

Experience of Compiling Interest Rate Statistics

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abstract

The Bank of Korea began compiling weighted average interest rates of deposit-taking banks and non-bank deposit-takers from the late 1990s. Since then, in line with the development of data management systems in financial institutions, it has been improving and expanding interest rate statistics from various angles, such as by financial instrument, economic entity, maturity, etc. The Bank of Korea has therefore compiled and released details of the rates of deposits and loans of deposit-taking banks regarding not only newly taken but also outstanding basis. In terms of non-bank deposit-takers, since the data management systems are still lacking, the Bank of Korea has compiled only representative interest rates of newly taken loans and deposits.

As non-banking financial institutions' role in lending and deposit-taking has gradually grown, and their sizes of them have expanded sharply, the need for looking into and compiling the interest rate statistics in these areas from various angles has increased. It is also necessary to examine the interest rates of a variety of financial instruments, not only for identifying the interest rate transmission channel but also for estimating the amounts of interest repayments of households and companies. Moreover, due to the emergence of a number of financial products, new problems in investigating the interest rates of deposit-taking banks have arisen.

Key Words : monetary policy transmission channels, weighted average interest rates, newly taken deposits/loans , outstanding deposits/loans

I . Compilation of Interest Rates in Korea

1. The history of compilation of interest rates

The Bank of Korea began to compile weighted average interest rates statistics in late 1995, in line with the interest rates deregulation process that started in 1991. When the Bank conducted its first survey in 1995, it compiled only interest rates of the newly handled major types of deposits and loans of deposit money banks, and of outstanding instant access type savings deposits and current account overdrafts. In August 1997, it increased the types of institutions surveyed to include non-bank deposit-taking institutions such as mutual savings banks, mutual credits (National Agricultural Cooperative Federation), and credit unions, and surveyed and compiled their benchmark deposit and loan interest rates of the newly handled.

As basic data management became systematic as financial institutions' IT systems improved, the Bank's survey of financial institutions' interest rates has become more detailed, and the range of statistics of weighted average interest rates compiled has widened. For instance, key deposit and loan interest rates are surveyed at different maturities for deposit money banks, and the number of items surveyed on loans and deposits outstanding has increased significantly. Shares of deposits and loans by interest rate level and shares of loans at fixed and floating rates are also surveyed.

Survey and compilation methods, having been continuously expanded since the first survey in 1995, have recently been arranged in a more systematic and efficient manner

to enhance convenience of those filling out the interest rate sheet at financial institutions. Also, the current interest rate sheet underwent thoroughgoing revision to include new survey items matching the current financial environment, and it has been in use for the survey since January 2013, to improve efficiency in filling out the sheet and the validity of the survey contents. In addition, with much easier access than before to data on non-bank financial institutions, the survey of interest rates on outstanding amounts is now conducted for these institutions.

Statistics on financial institutions' interest rates were first based on the survey of interest rates on newly handled deposits and later included surveys based on outstanding amounts, and this was closely related with the development of financial institutions' data management systems. In this context, while deposit money banks that have constructed advanced computer systems carry out surveys of various interest rate indicators, including those on newly handled deposits and outstanding amounts, non-bank financial institutions are not yet fully equipped with such systems, which makes it difficult for them to carry out detailed surveys.

Statistics on financial institutions' average interest rate currently released by the Bank of Korea are based on weighted averages of interest rates: with financial institutions here divided into deposit money banks and non-bank deposit-taking institutions, the Bank, using the following equations, compiles statistics on deposit money banks based on the interest rates on newly handled deposits/loans and outstanding amounts, and on non-bank deposit-taking institutions based on interest rates on newly handled deposits and loans. While interest rates on newly handled deposits/loans represent recent trends in interest rates well, the interest rates on outstandings at a specific point of time reflect financial institutions' positions.

2. Financial Institutions and Items for Interest Rates Compilation

In order to compile interest rate statistics, interest rate surveys for deposit banks are carried out only on commercial and provincial banks at the moment and the deposit and lending rates extended by foreign bank branches are excluded from the surveys. At the early stage of the interest rate surveys carried out in 1995, interest rate surveys on domestic branches of foreign banks also used to be carried out on a quarterly basis and the developments of their interest rates were used internally for reference. However, since the share of domestic branches of foreign banks to all deposit banks in Korea is marginal and certain areas and classes concentrate their deposits and loans at domestic branches of foreign banks due to the distinctive characteristics of foreign bank branches in terms of operation, the deposit and lending rates of foreign bank branches often showed a gap with the overall deposit and lending rates. Against this backdrop, the survey on foreign bank branches was suspended since the latter half of 2009. In other words, the suspension took place because the interest rates of deposit and loan products of domestic branches of foreign banks played a marginal role as the representative market interest rates since they may have a gap with the trend of the entire market and the survey cost far exceeded the convenience of additional information acquirement from the survey on them. For reference, based on the volume of all deposits and loans subject to interest rate survey (on outstanding amounts), the loans and deposits of domestic financial institutions as of the end of 2012 accounted for 99%.

<Table 1> Financial Institutions subject to Interest Rate Compilation

Overall Classification	Medium-level Classification	Breakdown	No. of Institutions surveyed
Deposit-taking institutions	Deposit banks	Commercial and local banks	17
		Mutual savings banks	Federation of Savings Banks (cover around 100)
	Non-bank financial institutions	Mutual Banking	Federation of Mutual Banking (cover around 1000)
		Credit unions	Credit Union Federation of Korea (cover around 1000)
		Community credit cooperatives	Federation of Community Credit Cooperatives (cover around 1500)

Regarding the scope of interest rate compilation, in the cases of deposit money banks whose computer networks are well established, surveys of various interest rate indicators are carried out. First, for deposit rates, surveys are carried out depending on maturity based both on newly handled deposits and deposits of outstanding. Similarly for deposit products, as with deposit rates, surveys are conducted depending on the maturity based on newly handled deposits and deposits outstanding. For instance, with time deposits, surveys are carried out not only of their deposit rate and amount, but also deposit rates and amounts depending on the maturity including those for deposits with a maturity of more than one month~less than 6 months, of more than 6 months~less than 1 year, of more than 1 year~less than 2 years, of more than 2 years~less than 3 years, of more than 3 years~less than 4 years, ..., of more than 5 years. For reference, deposit products include demand deposits, time deposits, installment savings, mutual installment deposits, housing installment deposits, negotiable certificates of deposit, repurchase agreements, cover notes sold, bank debentures, etc.

As for lending rates similarly, surveys are conducted by categorizing them into the corporate sector, the household sector, the public sector and others, depending on the agent based on new loans and outstanding loan amounts. The categorization by agent is sub-divided by purpose such as loans for equipment and loans for operating funds for corporations and by security type such as mortgage loans, deposit loans, credit loans, etc, and interest rates and amounts on them are surveyed. In addition, there are also surveys on loans amounts at fixed and floating rates for corporate and household lending and surveys on interest rates of other unusual accounts, including trust account loans, and amounts by interest rate level and maturity level of major deposit and loan products. Surveys are carried out not only on information on interest rates, but also on changes in the composition of deposit and loan products and trends of new financial instruments to allow us to grasp changes in the financial system and the emergence of new financial products.

On the other hand, only about 5~10 categories of deposits and loans, centering around typical interest rates are surveyed for the interest rates of non-bank financial institutions. As for deposit rates, surveys are conducted on typical deposits including time deposits, installment savings and mutual installment deposits. For time deposits

alone, surveys are made by sub-dividing them depending on maturity including deposits with a maturity of less than 6 months, more than 6 months~less than 1 year, more than 1 year~less than 2 years, more than 2 years~less than 3 years, more than 3 years. As for loans, surveys are carried out on lending rates by borrower including the corporate, household, public and other sectors and by loan type including general loans and other loan products. As for general loans, detailed surveys are carried out by sub-dividing them depending on maturity, for time deposits.

Meanwhile, the surveyed information of the interest rates obtained through deposit money banks and non-bank financial institutions is publicly released after checking out the appropriateness of the provision of the information, the stability of the time series and the degree of time series accumulation. Accordingly, the number of categories publicly released constitutes about 50% of the total number of categories surveyed.

3. Procedure for Compiling Interest Rate Statistics

Most statistical compilation procedures at the Bank of Korea are carried out in the ECOS (Economic Statistics System), and the final statistical data are released through the system. There are many cases in which obtaining the basic data, error verification, aggregation and the procedures for offering statistics are done through the system. For some statistics, even if the final data is uploaded in the ECOS, the process of obtaining, processing and aggregating the basic data is carried out on individual users' PCs.

When it comes to interest rate statistics, we have a dual system. The basic data is obtained through the ECOS and downloaded by the individual PCs of the persons in charge. The errors of individual institutions are then checked for, the data aggregated and other related work carried out through a separate interest rate compilation system, after which the final data is posted in the ECOS. For reference, the interest rate compilation system operated through the individual PCs of the persons in charge uses the SAS language, and this system has the advantage of enabling flexible changing of the system in accordance with changes in the interest rate sheets.

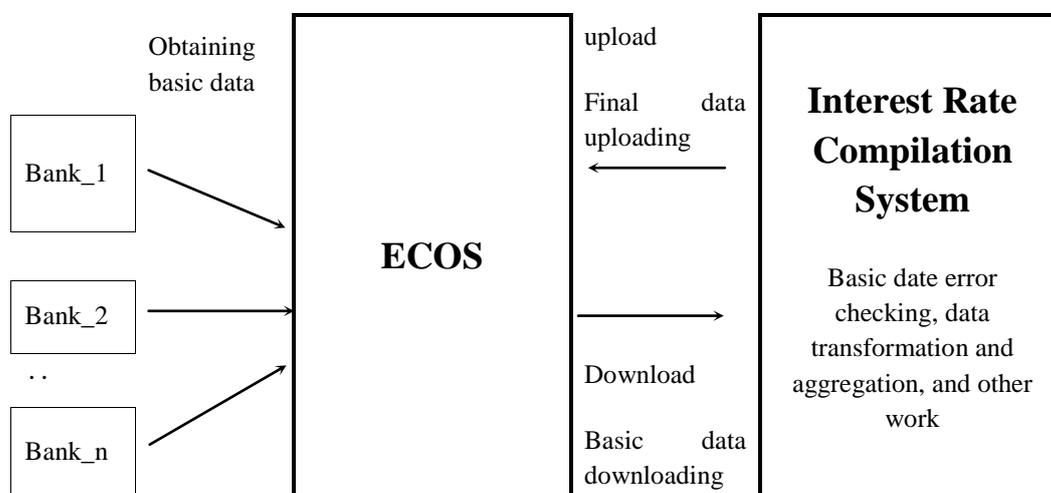
The interest rate sheet is written in an excel file, and designed to screen out the errors in the initial review. The interest rate sheets written by individual financial institutions are obtained in the system through the BOK access IDs given to individual financial institutions from around the 15th to the 20th of each month. The basic data obtained from individual institutions is moved to the interest rate compilation system of the person filling out the interest rate sheets at the Bank of Korea, and a second round of error checking is carried out.

If errors occur in this process, the person in charge of compiling interest rates notifies the person filling out the interest rate sheet at the financial institution concerned, and receives the revised sheet again. Through reviews and corrections of the sheet, the reasons for changes in interest rates are identified, and market developments are naturally monitored.

If there are no errors found in the sheet after completion of this process, then the data transformation and aggregation and other work including writing of the related report are carried out. The final data compiled is posted on the ECOS as the final process of interest rate compilation. Interest rates are compiled every month and released in accordance with the schedule for announcement of major statistics set in advance at the end of the previous year, in line with the IMF's SDDS (Special Data

Dissemination Standards). The statistics are normally made public at the end of every month.

<Figure 1> Flow Chart of Interest Rate Compilation System



II. New Challenges of Interest Rate Statistics

1. Survey Methods to Rapidly Identify Financial Market Changes

The monetary and financial statistics are mostly aggregate statistics, and the interest rates statistics also belong in this category. Just like the case with most major central banks' statistics, those of the Bank of Korea normally provide the time series data stabilized for a long time in line with a certain standard. This may be because credibility is very critical not only in the conduct of monetary policy but also in the announcement of statistics.

However, the stability of time series is a feature that works somewhat against agility and promptness in the securing of statistical data. At a time of rapid market change, one of the difficult challenges is to incorporate such changes in statistics rapidly when a new variety of financial instruments emerge and then disappear from the market, or when various mixes of financial instruments appear. For example, in Korea new microfinance instruments for the common people with low credit ratings have emerged since the global financial crisis, but surveying the trends of interest rates on these unique financial products using additional data does not fit with the method of data survey from a long-term perspective. The Bank of Korea has introduced and implemented ad hoc survey methods as a way of capturing various market changes such as the appearance of these new instruments. It is thought advantageous to simultaneously also use the survey method of collecting further data to identify short-term financial market changes, while still sticking to the traditional survey format in order to maintain consistency of the time series data.

2. Expanding Survey Items on Interest Rates of Non-bank Financial Institutions

Amid rising interest in the financial activities of non-bank financial institutions in the wake of the global financial crisis, demand for interest rate statistics on their

deposit and lending instruments has been also growing. Since the small-scale branches of non-bank financial institutions number over the hundreds or thousands, however, and they do not have IT systems systematically in place, it is difficult to gather such data. Furthermore, since their financial statements' accounts are not segmented like those of banks, it is not easy to conduct detailed surveys on these deposit and lending instruments by institution and maturity.

For reference, the G-20 Data Gaps Initiative discussions since the global financial crisis, led mainly by the IMF/FSB, are considering expansion of the Financial Soundness Indexes. New indices under consideration include 'Earnings to interest and principal expenses: I30' and the 'Household debt service ratio: I34.' To produce these indices it is first necessary to identify the interest rates on the outstanding amounts applied to outstanding loans that households and corporations have borrowed from financial institutions including banks and non-banks. That is also the reason why a survey on the levels of interest rates charged by individual non-bank financial institutions is needed.

In addition, as various financial instruments emerge in line with financial market development, there are many cases in which it is hard to set standards when surveying interest rates. When it comes to step-up roll-over time deposits, for example, it is not so simple to distinguish between the interest rates on the newly extended amounts, the interest rates on the outstanding amounts, and the maturities. In compiling interest rates, for the interest rates on newly extended amounts the Bank of Korea investigates the interest rates applied at that moment to newly extended deposits, and for the maturities of newly extended amounts it investigates the maturities based on consideration of when the new interest rates are applied. For the interest rates on outstanding amounts the Bank studies the average interest rates applied to the deposits, while for their maturities it investigates the holding periods of the deposits concerned. Since interest rate surveys and statistical classification related to mixed instruments of various combinations is not easy, there are difficulties in interest rate compilation.

3. Drawing up of Interest Rates in Harmony with System of National Accounts

In drawing up its monetary and financial statistics the Bank of Korea follows the IMF's MFSM. Issued in 2000, the MFSM is the first guideline showing how to systematically classify and draw up the stocks and flows of financial assets and debts, and its concepts and principles are in harmony with the SNA. Simply put, the monetary and financial statistics comply with the classifications by section and by financial institution defined in the SNA, and remain consistent with the SNA in recognizing and recording the stocks and flows.

In this context, the FISIM (Financial Intermediation Services Indirectly Measured) require more detailed interest rates indices than the current ones in estimating value added in the financial sector. While the interest rate statistics now drawn up by the Bank of Korea are compiled by institution and by maturity only in the case of lending rates, the deposit statistics are compiled by deposit instrument and by maturity, and not by institution. For more harmonization of statistics with the SNA going forward, it seems necessary to compile the interest rate statistics on deposits by institution and by maturity as well. It would be a useful approach to refer to the ECB's interest rate statistics, and to its experience in estimating value added in the financial sector using them.