclosure of confidential information that can have a crucial influence on individual entities or the financial market as a whole.

  - They must also set out regulations prohibiting staff with access to confidential information from disclosing it or using it to make illegal investments.

## Reviewing data-sharing arrangements

Procedures for reviewing the data-sharing arrangement or dealing with the termination of the data-sharing initiative should be included.

In addition, the following appendices may be included

- A glossary of key terms.

- A summary of the key legislative provisions that provide the legal basis for data-sharing.

- A model form for seeking individuals' consent for data-sharing.

# Annex 8: Practical tools to facilitate data-sharing

The sharing of confidential data can be enabled through a number of facilities and tools. Those listed below have been used in various countries depending on the legal, organisational and technical arrangements in place. A combination may also be considered. Each approach has its own advantages and disadvantages.

- *Aggregated data*, in particular those that capture information that may be needed for policy use, can be calculated and shared on a regular or ad hoc basis; this could also include data on concentration, distribution and networks. Data could be aggregated at different levels to avoid sharing aggregated data with too much granularity where confidentiality might be an issue. One limitation is that analysis of, and access to, micro data is often needed to establish which aggregated data would be most useful for monitoring by policy analysts.

- *Micro data can be anonymised* so that individual entities cannot be identified, either directly or indirectly. One difficulty is that data on banks, and financial institutions more generally, are highly concentrated and that information on balance sheet size and composition for most of these institutions may also be publicly available, making it possible for users to identify the entities behind the anonymised data.

- Analysts could analyse data (anonymised or non-anonymised micro data or various types of confidential or non-confidential aggregated data) in a *special data room* with a standalone computer. In such a controlled environment, it may be possible for the agency owning the data to determine exactly what type of data will be shared and what tools will be made available to analyse them (ie those available on the standalone computer). However, this arrangement may be viewed as rather cumbersome.

- *The data-sharing agency can send researchers or research assistants* to work with analysts in other agencies to produce statistical analysis without having to provide direct access to the underlying micro data. This approach requires that adequate resources with the appropriate skill mix are available at the data-sharing institution.

- *Algorithms* have been developed to produce so-called "synthetic datasets", which transform the original confidential micro data into artificial micro data with the same statistical properties that can be used by third parties. Researchers can then perform their statistical tests on the synthetic data sets and, once they are satisfied, ask the data owners to run their tests using the actual confidential data (or to use the "true" data in a data room if one is available). However, analysts may not be keen to work with synthetic data if they are not confident in the results of their preliminary analysis. Data sharers may also have reservations about the capacity of algorithms to hide the identity of individual entities.

# Annex 9: European efforts for data mapping between the supervisory and statistical reporting standards

Supervision of banks, insurance companies and pension funds requires access to individual firm data, known as micro data. In Europe, the standard for exchanging supervisory micro data is the eXtended Business Reporting Language (XBRL), whereas the standard for exchanging usually more aggregated statistical data is Statistical Data and Metadata eXchange (SDMX). Respecting the relevant Chinese walls between statistics and supervision, there is an increasing need to combine these data, requiring a mapping between the two standards.

In Europe, the European Banking Authority (EBA), in charge of defining supervisory reporting, is responsible for the Implementing Technical Standard (EBA ITS) and the resulting taxonomy in XBRL, specifying the reporting by banks. The taxonomy is based on a multidimensional Data Point Model.[31]

From a high-level perspective, both statistical and supervisory standards aim at describing data through concepts represented by lists of codes. However, mapping between those standards depends heavily on the specific implementations. The mapping discussion focuses on mapping the supervisory data content or "facts" to the statistical representation of time series data based on Data Structure Definitions (DSDs). In terms of mapping direction, the mapping from XBRL to SDMX seems more relevant as the SDMX data models focus more than XBRL on characteristics relevant for data processing and analysis.

Mapping between such standards depends on several factors. First, the information worded in both standards should have a well defined and unambiguous relationship. The use of standardised data dictionaries and shared codelists or uniquely mappable equivalents greatly facilitates one-to-one mapping of data standards. Alternatively, calculation rules may specify mappings.

The initiatives of the Joint Expert Group on Reconciliation of credit institutions' statistical and supervisory reporting requirements (JEGR) and the Groupe de Réflexion on the Integration of Statistical and Supervisory Data (GRISS) aim at defining the relationships between the monetary and financial statistical data definitions used for instance for the Balance Sheet Item (BSI) statistics and the supervisory definitions that form the basis of the EBA ITS. For example, loans defined in BSI are currently not equal to loans according to the EBA ITS. The difference between the two definitions is being identified and will probably be included in the reporting. Furthermore, as statistical data definitions usually address data that are more highly aggregated than for supervisory definitions, clear aggregation rules need to be established.

Second, the standards should be rich enough or extended to word information and functionality available in statistical and/or supervisory data exchange formats. SDMX and XBRL contain different information objects, and work remains to be done on checking their correspondence. XBRL allows the data to be presented according to the original reporting templates and the definition of validation rules. SDMX

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[31]  www.eba.europa.eu/regulation-and-policy/supervisory-reporting/implementing-technical-standard-on-supervisory-reporting-data-point-model-.

provides web services and registries for querying data and metadata and provides metadata attributes at the observation level.

Third, the data modelling objectives for statistical and supervisory data are different. Modelling data for statistical purposes is driven by the need to process and analyse data according to characteristics relevant for such analysis, while ensuring harmonised data definitions and the ability to uniquely define data. The supervisory modelling of data focuses primarily on providing all characteristics required for data harmonisation (usually within a reporting template as defined in the EBA ITS) and for uniquely defining data, and much less on needs related to data analysis. The different approaches in data modelling pose an additional challenge in identifying and extracting those XBRL elements relevant for processing and analysing the data in an SDMX context.

Fourth, a major difference between statistical and supervisory data modelling is that statisticians use DSDs covering data of coherent nature (eg exchange rates), whereby each data element is described by all characteristics (dimensions) in the DSD for exchange rate data. In contrast, the EBA taxonomy for supervisory data covers much more varied data, whereby for each data element only a sparse subset of "reporting relevant" data characteristics (dimensions) are selected from among all the data characteristics available in the taxonomy. Only the "relevant" characteristics are reported, and the others are ignored or considered as defaults.

The above examples illustrate the main difficulties in mapping between statistical and supervisory data. Mechanical mapping from supervisory data definitions to statistical data definitions does not seem to be a fruitful approach, as indicated by the experience of one national central bank in Europe. A more feasible approach is based on providing a carefully crafted mapping table and conversion rules for each coherent group of supervisory data. Again, this conclusion only relates to the specific case of mapping the supervisory reporting as defined in the EBA ITS and taxonomy to a statistical data model in SDMX.

Several central banks (for example, those of Italy and Austria) use the so-called "input approach" aiming at collecting at individual transaction level all characteristics relevant for wording data according to both statistical and supervisory purposes. This approach is currently under investigation on a wider scale and in Austria is already being implemented as a part of the AuRep (Austrian Reporting) project.

# Annex 10: Supervisory and statistical data-sharing in Europe

In Europe, sharing of supervisory and statistical data from credit institutions is regulated on the basis of separate legal frameworks.

For supervisory data, the Capital Requirements Directive (CRD)[32] has been in force since 2014. This is the legal framework for the supervision of credit institutions and investment firms in all EU and EEA member states. It is also the main legal act governing the sharing of supervisory information. This regulation does not foresee any obstacles in the sharing of information between supervisors and the monetary authorities, as far as relevant for their statutory tasks and subject to applicable EU confidentiality rules. This is specified in particular in article 58 of the CRD.[33] The legislation gives the supervisors the eligibility to share confidential supervisory, and requires EU member states to remove all obstacles preventing competent authorities from transmitting information.

In practice, the level of sharing of information is different from one member state to another. This is not because of the applicable law but for practical, institutional and/or cultural reasons. The CRD has not been transposed in all member states yet. However, as indicated above, the CRD expressly allows sharing of "relevant" confidential information with competent authorities, and eg central banks, as far as the confidentiality of the data is preserved. As an EU legal act, the CRD requires that member states consider conflicting national legislation inapplicable.

The sharing and collection of statistical data by the European System of Central Banks (ESCB) is regulated by Council Regulation (CR) 2533/98[34] concerning the collection of statistical information by the ECB. This regulation was conceived and adopted at a time when the ECB was not entrusted with the supervisory function. In response to the financial crisis that emerged in 2008 and evolved in the subsequent years, the European Commission pursued a number of initiatives, including the further integration of the banking system by establishing the Single Supervisory Mechanism (SSM). The SSM foresees that, as of November 2014, the ECB will directly supervise the largest credit institutions, while the national supervisors will continue to monitor the remaining ones. This change of context has led the ECB to publish a recommendation for a Council Regulation amending Regulation (EC) No 2533/98.[35] This regulation, which already enables the sharing of confidential statistical data for the tasks of the ESCB, is currently being reviewed in order to

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[32] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and prudential supervision of credit institutions and investment firms, amending Directive 2022/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:0338:0436:EN:PDF).

[33] Extract from article 58 (1): "Nothing in this Chapter shall prevent a competent authority from transmitting information to the following for the purposes of their tasks: (a) ESCB central banks and other bodies with a similar function in their capacity as monetary authorities when the information is relevant for the exercise of their respective statutory tasks, including the conduct of monetary policy and related liquidity provision, oversight of payments, clearing and settlement systems and the safeguarding of stability of the financial system; [...] Member States shall take the appropriate measures to remove obstacles preventing competent authorities from transmitting information in accordance with the first subparagraph".

[34] www.ecb.europa.eu/ecb/legal/pdf/01998r2533-20091015-en.pdf.

[35] www.ecb.europa.eu/ecb/legal/pdf/oj_joc_2014_188_r_0001_en_txt.pdf.

remove any obstacles to the transmission of confidential central bank statistical data to supervisory authorities.[36] The amendment will also clarify that the transmission of confidential data may also take place between the ESCB and the other authorities of the member states and of the EU in charge of the supervision of financial institutions, markets and infrastructures as well as the stability of the financial system, for their statutory tasks. The main motivation for such an amendment is to reduce respondents' reporting burden. Any data-sharing according to this Regulation will be subject to the confidentiality rules already foreseen by the Regulation.

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[36] The amendment to the Regulation is currently under consideration by the EU Council.

Data-sharing: issues and good practices