



Effective data sharing as an indispensable element of mature data management

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Abstract

Bank of Russia (BoR) adheres to the broad definition of data sharing (DS), including both exchange of data and elaboration of integrated requirements to data and metadata at all levels of informational cooperation. In recent years, assignment to BoR of the functions of mega regulator of financial markets has required new data for financial accounts' (FAs) and balance sheets' compilation, and for developing functions of consolidated supervision and financial stability analysis. BoR has applied a partially integrated approach to DS which has enabled expanded opportunities for data exchange within existing legal framework. Depending on the level of informational co-operation, necessary solutions have been implemented in the sphere of interagency co-operation and interaction with respondents, as well as within BoR. In particular, regular submission and uploading of data into BoR's automated system of FAs' compilation has been organised in compliance with confidentiality requirements. Quarterly reporting needed for FAs' compilation has been modified and Statistical Business Register has been incorporated into all reporting forms of financial organisations. Joint use of balance sheet centralized data base has been enabled. On the other side, algorithms for depersonalisation of data from surveillance reports of non-credit financial organisations (NFOs) that contain personal data have been developed to allow further use for statistical purposes, and integrated requirements to bank reports and reports of NFOs have been established. Many bank reports collected for external sector statistics compilation have been relieved of restrictions on their use exclusively for stated purposes to avoid increasing supervisory reporting burden on respondents. Developing modern approaches, a new project designed for microdata collection and accessing them within multifunctional centralized information system (Credit Register) has been initiated. A practice of receiving respondents' prior consent to use their reported statistical data for other purposes has been introduced. Individual data disclosure on BoR's website and submission thereof to international organisations are subject to the same procedure. Further improvements of DS will depend on: (1) progress in developing proposals to expand opportunities for DS within the framework of the second phase of G20 Data Gaps Initiative; (2) review of countries' implementation of the Generic Law on Official Statistics provision related to granting access to anonymous data for independent researchers; (3) centralization of collection and processing of reporting data within central banks' and statistical authorities' data management function.

Keywords: co-use of data and metadata; centralized solution; data management; G20 Data Gaps Initiative.

Introduction

Ours is the age of data, when data is increasingly recognised as one of the most valuable intangible assets that supplies market players with competitive advantages, and regulators with the capability to act in time.

In their capacity as financial market regulators, central banks tend to accumulate vast volumes of information, which are set to grow exponentially in the near future. Drawing on their accumulated IT experience, as they solve problems related to financial supervision, while at the same time optimising the administrative burden for businesses, many central banks champion the practice of collecting more detailed reporting data and the use of new external sources – so-called big data.

Based on its experience with transactional payment data, the Bank of Russia has also been using the transactional data of exchanges and other financial market infrastructures. In 2016, the regulator launched its Credit Register project and a new offline CPI project, with the aim of using Internet sources to analyse the movements of consumer prices. As a separate initiative, there are plans to reengineer supervision processes, which provide for a switch to consolidated supervision and risk analysis with the use of banks' operating systems' data, which should be available to the Bank of Russia employees online.

For such big data to be handled efficiently, it is critical to have appropriate central data management solutions and a central data repository enabling integration of all available data into a unified structured environment based on clear rules and standards for data collection, storage and use. It stands to

reason that the more granular and, consequently, the more ‘market-sensitive’ the data accumulated in central banks’ internal systems is, the more likely the data will become classified, with all the ensuing rights and duties arising from corporate practices of information exchange and data access. This holds true both in the case when data is re-used inside the central bank and when interagency information exchange occurs or data is reported to international organisations and partner countries.

It is also beyond doubt that despite hefty legal constraints that may exist, data exchange needs to be promoted across all levels of information interaction as an important tool to enrich the current data, to enhance data quality and to reduce reporting burdens. It is for good reason that *data sharing* is currently in a focal point and a subject of separate solutions as part of the Action Plans for the Implementation of DGI-2 Recommendations¹.

Data sharing is high on the agenda of the Bank of Russia and its statistics division – the Statistics Department, which acts as the coordinator for statistical data collection and processing and the centre of expertise for macroeconomic financial statistics. Our definition of data sharing is a broad one and includes both data exchange and the development of integrated requirements for data and metadata across all levels of information cooperation.

In this article we present approaches used by the Bank of Russia’s statisticians in information cooperation, developed in the current context of legal constraints to data exchange.

The analysis of the related international practices held by the IFC² shows that the solutions used by the Bank of Russia are not one of a kind, but belong to best data sharing practices described in the IFC Report.

Legal environment of data sharing

The current Bank of Russia’s data sharing restrictions cover exclusively provision of primary (confidential) data and (or) access to them. It is regulated by the fundamental law on information, information technologies and data protection, as well as the law on the Bank of Russia, the banking law, and the law on official statistical accounting and state statistics system.

The fundamental law – the federal law on information, information technologies and data protection – establishes rules and conditions for classifying information as data that constitute commercial, business and other secrecy, and responsibilities for protecting such data.

Provision of primary supervisory reporting data is regulated by the banking law. Under this law, the Bank of Russia is not allowed to disclose information on specific deals and operations covered by bank reports that the Bank of Russia obtains under its licensing, supervisory and controlling functions. The right to provide such information to foreign banking supervision authorities is an exception, provided that the said authorities ensure data protection consistent with the protection envisaged by the Russian law. *Data sharing* practices do not regard as a disclosure the use of such data in compiling aggregated statistics inside the Bank of Russia. Therefore, the Bank of Russia’s Statistics Department may have access to primary supervisory reporting data, provided that it can explain the necessity of such access and ensure protection of the confidential information in full compliance with the procedures established in the Bank of Russia.

Primary statistical reporting data exchange is regulated by the federal law on official statistical accounting and state statistics system. The law was adopted in 2007 and based on international approaches to laws on official statistics. Protection of primary statistics is stipulated in a special provision of the law. In compliance with the said provision, primary data covered in statistical reports shall not be disclosed (disseminated and (or) provided) and shall be used only to compile the official statistics. Public authorities, officials, other individuals and legal entities shall not demand their provision and use for the purposes not related to the compilation of official statistics.

¹ G-20 Data Gaps Initiative (DGI) dates back to 2009 when several international organisations (IMF, Financial Stability Board, BIS, and ECB) initiated the development of guidelines for G20 countries on how they should fill data gaps in the aftermath of the global financial crisis. Since 2016, the countries have been implementing Phase 2 of the initiative (DGI-2), which includes data exchange support activities (see Recommendation 20 Promotion of Data Sharing by G-20 Economies of the Action Plans for the Implementation of DGI-2 Recommendations).

² Report to BIS Governors prepared by the Task Force on Data Sharing, January 2015.

This approach does not restrict data sharing between statisticians for the purpose of compiling statistical datasets (e.g. SNA current and financial accounts), but does not allow the Bank of Russia's supervisory departments to access primary statistics.

Given the existing serious legal restrictions, the Bank of Russia applies partially integrated approach to data sharing. It allows wider data sharing within the given legal environment.

Data sharing between the Bank of Russia and the Federal State Statistics Service (Rosstat)

IFC 2016 Survey³ suggests that 45% of central banks share microdata with national statistics offices.

The Bank of Russia is not an exception. Free data sharing between the Bank of Russia and National statistical office – Rosstat has been implemented on a regular basis since 1997, when annual Data Sharing Agreements were introduced. Since 2001, the Agreement has become permanent and is amended and supplemented as necessary. The effective Agreement was signed in 2015. Unlike all the previous agreements, it includes not only lists of aggregated statistical and analytical data shared, but also a separate annex that lists primary data which Rosstat provides to the Bank of Russia at the federal level. This list includes data from the Statistical Business Register, centralized balance sheet data base and about 24 forms of state federal statistical monitoring, which bear information on key financial data of individual types of businesses (small-sized enterprises, individual entrepreneurs, cooperatives, financial leasing companies, etc.).

The new annex was introduced after the Bank of Russia had been tasked with compiling SNA financial accounts and balances in 2011. As the Bank of Russia started to develop information needed for compiling financial accounts and balance sheets, the role of the datasets in ensuring the overall SNA data quality and the need for closer information cooperation at the level of joint use of primary data of reporting entities became evident. That was the reason for the Governor of the Bank of Russia to raise a question about such cooperation at the meeting of the Government of the Russian Federation during the discussion of a plan for developing Russian national accounts for the period until 2017. The Governor emphasised the purposes for which the Bank of Russia used statistical data while ensuring their protection as appropriate, namely:

- consolidating data on financial sector entities received by the Bank of Russia with Rosstat's data on non-financial sector and households;
- obtaining information on non-financial intra-sector financial flows and assessing the value of non-traded shares and other equity based on the information about own funds of non-financial organisations;
- extrapolating of the data from a sample of non-financial organisations quarterly statistical reports to the whole population of organisations on the basis of the centralized balance sheet data base.

The approval of the Bank of Russia's proposals by the Government of the Russian Federation gave a green light to the development of a regulation (procedure) for providing primary data electronically. It stipulates cooperation in data preparation, as well as identification of structure, form and terms of files to be submitted. In preparation of the document, representatives of the Bank of Russia's statistics and IT departments had to study data collection and processing by the Rosstat. Both parties held several technical meetings to elaborate data requirements and the channels of data transfer (with or without involvement of regional branches of the two organisations). Given that primary data from Rosstat's regional branches has never been used at the federal level before, Rosstat had to fine-tune its automated system at the federal level.

In its turn, the Bank of Russia also had to develop a solution for automation of uploading primary data into the automated system for compiling financial accounts. Uploading required a thorough data clearing and a joint detection of areas subject to additional analysis. In particular, the analysis of annual financial statements revealed organisations not recorded in the Statistical Business Register, balance sheets with a negative balance sheet total or discrepancies between balance sheet total on assets' and liabilities' sides. At the same time, the Bank of Russia verified data of the annual financial statements and quarterly statistical reporting on companies' financial investments. The verification revealed discrepancies in the balance sheet data and corresponding items in statistical reporting. The results of the verification were sent to Rosstat which allowed to improve data quality and consistency.

While describing the information exchange with Rosstat within the framework of data sharing defined broadly, it is noteworthy to underscore the constructive cooperation on harmonising and integrating approaches to the methodology of compiling macroeconomic statistics and establishing a unified statistical infrastructure.

³ IFC Report "The sharing of microdata – a central bank perspective" (BIS, December 2016)

The joint efforts in developing the methodology for data collection resulted in improvement of the statistical toolset approved by Rosstat for non-financial sector respondents. As suggested by the Bank of Russia, some statistical reporting forms of non-financial organisations, insurers, non-governmental pension funds and leasing companies were supplemented with necessary breakdowns by instrument and sector, valuation as well as other changes in volume were emphasised.

Other important changes include the **development of statistical infrastructure: Classification system and business register** used by statistical data collection.

During 2014-2016 national statistical classifications consistent with SNA 2008 have been developed instead of local classifications used for Rosstat purposes: All-Russian Classification of Institutional Units by sector of the economy and Classification of Fixed Capital. The BoR initiated also preparation of All-Russian Classification of Financial Instruments (FI) based on the SNA 2008 and harmonised with CFI standard and carried out comprehensive work to determine and classify all financial instruments. While not being an official parent of the Classification, the BoR nevertheless took that burden for common benefit considering the importance of proper classification of FI for financial statements and other reporting forms used by NA compilation.

As far as the Statistical Business Register is concerned, it has been transformed by Rosstat into a unified centralized source with access provided to respondents and statistical agencies, including the BoR. Consequently we incorporated the Statistical Business Register in all reporting forms submitted to the BoR as one of the main sources of identification of legal entities. The Statistical Business Register, the most comprehensive Russian information resource for identification of reporting entities, also became a basis of the joint efforts of the Bank of Russia and Rosstat to determine the boundaries of financial corporations sector. For this purpose, in 2012-2014 they held a comparative analysis of data coverage in registers and financial statements bearing data on financial assets and liabilities. The access to the Statistical Business Register has allowed the Bank of Russia to compare the recorded data with information from other administrative databases: the State Register of Credit Institutions of the Bank of Russia registers and lists of non-bank financial organisations. The verification has resulted in updating the Statistical Register and preparing the List of Financial Sector Organisations which has been published quarterly on the Bank of Russia official website since June 2014, ensuring a common coverage of the financial sector in various areas of macroeconomic statistics.

Data sharing between statistics and supervisory departments of the Bank of Russia

According to the IFC Report, almost half (45%) of central banks consider the internal sharing of microdata as very important. 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 prevent and address crises.

The development of the reporting forms as an all-purpose source for statistical and supervisory tasks is a way to maintain the said balance in the Bank of Russia and at the same time ensure the balance between the demand for information and the reporting burden.

It should be noted that the data collected from most reporting forms, containing interpretation of financial statements, information on interest rates, securities, loans, capital structure, etc., has no intended use. Experts at statistics and supervisory departments of the Bank of Russia can gain personal access to the primary data if it is necessary to perform designated functions and strictly in line with data protection procedures. If Statistics Department experts need to access the primary data containing personal information (e.g., reports of investment funds, microfinance organisations, pawnshops, consumer credit cooperatives, etc.) to prepare financial accounts and the balance of payments, we develop in consent with the supervisory departments that own the data the procedure for data adaptation (anonymisation).

Until quite recently, some forms of banks' reports used to develop the external sector statistics have been the exception to the rule. Procedures for producing the reports included a clear statement that the forms were designed solely for preparing the balance of payments and that the data collected would be used as an aggregate only. It was also stated that the Bank of Russia guaranteed information confidentiality.

That approach has historically evolved because information on credit institutions' counterparties presented in the reports has included indirect information on clients of the reporting banks and has been provided by them. The said data has been prepared in cooperation with the customers, applying statistical methods. It meant that using that data solely for statistical purposes was aimed at mitigating the risks of customers being reluctant to provide information to banks, thus posing the risks of quality deterioration of the balance of payments data.

Rosstat employs a similar approach, encouraging respondents to provide statistical reports on condition that data will be used solely for statistical purposes and that public authorities will not be able to use it for fiscal or other purposes.

However, unlike the statistics service, the Bank of Russia is a banking regulatory and supervisory authority. As such, it sets mandatory statistical reporting rules for credit institutions and the list of information requested, and has the right to apply supervisory measures to credit institutions in case they do not provide information needed or provide incomplete or false information. Accordingly, as a banking supervisor, the Bank of Russia has the right to obtain the necessary data; the only question here is the source of information: it may be the Statistics Department of the Bank of Russia that already possesses the needed information or the supervised organisation itself. The use of the second source causes unnecessary duplication of information. Taking this into account, the problem of primary data sharing with supervisory divisions is solved using one of the following methods:

- Reporting forms with aggregated data on the operations of supervised organisations are set as an all-purpose data source, the compilation of which has no intended use (from 2017 this will apply to reports on foreign assets and liabilities provided by authorised banks);

- The Statistics Department may transform reporting forms with transactional information on customers' operations into analytical reports with minimally aggregated data upon request from supervisory departments for the purposes of performing their supervisory functions and in compliance with the statistics law;

- Reporting forms provided by particular banks containing granular data on operations of the customers (e.g., reports on cross-border remittances of individuals) are made available to supervisory departments with the prior consent of the banks to the use of the data inside the Bank of Russia for the purposes other than statistical ones.

Providing primary data with the prior consent of respondents showed good results not only in internal data sharing, but also in sharing the data with international organisations and in disclosure of primary reports on the Bank of Russia website.

A good example is providing international banking statistics to the Bank for International Settlements (BIS). It implies the disclosure of information on assets and liabilities of the Russian banking sector grouped by financial instruments, countries acting as counterparties, sectors serving as counterparties, currencies, types of banks and by residency of controlling investor. When statistics are detailed, some indicators might create grounds for disclosure of data on one or two reporting banks, leading to disclosure of confidential information. That is why the Bank of Russia has conducted two sample surveys of the banks that might be affected by such disclosure regarding their consent to provide the data to the BIS and the degree of its confidentiality (public, restricted, confidential). The survey showed that 60% of respondent banks classified their data as confidential and resulted in a positive decision on data sharing with the BIS. BIS employees are entitled to access the data for the purpose of their further aggregation and analysis only. As a result of that communication with the banks, Russia has managed to meet one of the priority recommendations of the G-20 Data Gaps Initiative. In December, 2016 the BIS added Russia as a reporting country for the locational banking statistics and started to include Russia's data in the global aggregates needed for analyzing the foreign currency positions and country risk exposures of internationally active banks.

As for communication, the Bank of Russia actively avails itself of the opportunity to publish data on its official website. At the users' request, the website features the Information on Credit Institutions section, which provides primary data from certain forms of financial and regulatory statements: balance sheet, profit and loss statement, calculations of own funds, information on mandatory ratios. Upon request from the professional community, the Bank of Russia started the web-based publication of monthly primary housing mortgage data on 452 (of 643) banks. We consider these publications as a good example of public data sharing, aimed at increasing mortgage market transparency for analysts, prospective borrowers and bankers themselves.

As a part of broadly defined data sharing (same as under interagency cooperation), the Statistics Department takes measures to unify the Bank of Russia requirements to reports by financial corporations, which are used to develop macroeconomic financial statistics. Since 2015, new reporting forms on securities transactions for non-bank financial institutions that are professional securities market participants have been collected. In terms of indicators, classification and identification of issuer, security and its holder, these forms are comparable to those used in bank reporting. Development of application of unified measures includes data on direct and portfolio investments by non-bank financial institutions provided to the Bank of Russia for the purposes of preparing the balance of payments.

In the context of creation and usage of universal data sources, we should highlight advanced approaches to collection, processing and multipurpose use of microdata, which are supported by the current IT development level.

One of the advanced approaches by the Bank of Russia has been the establishment of the Bank of Russia Credit Register, serving as a central database, which includes microdata on lending to economic agents in Russia. The Bank of Russia Statistics Department provides necessary methodological support to the Register. The main source of information for it is a special bank reporting form containing detailed information on individual bank loans. The system allows completing the reporting data using other sources: credit history bureaus, securities database, centralized balance sheet data base and business registers and records maintained by the Bank of Russia, Rosstat and the Federal Tax Service.

Establishment of the Credit Register represents a difficult task which requires coordinated efforts of statistics experts, representatives of the supervisory bodies and IT services aimed at ensuring quality of data, developing data model, functional requirements to the system, and procedures for access to data and analytical tools for different user groups. The integrated system has substantial advantages for attaining a wide range of the Bank of Russia goals, which are pursued by the Statistics Department, analytics and research divisions engaged in monetary policy and financial stability issues and supervisory divisions. We believe that microdata are our future and it will help solve problems in data sharing within central banks.

Conclusion

The Bank of Russia believes that the prospects for further development in the field of data sharing are widely related to cooperation among countries to carry out 20 DGI-2 recommendations, aimed at creating agreed proposals for broader scope of data and metadata sharing between countries.

In particular, the Bank of Russia is highly interested in the compilation and dissemination of accurate and reliable statistical data on securities holdings which represent foreign assets and liabilities of Russian residents.

According to our experience, it is very difficult to establish solo relations with global custodians. For instance, as an initial step in the collaboration with Euroclear and Clearstream, the Bank of Russia sent official letters to these organisations requesting information on securities holdings. However, we haven't received any response from Clearstream, whilst Euroclear has emphasized the need to obtain the permission from the central bank of its location.

Therefore, we fully support the initiative that the largest custodian centers will submit the information on securities holdings and national compilers will be provided with an access to these helpful data. The question is who will gather these data – international organisations or national central banks of global custodians' location, what will be the data template and the procedure of data sharing.

We also support the broad scope of data sharing, including not only data but also metadata. In this context we could single out the case of Business (Statistical) Registers as one of the most common used sources of metadata. Considering this source as an open source along with wider use of global identifiers (e.g. LEI), it would allow the experts compiling the balance of payments to include information on economic sector of non-resident counterparties, complemented by corresponding administrative data provided by partner countries.

From the external data sharing point of view, it will be also worthy to develop standard procedures for data sharing as a prototype for countries in establishing bilateral co-operation.

Let us emphasize once again: we believe that further development of internal data sharing should be supported by the implementation of centralized approaches to data processing in central banks and statistics agencies. Currently, the Bank of Russia is redesigning the procedures for collection and processing of financial market participants' reporting and establishing centralized data management approach. The project seeks to make data an indispensable part of decision-making and business processes of the Bank of Russia. The goals of the project include creation of a single data warehouse, new coordinated data management (CDO) function, development of policies, rules and procedures for data usage, including the procedures for identifying the owners and users of data, rules for providing access and enhancing the tools for BI-analysis. We believe that implementation of such an important project will principally change the information environment in the Bank of Russia enabling users' work with all necessary data at a new higher quality level.