

DATA SHARING AND COMMUNICATION OF STATISTICS, THE KOREAN EXPERIENCE

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1. Introduction

Demand for new statistics or information to fill the existing data gaps has increased since the global financial crisis. However, collecting new data always involves time and costs. The re-use of existing data or information has thus become an important albeit challenging issue. Such use of information by more than one organisation or individual is called 'data sharing'. Through the sharing of existing data, the related reporting burdens and compilation costs can be reduced as the same information does not need to be collected more than once.

Data sharing requires effective coordination and communication among the institutions concerned. In particular, a system for efficient data transmission and processing among different organisations is helpful to the expansion of data sharing. One of the major difficulties related to data sharing is that of preserving data confidentiality. The protection of confidentiality in any statistical activities should be ensured and established in the relevant legal framework. Therefore, for the sake of efficient and safe data sharing, data sharing agreements should be built based on the support of technical and legal systems. The Australian Bureau of Statistics (2009) provides general advice and guidance on data sharing.

At the same time, the question of how to provide statistical information to users is just as important as that of how to produce reliable statistics with limited resources. In this context, statisticians need to 'communicate smartly' by utilising more diverse communication channels and by increasing their interactions with the statistics users. There are a variety of tools for such communication, for example issuing press releases, holding press conferences, giving interviews, delivering speeches, providing background briefings, operating statistical websites, and so on. As the Internet has become the main channel for communication, statisticians have made efforts to develop statistical websites that are more user-friendly, understandable and accessible to the public. Statisticians also need to make themselves available to the markets and the public through various meetings, workshops and seminars, which will enable them to better respond to changes in the statistical environment quickly and flexibly. The metadata containing the detailed methodology

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and sources used for compiling statistics is another prerequisite for transparent communication. Refer to paper by European Central Bank (2011) for more details regarding the role of statistics in central bank communication.

The Bank of Korea (BOK) has devoted efforts to enhancing both its data sharing and its communication of statistics. The purpose of this paper is to present Korea's experiences and share related information. The remainder of this paper is organised as follows. Section 2 describes the systems for data sharing in Korea and Section 3 details the BOK's activities undertaken to promote communication of statistics. Section 4 then concludes with some remarks.

2. Data Sharing in Korea

2.1 Legal Foundation for Data Sharing in Korea

Statistics Korea, the national statistical office in Korea, provides the services of overall planning and coordination of national statistics compilation, establishes statistical standards, produces and distributes various economic and social statistics, processes and manages statistical information, and supplies various statistical data. All of these functions are carried out in accordance with the Statistics Act, and its major provisions are presented in Table 1. Accordingly, any data sharing agreements should be built on the basis of this legal foundation.

The BOK has compiled major economic statistics since 1950, based on the Bank of Korea Act. According to Article 86 of the Act, regarding the collection and compilation of statistics, etc., "the Bank of Korea may, when necessary for the formulation of its monetary and credit policies, collect and compile statistics on money and banking, public finance, prices, wages, production, the balance of payments and other basic economic statistical series, and conduct economic research and for such purposes request any materials or information from the government organisation and any juridical or individual person." After the recent global financial crisis, the Bank of Korea Act was revised in 2011 to strengthen the financial stability role of the central bank. And in fulfilling this new responsibility, the BOK has worked to establish a close network for cooperation with the relevant institutions, and the demand for data sharing has therefore increased within the BOK as well.

Table 1: Major Provisions of the Statistics Act³

<ul style="list-style-type: none">• Approval for Compiling Statistics The agencies compiling the official statistics shall obtain in advance the approval from the Commissioner of the Statistics Korea. Approval should also be obtained in case of suspension or alteration of approved statistics.• Obligation to Report a Designated Statistical Survey An agency which conducts a designated census or survey may be obliged to report on the respondents. Penal regulations are provided for non-observance of this obligation.• Confidentiality Data collection by the statistical agencies must carry a legal guarantee of protection of the confidentiality of individuals. Private information obtained from individuals, juridical persons or bodies in the process of the compilation of statistics shall be kept confidential.• Prohibition of the Use of Data for Other than Statistical Purposes The utilisation of statistical data collected for designated or general statistics is prohibited for anything other than statistical purposes.• Consultation and Approval of the Statistical Results for Publication The heads of agencies compiling official statistics shall immediately submit the results of these statistics to the Commissioner of the Statistics Korea. After consultation with the Commissioner and upon his approval, the results shall be published. This provision aims at not only ensuring the timely publication of results, but also securing the truthfulness of official statistics.• Quality Evaluation on Official Statistics In order to reinforce the credibility of official statistics, the Statistics Korea will perform quality evaluations on the compilation and dissemination of official statistics both regularly and irregularly.• Use of Administrative Data and Taxation Data The Commissioner of the Statistics Korea can require the use of administrative data of other administrative organisations, and the taxation data can be utilised in the compilation of statistics due to the revision of the Framework Act on National Taxes (2009.2).

2.2 MOUs between Institutions

Data sharing requires both collaboration among, and commitment by, the relevant institutions, and so the data sharing agreement needs to clearly state the purposes, standards and procedures for data sharing. As for the type of data sharing agreement it prefers, the BOK has chosen a Memorandum of Understanding (MOU) for on-going data sharing between institutions.

³Statistics Korea

The BOK signed an MOU on financial information sharing with four financial authorities - the Ministry of Strategy and Finance (MOSF), the Financial Services Commission (FSC), the Financial Supervisory Service (FSS) and the Korea Deposit Insurance Corporation (KDIC). This MOU came into effect from September 2009, for the purpose of promoting close cooperation among the organisations to overcome the financial crisis. The original MOU has been revised, however, to expand the scope of data sharing and to improve the sharing procedure, and a new, amended version has been in force since September 2012. Under the MOU, there is a Macroeconomic and Financial Committee, which operates to promote effective cooperation and mediate disagreements.

This MOU defines the target data to be shared as all periodic and occasional reports submitted by financial corporations, and the processed data such as indices and ratios that the institutions make from these original reports. Excluded are data whose sharing is prohibited by law, based upon protection of confidentiality, and data approved for exclusion by the Macroeconomic and Financial Committee for special reasons.

The MOU prescribes the procedure for data sharing as follows: (i) all work processes related to data sharing should be based on official documents; (ii) requests for data sharing should be processed so that the data sharing is accomplished within 10 business days, or three business days in cases of emergency; (iii) if the requested data is confidential, the institution requested to provide it must offer relevant data after deletion of individual information or conversion of the original data to make it appropriate for sharing; (iv) when the requested data does not exist, the requesting institution can ask for it to be newly collected; (v) data that has not been sufficiently validated should be shared on the understanding of it having low reliability; and (vi) asking financial corporations to submit the same reports they have already submitted to any of the five financial authorities is not permitted.

In order to invigorate data sharing, the five financial authorities check the list and the formats of the shared reports every quarter, and exchange updated information on them. This kind of information exchange is done via the authorities' electronic systems. For example, the BOK has an Information Process System (IPS) for managing and uploading the reports it has received from financial corporations or made by itself. Likewise, the FSS has a Financial Information Sharing System (FISS) and the KDIC a Financial Information Analysis System (FIAS). These systems make financial information sharing more efficient and convenient.

The MOU also stipulates ways of protecting the confidentiality of financial information. First, the authorities must obtain prior approvals for data sharing from financial corporations when collecting their reports.

Second, they must take appropriate actions to ensure non-disclosure of confidential information that can have crucial influences on individual financial corporations or the financial market as a whole. Third, they must also set up regulations prohibiting staff with access to confidential information from disclosing it or making illegal investments by taking advantage of it.

Another good example of the BOK's MOUs is the MOU on statistical cooperation with Statistics Korea in September 2011, which facilitates development of the national statistics with a focus on improving the statistical methods and statistics compilation framework necessary to enhance the national statistics' quality. Through conclusion of this MOU, the two organisations agreed to strengthen their cooperation in conducting joint research, exchanging statistical compilation methods and sharing raw data. The MOU stipulates the formation of a Statistical Cooperation Council, with sub-divisions created under it to deal with specific issues. For example, the Division on Cooperation for 2008 System of National Accounts (SNA) Implementation discusses major issues involved in implementation of the 2008 SNA, and the Division on Cooperation for National Balance Sheet Development works on methods of estimation of financial and non-financial assets in order to develop the national balance sheet by 2014.

The principles of information sharing between the two organisations are as follows: (i) they will cooperate actively upon receipt of requests from each other for data provision; (ii) the provision of statistical data will comply with the relevant regulations of the two organisations, and that in cases where there are no related regulations conditions may be determined in consultation among them; and (iii) the statistical data provided will neither be used for other statistical purposes without consent of the providing party nor provided to third parties.

2.3 Data Sharing within the BOK

The BOK's Economic Statistics Department consists of 11 teams compiling major economic statistics and each team accumulates a considerable amount of raw data in the course of compilation. These economic statistics tend to be associated with each other; for example, the flow of funds statistics is closely related to the national income statistics, the monetary and financial statistics, and the balance of payments. The raw data collected for compiling each of these statistics can thus be partly used to compile the other statistics, too. Moreover, the demand for micro level data has increased, even for research purposes. There is an obvious need, therefore, for data sharing by different sections within the BOK itself.

Statistics Korea operates its own Micro Data Service System (MDSS), but most of the micro data provided through it are social statistics from population and household surveys. The BOK has therefore worked to develop a similar micro data system dedicated to economic statistics. The system aims to contain not only the micro data collected by the BOK itself, but also other relevant statistics from outside sources. Approaches such as data reduction, data distortion and synthetic data generation should of course be applied to protect the confidentiality of information of individual units. The new system will be launched in 2013, and is expected to enhance the reliability and quality of statistics by making possible the systematic sharing and management of a variety of raw data sources. Moreover, the micro data made available will also satisfy researchers' needs for carrying out deeper and more flexible research.

In addition to the micro data system, the Economic Statistics Department of the BOK established the BOK Statistical Council in July 2012, to consult on statistical issues concerning more than one department. Comprising the director generals of major BOK departments, the Council discusses issues including the development and improvement of statistics, measures to support statistics compilation and utilisation, statistics quality control and management, dissemination and provision of statistics, etc., and if necessary, makes decisions on specific issues, such as reducing the risks stemming from errors in compiling statistics. This internal council is expected to contribute to the promotion of information sharing between the producers and users of statistics within the BOK, and to eventually facilitate better BOK policy decision-making and higher credibility.

3. Communications of the BOK

3.1 Economic Statistics System

The BOK has operated its Economic Statistics System (ECOS) website since January 2004, as a main channel for delivery of economic statistics to policymakers and the public in a timely and convenient manner. The BOK has adopted a new technology to enable it to present up-to-date information on the ECOS in a user-friendly way, and the ECOS has as a result been evaluated as one of the best communication channels in Korean statistical society.

To be more specific, there are five main tabs (ECOS Guide, Search Stat, Press Release, Statistical Calendar and Principal Indicator) at the top of the ECOS homepage, as shown in Figure 1. First, ECOS Guide briefly explains the main functions of the ECOS. Second, Search Stat enables users to easily retrieve various statistics compiled by the BOK and other domestic and international statistical agencies with a simple and easy interface. Search Stat contains useful functions including fluctuation rate calculation, chart and graph drawing and data downloading. A click on

this tab links to a page with two search options - the Simple Search, and the Multiple Search with more extended functions, such as a change of unit function and a pivot function making it easy to switch columns with rows. Access to the Meta DB is also available, providing users with the related metadata for better understanding of the statistics concerned. Third, by clicking the Press Release tab, the public can easily access the latest press releases, or search among previous press releases dating back to 2004, through the use of keywords or the subjects in question. Fourth, Statistical Calendar displays the BOK's advance release calendars (ARC) for all of the statistics that it compiles. The ARC is useful for ensuring the sound management and transparency of statistical compilation as well as facilitating users' plans for analysis and related activities. Fifth, by clicking Principal Indicator users can access the principal published statistics on money & banking, securities, prices, the balance of payments, the national accounts, etc. of the Korean economy, which are updated every month.

In particular, at the bottom of the main ECOS page, on the left, there is a tab labelled 100 KOREAN STAT (Prompt), by which the public can access 100 principal statistics that are useful in policy making and the analysis of economic trends in Korea. If the user clicks on this tab, and then on any item in the list that appears, more detailed data series and the related charts and graphs can be found so that the users can understand quite easily and conveniently.

The above-described ECOS service to the public is available via various functions of several subsystems of the ECOS, as illustrated in Figure 2 and Table 2. Based upon its integration of processes from raw data collection through statistics distribution, the ECOS increases the efficiency of statistics compilation and the productivity of economic research. Therefore, it is considered as a dedicated website for provision of statistics services to the public, and the central data repository for improving the BOK's statistics management capability.

Figure 1: Economic Statistics System of the Bank of Korea



Figure 2: ECOS System Map

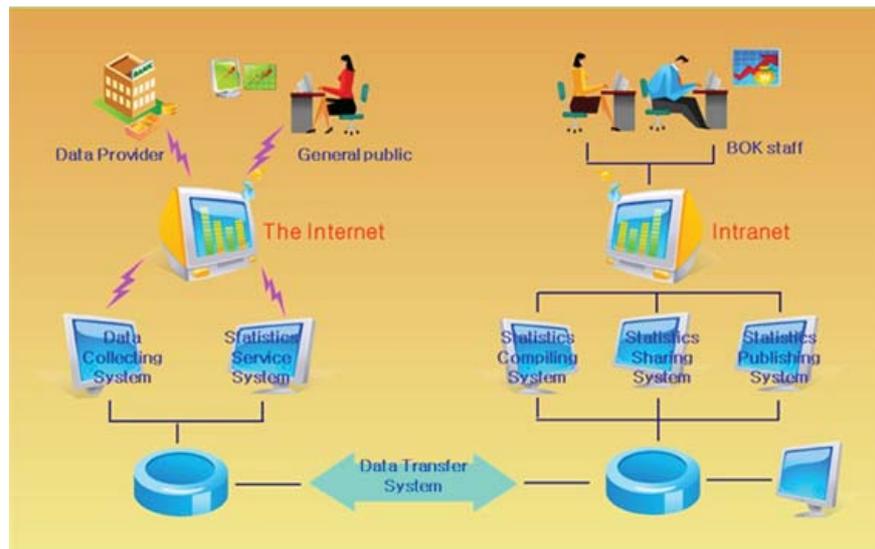


Table 2: ECOS System

Subsystem	Function
Data collecting system	Automation of statistical raw data gathering through Internet <ul style="list-style-type: none"> • Registering survey forms and information about institutes submitting raw data • Sending of survey forms through Internet, and allowing direct input of survey information on webpage • Encoding of data at time of collection, for information protection
Statistics compiling system	Enable officer in-charge to manage compilation processes <ul style="list-style-type: none"> • Standardisation of compilation processes using SAS and EXCEL • Compilation of statistics and printing out of reports linked with ECOS DB, using EXCEL • Requires permission of authorised person to complete compilation (to prevent modification of data)
Statistics sharing system	Enable the BOK staff to search for and use statistics through various methods <ul style="list-style-type: none"> • Conversion of original data into period changes and period change ratios, and drawing of related graphs • Rapid search using "My Statistics" and "Popular Statistics" • Searching for statistical periodicals linked with statistics publishing system • Retrieval of data from ECOS DB using EXCEL
Statistics service system	Provide general public with principal statistics of the BOK through Internet <ul style="list-style-type: none"> • Transfer of intranet data to Internet automatically, at point in time set by compiling staff • Enabling public user access of the ECOS through Internet • Providing graphs, period changes and period change ratios, with original statistics data • Provision of statistical periodicals (in EXCEL, PDF, etc. formats)
ECOS management system	Facilitate management team supervision of the ECOS <ul style="list-style-type: none"> • Managing user information and authorisations • Monitoring of statistics appearing in the ECOS • Managing metadata, such as tables and codes
Data transfer system	Automate transfer of data between intranet and Internet <ul style="list-style-type: none"> • Transfer of data from intranet to Internet or vice versa, at appointed time • Recording and managing of data transfer details
Statistics publishing system	Enable publication of statistical periodicals <ul style="list-style-type: none"> • Registering and managing contents and forms of periodicals • Organising statistics presentation forms using EXCEL • Uploading periodical files on Statistics sharing system and Statistics service system

3.2 Communication of Statistics with the Public

The BOK has arranged various events for communicating statistics with both expert groups and the general public. First, it has regular consultation meetings with national experts from both industry and academia, which help it to gain better understanding of economic reality and statistical needs through interaction with market participants. The BOK's Economic Statistics Department has in this regard also appointed three professors as advisory board members, to obtain advice on or assistance in statistical compilation.

The BOK undertakes diverse activities to boost public awareness concerning economic statistics. For example, it provides lectures for college students in local cities, to develop their abilities to read and interpret statistics - with senior economists in the BOK's Economic Statistics Department making lecture visits about 40 times per year. The BOK also conducts a weekly 'BOK Friday Class' programme for the general public, with the lectures subsequently uploaded on the BOK website every week, for free 'attendance' by the public without visiting the BOK. This class covers various issues concerning the central bank and the economy, but economic statistics are one of the most popular topics for the audience.

The BOK also emphasises communication with journalists, since its press releases reach the general public through them. In particular, the BOK holds press conferences or provides background briefings when the statistics released need explanation in greater detail.

4. Conclusion

In summary, the BOK has devoted a variety of efforts to enhancing both its data sharing and communication of statistics. However, the BOK still has a long way to go in order to support better policy making through effective data sharing and communication of statistics. For example, the BOK needs to improve the existing MOUs as the economic and statistical environments change. Building an integrated financial data reporting system, by harmonising the reporting templates, would be one means of further enhancing the current means of data sharing. The BOK also has to make continuous efforts to foster the micro data system since it is still in early stages. Although the BOK has the well-developed ECOS system for communicating its statistics effectively, the BOK must remain ever alert and aware of up-to-date information technology so as to improve its statistical communication tools. For effective communications, increasing the opportunities for information interchange with the public is also desirable.

Looking back from the Korean experience, data sharing and communication of statistics have been strengthened by the outward impulse such as the global financial crisis and the implementation of international statistical standards. However, it has been also clearer that they are not just a second task of central banks, but should be one of the main functions of modern central banks.

References

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