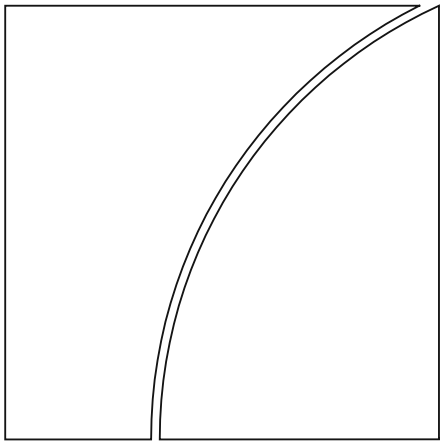
Irving Fisher Committee on Central Bank Statistics



IFC Report

No 6

The sharing of micro data – a central bank perspective

2016 Survey conducted by the Irving Fisher Committee on Central Bank Statistics (IFC)

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BANK FOR INTERNATIONAL SETTLEMENTS

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

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The sharing of micro data – a central bank perspective[2]

1. Executive summary

There has been a growing recognition by the international community of the need for improved data-sharing in the aftermath of the Great Financial Crisis (GFC). In 2015, the second phase of the G20 Data Gaps initiative (DGI) was launched and included a specific Recommendation (II.20) on the promotion of data-sharing. Among the various action plans set up to implement this recommendation, the BIS was invited to update the IFC survey of data-sharing practices between statistical and supervisory authorities, following up on the initial 2015 IFC Report.

The result is the present survey, which *focuses on the sharing of micro data among the wider range of national and international bodies in general*. Its findings can be summarised as follows:

1. Senior policymakers in central banks view the **internal sharing of micro data within their own institutions** as a very important issue, particularly as regards supervisory information, monetary and financial statistics and macroprudential data. In the vast majority of cases (about 80% on average for all main internal groups and types of data), various central banks departments are already able to share micro data internally (Table 1). When this is not the case, legal constraints or other confidentiality restrictions are the most prevalent factors precluding or limiting internal sharing.

2. Senior policymakers also consider the **external sharing of micro data between central banks and other authorities** as important, albeit less so than the internal sharing of such data within their own institutions. Indeed, sharing with external counterparties is less widely enabled than within central banks: it is possible for almost 40% of the cases on average across all counterparties and all types of data (Table 2). This limited feasibility is due mainly to legal or confidentiality reasons, but also to technological obstacles. Among external institutions, supervisory authorities are the prime counterparty of central banks for sharing micro data. Survey respondents stressed in particular the importance of allowing the use of supervisory data for financial stability/macroprudential analysis, and, in turn, of macroprudential data for supervisory purposes.

3. **Specific sharing arrangements,** such as legal agreements, MoUs, data aggregation, synthesis or anonymisation, often govern sharing of micro data. Obviously, they are more extensively used for external sharing, but they also frequently govern internal sharing practices within central banks.

4. As regards the **sharing of micro data with academia**, it is typically governed by bespoke bilateral agreements. Several central banks are currently working on refining MoUs or establishing the technical and legal frameworks that allow researchers to access their micro data.

[2] This report benefited from comments by Robert Kirchner. Assistance by Jeff Slee with the preparation of graphs is gratefully acknowledged.

5. Almost half of the central banks have an environment to perform **matching of micro data sets** produced for different purposes through anonymous or true identifiers. Such matching allows the same data set to be used for several purposes, thus obviating the need to collect it multiple times. It can also be used to perform quality control, provide a micro-level drill-down for aggregates, and more generally benefit from the wealth of information available from granular "administrative" data sets.

6. One third of surveyed **central banks have major plans to change their current practices** (including their IT environments) with regard to sharing micro data. The vast majority of central banks are of the view that they can influence the public debate on these matters even when they have no plans to make changes or direct authority on data-sharing.

7. One third of respondents felt that there is a strong or very **strong need to ease the legal constraints imposed by commercial agreements** that restrict the sharing among public authorities of micro data provided by private vendors.

Is it possible for central banks to share data internally?

Positive responses, in per cent of total — Table 1

	Banking supervision group	Economic and monetary analysis group	Financial stability analysis group	Research group
Monetary and financial statistics	77	97	100	87
Supervisory data	68	73	83	68
Macroprudential data	68	82	92	75
General economics micro data	57	73	80	78
Legend:	*High*	*Medium high*	*Medium low*	*Low*

It is possible for central banks to share data externally?

Positive responses, in per cent of total — Table 2

	Supervisory authority/ies	National statistical office/s	Other public authorities	Other central banks	International organisations	Acade-mia
Monetary and financial statistics	59	62	38	41	46	31
Supervisory data	53	27	22	37	42	15
Macroprudential data	47	32	25	37	40	20
General economics micro data	37	52	38	38	40	33
Legend:	*High*	*Medium high*		*Medium low*	*Low*	

2. Introduction

The GFC underscored the importance of data collection and sharing by central banks and other policymakers in order to assess and monitor financial vulnerabilities. This issue has been particularly stressed in the central banking community in recent years (Tarullo (2010), BIS (2011), Caruana (2012), Borio (2013), Yellen (2013), Cœuré (2015)). It has also been analysed in academic circles (Eisenbeis and Kaufman (2008), Moshirian (2014)).[3]

Box 1

The importance of sharing micro data in recent policy statements and the academic literature

In the aftermath of the GFC, several policymakers and academics have stressed the benefits brought by the enhanced national or cross-border sharing of micro data. The focus was in particular on institutions of systemic importance, such as large banks and shadow banks: sharing information on these institutions was seen as particularly beneficial for regulators, supervisors and public authorities. According to Tarullo (2010), *"[a] better system of data collection and aggregation would have manifold benefits, particularly if the data are shared appropriately among financial regulators and with a systemic risk council if one is created. It would enable regulators and a council to assess and compare risks across firms, markets, and products"*. Greater sharing of micro data would also "*enhance the ability of the government to wind down systemically important firms in a prompt and orderly fashion by providing policymakers a clearer view of the potential impacts of different resolution options on the broader financial system*".

Perhaps less intuitively, the sharing of data among policymakers would also bring indirect benefits for financial institutions themselves and the public at large. Tarullo (2010) argues that "*it would improve risk management by firms themselves by requiring standardized and efficient collection of relevant financial information. Additional benefits would result from making data public to the degree consistent with protecting firm-specific proprietary and supervisory information*". Borio (2013) also notes the benefits of additional micro data-sharing in terms of market discipline.

These issues are of particular relevance in an international and cross-border context. Taking the example of global derivatives markets, Yellen (2013) notes that *"[i]n order to effectively monitor market developments and systemic risks, it is crucial that regulators across jurisdictions and countries share data on a consistent and regular basis"*. Caruana (2012) and Moshirian (2014) stress that the international sharing of firm-level data on systemically important financial institutions has the potential to considerably enhance the understanding of interconnectedness and other risks – thereby facilitating the monitoring of the build-up of systemic risk and the preventing of episodes of financial stress (see also FSB (2013)). Eisenbeis and Kaufman (2008) highlight the relevance of the international sharing of bank-level information in the context of failure resolution.

For sure, policymakers and academics are well aware of the difficulties involved in the need to preserve the confidentiality of information while working towards enhanced micro data-sharing. Recommended solutions include masking the identity of individual institutions to the extent that such an approach still allows interconnections and vulnerabilities to be highlighted (Tarullo (2010)) as well as aggregating institution-level information. "*For example, firm-level data offer flexibility in constructing aggregated information, and analytical results can often be shared without revealing identities*" (Caruana (2012)). Yet even such solutions may not be sufficient. One specific issue relates to the sharing between various policymakers of the data bought from commercial vendors, which can be excessively costly or even prohibited. Thus there is a need to recognise intellectual property and other interests of data vendors while still safeguarding systemic risk (Tarullo (2010)).

While most policymakers recognise that there is a trade-off between the benefits of additional micro data-sharing and the need to preserve confidentiality, a consensus is emerging in favour of tilting this balance towards greater data

[3] See Box 1 for a review of recent policy and academic references on the topic of sharing micro data.

dissemination (Borio (2013), Cœuré (2015)). The second phase of the DGI emphasises that data-sharing and the revisiting of confidentiality constraints should go hand in hand (FSB and IMF (2015)).

That puts a premium on international collaboration in this area, given that legal and other restrictions on data-sharing often differ from one jurisdiction to the next. As highlighted in the previous 2015 IFC Report, data-sharing practices and cooperation models that have been implemented successfully in some places can serve as useful benchmarks for others. Yet national circumstances still differ and tailor-made solutions would have to be found in each country (IFC (2015)).

Indeed, the importance of adequate data to support enhanced policy analysis was formally encapsulated in the 20 recommendations of the DGI endorsed by the G20 Finance Ministers and Central Bank Governors to close the data gaps identified following the GFC (IMF and FSB (2009); Heath and Goksu (2016)). In this context, specific attention has been devoted to using micro-level information (Tissot (2016)) and on the usefulness of combining micro and macro statistical data for financial stability analysis (IFC (2016)).

But making use of micro data for policy purposes raises important challenges. Disclosing information at the individual level of households or corporates is often sensitive and traditionally protected by stringent legal protections. Micro data can reveal information to third parties on individual entities (persons, institutions), either directly or indirectly (through detailed information on transactions, instruments or counterparties). Its sharing is therefore often limited. This severely constrains the efficient use of granular information that is available in one place but cannot be effectively used by all relevant authorities.

Despite these difficulties, the international community has realised the importance of better exploiting the potential benefits of making more micro data available for policy uses. Data-sharing has therefore gained prominence during and after the GFC, both at the national and the international levels.

At the national level, examples include the sharing of information with financial stability bodies following the development of comprehensive macroprudential policy frameworks (Gadanecz and Jayaram (2016)). At the international level, multiple initiatives involving the sharing of micro data between different authorities or jurisdictions have been launched with the aim of making the financial system sounder. Examples include the supervision of global systemically important financial institutions (G-SIFIs; see BCBS (2013)), authorities' access to trade repository data (CPMI (2013)), cross-border resolution schemes (FSB (2014)), and the Global Legal Entity Identifier (LEI) system (FSB (2012)).

In this context, in 2013 the Irving Fisher Committee on Central Bank Statistics (IFC) established a task force to take stock of existing practices for data-sharing between central banks and supervisory groups. Based on several case studies provided by central banks, the IFC published a set of recommendations to foster collaboration and data-sharing. While the focus was narrowly limited on the cooperation between supervisors and central bank statisticians at the national level, the findings were expected to also help to improve data-sharing practices both among other national authorities (non-bank regulatory and supervisory authorities, national statistical institutes, other supervisory authorities and ministries) as well as international bodies. The Report established a suite of six good practices for stakeholders involved in data-sharing schemes, covering in particular communication,

governance and cooperation (IFC (2015)). These recommendations also addressed collecting and preserving the confidentiality of data (Box 2 and Appendix 1).

Box 2

Good practices identified by the initial 2015 IFC Report on data-sharing (IFC (2015))

The Report outlined the following six good practices intended to serve all countries and organisations that wish to improve data-sharing and cooperation irrespective of the existing arrangements:

1 – Establish appropriate communication with stakeholders and seek proper institutional endorsement.

2 – Ensure a clear legal basis to support data-sharing.

3 – Establish fully fledged cooperation at all levels.

4 – Collect common data using joint methodological and technical standards.

5 – Ensure sound measures to protect confidential information.

6 – Formalise governance and cooperation arrangements.

This initial work, together with other initiatives, has fostered a growing recognition by the international community of the need for improved data-sharing in the aftermath of the GFC. In 2015, the second phase of the G20 DGI was launched and included a specific Recommendation (II.20) on the promotion of data-sharing (Box 3). The aim was to "*promote and encourage the exchange of data and metadata among and within G-20 economies, and with international agencies, to improve the quality (eg, consistency) of data, and availability for policy use*". An increase in "*the sharing and accessibility of granular data, if needed by revisiting existing confidentiality constraints*" was also encouraged. Among the various action plans set up to implement this recommendation (IMF and FSB (2016)), the BIS was invited to update the IFC survey of data-sharing practices between statistical and supervisory authorities (following up on the initial 2015 IFC Report).

The result is the present IFC survey, which focuses on *the sharing of micro data among a wider range of national and international bodies*. The starting point is that such sharing is a balancing act between securing the confidentiality of granular data, and providing policymakers with the right information set that enables them to better detect financial system vulnerabilities, with a view to preventing and addressing crises. To assess the trade-off between preserving confidentiality and supplying useful information, the survey takes stock of central banks' current practices and experience with regard to the sharing of micro data: internally, ie among different departments of individual central banks (eg general economic statistics, supervisory department, financial stability and macroprudential groups, research area). It also reviews external sharing practices, ie sharing between central banks and other national or foreign authorities or international organisations (see Appendix 2). Conducted in the course of 2016, the survey was completed by 64 countries, of which 22 are advanced

economies, and 42 emerging economies in Africa/Middle East, Asia, eastern Europe and Latin America.[4]

Box 3

Recommendation II.20: Promotion of data-sharing by G20 economies (*extract from IMF and FSB (2015)*)

During the outreach activities to the data users and data compilers, the need for improved data-sharing was emphasised to make best use of the outcomes of the DGI. There was strong emphasis on the need for increased efforts to make more data and accompanying metadata available across a wide range of data users. There was also increasing demand by the users for more granular data to detect risks and imbalances.

In response to these requests from the users, a new recommendation is proposed for DGI-2. Building on the idea of non-confidential data being a public good, this recommendation is intended to encourage the enhanced exchange of data among and within G20 economies as well as with international agencies. National authorities are encouraged to help their users to not only have access to timely and consistent national data but also to reference in their websites related national and international data sources, and even research, that informs the users' understanding of the national data sets.

Where needed, G20 economies are also encouraged to consider revisiting existing confidentiality constraints to increase the sharing and accessibility of granular data (eg through anonymisation) so as to better inform users' understanding. A series of workshops could be held on institutional arrangements and policies related to data-sharing and confidentiality. The workshops would create a platform to share country experiences on improving the availability of more granular data in response to user demands and on the need to improve the quality of statistics (eg removing asymmetries in international flows to ensure consistency).

New recommendation:

The IAG and G20 economies to promote and encourage the exchange of data and metadata among and within G20 economies, and with international agencies, to improve the quality (eg consistency) of data, and availability for policy use. The G20 economies are also encouraged to increase the sharing and accessibility of granular data, if needed by revisiting existing confidentiality constraints.

3. The internal sharing of micro data within central banks

Senior policymakers view the internal sharing of micro data within their own institutions as a very important issue.[5] They also report that it is already possible to share various kinds of micro data within central banks, in particular monetary and financial statistics, supervisory data, macroprudential data and general economics micro data.

[4] The survey thus reflects the views of three quarters of IFC member countries: 14% of the respondents are located in Africa/Middle East, 14% in the Americas, 14% in Asia, 28% in eastern Europe and 30% in Europe (see the list in Appendix 3).

[5] Political support at the highest level was already identified by the IFC in 2015 as key to obtaining the endorsement of data-sharing and its benefits (IFC (2015)).

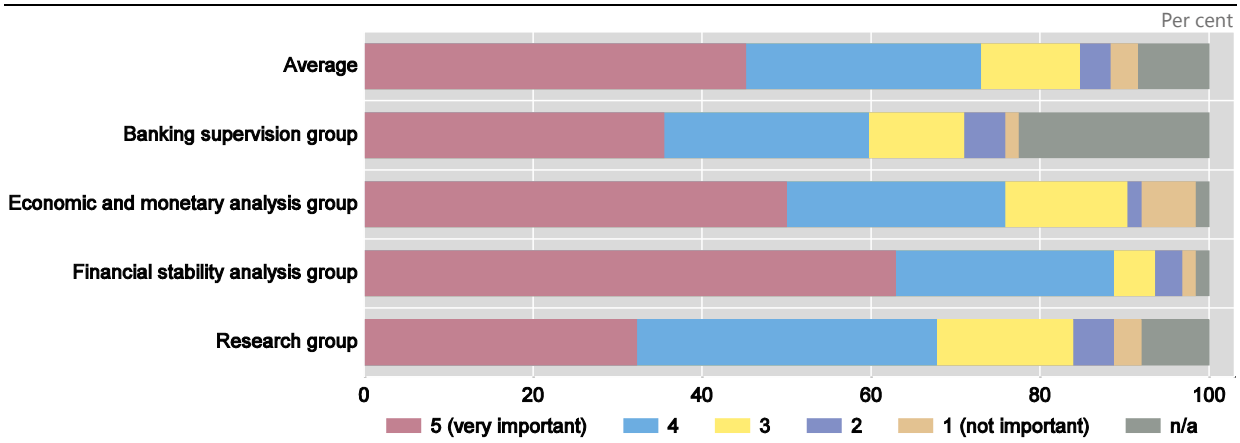
Importance of internal data-sharing

Almost half (45%) of central banks considered the internal sharing of micro data as "very important", and about three quarters said it was either "very important" or "important" (Graphs 1–4). This was particularly the case for financial stability groups, for which internal sharing was deemed very important by about 55% of the respondents on average for all types of data.

The relevance of internal sharing broadly applies to all the major types of data, although interest in sharing general economics data is significantly lower.

First, as regards micro data on *monetary and financial statistics*, central banks saw their internal sharing as key for their financial stability analysis groups (Graph 1). Those groups were the heaviest users of such data: more than 60% of respondents said that sharing with them was "very important". In contrast, the importance of these data appears lower for supervisory and research groups (around 30–35%).

Is it important to share monetary and financial statistics micro data internally? Graph 1



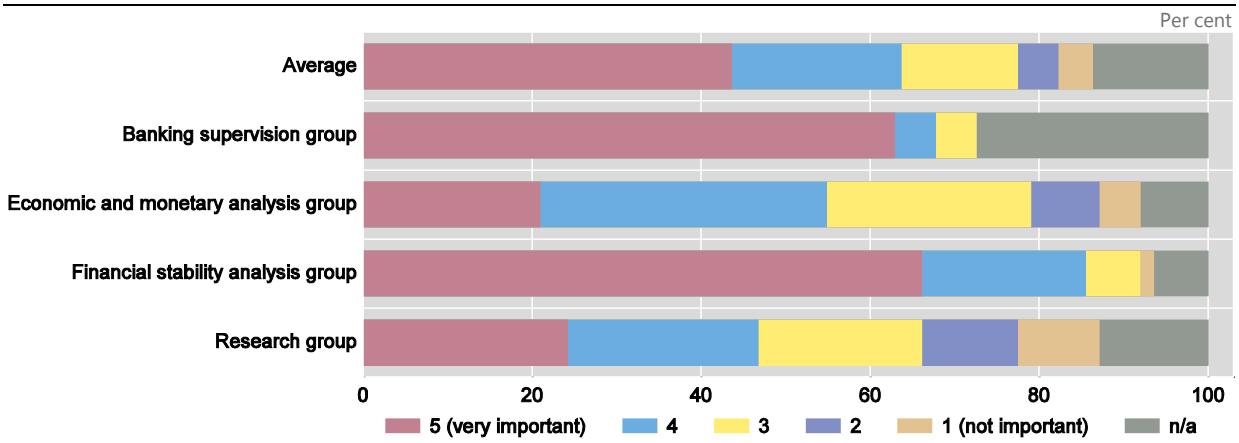
Source: IFC survey on the sharing of micro data, 2016.

Second, around two thirds of respondents considered the sharing of *supervisory information* "very important" with both financial stability and banking supervision groups. In contrast, only around 20% felt a strong need to share such data with research and economic analysis groups (Graph 2a). Obviously, the degree of internal sharing of supervisory data is influenced by respondents' institutional features.[6] It is much higher in central banks in charge of banking supervision, for which almost 80% and 65% of the respondents said it was "very important" to share supervisory data with banking supervision groups and financial stability groups, respectively (Graph 2b).

[6] Of all survey respondents, 61% were central banks also in charge of banking supervision. For the remaining 39%, banking supervisory authorities were separate entities (information on the institutional structure of survey respondents as derived from BIS data and complementary information from central banks' websites).

Is it important to share supervisory data internally? (all respondents)

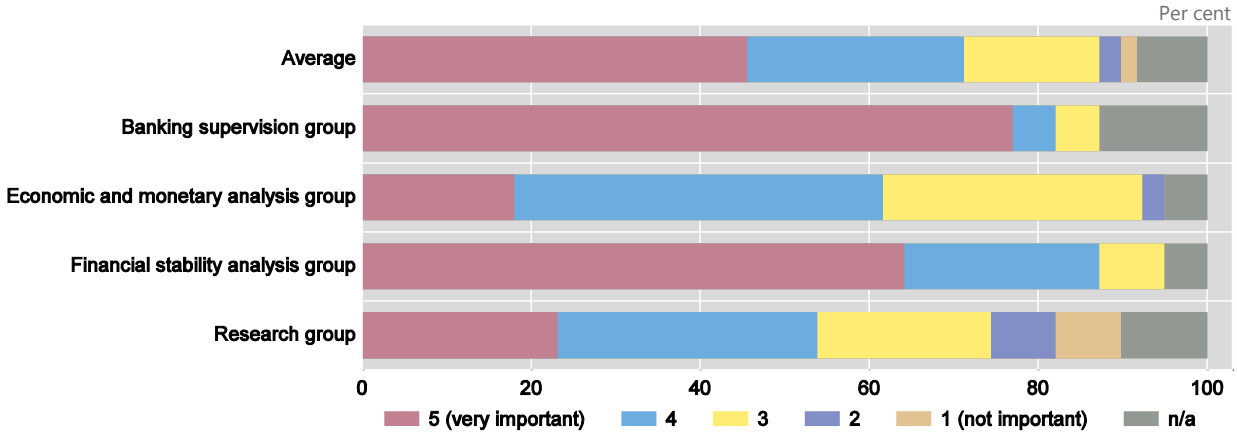
Graph 2a



Source: IFC survey on the sharing of micro data, 2016.

Is it important to share supervisory data internally? (joint CB and supervision)

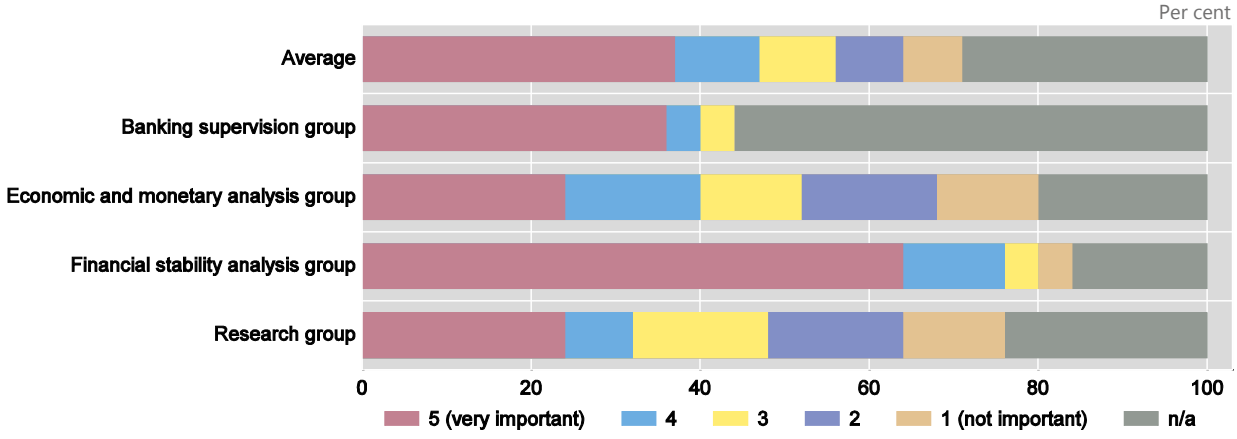
Graph 2b



Source: IFC survey on the sharing of micro data, 2016.

Is it important to share supervisory data internally? (separate CB and supervision)

Graph 2c

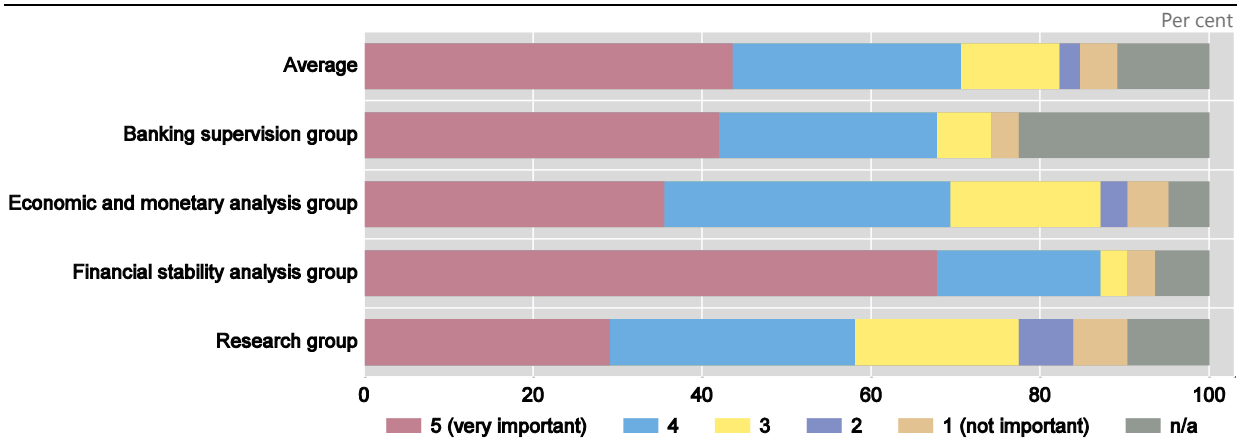


Source: IFC survey on the sharing of micro data, 2016.

Those countries where the supervisory authority is outside of the central bank generally attach significantly lower importance to the internal sharing of supervisory data; a large part – almost one third – of such countries' respondents flagged this question as irrelevant (Graph 2c).

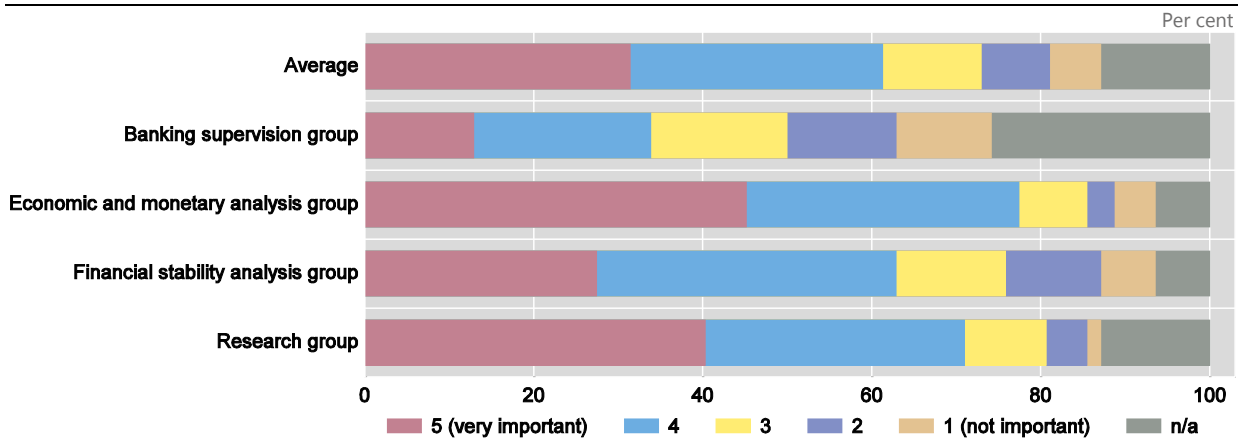
Third, the internal sharing of micro data for *macroprudential* purposes was considered "very important", particularly vis-à-vis financial stability departments (for almost 70% of the respondents). But this was less the case with respect to the sharing with other units such as banking supervision groups (about 40%; Graph 3): this contrasts with the importance reported above for the symmetrical situation (ie the internal sharing of supervisory data with financial stability groups).

Is it important to share macroprudential data internally? Graph 3



Source: IFC survey on the sharing of micro data, 2016.

Is it important to share general economics micro data internally? Graph 4



Source: IFC survey on the sharing of micro data, 2016.

Lastly, the internal sharing of *micro data on general economics*[7] was generally seen as a lesser priority (Graph 4). It was deemed "very important" by only about 30% of the central banks, and primarily for sharing with economic analysis as well as research units, but much less with banking supervisory groups. One reason for this relative lower priority may reflect the fact that sharing such economic data sets in aggregated form is often sufficient for analytical purposes. In contrast, micro-level supervisory data often require a fairly high level of granularity if they are to be useful for analytical purposes.

Feasibility of internal data-sharing

The survey shows that a vast majority of central banks (about 80% on average for all main internal groups and types of data) can already share a wide range of statistics across a number of their different internal departments (Table 1). Sharing is somewhat higher with financial stability groups, lower with banking supervision groups and close to the average with economic analysis and research groups. Monetary and financial statistics are most widely shared, followed by macroprudential data; sharing is relatively more limited for supervisory data and general economics micro data (Graphs 5-8).

(i) Central bank units' access to internal micro data

Looking at various types of central banks units, two thirds of *supervision departments* have access on average to all the main types of internal micro data. A large majority of them have already access to monetary and financial statistics (in about 75% of cases), but only around 55% have access to general micro economic statistics.

Economic and monetary analysis groups have access to internal data in more than 80% of the cases on average. They have almost complete access to monetary and financial statistics, and also to a large extent to macroprudential data; but their access is more limited for supervisory and general microeconomics data.

Financial stability analysis groups have the broader access to central banks' internal data, for almost 90% of the cases on average. In particular, they enjoy full access to micro monetary and financial statistics. Importantly, micro-level bank supervisory data and macro-prudential data can be passed on to them in many cases.

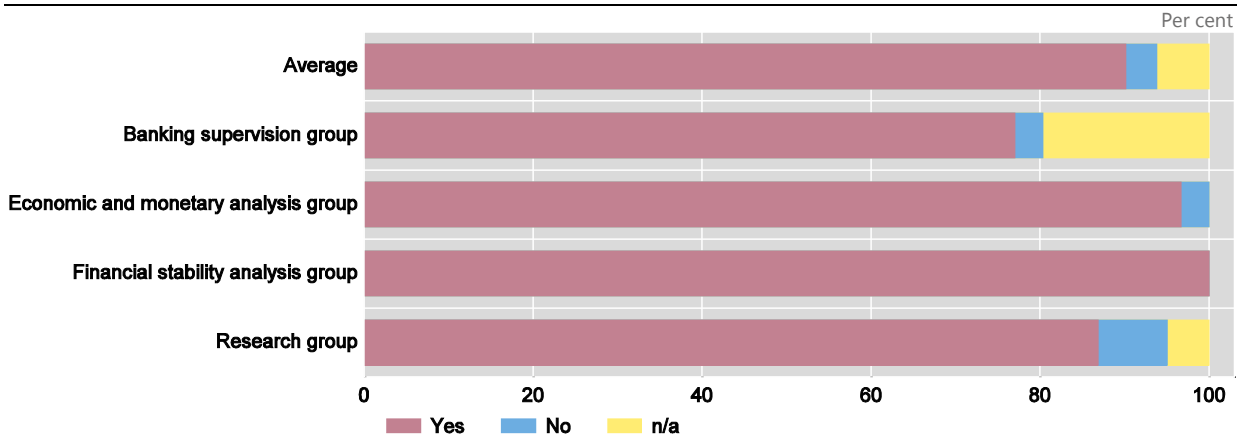
Lastly, *research groups* have a high but more limited access to internal data (in slightly less than 80% of the cases on average). They have a relatively higher degree of access to monetary and financial statistics. Their access to supervisory data is somewhat more limited but is still quite significant.

(ii) Internal sharing by type of micro data

Turning now to how specific types of micro data can be shared with all types of central bank units, it is easiest to share *monetary and financial statistics*. This was indicated by 90% of respondents, in particular as regards the sharing with financial stability and economic and monetary analysis groups (Graph 5).

[7] Eg data on the external sector, the balance of payments, non-bank financial institutions, household finances, house prices and non-financial corporations. Note that the interpretation of this concept may have differed across survey respondents. For instance, some countries may have interpreted some data sets as general economics data and others as "other data".

Is it possible to share monetary and financial statistics micro data internally? Graph 5

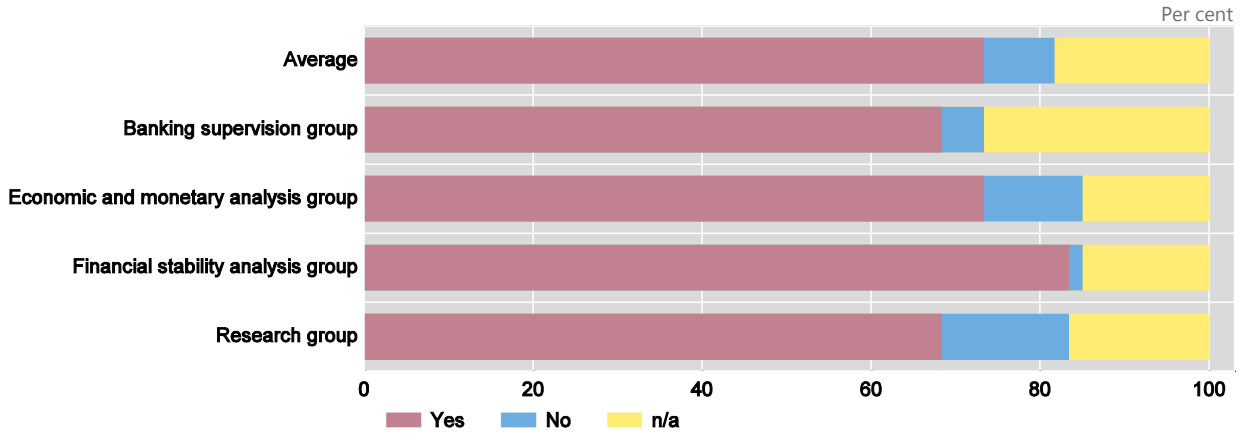


Source: IFC survey on the sharing of micro data, 2016.

As far as *supervisory data* are concerned, they are less widely shared internally (at around 75% of reporting institutions). Financial stability groups enjoy the highest degree of access to these data (Graph 6a).

Again, central banks' institutional structure (ie whether the supervisory authority is incorporated or not inside the central bank) affects their data-sharing policies to some extent: sharing supervisory data with all internal units (on average) is enabled significantly more often when the central bank is in charge of banking supervision than when it is not (about 80% and 60%, respectively; Graphs 6b, 6c).

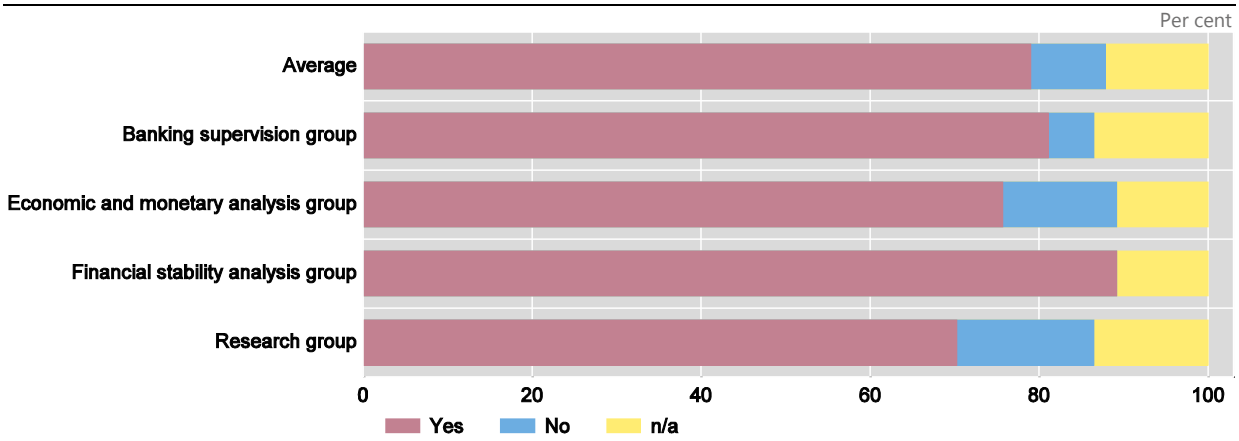
Is it possible to share supervisory data internally? (all respondents) Graph 6a



Source: IFC survey on the sharing of micro data, 2016.

Is it possible to share supervisory data internally? (joint CB and supervision)

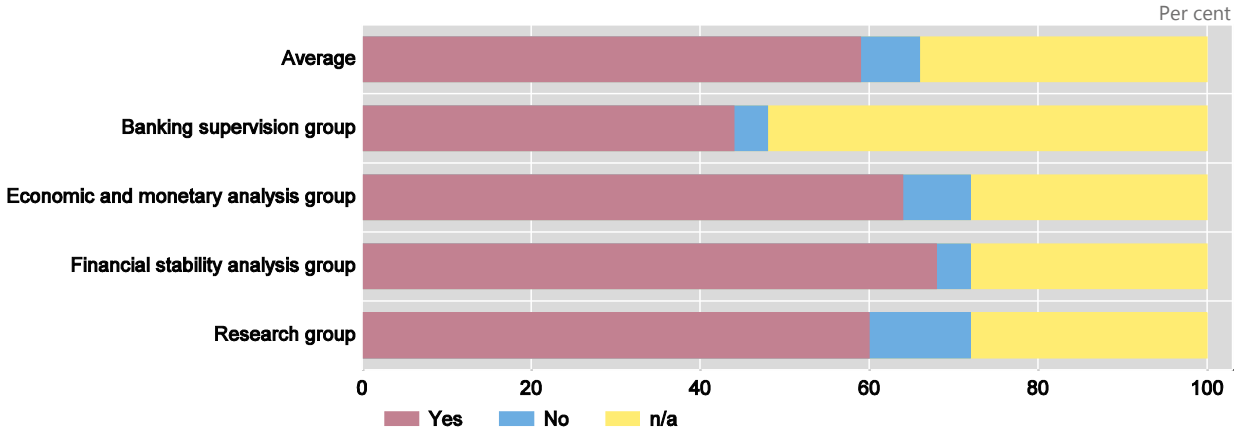
Graph 6b



Source: IFC survey on the sharing of micro data, 2016.

Is it possible to share supervisory data internally? (separate CB and supervision)

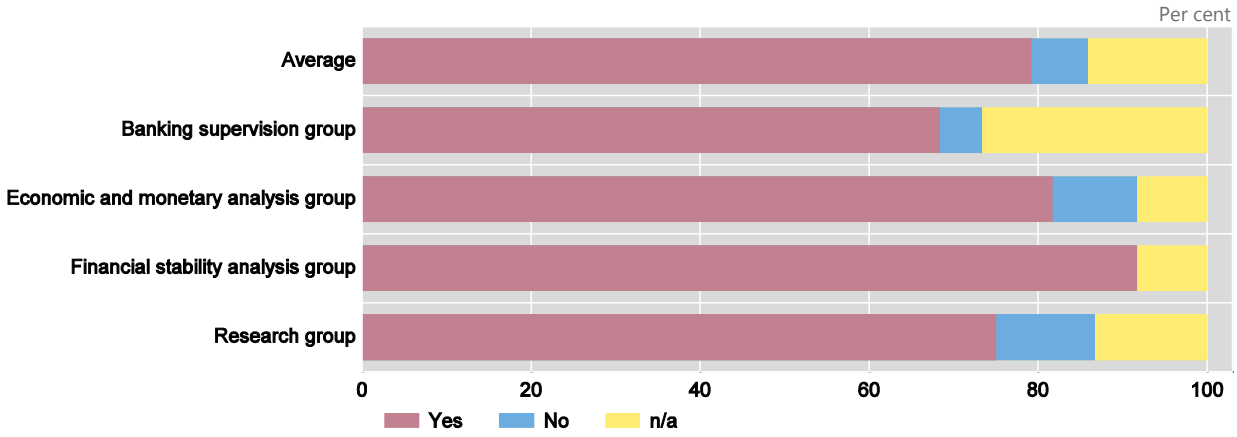
Graph 6c



Source: IFC survey on the sharing of micro data, 2016.

Is it possible to share macroprudential data internally?

Graph 7

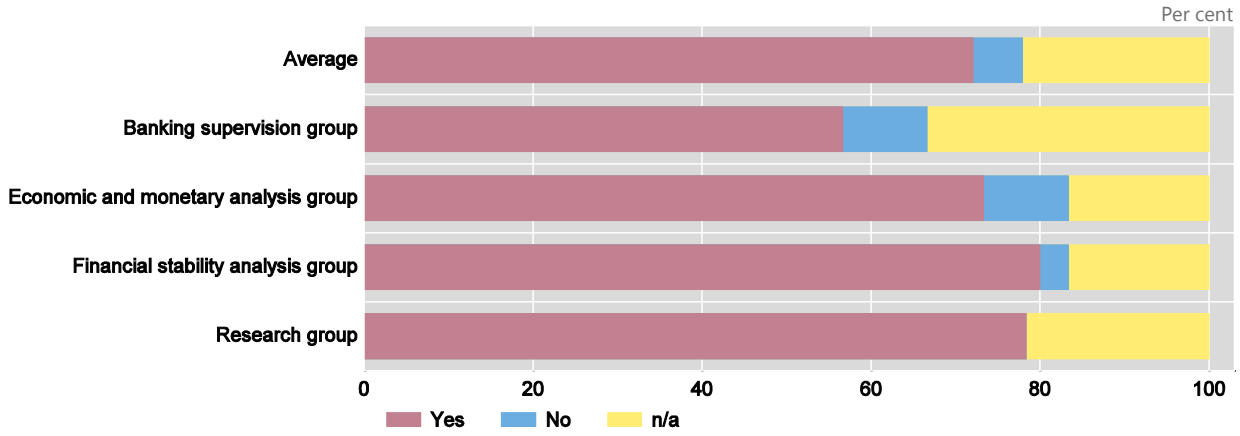


Source: IFC survey on the sharing of micro data, 2016.

The degree of internal sharing of *macroprudential data* is somewhere in between (Graph 7). They are shared by 80% of respondents, which is more often than supervisory data, but less frequent than monetary and financial statistics. Worth noting is the fact that these data are easily accessible internally to financial stability groups (for more than 90% of the cases), but much less to banking supervision groups (less than 70%). Presumably the degree of sharing would depend on the sensitivity of the data. For instance, a central bank noted that one of its departments has detailed micro data on capital controls, but these are not shared internally (and, obviously, also not externally).

Lastly, the sharing of *general economics micro data sets,* such as business conditions and household finances information, is somewhat more limited, especially with supervisory groups. Yet they are nevertheless shared internally in about 70% of the countries which took part in the survey (Graph 8).

Is it possible to share general economics micro data internally? Graph 8



Source: IFC survey on the sharing of micro data, 2016.

4. The external sharing of micro data between central banks and other authorities

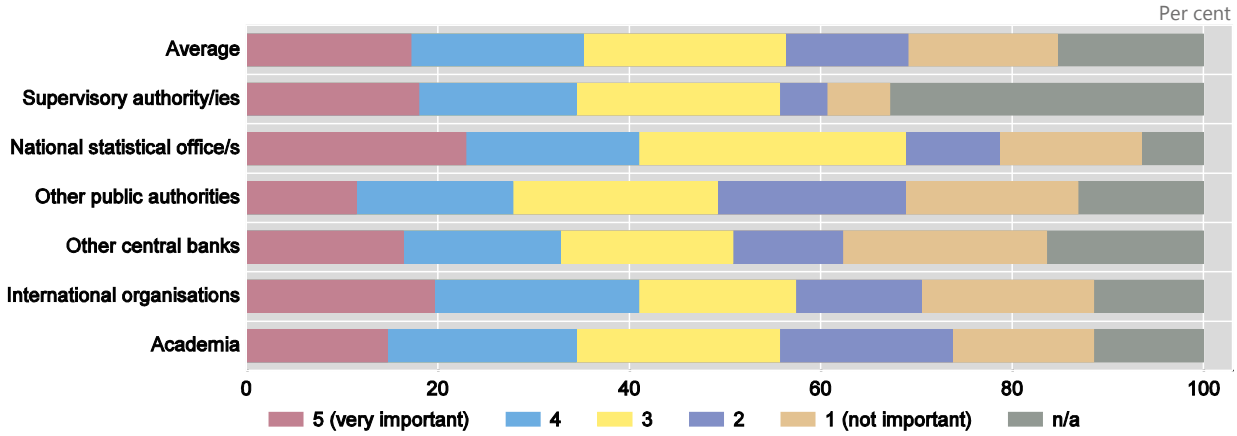
Senior policymakers in central banks attach significant importance to the external sharing of micro data between their institutions and other authorities, but much less so than to the internal sharing of such data within central banks. Here, significant emphasis is placed on information exchange between central banks and supervisory authorities, in particular concerning supervisory and macroprudential data. As regards the actual feasibility of information exchange, the sharing of micro data with external counterparties is possible in noticeably fewer cases than within the central bank itself.

Importance of external data-sharing

External sharing is deemed significantly less important than internal data-sharing: only around 15% of the central banks consider it as "very important" (compared to 45% for internal sharing, see above).

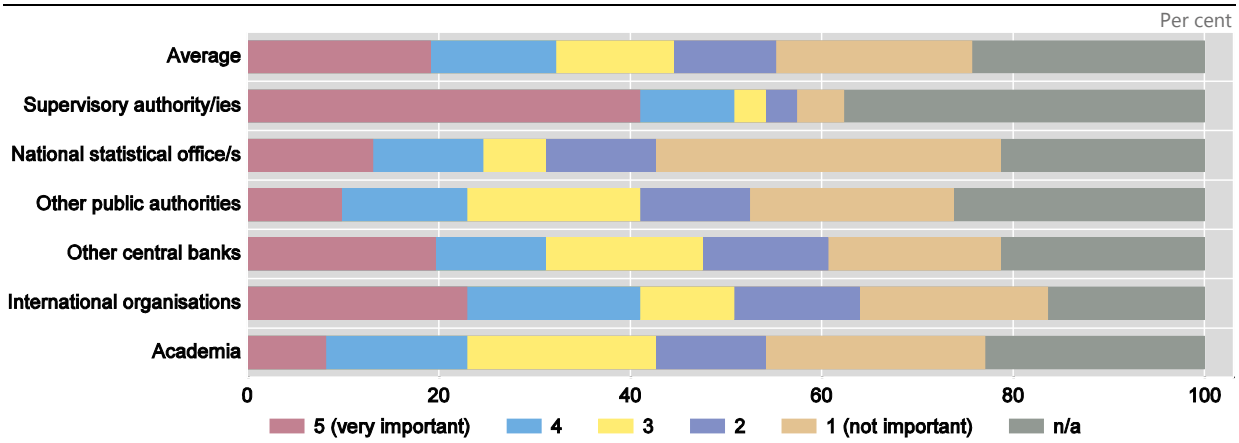
In particular, slightly less than 20% of the respondents opined that it is very important to exchange micro data in the area of monetary financial statistics (Graph 9) and supervisory data (Graph 10a) – this is well below the responses reported for internal sharing of those two types of data (around 45% in both cases).

Is it important to share monetary and financial statistics micro data externally? Graph 9



Source: IFC survey on the sharing of micro data, 2016.

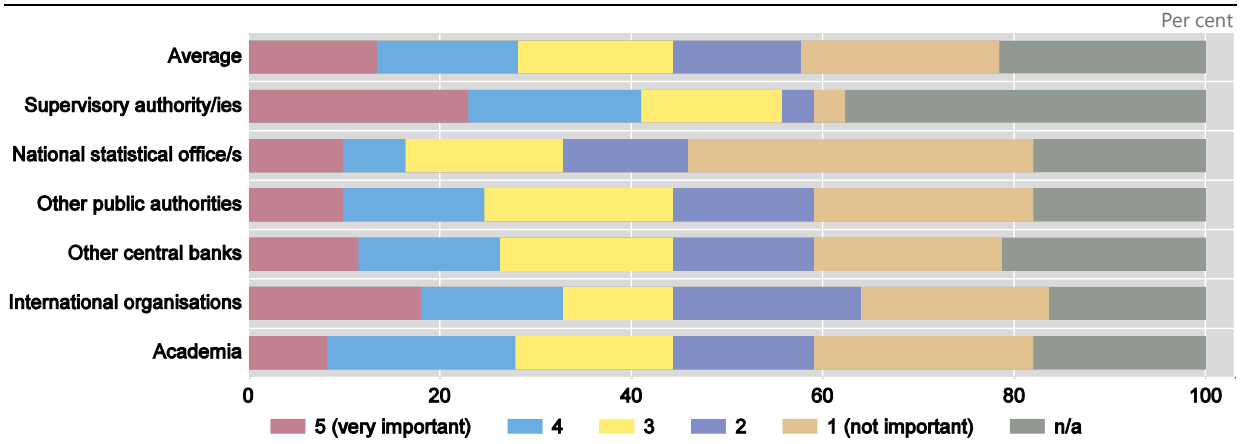
Is it important to share supervisory data externally? (all respondents) Graph 10a



Source: IFC survey on the sharing of micro data, 2016.

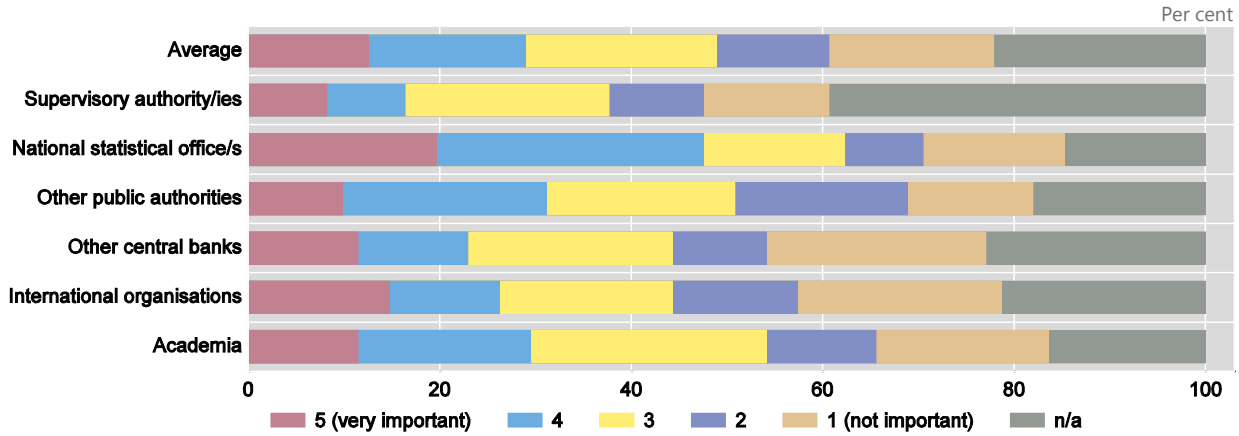
Compared with monetary and financial statistics data as well as supervisory data, interest in the external sharing of macroprudential and general economics data (Graphs 11 and 12) appears more limited: slightly more than 10% of the respondents rated it as "very important".

Is it important to share macroprudential data externally? Graph 11



Source: IFC survey on the sharing of micro data, 2016.

Is it important to share general economics data externally? Graph 12



Source: IFC survey on the sharing of micro data, 2016.

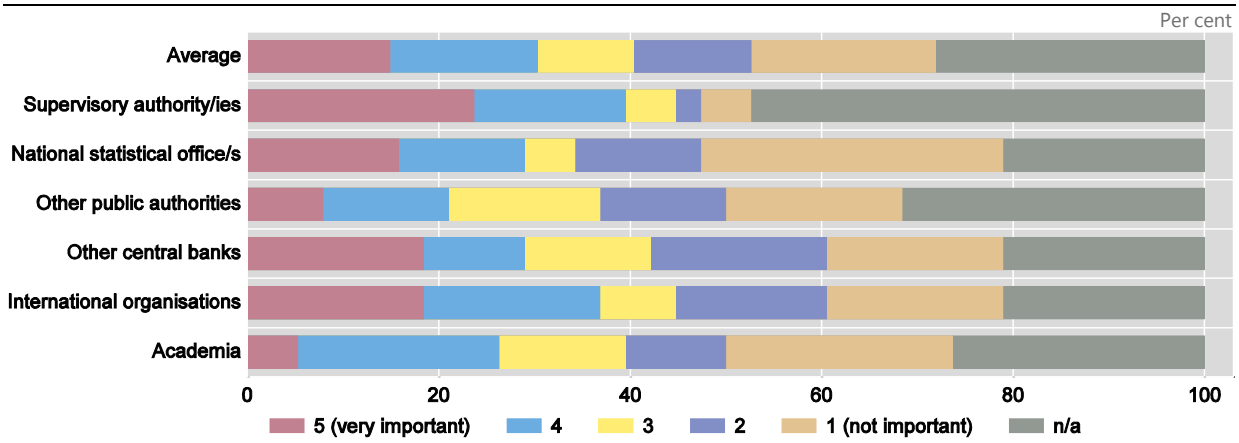
In terms of external counterparties for exchanging micro data, the greatest importance is accorded to sharing with supervisory authorities (seen as "very important" by just under 25% of the respondents). The next most important counterparties are international organisations, national statistical offices and other central banks ("very important" for around 15% of respondents). The sharing of data with academia and other public authorities was seen as least useful ("very important" for only around 10% of central banks in both cases).

A closer look at the responses yields some interesting findings regarding the use of specific data types by various user groups. One is that cooperation with *national statistical offices* should first focus on the sharing of monetary and financial statistics and of general economics micro data: this is deemed "very important" in 20–25% of the cases.

Another, particularly striking feature is that the sharing of supervisory data with *supervisory authorities* was seen as the most important type of external sharing

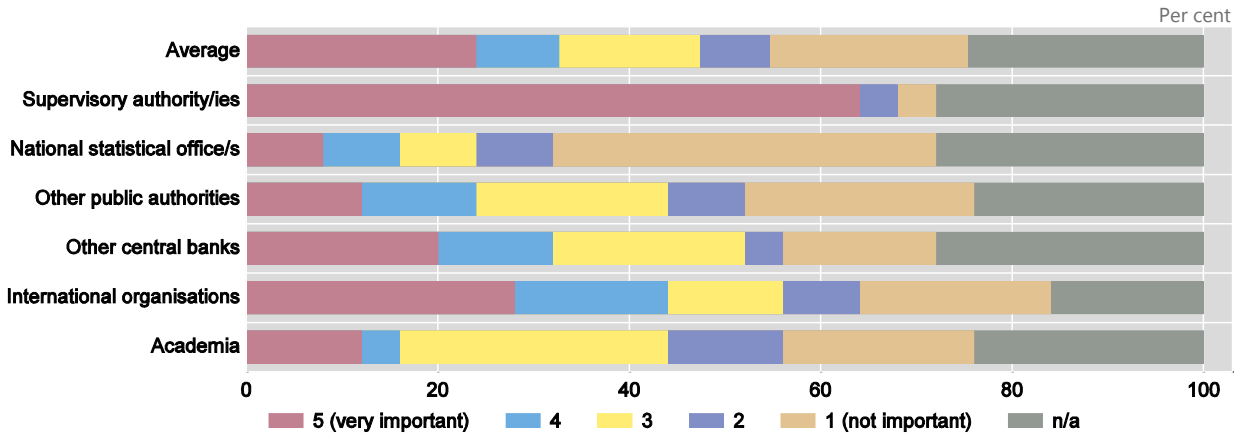
exercise. This is especially the case for countries where the supervisory authority is separate from the central bank: in those countries, around 65% of the respondents felt that it was "very important" to share supervisory data with those groups (Graph 10c), compared with around 25% in countries where the central bank is in charge of financial supervision (Graph 10b).

Is it important to share supervisory data externally? (joint CB and supervision) Graph 10b



Source: IFC survey on the sharing of micro data, 2016.

Is it important to share supervisory data externally? (separate CB and supervision) Graph 10c



Source: IFC survey on the sharing of micro data, 2016.

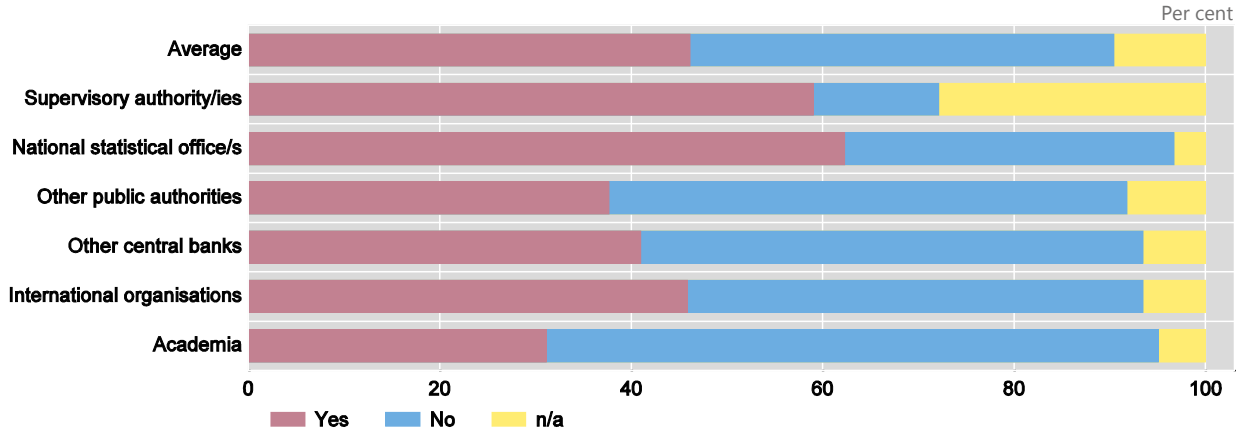
Turning to *other central banks and international organisations*,[8] the highest interest for sharing information with them relates to supervisory data.

[8] Many survey respondents treated the ECB and the European Banking Authority as international organisations for the purposes of the survey. Note: the notion of external sharing with supervisors applies when the latter are located outside the central bank.

Feasibility of external data-sharing

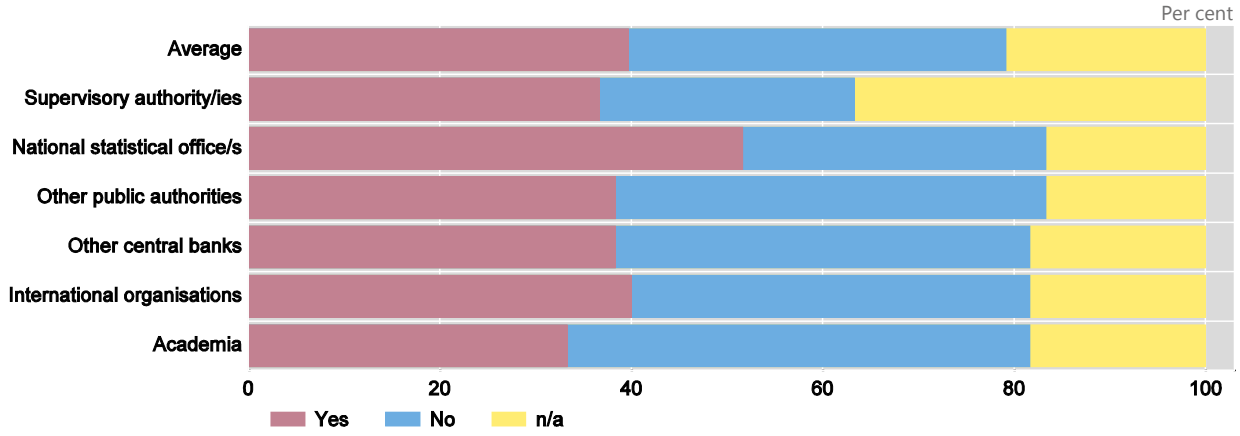
According to the survey, the sharing of data between central banks and external counterparties is already enabled to a significant extent (Table 2). On average across all counterparties and all types of data, it is feasible in almost 40% of the cases. That is however only half of the proportion reported for internal data-sharing feasibility within central banks.

Is it possible to share monetary and financial statistics micro data externally? Graph 13



Source: IFC survey on the sharing of micro data, 2016.

Is it possible to share general economics data externally? Graph 14

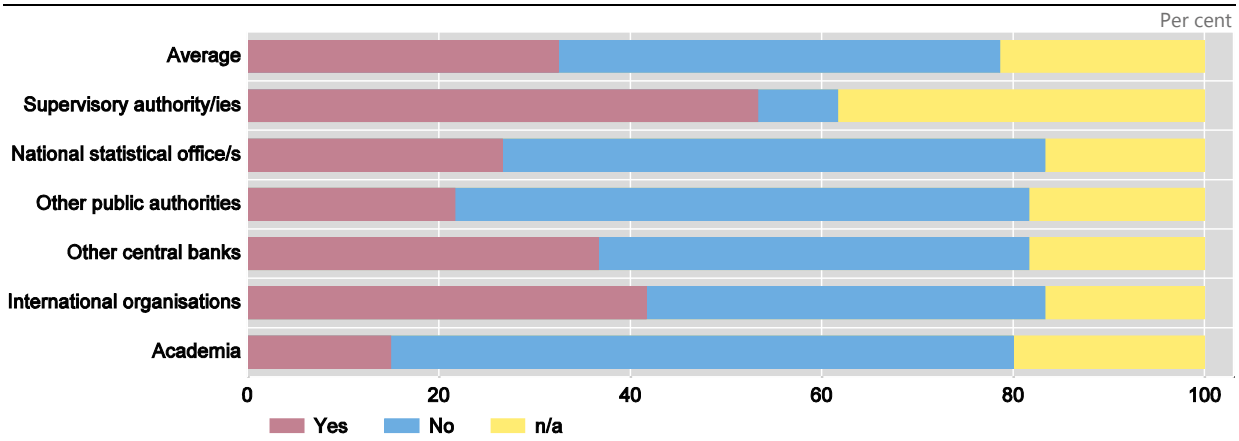


Source: IFC survey on the sharing of micro data, 2016.

Looking at the types of information that can be potentially shared externally, *monetary and financial statistics* and *general economics data* are a case in point (Graphs 13 and 14). Indeed, central banks can share those types of micro data with all external counterparties in, respectively, approximately 45% and 40% of the time on average. The maximum is reached for the external sharing with national statistical offices, which is possible in more than 60% of the cases for monetary and financial statistics (50% for general economics data).

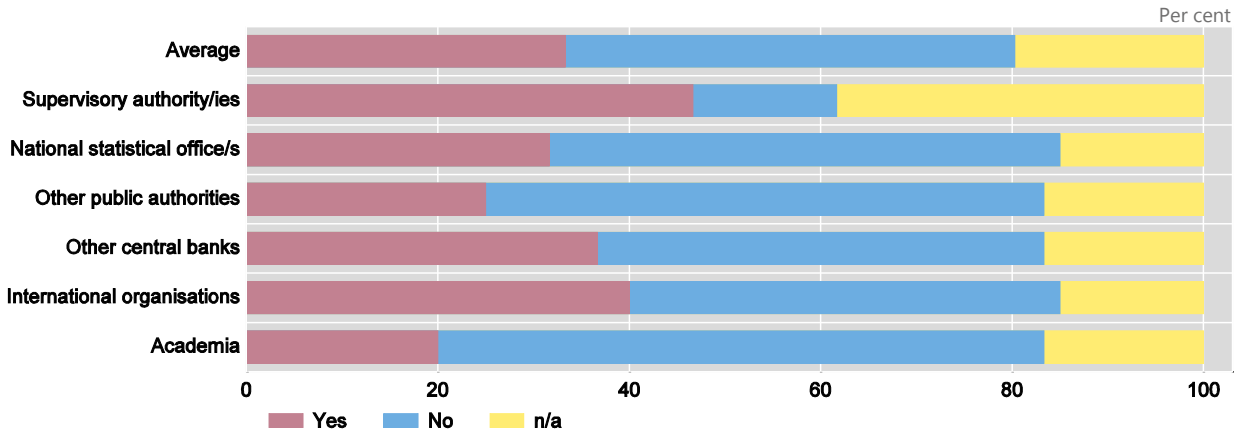
In contrast, exchange possibilities appear noticeably lower for *supervisory data* (Graph 15a) and *macroprudential data* (Graph 16): only one third of the respondents said that the exchange of these types of data was possible (on average with all types of counterparts). In either case, the sharing of such data is essentially geared towards supervisory authorities.

Is it possible to share supervisory data externally? (all respondents) Graph 15a



Source: IFC survey on the sharing of micro data, 2016.

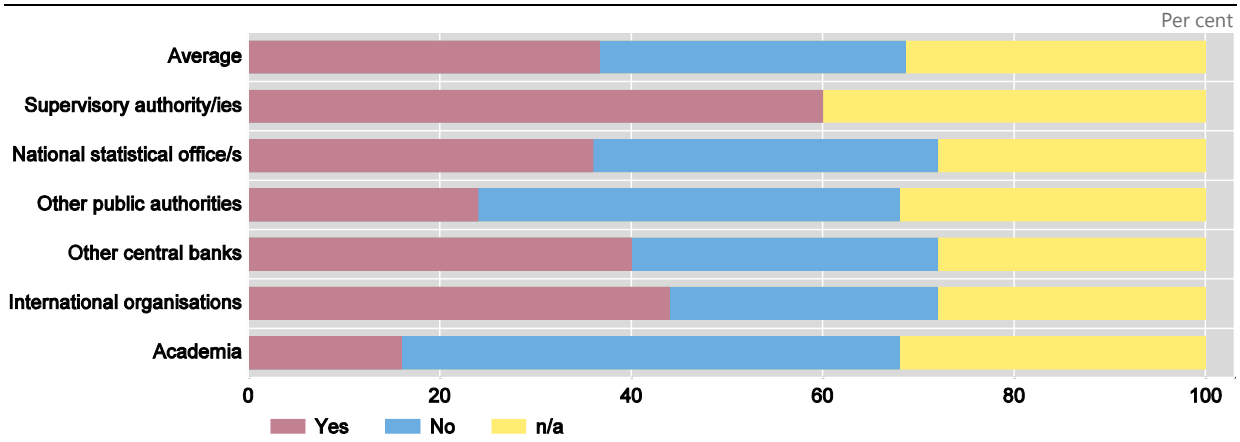
Is it possible to share macroprudential data externally? Graph 16



Source: IFC survey on the sharing of micro data, 2016.

Looking at the types of counterparty, the survey showed that many arrangements covering data-sharing with *supervisory authorities* often already exist. For all types of data, 50% of the central banks on average have in place such arrangements with supervisory bodies (for all types of data in general). For supervisory data only, this ratio goes up to 60% when the central bank is not in charge of financial supervision (Graph 15b).

Is it possible to share supervisory data externally? (separate CB and supervision) Graph 15b



Source: IFC survey on the sharing of micro data, 2016.

Turning to other external institutions, *national statistical offices* are the next most important counterparty for outward data-sharing: sharing with them was possible for almost 45% of the respondents, especially for monetary and financial statistics as well as general economics data. Next in line are *international organisations* and *other central banks*:[9] around 40% of central banks said that data-sharing was possible with those two types of counterparties (on average for all data types). Lastly, data-sharing possibilities with *other public authorities* and *academia* exist only for around 30% and 25% of the cases, respectively – as regards academia, sharing is primarily restricted to data outside the supervisory and macroprudential areas.

The above findings reflect the average situation reported by central banks. The survey also revealed some idiosyncrasies. On the one hand, several central banks reported that external data-sharing can extend to any topic relevant for the conduct of monetary policy and financial stability analysis. They mentioned central registries and balance sheet offices as an important external counterparty in this context; in addition, sharing data on non-bank financial institutions for financial stability analysis purposes was often considered as being of particular relevance. On the other hand, a number of central banks noted that the outward sharing of micro data is simply not allowed, except with supervisors or statistical offices for the preparation of aggregates.

5. Current sharing practices and planned improvements

Data-sharing arrangements

Specific sharing arrangements (legal agreements, MoUs, data aggregation, synthesis or anonymisation) often govern the sharing of micro data. The results are summarised

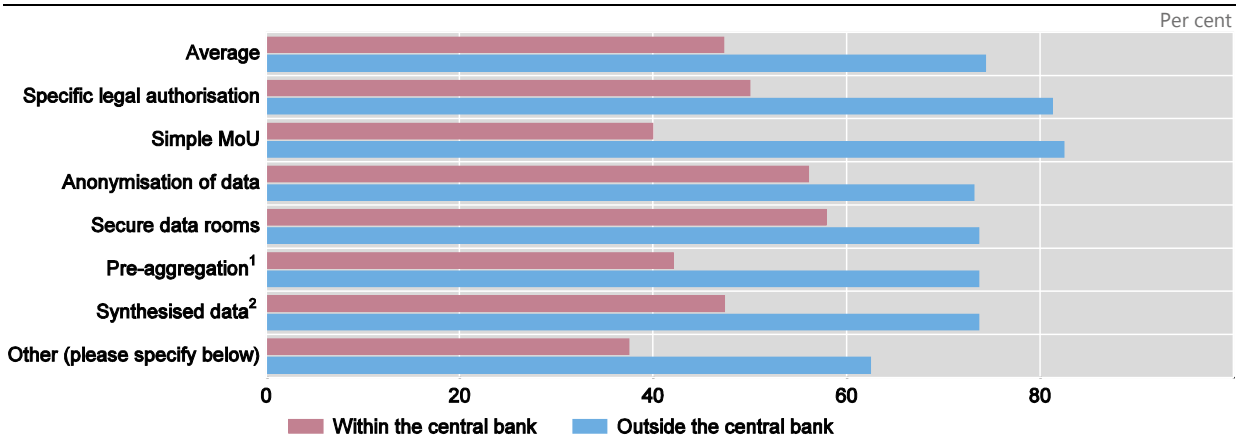
[9] See footnote 8.

in Graphs 17 to 20. Depending on the types of information considered, such arrangements apply in 40–65% of cases for internal sharing (the pink bars)[10] and in 60–80% of cases for external sharing (the blue bars). Considering all types of data together, this represents half and three fourths of the respondents, respectively. These results go in line with the findings of the 2015 IFC report on data-sharing, which identified clearly defined agreements as one of the pillars supporting data-sharing and recommended in particular that high-level institutional buy-in for a legal basis should be sought in the long term in the absence of favourable legislation.

Looking at specific type of *internal sharing* agreements more precisely, the most frequent type of arrangement is secure data rooms (reported on average by around 60% of the respondents), which is deemed particularly suitable for supervisory and macroprudential data. Less frequently but still widely used are specific legal authorisations, data anonymisation, pre-aggregation[11] techniques and synthesised indicators:[12] on average, around one half of the responses mentioned the use of these techniques for external sharing (for a wide range of data). Least frequently used are simple MoUs, in about 40% of the cases, pertaining mainly to macroprudential data.

Turning to *external sharing* agreements, the ranking of sharing arrangements is somewhat different. First come specific legal authorisations, simple MoUs and the use of synthesised data – mentioned in around 80 to 85% of the cases on average. Anonymisation, secure data rooms and pre-aggregation were mentioned in around 75% of the cases.

Sharing arrangements for monetary and financial statistics micro data? Graph 17



[1] Data on which some aggregation has been done but that are nevertheless confidential.

[2] Non-confidential summaries or representations of data.

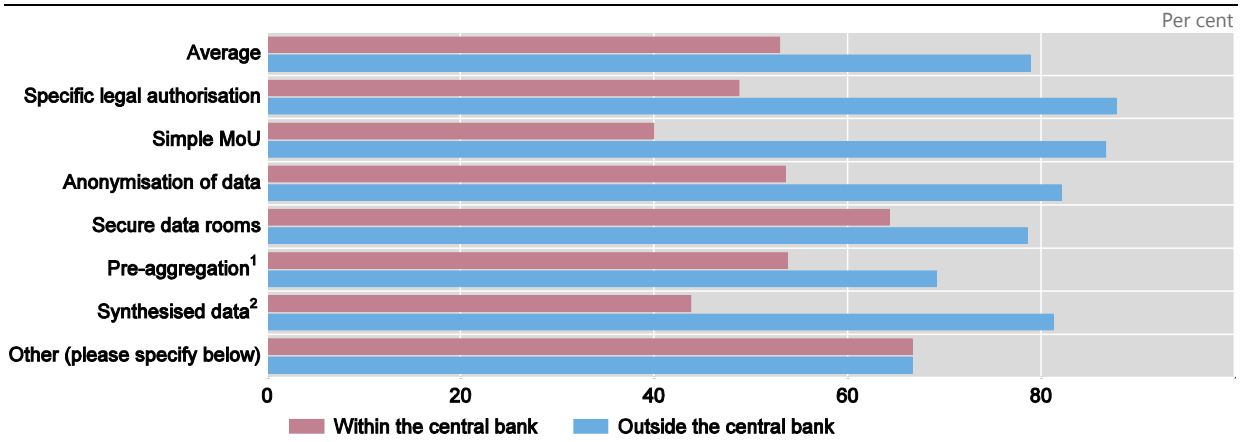
Source: IFC survey on the sharing of micro data, 2016.

[10] Several central banks mentioned that the internal handling of micro data on a "need to know" basis (including for research) is being applied and strictly monitored.

[11] Data on which some aggregation has been done but that are nevertheless confidential.

[12] Non-confidential summaries or representations of data.

Sharing arrangements for supervisory data? Graph 18

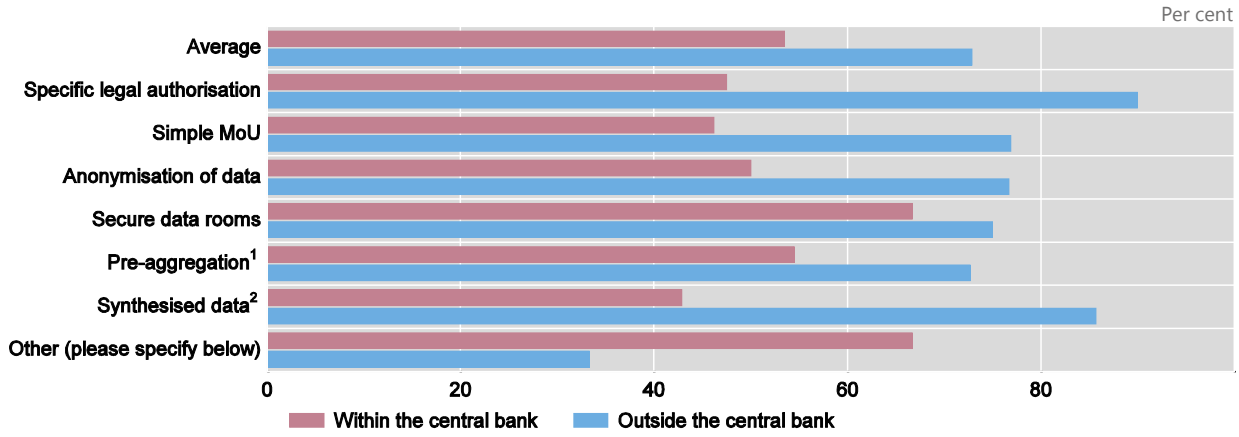


[1] Data on which some aggregation has been done but that are nevertheless confidential.

[2] Non-confidential summaries or representations of data.

Source: IFC survey on the sharing of micro data, 2016.

Sharing arrangements for macroprudential data? Graph 19



[1] Data on which some aggregation has been done but that are nevertheless confidential.

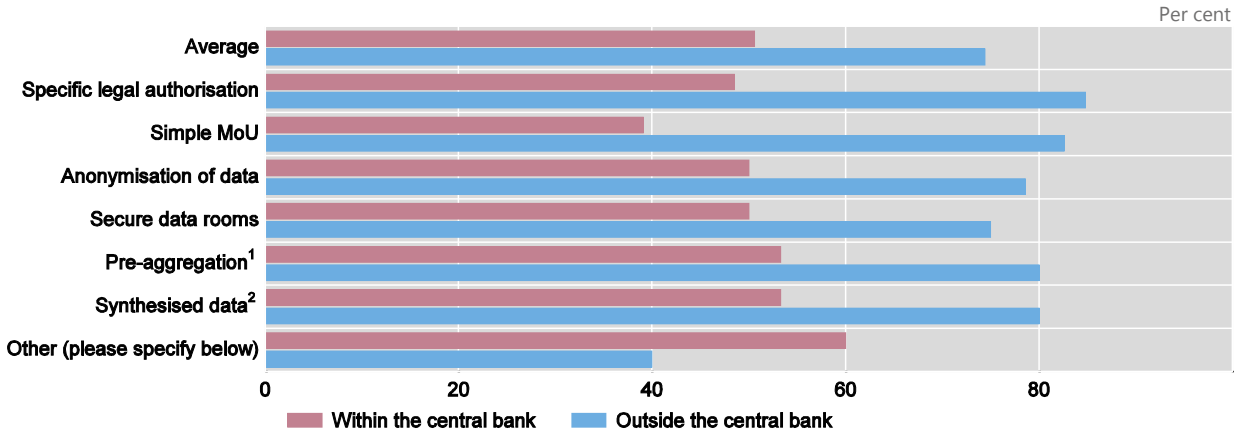
[2] Non-confidential summaries or representations of data.

Source: IFC survey on the sharing of micro data, 2016.

Survey responses offer interesting insights into alternative, more specific *internal* and *external* data-sharing arrangements, especially for supervisory data. More than half of the respondents reported the use of "*other sharing arrangements*" not covered under the main ones discussed above. One example relates to the sharing of micro data with academia, which is typically governed by bespoke bilateral agreements. Several central banks are currently working on refining MoUs or establishing the technical and legal frameworks that allow researchers to access their micro data. An interesting way of preserving the confidentiality of this information vis-à-vis internal and external counterparties is whereby users carry out their statistical and econometric analyses without having direct access to the actual micro data. They send an e-mail containing a program written in a prescribed software language; the system

subsequently returns a message with the results of the calculations, but without disclosing the actual micro data.

Sharing arrangements for general economics data? Graph 20



[1] Data on which some aggregation has been done but that are nevertheless confidential.

[2] Non-confidential summaries or representations of data.

Source: IFC survey on the sharing of micro data, 2016.

Another interesting form of sharing involves the matching of micro data sets produced for different purposes through anonymous or true identifiers.[13] The usefulness of this approach has become particularly evident in the period following the GFC. At that juncture, the need of central banks, regulators and supervisors for micro data rose in the context of both increasingly complex financial systems and financial activities and growing interconnections among banks as well as between banks and other financial institutions. Moreover, it was felt that the reporting burden had to be contained to the extent possible.

Almost one half of the central banks surveyed have an environment to perform matching on micro data sets (Graph 21). Examples include data on individual corporations and security-by-security databases, foreign exchange data and OTC transactions data.[14] Such matching allows the same data set to be used for several purposes, thus obviating the need to collect it multiple times. It can also be used to perform quality control, or to provide a micro-level drill-down for aggregates. Matching is likely to be easier to organise within the central bank, but it can sometimes also take place in collaboration with external counterparties. In particular, one could benefit from the wealth of information that can be derived from granular "administrative" data sets, which typically include databases maintained by financial institutions or by public authorities, including public credit registries on individual

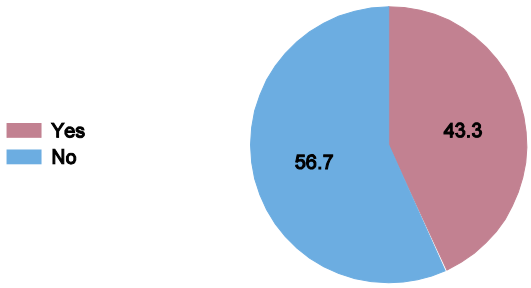
[13] Eg securities ISIN numbers, bank Swift codes, unique keys specific to a proprietary or commercial database. Matching through anonymous or true identifiers was also recognised and supported as good practice in the 2015 IFC report on data-sharing (Good practice 4).

[14] In Europe, for instance, similar information is available on securities holdings both as micro data (securities holding statistics) and more aggregate data (balance sheet items). The same type of information is coded differently in the two data sets, which might be connected through developing a single data dictionary.

loans data, security-by-security databases, central balance sheet databases, just to name a few (see Bean (2015)).

Does your central bank have a sharing environment for matching different micro data sets? Graph 21

Per cent



Source: IFC survey on the sharing of micro data, 2016.

Plans for improvements

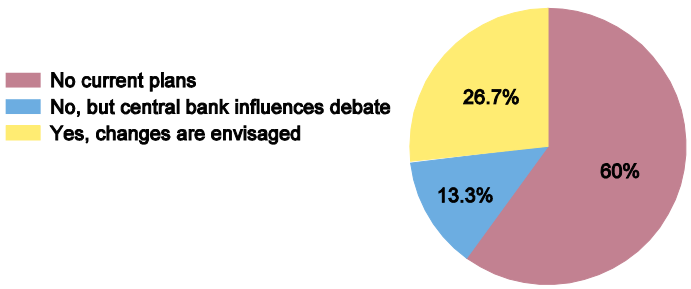
Around three quarters of central banks surveyed have no plans to change their current practice with regards to sharing micro data (Graph 22).

For the remainder of respondents who are currently envisaging altering their practices, examples of planned changes include:

- creating an integrated data collection exercise for monetary statistics and supervisory purposes and other areas of central bank operations;
- setting up platforms or dedicated secure rooms for sharing and matching micro data;

Does your central bank have any plans for changing its current policy or practice with regard to micro data-sharing? Graph 22

Per cent



Source: IFC survey on the sharing of micro data, 2016.

- increasing the encryption and other protection[15] of micro data;
- changing legislation or MoUs[16] in order to allow the sharing of more information between various central bank departments, as well as between the central bank and national statistical offices and/or international organisations.

One central bank is currently implementing a data strategy which will involve a review of all data requirements including access to micro data. This will provide better governance procedures and audit trails for anyone accessing its micro or confidential data.

Turning to the majority of survey respondents who stated having no plans for changing practices concerning micro data-sharing, one out of five reported that their central bank is nevertheless taking action to influence the general debate on this issue. Such influencing can take place through promoting legal acts, talking to other stakeholders, having a dialogue with the government, mentioning the matter during official statistical programme consultations or in various forums dedicated to micro data issues. From this perspective, it is usually felt that promoting an exchange of views within the central banking community on these topics can be very helpful – as evidenced by central banks' interest in participating in this IFC survey.

6. Legal and confidentiality constraints and potential solutions

To what extent do legal constraints such as national laws and commercial agreements as well as other confidentiality restrictions[17] preclude or limit the sharing of micro data?

The survey showed that this was not a major obstacle for *internal* data-sharing: on average about only one third of respondents cited these factors as constraints, and the responses were similar for the various types of micro data considered (monetary and financial statistics, supervisory data, macroprudential data, general economics micro data; see Graphs 23 to 26). Interestingly, it was felt that the obstacles for internal sharing of data were not so much posed by laws intended to protect anonymity or confidentiality (around 20% of the reported cases for all types of data) as by commercial agreements impeding the sharing of data among the various departments in central banks (almost 35%).

Turning to the *external* sharing of micro data, almost all respondents (about 90% to 95% on average) reported that legal constraints and confidentiality restrictions were limiting it. Again, the situation was broadly similar for all types of data being considered.

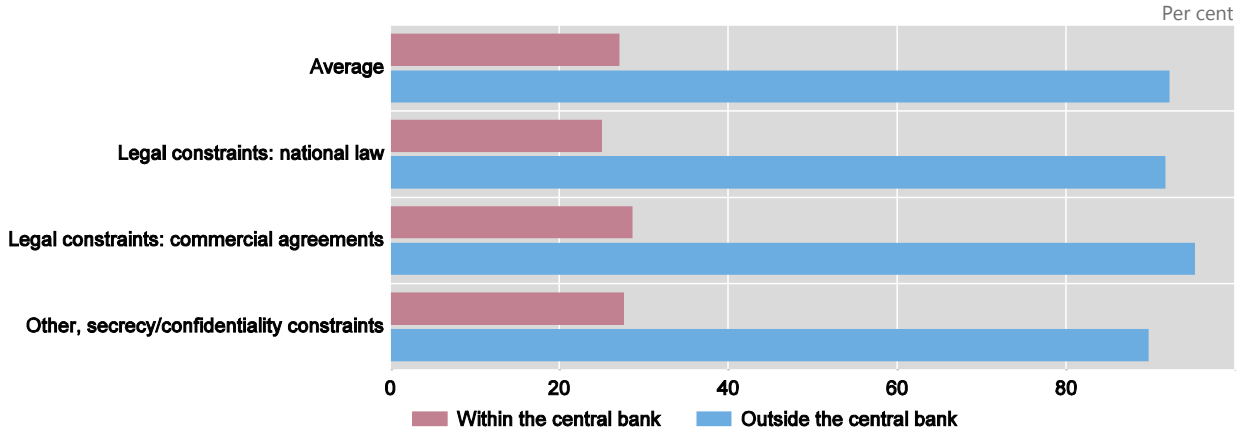
[15] See good practice 5 (IFC (2015)).

[16] See good practice 2 (IFC (2015)).

[17] Legal constraints may restrict the use of the data to the purpose(s) foreseen for the initial data collection exercise, or make data usage subject to specific access conditions (eg consent of survey respondents, MoU).

Constraints affecting monetary and financial statistics micro data?

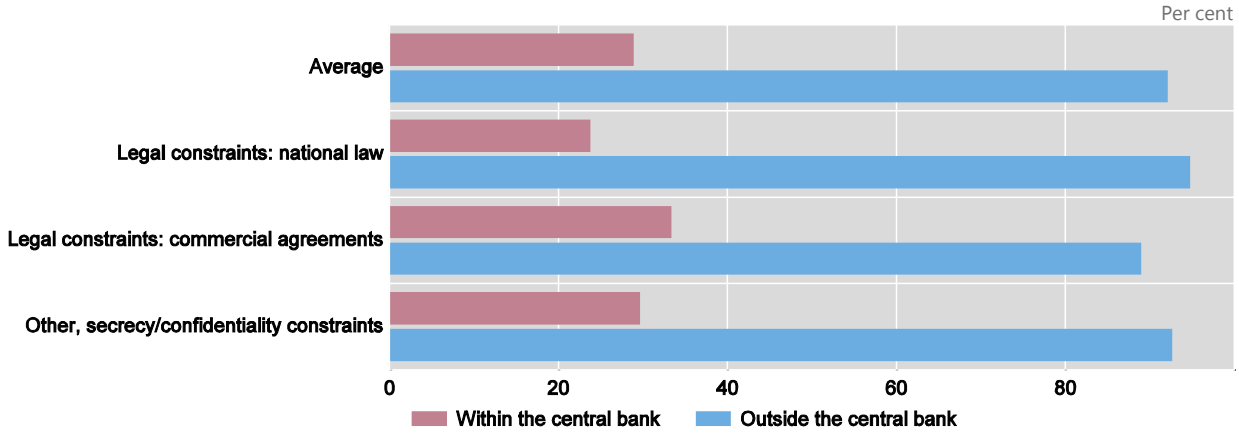
Graph 23



Source: IFC survey on the sharing of micro data, 2016.

Constraints affecting supervisory data?

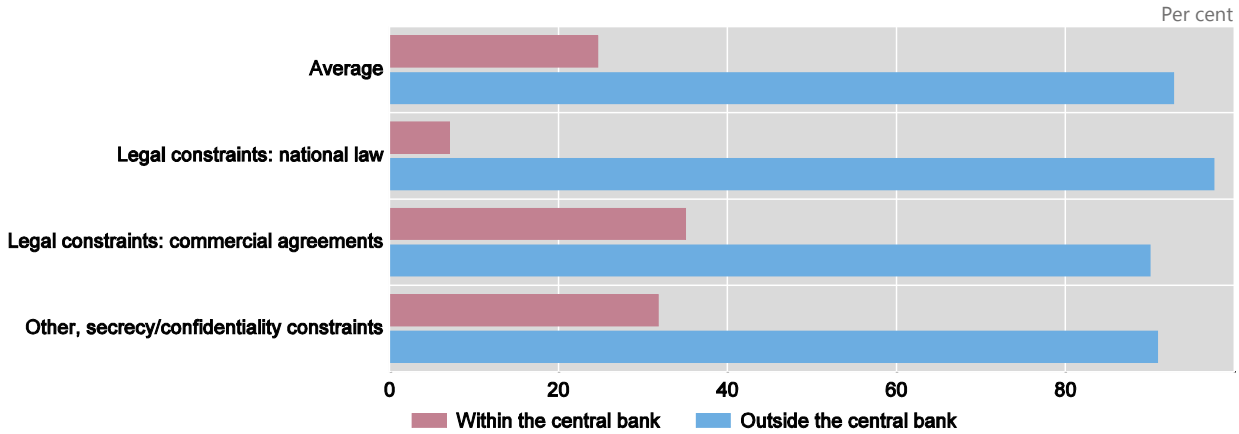
Graph 24



Source: IFC survey on the sharing of micro data, 2016.

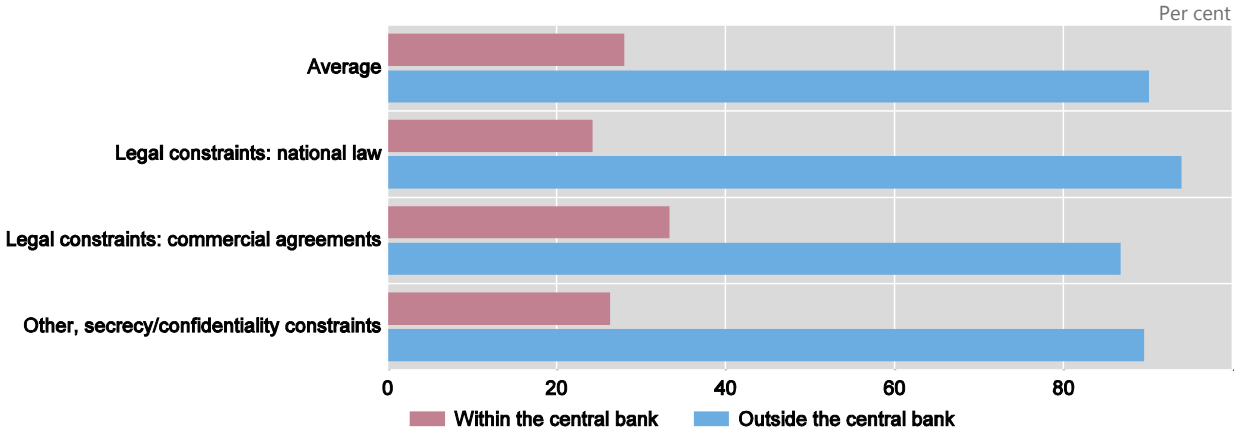
Constraints affecting macroprudential data?

Graph 25



Source: IFC survey on the sharing of micro data, 2016.

Constraints affecting general economics data? Graph 26



Source: IFC survey on the sharing of micro data, 2016.

These results corroborate the findings of the 2015 IFC Task Force on Data-sharing, which had identified legal issues as one of the main obstacles to data-sharing. But what should be the best approach, going forward? The IFC 2015 Report had first highlighted that "*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*".

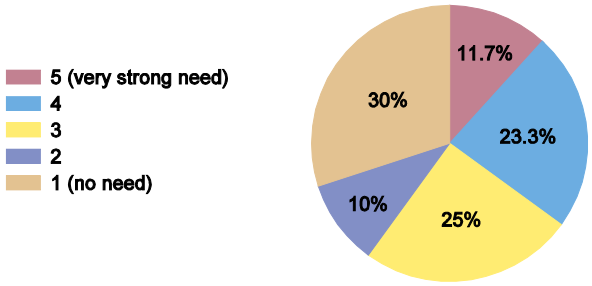
As a second-best solution, the 2015 Report mentioned that "*if changes in the legal framework cannot be pursued (…) good practice would encourage clarifying the existing legal framework and understanding what can and cannot be shared*". The findings of the present survey tend to support these recommendations. In particular, legislation is indeed being changed in some countries to facilitate the sharing of micro data.

Yet another message over and above those of the 2015 Report is the suggestion that additional actions could be taken to specifically deal with the constraints posed by commercial agreements. Over one third of respondents felt that there is a strong or very strong need to ease the legal constraints imposed by commercial agreements in order to allow the sharing of micro data among public authorities (Graph 27). Among the measures envisaged by some countries, one is to allow public authorities to have access to micro data collected by the private sector as a general rule, unless the data provider can prove that this would be detrimental to its activities.

Several respondents also stressed the importance of pooling the purchasing of commercial data between various user entities in order to provide more clout in negotiations about data-sharing. One central bank noted that better communication stressing the non-commercial use of the data may facilitate such endeavours. Sharing data at a low level of aggregation may be another solution, as most contracts – but not all – stipulate that manipulations of data that meet certain conditions become the property of the purchasing organisation. Another respondent pointed out that there is a balance to be found between providing rightful access to micro data for policy analysis purposes and preventing any misuse of it, the latter presenting a risk not only to the security and business of the reporting entity, but also to the country's financial stability.

In your view, is there a need to ease the legal constraints imposed by commercial agreements in order to allow the sharing of micro data among public authorities? Graph 27

Per cent



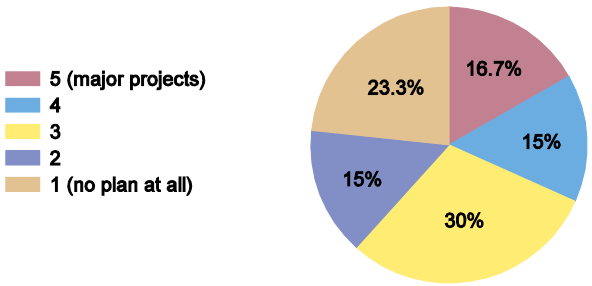
Source: IFC survey on the sharing of micro data, 2016.

7. Overcoming technical obstacles

Apart from legal and confidentiality constraints, technical obstacles were also frequently mentioned as limiting or precluding the external sharing of micro data. Although the majority of central banks surveyed have no significant plans to change their current IT environment supporting the sharing of micro data, a significant minority (about one third of respondents) stated that they do currently have "major" or "significant" projects to increase IT security in this area (Graph 28). Examples of projects underway include new encryption software, database logging, preventing unauthorised external access, setting up firewalls, improving data management including centralising data and integrating databases, reinforcing internal protocols relating to access, and improving remote access protocols. At several central banks, such projects have buy-in from senior management and are regarded as strategic.

Does your institution have plans to increase the IT security related to access and/or sharing of the data? Graph 28

Per cent



Source: IFC survey on the sharing of micro data, 2016.

8. Conclusion

Data-sharing inside central banks for different user groups is considered important at a senior policy level and is already possible in many countries. Particularly involved in such sharing exercises are central bank supervisory and macroprudential departments. The importance of this topic has increased significantly with the current demand for granular data both from authorities and academia.

The sharing of micro data between central banks and external counterparties is also viewed as important, but is seen as a lesser priority than sharing within central banks. Particularly important here is the sharing of data between financial stability departments of central banks and (external) supervisory authorities.

Certainly, there is a balance to be found between preserving the confidentiality of micro data and providing sufficient and useful micro data to policymakers especially central banks in the areas of supervision, financial stability and monetary policy. Buy-in at a high level to support data-sharing was already identified in the conclusions of the 2015 IFC Report as a key factor facilitating data-sharing endeavours and this survey confirms the importance of this factor.

Obviously, the first area for potential action is to revisit existing *legal constraints*. This report suggests that particular attention should be devoted to mitigating the constraints posed by commercial agreements with private data vendors.

When legal constraints cannot be easily and/or rapidly removed, an alternative solution is to focus on *good practices* that could be derived from others' experiences. This issue was already raised in the 2015 IFC Report on data-sharing, and one purpose of this present survey is precisely to facilitate such knowledge-sharing within the central bank community. Indeed, silo mentalities still often hamper the sharing of micro data. And, as the benefits of data-sharing may not have been sufficiently marketed to senior decision-makers, improving communication in this area may be desirable.

Lastly, one should recognise that a significant amount of work is ongoing at the international level to promote data-sharing both within and across countries. In particular, the second phase of the G20 Data Gaps Initiative (DGI-2) under the aegis of the G20 Finance Ministers and Central Bank Governors offers a key opportunity for raising awareness about the benefits of increased data-sharing and accessibility of granular data for policy purposes. The present survey shows that this is a particularly welcome and timely initiative.

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Appendix 1: Executive summary of the 2015 IFC Report on Data-sharing

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.

The 2015 IFC data-sharing 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, taking into account 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.

Appendix 2: 2016 IFC survey questionnaire on the sharing of micro data

The following questions aim at collecting information on central banks' policy and practice with regard to access to and sharing of micro data for various purposes. Micro data refers to data at individual level which allow identification of the reporting entity.

The aim of this part of the survey is to enable an overall assessment of whether there is currently a fair balance between maintaining confidentiality of individual data and the use of micro data.

A. General policy interest in sharing of micro data

1. Has the sharing of micro data with various user groups been an important issue at the senior policy level at your central bank?

1.1 Sharing micro data within your central bank , and with the given internal user groups, on …

For each point below, please indicate on a scale of 1 to 5, where 1 = "not important" and 5 = "very important", the importance of sharing micro data with the indicated groups within your central bank

1.1 a) … monetary and financial market statistics issues

	Very important				Not important	
	5	4	3	2	1	n/a
Banking supervision group	❑	❑	❑	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑	❑	❑	❑
Financial stability analysis group	❑	❑	❑	❑	❑	❑
Research group	❑	❑	❑	❑	❑	❑

1.1 b) … banking supervisory issues

	Very important				Not important	
	5	4	3	2	1	n/a
Banking supervision group	❑	❑	❑	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑	❑	❑	❑
Financial stability analysis group	❑	❑	❑	❑	❑	❑
Research group	❑	❑	❑	❑	❑	❑

1.1 c) … macroprudential issues

	Very important				Not important	
	5	4	3	2	1	n/a
Banking supervision group	❑	❑	❑	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑	❑	❑	❑
Financial stability analysis group	❑	❑	❑	❑	❑	❑
Research group	❑	❑	❑	❑	❑	❑

1.1 d) … general economics issues

	Very important					Not important
	5	4	3	2	1	n/a
Banking supervision group	❑	❑	❑	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑	❑	❑	❑
Financial stability analysis group	❑	❑	❑	❑	❑	❑
Research group	❑	❑	❑	❑	❑	❑

1.1 e) … other issues (please specify below)

	Very important					Not important
	5	4	3	2	1	n/a
Banking supervision group	❑	❑	❑	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑	❑	❑	❑
Financial stability analysis group	❑	❑	❑	❑	❑	❑
Research group	❑	❑	❑	❑	❑	❑

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A. General policy interest in sharing of micro-data

1. Has the sharing of micro data with various user groups been an important issue at the senior policy level at your central bank? (continued)

1.2 Sharing micro data outside your central bank , and with the given external user groups, on …

For each point below, please indicate on a scale of 1 to 5, where 1 = "not important" and 5 = "very important", the importance of sharing micro data with the indicated groups outside your central bank

1.2 a) … monetary and financial market statistics issues

	Very important					Not important
	5	4	3	2	1	n/a
Supervisory authority/ies	❑	❑	❑	❑	❑	❑
National statistical office/s	❑	❑	❑	❑	❑	❑
Other public authorities	❑	❑	❑	❑	❑	❑
Other central banks	❑	❑	❑	❑	❑	❑
International organisations	❑	❑	❑	❑	❑	❑
Academia	❑	❑	❑	❑	❑	❑

1.2 b) … banking supervisory issues

	Very important					Not important
	5	4	3	2	1	n/a
Supervisory authority/ies	❑	❑	❑	❑	❑	❑
National statistical office/s	❑	❑	❑	❑	❑	❑
Other public authorities	❑	❑	❑	❑	❑	❑
Other central banks	❑	❑	❑	❑	❑	❑
International organisations	❑	❑	❑	❑	❑	❑
Academia	❑	❑	❑	❑	❑	❑

1.2 c) … macroprudential issues

	Very important				Not important	
	5	4	3	2	1	n/a
Supervisory authority/ies	❑	❑	❑	❑	❑	❑
National statistical office/s	❑	❑	❑	❑	❑	❑
Other public authorities	❑	❑	❑	❑	❑	❑
Other central banks	❑	❑	❑	❑	❑	❑
International organisations	❑	❑	❑	❑	❑	❑
Academia	❑	❑	❑	❑	❑	❑

1.2 d) … general economics issues

	Very important				Not important	
	5	4	3	2	1	n/a
Supervisory authority/ies	❑	❑	❑	❑	❑	❑
National statistical office/s	❑	❑	❑	❑	❑	❑
Other public authorities	❑	❑	❑	❑	❑	❑
Other central banks	❑	❑	❑	❑	❑	❑
International organisations	❑	❑	❑	❑	❑	❑
Academia	❑	❑	❑	❑	❑	❑

1.2 e) … other issues (please specify below)

	Very important				Not important	
	5	4	3	2	1	n/a
Supervisory authority/ies	❑	❑	❑	❑	❑	❑
National statistical office/s	❑	❑	❑	❑	❑	❑
Other public authorities	❑	❑	❑	❑	❑	❑
Other central banks	❑	❑	❑	❑	❑	❑
International organisations	❑	❑	❑	❑	❑	❑
Academia	❑	❑	❑	❑	❑	❑

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B. Current data-sharing policy of your central bank

2.1 Can granular/micro data on monetary and financial market statistics collected in your central bank, in principle, be shared with other users within or outside your central bank?

2.1 a) Shared within your central bank and with the following internal user groups

	Yes	No	n/a
Banking supervision group	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑
Financial stability analysis group	❑	❑	❑
Research group	❑	❑	❑

2.1 b) Shared outside your central bank and with the following external user groups

	Yes	No	n/a
Supervisory authority/ies	❑	❑	❑
National statistical office/s	❑	❑	❑
Other public authorities	❑	❑	❑
Other central banks	❑	❑	❑
International organisations	❑	❑	❑
Academia	❑	❑	❑

2.1 c) If you answered "yes" to sharing this micro data with any of the above user groups, is this subject to any of the following specific arrangements?

Please mark all that apply

	Within the central bank	Outside the central bank
Specific legal authorisation	❑	❑
Simple MoU	❑	❑
Anonymisation of data	❑	❑
Secure data rooms	❑	❑
Only pre-aggregated data can be shared (ie data on which some aggregation has been done but that are nevertheless confidential)	❑	❑
Only synthesised data can be shared (ie non-confidential summaries or representations of data)	❑	❑
Other (please specify below)	❑	❑

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2.1 d) If you answered "no" to sharing this micro data with any of the above user groups, what are the constraints that preclude this?

Please mark all that apply

	Within the central bank	Outside the central bank
Legal constraints imposed by the law that authorises the data collection (restrictions on using data for purposes other than those explicitly specified)	❑	❑
Legal constraints imposed by commercial agreements (eg micro data on individual securities or firms that the central bank obtains through commercial agreements)	❑	❑
Secrecy/confidentiality constraints (other than legal restrictions)	❑	❑
Technical constraints	❑	❑
Other (please specify below)	❑	❑

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B. Current data-sharing policy of your central bank (continued)

2.2 Can granular/micro data on banking supervisory issues collected in your central bank, in principle, be shared with other users within or outside your central bank?

2.2 a) Shared within your central bank and with the following internal user groups

	Yes	No	n/a
Banking supervision group	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑
Financial stability analysis group	❑	❑	❑
Research group	❑	❑	❑

2.2 b) Shared outside your central bank and with the following external user groups

	Yes	No	n/a
Supervisory authority/ies	❑	❑	❑
National statistical office/s	❑	❑	❑
Other public authorities	❑	❑	❑
Other central banks	❑	❑	❑
International organisations	❑	❑	❑
Academia	❑	❑	❑

2.2 c) If you answered "yes" to sharing this micro data with any of the above user groups, is this subject to any of the following specific arrangements?

Please mark all that apply

	Within the central bank	Outside the central bank
Specific legal authorisation	❑	❑
Simple MoU	❑	❑
Anonymisation of data	❑	❑
Secure data rooms	❑	❑
Only pre-aggregated data can be shared (ie data on which some aggregation has been done but that are nevertheless confidential)	❑	❑
Only synthesised data can be shared (ie non-confidential summaries or representations of data)	❑	❑
Other (please specify below)	❑	❑

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_____

2.2 d) If you answered "no" to sharing this micro data with any of the above user groups, what are the constraints that preclude this?

Please mark all that apply

	Within the central bank	Outside the central bank
Legal constraints imposed by the law that authorises the data collection (restrictions on using data for purposes other than those explicitly specified)	❑	❑
Legal constraints imposed by commercial agreements (eg micro data on individual securities or firms that the central bank obtains through commercial agreements)	❑	❑
Secrecy/confidentiality constraints (other than legal restrictions)	❑	❑
Technical constraints	❑	❑
Other (please specify below)	❑	❑

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B. Current data-sharing policy of your central bank (continued)

2.3 Can granular/micro data on macroprudential issues collected in your central bank, in principle, be shared with other users within or outside your central bank?

2.3 a) Shared within your central bank and with the following internal user groups

	Yes	No	n/a
Banking supervision group	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑
Financial stability analysis group	❑	❑	❑
Research group	❑	❑	❑

2.3 b) Shared outside your central bank and with the following external user groups

	Yes	No	n/a
Supervisory authority/ies	❑	❑	❑
National statistical office/s	❑	❑	❑
Other public authorities	❑	❑	❑
Other central banks	❑	❑	❑
International organisations	❑	❑	❑
Academia	❑	❑	❑

2.3 c) If you answered "yes" to sharing this micro data with any of the above user groups, is this subject to any of the following specific arrangements?

Please mark all that apply

	Within the central bank	Outside the central bank
Specific legal authorisation	❑	❑
Simple MoU	❑	❑
Anonymisation of data	❑	❑

Secure data rooms	❑	❑
Only pre-aggregated data can be shared (ie data on which some aggregation has been done but that are nevertheless confidential)	❑	❑
Only synthesised data can be shared (ie non-confidential summaries or representations of data)	❑	❑
Other (please specify below)	❑	❑

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2.3 d) If you answered "no" to sharing this micro data with any of the above user groups, what are the constraints that preclude this?

Please mark all that apply

	Within the central bank	Outside the central bank
Legal constraints imposed by the law that authorises the data collection (restrictions on using data for purposes other than those explicitly specified)	❑	❑
Legal constraints imposed by commercial agreements (eg micro data on individual securities or firms that the central bank obtains through commercial agreements)	❑	❑
Secrecy/confidentiality constraints (other than legal restrictions)	❑	❑
Technical constraints	❑	❑
Other (please specify below)	❑	❑

_____
_____

B. Current data-sharing policy of your central bank (continued)

2.4 Can granular/micro data on general economics issues collected in your central bank, in principle, be shared with other users within or outside your central bank?

2.4 a) Shared within your central bank and with the following internal user groups

	Yes	No	n/a
Banking supervision group	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑
Financial stability analysis group	❑	❑	❑
Research group	❑	❑	❑

2.4 b) Shared outside your central bank and with the following external user groups

	Yes	No	n/a
Supervisory authority/ies	❑	❑	❑
National statistical office/s	❑	❑	❑

Other public authorities	❑	❑	❑
Other central banks	❑	❑	❑
International organisations	❑	❑	❑
Academia	❑	❑	❑

2.4 c) If you answered "yes" to sharing this micro data with any of the above user groups, is this subject to any of the following specific arrangements?

Please mark all that apply

	Within the central bank	Outside the central bank
Specific legal authorisation	❑	❑
Simple MoU	❑	❑
Anonymisation of data	❑	❑
Secure data rooms	❑	❑
Only pre-aggregated data can be shared (ie data on which some aggregation has been done but that are nevertheless confidential)	❑	❑
Only synthesised data can be shared (ie non-confidential summaries or representations of data)	❑	❑
Other (please specify below)	❑	❑

_____
_____

2.4 d) If you answered "no" to sharing this micro data with any of the above user groups, what are the constraints that preclude this?

Please mark all that apply

	Within the central bank	Outside the central bank
Legal constraints imposed by the law that authorises the data collection (restrictions on using data for purposes other than those explicitly specified)	❑	❑
Legal constraints imposed by commercial agreements (eg micro data on individual securities or firms that the central bank obtains through commercial agreements)	❑	❑
Secrecy/confidentiality constraints (other than legal restrictions)	❑	❑
Technical constraints	❑	❑
Other (please specify below)	❑	❑

_____
_____

B. Current data-sharing policy of your central bank (continued)

2.5 Can granular/micro data on other issues collected in your central bank, in principle, be shared with other users within or outside your central bank?

2.5 a) Shared within your central bank and with the following internal user groups

	Yes	No	n/a
Banking supervision group	❑	❑	❑
Economic and monetary analysis group	❑	❑	❑
Financial stability analysis group	❑	❑	❑
Research group	❑	❑	❑

Please specify which issues, here

_____
_____

2.5 b) Shared outside your central bank and with the following external user groups

	Yes	No	n/a
Supervisory authority/ies	❑	❑	❑
National statistical office/s	❑	❑	❑
Other public authorities	❑	❑	❑
Other central banks	❑	❑	❑
International organisations	❑	❑	❑
Academia	❑	❑	❑

Please specify which issues, here

_____
_____

2.5 c) If you answered "yes" to sharing this micro data with any of the above user groups, is this subject to any of the following specific arrangements?

Please mark all that apply

	Within the central bank	Outside the central bank
Specific legal authorisation	❑	❑
Simple MoU	❑	❑
Anonymisation of data	❑	❑
Secure data rooms	❑	❑
Only pre-aggregated data can be shared (ie data on which some aggregation has been done but that are nevertheless confidential)	❑	❑
Only synthesised data can be shared (ie non-confidential summaries or representations of data)	❑	❑
Other (please specify below)	❑	❑

_____
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2.5 d) If you answered "no" to sharing this micro data with any of the above user groups, what are the constraints that preclude this?

Please mark all that apply

	Within the central bank	Outside the central bank
Legal constraints imposed by the law that authorises the data collection (restrictions on using data for purposes other than those explicitly specified)	❑	❑
Legal constraints imposed by commercial agreements (eg micro data on individual securities or firms that the central bank obtains through commercial agreements)	❑	❑
Secrecy/confidentiality constraints (other than legal restrictions)	❑	❑
Technical constraints	❑	❑
Other (please specify below)	❑	❑

Please specify which issues, here

_____
_____

3. Does your central bank have a sharing environment for matching different micro data sets with each other through some (anonymous or true) keys or identifiers?

- ❑ Yes
- ❑ No

Other comments / observations:

_____
_____

4. Does your central bank have any plans for changing its current policy or practice with regard to micro-data-sharing?

- ❑ No, there are currently no plans to change the status quo
- ❑ No, but while the central bank has no specific competency in this area it is nevertheless taking action to influence the general debate on this issue
- ❑ Yes, changes are envisaged

What action is your central bank taking to influence the general debate on sharing micro data?

_____
_____

What changes are envisaged?

_____
_____

5. Sharing commercial data, ie information obtained from private data providers, among public authorities

In your view, is there a need to ease the legal constraints imposed by commercial agreements in order to allow the sharing of micro data among public authorities?

- ❑ 5 (very strong need)
- ❑ 4
- ❑ 3
- ❑ 2
- ❑ 1 (no need)

How could these legal constraints be eased?

_____
_____

Other comments / observations:

_____
_____

6. Does your institution have plans to increase the IT security related to access and/or sharing of the data?

- ❑ 5 (major projects)
- ❑ 4
- ❑ 3
- ❑ 2
- ❑ 1 (no plan at all)

If plans exist, please briefly describe them here

_____
_____

7. Does your institution have any other specific comments on, or concerns about, data-sharing?

_____
_____

Permission to share your answers

IFC members will be informed at the annual IFC meeting which central banks requested and received access to individual answers. The central bank using other central banks' individual information commits to deleting all individual data after completing its analysis, at the latest 12 months after receiving the data.

- ❑ My answers to this part of the questionnaire shall be treated confidentially and results shall be made available only in an aggregated form.
- ❑ My individual answers may be analysed by other IFC central banks upon their request, explaining their particular interest, and after approval by the IFC Executive.

Appendix 3: List of countries that responded to the survey

1. Algeria
2. Angola
3. Argentina
4. Armenia
5. Austria
6. Belarus
7. Bosnia and Herzegovina
8. Brazil
9. Bulgaria
10. Canada
11. Chile
12. Colombia
13. Croatia
14. Cyprus
15. Czech Republic
16. Denmark
17. Estonia
18. European Central Bank
19. Finland
20. France
21. Germany
22. Greece
23. Hong Kong SAR
24. Hungary
25. Iceland
26. Indonesia
27. Iran
28. Ireland
29. Italy
30. Japan
31. Korea
32. Latvia
33. Lebanon

34. Lithuania
35. Luxembourg
36. Macedonia
37. Malaysia
38. Malta
39. Mauritius
40. Mexico
41. Morocco
42. The Netherlands
43. New Zealand
44. Norway
45. Peru
46. The Philippines
47. Poland
48. Portugal
49. Romania
50. Russian Federation
51. Sao Tome and Principe
52. Saudi Arabia
53. Serbia
54. Singapore
55. Slovakia
56. South Africa
57. Spain
58. Suriname
59. Switzerland
60. Thailand
61. Turkey
62. Ukraine
63. United Kingdom
64. United States