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To: Members of the Executive Board

From: The Secretary

Subject: **Republic of Korea—Detailed Assessments Using the Data Quality
Assessment Framework**

Attached for the information of the Executive Directors are the detailed assessments using the data quality assessment framework for the Republic of Korea. At the time of circulation of this paper to the Board, the Secretary's Department has received a communication from the authorities of the Republic of Korea indicating that they do not consent to the Fund's publication of this paper.

Questions may be referred to Mrs. Andrade (ext. 38653) and Mr. Armknecht (ext. 37929).

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INTERNATIONAL MONETARY FUND

REPUBLIC OF KOREA

Detailed Assessments Using The Data Quality Assessment Framework

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This document contains a detailed assessment by dataset of the elements and indicators that underlie the data quality dimensions discussed in the data module including the generic framework used for the assessment of the quality of Korea's data (Appendix I).

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DETAILED ASSESSMENTS USING THE DATA QUALITY ASSESSMENT FRAMEWORK

The following detailed information on indicators of statistical practices in the areas of the national accounts, prices, government finance, monetary, and balance of payments statistics was gathered from information provided by the Korean officials during the mission's stay and from publicly available documents. This information, which is organized along the lines of the generic DQAF, was used by the mission to prepare the summary assessment presented in Appendix I.

I. NATIONAL ACCOUNTS (ANNUAL AND QUARTERLY)

0. Prerequisites of quality

0.1 Legal and institutional environment

0.1.1 The responsibility for collecting, processing, and disseminating statistics is clearly specified.

The national accounts estimates are compiled under the terms of the Bank of Korea Act of April 1, 1998, and the Statistics Law, last amended in January 1999. In accordance with Article 86 of the Act, the Bank of Korea (BOK) may compile statistics for the proper formulation of its monetary and credit policies. Under Article 4 of the Statistics Law, the Korea National Statistical Office (KNSO) Commissioner has designated the BOK as the compiling agency for the national accounts.

0.1.2 Data sharing and coordination among data producing agencies are adequate.

The BOK has established relationships with data suppliers which ensure the smooth and timely flow of information. Most areas of the BOK maintain close contacts with data suppliers, but others do not, resulting in some loss of quality in the data used in the national accounts.

0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.

The confidentiality of individual respondents' data collected by the BOK is guaranteed by the Statistics Law (Articles 13 and 14). The law requires that material of a confidential nature belonging to individuals, juristic persons or organizations collected for statistical compilation shall be protected from disclosure and used only for statistical compilation. In the surveys administered by the BOK, respondents are informed that the data requested will be held in confidence and used only for statistical purposes. When new surveys are introduced, respondents are informed of the purpose of the survey, the importance of the statistics, and the legal basis for the collection.

The *Guidelines on Compilation and Dissemination of Statistics* (September 1999), prepared by the management of the BOK's Economic Statistics Department, instructs staff of the requirement to ensure that source data collected are kept confidential and not divulged. In

particular, no one except the statisticians working with the data are allowed to see or copy data that are provided in strict confidence. New staff, including temporary staff, are apprised of the guidelines. To prevent disclosure of data, there is restricted access to the national accounts work area when the data are under compilation and the data are secured in lockable file cabinets and in password protected computer systems.

0.1.4 Statistical reporting is ensured through legal mandate and/or measures implemented to encourage voluntary response.

The BOK has the authority to collect data, but itself cannot penalize those who do not cooperate. The Statistics Law allows the KNSO to fine non-respondents on behalf of the BOK. However, the BOK prefers to encourage goodwill among data providers. To this end, it has established a committee to meet with data providers and build up confidence and cooperation.

0.2 Resources

0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.

There are adequate staff resources to compile the national accounts, but the staff have to work some overtime during busy periods. The BOK takes every opportunity to send staff on international training courses, seminars and workshops. Most knowledge of compilation is built up from the job manuals which explain the concepts, classification, compilation process, and computerized programming. These manuals are regularly updated by each current compiler to reflect the changes, if any, in the compilation process and handed over to new compilers with the explanation and coaching from each predecessor. The BOK also undertakes its own training in general statistical matters, including national accounts. Salaries are competitive in the BOK, so it does not have a serious issue in retaining staff. Neither does the national accounts program have any difficulty in obtaining the financial resources it needs. Every member of staff working on the national accounts has a PC, which are linked together in a network.

0.2.2 Measures to ensure efficient use of resources are implemented.

As far as possible, concepts and methodologies adopted by data providers are in harmony with the requirements of the national accounts. In particular, the KNSO is responsible for establishing standard classification systems to be applied to all statistics. This use of standard classification systems avoids the inefficient use of resources in adapting source data to meet the needs of the national accounts.

0.3 Quality awareness

0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.

Staff share senior management's commitment to quality. Also, the BOK has established a National Accounts Advisory Committee made up of representatives from the BOK, other government agencies, universities and research institutes. This body assesses the national accounts program and makes recommendations for its improvement. In addition to the advisory body, the BOK has established a program of user consultation; together these two sources usually are used to identify any new requirements.

1. Integrity

1.1 Professionalism

1.1.1 Statistics are compiled on an impartial basis.

The national accounts statistics are compiled on an impartial basis. The BOK is independent of all other government agencies. There is no external pressure on the BOK with respect to the content or release of the national accounts.

1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.

The compilers of national accounts statistics are free to choose the data sources, taking into account quality, timeliness, costs, and the burden on respondents. Even the balance of payments (BOP) which are also produced by the BOK are adjusted to conform to national accounts requirements.

1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.

The BOK continuously monitors media comment on its statistics and contacts reporters to correct any misinterpretation. If necessary, the BOK will prepare commentary on erroneous interpretations of national accounts estimates and has done so in the past.

1.2 Transparency

1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.

In April 2001, the BOK published a *Guide to Economic Statistics* which explains the terms and conditions for the compilation and dissemination of their statistics. Other publications also contain information on terms and conditions, including – *A Guide to National Accounts*, *An Easily Understandable Guide to Korean Economic Statistics*, and *The Explanation of National Accounts Terminology*.

1.2.2 Internal governmental access to statistics prior to their release is publicly identified.

Some senior government ministers are provided with data on gross domestic product (GDP) a few hours before their general release. This is contrary to the statement on the Dissemination Standards Bulletin Board (DSBB) that there is no pre-release access.

1.2.3 Products of statistical agencies/units are clearly identified as such.

All of the products of the BOK are clearly identified as coming from this organization.

1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.

Advance notice is given of major changes in methodology, source data, and statistical techniques such as changes in the base year introduced in 1999 (using 1995 base). Also, the detailed plan for adopting the *System of National Accounts 1993 (1993 SNA)*, scheduled to be implemented in 2004, has been published.

1.3 Ethical standards

1.3.1 Guidelines for staff behavior are clear and publicized.

There are clear ethical guidelines for official statistics in the *Guidelines on Compilation and Dissemination of Statistics* issued to all staff in September 1999. This document was also published and is given to all new staff and displayed in work areas. These ethical standards are followed by the staff of the BOK.

2. Methodological soundness

2.1 Concepts and definitions

2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices:

The national accounts are, in the main, based on the *1968 System of National Accounts (1968 SNA)*. However, in 1999, when the base year was changed to 1995, some changes were made to align the accounts more closely with the *1993 SNA*. Most of the changes affected the income accounts rather than the production account, but the valuation of imports of goods was changed from cost, insurance and freight (c.i.f.) to free on board (f.o.b.). The BOK is gradually introducing further elements, but full implementation of the *1993 SNA* is not expected until the next change of base year in 2004.

2.2 Scope

2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices.

The delimitation of the constituent units of the economy is in accordance with the *1993 SNA*. In particular, the national accounts cover territorial enclaves, operations by offshore enterprises and workers operating part of the year in another country.

The production boundary is generally based on the *1968 SNA*. Own-account production of agricultural goods is covered, as is output of goods for own-account fixed capital formation. Mineral exploration on own-account and production of entertainment, literary or artistic originals are not treated as output because these are *1993 SNA* concepts. Informal but not illegal activities are included in the accounts, in conformance with the *1968 SNA*. Operating leases are treated as the provision of a service while finance leases are treated as loans, in line with the *1993 SNA*.

The asset boundary is still in line with the *1968 SNA* — all defense related assets are classified to general government final consumption; historical monuments and valuables are not separately identified, though holdings of gold are included in gross fixed capital formation. None of the new intangible assets specified in the *1993 SNA* are currently included. The BOK does not calculate work in progress for agriculture due to the lack of source data.

2.3 Classification/sectorization

2.3.1 Classification/ sectorization systems used are broadly consistent with international standards, guidelines, or agreed practices:

National classification systems are broadly consistent with international standards. The industry classification, the Korean Standard Industrial Classification (KSIC), is fully consistent with International Standard Industrial Classification (ISIC), Rev. 3, down to the third digit level. However, 42 additional classes and a fifth digit level have been added to meet national requirements. Classification of Individual Consumption by Purpose (COICOP) and Classification of Functions of Government (COFOG) are used to classify household consumption and the functions of government, respectively.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks.

The valuation rules are in line with the *1968 SNA*, except that imports of goods are valued f.o.b. Market output is recorded at producer prices, as is market output of agricultural goods and capital formation produced for own final use. Intermediate and final consumption are recorded at purchaser's prices. The BOK makes adjustments to exclude deductible value added tax (VAT) from the accounts, based on data supplied by the National Tax Service. No information is available on transfer prices, so no adjustments to market prices are made.

Imports and exports are converted from US dollars to Korean won using average quarterly exchange rates. The actual exchange rate for every transaction is available and the BOK is already investigating the feasibility of compiling the BOP in Korean won as well as in U.S. dollars.

2.4.2 Recording is done on an accrual basis.

General government expenditure and revenue data are, as far as possible, recorded on an accrual basis. This involves a number of adjustments made by the BOK to the source data from both central and local governments.

2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.

The grossing and netting procedures are in accordance with the *1993 SNA*.

3. Accuracy and reliability

3.1 Source data

3.1.1 Source data are collected from comprehensive data collection programs that take into account country-specific conditions.

There is a centralized business register for statistical surveys built up from the economic censuses, which are conducted every five years. The register is updated in between censuses using information on births and deaths of enterprises from the National Tax Service.

The KNSO undertakes censuses every five years (years ending in 3 and 8) covering all industries, except for construction, and transport and communication, which are fully covered annually. All establishments with one or more workers are surveyed, except for publicly owned establishments which are covered in the central government data supplied by the Ministry of Finance and Economy (MOFE). The producers in the census are identified visually using a team of local interviewers. A population and housing census is also conducted every five years (years ending in 0 and 5) which provides data for the household sector.

The KNSO operates annual enterprise surveys covering all industries. All sizes of establishment are within the sample frames, except for the mining and quarrying industry and the manufacturing industry. In these two industries, establishments with less than five employees are excluded, but this still means that well over than 80 percent of value added is covered. Proper sampling techniques are used in all surveys.

The KNSO undertakes monthly or quarterly surveys for some industries, as noted below. The financial statement survey by the Bank of Korea covers almost all industries except for agriculture, forestry and finance and its results are widely used in the compilation of quarterly and annual national accounts. The value added ratio of industries such as manufacturing, wholesale, retail trade and hotels is derived from the results of the financial statement survey. The survey covers almost all large companies meeting the criteria of 1)

annual sales of more than 70 billion won, 2) annual sales among top five in their industry, 3) exports within top hundred, 4) listed companies in stock exchange market. The small companies surveyed are chosen by stratified random sampling among companies with sales of more than 2.0 billion won. The coverage in terms of sales amount is around 90 percent in the case of manufacturing industry.

- **Agriculture** There is a monthly data collection system for household farmers called the Farm Household Economy Survey. However, the results are not reported to the KNSO until after the end of the year. The data collected include sales, purchases and assets. A sub-sample of this survey, named the Production Cost Survey of Agriculture Products, is also conducted following the same reporting arrangements. This survey collects a breakdown of purchase costs by household farmers for a range of specific crops.
- **Forestry and Fishing** The KNSO conducts a monthly survey called the Fishery Production Survey, which covers all types of fishing activity undertaken by households, cooperatives and enterprises. It collects data on the quantity and value of production. There is another KNSO monthly survey, the Fishery Household Economy Survey, which collects data on expenditure as well as receipts.
- **Mining and quarrying and manufacturing** There is a monthly sample survey of these industries which is conducted by the KNSO. However, only data on the quantity produced, quantities of raw materials and inventory data are collected. This survey is used to construct the Industrial Production Index (IPI). Value of production data are only collected for establishments that produce machinery and electric and electronic products.
- **Electricity, gas and water supply** Quarterly data for electricity are obtained from financial statements of the Korea Electric Power Corporation. For those firms which generate electricity for their own final use, the only data collected relate to the quantity generated each quarter. For the gas and water producers, quarterly figures for sales values and quantities are obtained directly from the companies.
- **Wholesale and retail trade** There is a monthly KNSO survey, the Current Wholesale and Retail Trade Survey, which collects data on values of sales, but purchases and inventories have not been collected in this survey since 1980.
- **Financial intermediation and insurance** These enterprises supply the BOK with quarterly financial statements.
- **Transport and communications** Quarterly data on sales values are collected either from the enterprise, e.g., National Railroad Office, or from trade organizations.
- **Other services** Quarterly sales data are supplied by a number of sources. For some sub-industries the data are from the BOK's own quarterly survey which also uses the KNSO register as the sample frame. Monthly data from the KNSO are available for certain of the other sub-industries. Also, data are obtained from trade organizations and the MOFE for government operations..

The KNSO operates a monthly household survey, called the Family Income and Expenditure Survey (FIES). It covers 72 cities in Korea, but excludes farmers' and fishermen's households; single person households; households which manage restaurants, inns or boarding houses and cannot separate consumption from production expenditure; and resident aliens' households. The coverage of the survey is about 60 percent of the total population. It uses proper sampling and processing techniques, and collects information on income, occupation and detailed expenditure.

The BOK undertakes ad hoc surveys whenever necessary. An example was a telephone survey of manufactures to update the split between household and business purchases of motor vehicles, PCs and mobile phones.

3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.

Most source data are reasonably consistent with the requirements of national accounts. Some KNSO surveys are not adequate for the compilation of the national accounts. The monthly enterprise survey data for mining and manufacturing, which are used to construct the industrial production index, are drawn on by the BOK to estimate quarterly quantity amounts by products. The KNSO annual survey data for mining and manufacturing are used for estimation of gross output, but annual and quarterly value added is estimated by applying the value added ratio derived from the annual or quarterly financial statement survey to gross output since the value added of the KNSO annual survey is calculated by subtracting only major production costs from gross output. The KNSO regularly consults the BOK to ensure that surveys undertaken satisfy the requirements of the national accounts. However, in some cases the precise needs of the national accounts cannot be met due to the inability of enterprises to supply the data, e.g., mining companies cannot supply data on administrative expenses. On the other hand, there is evidence that appropriate changes are not always requested by the BOK, as noted in section 3.2.1.

3.1.3 Source data are timely.

All of the data required to produce GDP estimates are supplied on a timely basis.

3.2 Statistical techniques

3.2.1 Data compilation employs sound statistical techniques

Production approach

The output estimates use the 402 commodity breakdown from the input-output (I-O) tables, grouped into 77 industries. The latest available I-O refers to 1995. The 402 commodity breakdown broadly corresponds to the 4-digit level of ISIC Rev. 3, but with some additional breakdowns at the 5-digit level of the KSIC.

Intermediate consumption uses the same 77-industry breakdown as output. There is also a corresponding commodity breakdown of intermediate consumption for each industry.

However, this breakdown is based on the 1995 I-O structure at constant prices, reflatd to current prices using appropriate components of the Producer Price Index (PPI) and Consumer Price Index (CPI) for each product.

The degree of reliance on fixed ratios, derived from benchmarks or other sources, that are more than 5 years old are as follows:

- **Agriculture** There is no reliance on historical benchmarks.
- **Forestry and Fishing** Though output is obtained from survey data, intermediate consumption is derived by reflatng the constant price estimate. The constant price estimate for total intermediate consumption uses the base year ratio to output.
- **Mining and quarrying and manufacturing** There is no reliance on historical benchmarks.
- **Electricity, gas and water supply** Only quantity data are available for those firms which generate electricity for their own final use. So, value added for these firms is derived using the ratios from the 1995 I-O tables, which were obtained through a special survey. These firms account for less than 5 percent of total electricity generation. The current ratios for KEPCO should not be used because the input structure is quite different for the enterprises generating their own electricity. There is no reliance on historical benchmarks for the other producers.
- **Construction** Value added for construction is derived by applying the 1995 base year value-added ratio to the output estimates.
- **Wholesale and retail trade; transport and communications; financial intermediation and insurance; government services** The final annual estimates use survey data for all production aggregates, so there is no reliance on historical benchmarks. Preliminary data use the quarterly survey of enterprises as previously noted.
- **Non-profit institutions serving households (NPISHs)** The value of compensation of employees is derived by applying the change in the wage index to the number of employees in the relevant year. Thus, there is no reliance on historical benchmarks.
- **Other services** Value added is based on the value-added ratio to output derived from data supplied by the National Tax Service. No use is made of benchmark data.

Descriptions of the techniques used to address specific issues of GDP compilation that are identified in the national accounts DQAF are as follows:

- **Owner-occupied dwellings** Output is valued as the estimated rentals that tenants would pay for similar accommodation. However, the calculation is only done separately for urban and rural housing rather than by detailed geographic area. This is because rentals rates are only available for these two components.

- **Work in progress** Work in progress is not calculated for growing crops, standing timber, or stocks of fish owing to the lack of data. Work in progress is added to output for the production of all other goods.
- **Inventory valuation adjustment** Inventories data are used in the estimates of output and intermediate consumption. They are derived by applying current prices to quantity data which means that no adjustments are required for holding gains or losses.
- **Consumption of fixed capital** The perpetual inventory method (PIM) is used as the conceptual basis for estimating consumption of fixed capital for government. For other sectors, reported depreciation data are used.
- **Cash versus accrual** General government data are adjusted to an accrual basis by the BOK.
- **Agriculture** For crops, the preliminary quarterly figures for output are based on changes in the area planted and prices paid to farmers obtained from the National Agricultural Cooperatives Federation. Intermediate consumption is based on growth in output and prices of seeds and fertilizer. Data on livestock numbers and those sent for slaughter are obtained from the Ministry of Agriculture and Forestry (MAF). They also supply a volume index for dairy products. These quantity figures are multiplied by the relevant prices obtained from the National Agricultural Cooperatives Federation to provide estimates of value of output. Value added is estimated using the previous year's value-added ratio. These quarterly estimates are adjusted when annual data are supplied by the MAF. The KNSO conducts an annual survey on monthly agriculture production of household farmers. However, this survey is not used to compile actual quarterly values. If used, the data for household farmers would have to be supplemented with data for enterprises and cooperatives, but these should be available from the MAF.
- **Forestry** Preliminary current price output is estimated by applying the relevant component of the PPI to the constant price value. Final annual figures are obtained from the *Forestry Products Statistics* publication produced by the Korea Forest Service. Intermediate consumption at current prices is derived by reflatting the constant price value of the component.
- **Fishing** Monthly output figures are obtained from the KNSO's Fishery Production Survey. Intermediate consumption is derived from the product breakdown at constant prices reflatting using components of the PPI and CPI. The monthly Fishery Household Economy Survey is not used because it only covers inland households and does not cover enterprises or deep sea fishing. The BOK should investigate the availability of data for these other producers, since it would be unusual for there to be demand for expenditure data for some types of producers but not for others.
- **Mining and quarrying** Preliminary quarterly estimates for output are obtained from the constant price figures using the PPI for some products and actual prices from the Korea Mining Association for others. There is no need to make a special adjustment

for exports, as is done for manufacturing, since little of the output is exported. Final annual output figures are obtained from the KNSO survey. Value added is derived using the value-added ratio to output from the quarterly and annual financial statements collected by the BOK.

- **Manufacturing** Preliminary quarterly estimates for value of output are obtained from the constant price figures using the PPI. However, the PPI does not cover exports, so these are subtracted first and deflated separately using the export price index. Final annual output figures are obtained from the KNSO survey. However, the KNSO survey is not used for value added since it does not collect reliable figures for administrative costs. This is because the survey covers establishments that do not always know the overall administrative costs of the enterprise. This is so much of a problem that the KNSO does not publish these figures. So value added is derived using the ratio to output from the quarterly and annual financial statements collected by the BOK.
- **Electricity, gas and water supply** Financial statements from KEPCO are used to derive quarterly and annual figures for output, intermediate consumption and value added. However, for those firms which generate electricity for their own final consumption, only data on the quantity of electricity produced are available. In these cases, estimates of output for own final use are obtained by multiplying quantities by the unit price charged by KEPCO. Intermediate consumption is calculated by using the ratios from the 1995 product breakdown. Annual and quarterly financial statements, containing a full set of data, are available for the suppliers of gas and water.
- **Construction** The value of real output for the construction of new buildings is estimated using the area of new buildings. Area estimates are obtained by applying the average construction period to the floor area of authorized permits and allocating the estimated area for the project to the current period. The data on permits are adjusted to reflect work which is suspended. Current price output is derived by using a price index based on weighted input prices. For civil engineering, current price output is obtained from survey data. In all cases, intermediate consumption is estimated by applying changes in input prices to the constant estimates. However, there is an annual survey of the construction industry run by the KNSO which collects data on the value of work done and costs. The BOK does not use these data because the breakdown by type of construction does not conform to that used in the national accounts. This is a good example of where the BOK needs to review its sources and methods. Either the survey should be changed to reflect the BOK's needs or the classification used for the national accounts should be adjusted. Survey results should be more reliable than estimates based on permits issued and average prices. Data for construction by the government are obtained from the budget.
- **Wholesale and retail trade** Preliminary quarterly output figures are derived by applying the margin mark-up from the 1995 I-O tables to the output of agricultural and manufactured goods. Margin rates can vary significantly from year to year. The rate from the latest finalized year could be used to improve on present practice for quarterly estimates. Quarterly value added is obtained by extrapolating the value-

added ratio to output from the same quarter of the previous year, using the change in the ratio from financial statements. Final annual figures are available from the KNSO survey and from the National Tax Service. Both datasets are compared to come up with the final figures for output, intermediate consumption and value added.

- **Transport and communications** For the annual estimates, either financial statements reported to the BOK are used, or the KNSO survey. These sources give output, intermediate consumption and value added. Quarterly sales are collected for each sub-industry, but coverage is not complete. Therefore, the growth over the same quarter of the previous year is used to derive output. Intermediate consumption is then estimated by applying appropriate price indices (components of the PPI and CPI) to the constant price breakdown. Adjustments are made to the quarterly estimates when the annual figures are derived, but by simply prorating the differences.
- **Financial intermediation and insurance** The output of financial intermediation is made up of commissions and financial intermediation services indirectly measured (FISIM). FISIM is calculated by deducting interest paid from property income received. The data, together with that for insurance, comes from quarterly financial statements provided to the BOK by each corporation.
- **Government services** Annual figures come from the MOFE. The detailed breakdown of the figures allows the BOK to build up the production estimates using the cost approach. Less detail is available quarterly, so some of the figures are based on the structure of the annual budget. Annual estimates for consumption of fixed capital are derived using the PIM approach; quarterly estimates are assumed to be one fourth of the annual figures. Quarterly figures for payments of indirect taxes are also taken as one fourth of the annual value.
- **NPISHs** Output estimates at current prices are derived by reflatting the constant price estimates with components of the PPI and CPI. The wage index is applied to the number of employees in each year to derive estimates for compensation of employees. Consumption of fixed capital comes from the PIM calculation. This means that output and value added are partially derived from 1995 benchmarks. However, the KNSO is planning to introduce a new survey covering NPISHs.
- **Other services** KNSO surveys are the source used to derive final annual figures for output and value added for restaurants and hotels. Value added for the remaining services is calculated by applying the value-added ratio to output from detailed data supplied by the National Tax Service. Tax data are used because the KNSO survey does not provide value added data conforming to national accounts requirements. Fortunately, the KNSO is about to change the survey to meet the BOK's requirements. Quarterly output figures are obtained by applying sales growth to the value in the same quarter of the previous year. Preliminary value added figures are calculated using the value added ratio from the previous year. The final annual results are used to adjust the quarterly figures.

The volume measures are calculated using a fixed base year (currently 1995), which is updated every five years. In moving to the 1995 base year, the figures back to 1970 were re-

referenced to that year. However, the data for 1953 – 1969 are still shown at 1975 prices. It was not possible to re-reference the data for these earlier years because of differences in the classifications used. The BOK is planning to introduce annual chain-linked indices at the time of the next rebasing in 2004. The procedures followed for compiling volume measures of GDP for each industry are as follows:

- **Agriculture** Output at constant prices is based on changes in quantities for each type of product. Value added is derived using the base year value-added ratio.
- **Forestry** The only quarterly data available for standing timber are tree-planting area statistics and permits to extract timber, supplied by the Korea Forest Service. These data are used to construct the preliminary figures for output at constant prices. Final figures are obtained from the *Forest Product Statistics* produced by the Korea Forest Service. Value added is obtained by applying the ratio of intermediate consumption to output from the 1995 I-O tables.
- **Fishing** Monthly quantity figures are obtained from the KNSO's Fishery Production Survey. Value added is derived by applying the ratio of intermediate consumption to output from the base year.
- **Mining and quarrying** Preliminary quarterly estimates for output at constant prices are derived using volume indicators such as the IPI, or quantities of mining products provided by the Korea Institute of Geology, Mining and Materials. These are updated when annual quantity figures are available from the KNSO survey. Value added is calculated by applying the base year value-added ratio.
- **Manufacturing** Preliminary quarterly estimates for output at constant prices are derived using the IPI. These are updated when annual quantity figures are available from the KNSO survey. Value added is calculated by applying the base year value added ratio.
- **Electricity, gas and water supply** Output for the electricity industry at constant prices is derived by deflating with the unit price index from KEPCO. Intermediate consumption is also deflated, but using components of the PPI. For gas and water, the preliminary quarterly output figures are derived by applying growth in quantities to the value in the same quarter of the previous year. Value added is then obtained by applying the value-added ratio from the previous year. When the annual current price data on output and intermediate consumption are received, double deflation is used to derive constant price value added. The quarterly estimates are then adjusted to agree with the annual total.
- **Construction** Output of new buildings is calculated by applying the base year unit costs to the area of new construction. Output for repairs is obtained by extrapolating the output for the same quarter of the previous year by the number of residential buildings. Value added is derived from output using the base year ratio from the 1995 I-O tables. Government expenditure is deflated using a price index built up from the PPI and the construction wage index.

- **Wholesale and retail trade** The quarterly figures for output are obtained by applying the margin rate from the 1995 I-O tables to the constant price output of agricultural and manufactured goods. Actual quantity data obtained from some large enterprises are used as volume extrapolators for some components. Value added is derived using the base year value-added ratio.
- **Transport and communications** Good quality volume indicators are available for some sub-industries, so these are used to derive constant price estimates for output. However, for other transport sub-industries current price output has to be deflated by the PPI for total transport. Total intermediate consumption is derived using the ratio to output from the previous year. It is broken down by product so that it can be reflatd to obtain the current price figures. However, this breakdown is updated annually using financial statements or the KNSO survey. This is done because the structure of this industry is subject to large changes.
- **Financial intermediation and insurance** The commissions received by financial intermediaries are deflated by the total services component of the CPI. To derive FISIM, real interest payments are deducted from real property income received. Real interest payments are obtained by applying the growth rate of deposits or interest-bearing liabilities, deflated by the PPI, to the figure for the same quarter of the previous year. Real property incomes received are calculated similarly, but using loans or interest-bearing assets deflated by the CPI. Intermediate consumption is deflated using the total PPI. Output for life insurance is deflated using the CPI, while for non-life the insurance component of the PPI is used. Intermediate consumption is deflated using the total PPI.
- **Government services** Compensation of employees at constant prices is based on growth in the number of employees. Data on hours worked would be better, but this is not available. The BOK has no information on which to base an adjustment for changes in productivity. Consumption of fixed capital at constant prices is obtained as a byproduct from the PIM calculation.
- **NPISHs** Constant price figures are based on the growth in related volume indicators, such as the number of students or the number of patients.
- **Other services** For those industries where it is available, the specific component of the CPI is used to deflate output. For the other industries, the specific wage index is used. Value added is derived by applying the base year ratio to output.
- **Taxes less subsidies on production** Constant price estimates are constructed commodity by commodity. For some commodities they are derived by deflation using the relevant output deflator. For others they are obtained by extrapolation of the base year figure using growth in output.

Expenditure approach

At current prices

The expenditure approach is compiled using the structures of the I-O tables. Therefore, the estimates for the expenditure components of GDP are compiled from the 402 product groups used in those tables. Additionally, household final consumption is compiled at the three-digit level of COICOP and general government final consumption is compiled at the one-digit level of COFOG. Gross Fixed Capital Formation (GFCF) is compiled by activity and type of asset and changes in inventories are compiled by type of inventory.

In general, household final consumption expenditure is not derived independently, though for some products independent estimates are compiled. Food grain consumption is derived from a KNSO survey; meat consumption is obtained from the MAF; purchases of cars is supplied by the Automobile Manufacturers Association; and consumption of electricity and gas are provided by the respective utilities. Data for certain personal services and non-durable goods are derived directly from the production data. For all other products purchased by households and enterprises (such as computers, TVs, and furniture), household final consumption is calculated using the product's share in total domestic final consumption from the I-O tables. For the preliminary estimates for 2000, around 12 percent of the total value of household final consumption was estimated in this way. These ratios were updated recently for mobile phones and personal computers (PCs) using a special telephone survey of manufacturers. The ratios are applied to the constant prices estimates which are then converted to current prices using the CPI or, for some services not covered by the CPI, the appropriate implicit output deflator. The base year estimates for household final consumption were derived using various 5-yearly surveys, such as the Family Income and Expenditure Survey and the Wholesale and Retail Trade Survey. There are corresponding annual surveys, but their coverage and timing does not meet BOK's requirements. However, the BOK will approach the KNSO to try to overcome these limitations.

Final consumption expenditures for general government and NPISHs are derived by deducting receipts from the sale of goods and services from their output values. However, for NPISHs these receipts are derived using the base-year proportions. Expenditure on goods and services by Korean residents abroad are collected directly and included in imports. So, conceptually they are also included in household final consumption, as this is calculated using commodity flow techniques. Holdings of gold are included in GFCF, but data for other valuables are not separately identifiable.

The buildings component of GFCF is obtained directly from output of the construction industry after applying some adjustments, such as deducting repairs. The data for livestock are also extracted from the production figures. The rest of GFCF (amounting to around 32 percent) is derived first at constant prices using commodity flow techniques, as for household final consumption, and reflat by appropriate components of the PPI. Again, it would be more appropriate to use data from the KNSO industry surveys as is done for the I-O tables. However, the current surveys do not provide the details needed by the BOK. So, they will approach the KNSO to see if the surveys can be changed.

Changes in livestock inventories are obtained directly from the production data. For other agricultural products, the figures are calculated by residual from the supply and demand figures, with intermediate consumption derived using commodity flow techniques. Data for inventories of mineral and manufactured goods are estimated by reflatting the constant price values using the relevant components of the PPI. Oil inventories are obtained from the Korea National Oil Corporation. Changes in inventories of other imported goods are based on commodity flow techniques. Changes in inventories of goods for resale are derived directly from survey data.

Imports and exports in US dollars are taken from the BOP figures. In the BOP, trade with North Korea is deducted because it is seen as part of Korea. However, in the national accounts these transactions are added back to the figures. The data are converted to Korean won using average quarterly exchange rates. The Customs data include more current exchange rates specific to each transaction, but the BOK has not made use of these data. However, they are investigating the use of current exchange rates in the near future.

As noted above, most household final consumption expenditure is derived using commodity flow techniques. So, around 70 percent of the total value of household final consumption is based on the 1995 ratios. Similarly, final consumption by NPISHs is based on indicators applied to the 1995 figures. Data on capital formation on buildings and agriculture are used to compile constant price estimates of gross fixed capital formation and are based on production data, but the rest of GFCF uses the commodity flow technique. So, around 50 percent of total GFCF is based on the 1995 benchmark data.

At constant prices

Volume figures for household final consumption are mainly derived using commodity flow techniques. Final consumption at constant prices by general government and NPISHs are derived from production data in exactly the same way as are the current price figures.

Production data or the results of the commodity flow exercise, as appropriate, are used to compile changes in inventories for agricultural products, just like the current price values. The inventory figures for mining and manufacturing are calculated using ratios obtained from the KNSO. The estimates for changes in inventories of oil are obtained by deflating the current price figures using the relevant component of the PPI. Inventories for other imported goods are based on the ratio from the 1995 I-O tables. Inventories of goods for resale are derived by residual in the same way as the figures at current prices.

The BOK constructs proper import and export price indices for a range of goods using surveys of importers and exporters. Other special import and export indices are constructed for semiconductors, aircraft and ships. For semiconductors, the index comes from the BOK. For aircraft it is compiled in the BOK using year-on-year changes in actual prices. The index for ships is obtained from Lloyds of London. Other imports and exports of goods are deflated using unit value indices. This is not recommended since lack of homogeneity in many products leads to distortions in such indices. The value of the goods to which this technique is applied accounts for some 40 percent of total imports and exports. Imports of services are mainly deflated using the implicit deflator for imports of goods. Exports of transport services

are extrapolated using various volume indicators such as ton-kilometers. Exports of insurance are deflated using the implicit deflator for exports of goods. Other exports of services are deflated using the PPI.

3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

There is no official information on the size of the informal economy. External analysts that have undertaken such studies estimate that the informal economy is around 10 percent of GDP. However, the BOK does not adjust estimates for informal activities that might go unrecorded outside of normal administrative and survey data sources. Data from the monthly labor force survey of the Economically Active Population Survey (EAPS), could be used to verify the estimates of the total number of employees which would include those involved in small household activities and those covered by the enterprise surveys. Although the survey does not collect information on the industry in which the surveyed individuals work, a quinquennial survey (for years ending with 2 and 7), the Employment Structure Survey, does collect such information. This survey could be used to derive an industry breakdown of the monthly employment figures in informal activity.

3.3 Assessment and validation

3.3.1 Source data—including censuses, sample surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.

The BOK reviews and validates source data. Information on sampling errors, nonsampling errors and coverage are available. The BOK makes every effort to validate source data. Most household final consumption expenditure data are derived through commodity flow techniques. About 30 percent of household final consumption can be considered as coming from survey data or administrative records. Final consumption by NPISHs is derived from production account. Around 50 percent of GFCF is derived from production data, but the rest uses commodity flow techniques—all source data are checked and any inconsistencies are queried with the originator.

3.3.2 Main intermediate results are validated against other information where applicable

When independent data sources are available, they are used to check the estimates.

3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated and made available to guide users

The differences between the production and expenditure measures of GDP are calculated and separately identified in the published expenditure estimates. The differences are less than one percent of GDP for each of the years 1990 to 2000. However, as noted above, significant components of household final consumption, GFCF and changes in inventories are either calculated by applying the ratio from the I-O tables, or as the residual between supply and demand. So, the discrepancy simply relates to differences between the current estimates for

final consumption expenditure for general government and NPISHs and the values which would have been obtained if the I-O ratios had been used. As such, the published discrepancy may be misunderstood in that it could suggest that the expenditure measure of GDP is derived independently and is quite close to the production measure.

3.4 Revisions

3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.

When releasing the final annual figures, factors contributing to the difference between preliminary and final data are analyzed.

4. Serviceability

4.1 Relevance

4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place.

In December 2000, a meeting with users took place to identify user needs. The BOK plans to hold at least two such meetings a year.

4.2 Timeliness and periodicity

4.2.1 Periodicity follows dissemination standards.

The BOK compiles and disseminates quarterly and annual estimates of GDP by production and expenditure components at both current and constant prices. This meets SDDS requirements. GDP by income category is also available, but only annually and at current prices. Capital and financial accounts are also produced annually, by sector and sub-sector.

4.2.2 Timeliness follows dissemination standards

Quarterly GDP estimates are published within 60 days after the end of the relevant quarter. Preliminary annual estimates are published within three months of the end of the year with the final figures released 12 months later.

4.3 Consistency

4.3.1 Statistics are consistent or reconcilable over a reasonable period of time.

Consistent time series data are available back to 1970 for annual and quarterly data. Data are also available for 1953 to 1969, but are based on the 1953 *System of National Accounts* and the constant price figures still are reported on a 1975 base year. Erratic movements in the past have been explained to users, e.g., the effects of the oil crisis in 1979/80. All

methodological changes are applied to the complete time series from 1970 onwards. Data sources rarely change, but adjustments would be made to ensure continuity.

4.3.2 Statistics are internally consistent (e.g., accounting identities observed).

There is a statistical discrepancy which is shown explicitly in the accounts and is less than one percent of GDP (see 3.3.3). In effect, GDP is only measured from the production approach; the expenditure estimates are roughly constrained to the production figure. The net lending/borrowing figures for domestic sectors and the rest of the world data from the BOP are regularly reconciled to ensure consistency.

The sources and methods used to compile the quarterly and annual estimates of GDP are in some cases basically the same. However, for other components, indicators are used for the quarterly figures, leading to revisions when the annual data becomes available. Differences are currently prorated over the quarters, but the BOK is investigating the possibility of using the Denton technique.

4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

The BOP data are also produced by the BOK and are incorporated into the national accounts. Trade with North Korea, which is removed from the BOP figures, is added back for the national accounts. The combined financial account for domestic sectors is fully reconciled with that for the rest of the world produced by the BOP. Sometimes quarterly revisions to imports and exports are not made so that they are consistent with the BOP.

4.4 Revision policy and practice

4.4.1 Revisions follow a regular, well-established and transparent schedule.

Previous quarterly estimates within the same calendar year are revised when the figures for the next quarter are first published. They are subject to further revision when the figures for the full year are released. The annual and quarterly figures can also be revised when the annual estimates for the following year are published. After this, they are normally only revised at the time of the five-yearly rebasing. This revisions policy is clearly stated in the *Guide to Economic Statistics*.

The release dates are established to be as soon as possible after the arrival of the source data. The BOK's release policy is not influenced by any economic policy needs.

4.4.2 Preliminary data are clearly identified.

Preliminary annual and quarterly figures are indicated by putting the letter 'p' next to the data. Similarly, the letter 'r' is used to indicate revised estimates.

4.4.3 Studies and analyses of revisions carried out routinely are made public.

When releasing the final annual figures, factors contributing to the difference between preliminary and final data are analyzed and explained in *Quarterly National Accounts*.

5. Accessibility

5.1 Data accessibility

5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).

The national accounts estimates are available on the BOK website for both the current and historical series. However, the annual production figures in the main national accounts publication are broken down into 21 industry groups, but only data for the latest three years are included. It is usual to publish much longer time series in printed publications to aid analysis. For the quarterly estimates, data for 10 industry groups are published which is adequate given the lower reliability of quarterly data. Again, however, only a short time span is given in the main publication – just two and a half years in some tables. The other breakdowns are reasonable, but they also have short time series. It would be useful to discuss this with a range of users to identify their needs.

The quarterly GDP estimates from both the production and expenditure approaches, and at current and constant prices, are seasonally adjusted using the X12-Arima package. Adjustments are made to reflect the revolving holidays resulting from the lunar calendar used in Korea. Total GDP is made equal to the sum of the seasonally adjusted components, rather than being seasonally adjusted directly. This is the standard practice internationally. The quarterly figures are not constrained to add up to the annual unadjusted values. When new quarters are added and/or existing values are revised, they can change the seasonally adjusted values right back to the beginning of the series in 1970. Many countries do not do this, and suppress relatively small changes to avoid confusing users. This is done especially for years where the unadjusted figures have not been revised. The BOK should discuss this issue with a range of users to establish their preference.

5.1.2 Dissemination media and formats are adequate.

Annual and quarterly figures are disseminated through dedicated publications and the BOK's website.

5.1.3 Statistics are released on a pre-announced schedule.

The BOK provides an advance release calendar for a whole year on a "no-later-than" basis. The exact release date is announced one week prior to release, and statistics are released according to the pre-announced schedule.

5.1.4 Statistics are made available to all users at the same time.

Some senior government ministers are given the GDP figures a few hours before their general release. This is contrary to the statement on the DSBB that there is no pre-release access to other government users.

5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.

Non-confidential data at the detailed commodity level are available upon request, free of charge.

5.2 Metadata accessibility

5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from international standards are annotated.

The latest BOK sources and methods publication is dated January 1996, and therefore does not include information on the new methodology implemented with the 1999 revision. However, the BOK is in the process of updating this document. The differences from the 1968 SNA are highlighted in the 1999 update. However, the document is quite brief and contains insufficient detail. The BOK is planning to produce a more detailed document later this year. A particular problem with the existing documentation is that it focuses on the preliminary quarterly data; little attention is paid to the final annual sources and methods. This makes the sources and methods used by the BOK look much weaker than they generally are.

Some information can be obtained from the DSBB and through the OECD main economic indicators website. This material, however, is not up to date and the national accounts draft summary methodology statement for the DSBB (not yet published) is not complete in relation to the details requested in the SDDS prompt points list.

5.2.2 Different levels of detail are provided depending on intended audience and type of collection.

A summary of the sources and methods for the national accounts is contained in the BOK's *Guide to Economic Statistics* published in April 2001. This provides information for users on the availability of various types and configuration of data produced so that they can access the level of detail that they require.

5.3 Assistance to users

5.3.1 Contact person for each subject field is publicized.

The BOK has an automated central telephone contact number which provides ready access to the required team. The direct phone numbers of each team are also included in the BOK's *Guide to Economic Statistics* published in April 2001.

5.3.2 Catalogues of publications, documents, and other services, including information on any charges, are widely available.

The *Guide to Economic Statistics* contains a list of publications. The BOK does not charge for its publications, except for the large book and CD-ROM it publishes at the time of each five-yearly rebasing.

II. CONSUMER PRICE INDEX

0. Pre-requisites of quality

0.1 Legal and institutional environment

0.1.1 The responsibility for collecting, processing, and disseminating statistics is clearly specified.

The Statistics Law provides the authority for the KNSO to collect statistical data and coordinate the collection of statistics by other agencies in Korea. Government regulations require the KNSO to compile and publish the CPI. The KNSO also conducts the FIES, so no other agency is involved in CPI compilation.

0.1.2 Data sharing and coordination among data producing agencies are adequate.

Not applicable to the CPI since all activities are conducted by KNSO.

0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.

The confidentiality and privacy provisions for the CPI, along with disclosure penalties, are covered in the Statistics Law. Data collection staff in the regional offices are advised about confidentiality restrictions and regulations. Computer programs and systems have a security system and “firewall” to prevent unauthorized access and tampering. Confidential data are adequately secured.

0.1.4 Statistical reporting is ensured through legal mandate and/or measures implemented to encourage voluntary response.

The CPI is covered by the mandatory reporting provisions of the Statistics Law. Respondents who are reluctant to report are reminded of this provision but, in an effort to maintain good relations with respondents, the KNSO does not seek to enforce these provisions through legal action. Instead, they maintain excellent external relations with sample respondents to maintain high voluntary response rates (nearly 100 percent). Excellent respondent relations, of course, is necessary because the KNSO enumerators visit the shops on a regular cycle to actually observe the prices.

0.2 Resources

0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.

The CPI program has 14 professional staff at headquarters and 110 enumerators (who work on the CPI as well as other programs) in the KNSO field offices. The staff are knowledgeable of CPI concepts, methods and practices. All staff undergo internal training in price concepts and methods and the more senior staff are sent for external training to develop and maintain their skills. The quality of the staff is good and the remuneration is adequate to maintain a low rate of staff turnover in the KNSO. The staff and resources allocated are sufficient to maintain the CPI program and work on measures to make identified improvements. The resource level is commensurate with the agency's responsibility for monitoring price changes. There is adequate computing power to produce and disseminate the CPI. Monthly estimation is done on the KNSO mainframe computer and data entry, review and analysis is accomplished on PC workstations. Each staff member has a PC. The Statistical Information and Data Management Bureau continuously evaluates new technology to upgrade software and hardware if it is cost effective.

0.2.2 Measures to ensure efficient use of resources are implemented.

The CPI team receives monthly budget reports for non-personnel expenses and monitors resource utilization in relation to the annual budget. As part of the annual budget process, all resource allocations are reviewed in light of the program goals and activities for the next year. This includes reviewing the cost effectiveness of the program.

0.3 Quality awareness

0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.

The KNSO staff are well aware of the importance of quality in terms of the product and their internal processes. The quality aspects of the institution are covered in employee training and a formal quality awareness program is in place. With regard to the latter, there is a formal quality assessment system in place to review program activities, including periodic audits of the CPI.

The KNSO has an independent Statistics Committee, composed of business, labor, academic and consumer advocates, that regularly advises the KNSO on statistical issues, policies and priorities. There is a Price Subcommittee that provides input to the KNSO on CPI program activities, including methodology, user needs and potential areas for data development.

The Statistical Committee provides advice on new and emerging user needs for the CPI. In addition, an ad hoc user survey was conducted two years ago to get an insight on user needs, including future improvements. In terms of market trends, the CPI staff at headquarter and in the field keep track of current developments with in an effort to assess future data needs.

1. Integrity

1.1 Professionalism

1.1.1 Statistics are compiled on an impartial basis.

Staff are highly professional, make their own decisions with respect to CPI compilation, and are independent with no interference from outside. Decisions are based on CPI methods, procedures, and professional judgment.

The KNSO is thoroughly independent of the Ministry of Finance and Economy (MOFE) even though the Commissioner is appointed by the Finance Minister. This independence is widely recognized in the statistical law, in the government, and by most data users. The KNSO produces its own CPI press release with no interference from the MOFE. The MOFE produces a separate release with commentary on the CPI data. Analysis in releases, reports and articles is objective. Prescriptive analysis on policy/ political issues is not done by CPI staff.

1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.

CPI staff selects data sources, and the statistical techniques to be used. They are quite conscious of respondent burden and make efforts to keep reporting requirements to a minimum. They continuously keep up to date on the latest methodology as demonstrated by their review of the draft CPI Manual chapters and participation in the conference on the CPI Manual in June 2001. The KNSO is currently developing plans for improving the index in a variety of ways at the time of the next revision in 2002.

1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.

The KNSO has the authority to make commentary on the interpretation of statistics and the CPI staff have prepared commentary in the past on erroneous interpretations of CPI results and misuse of the CPI that sometimes appear in the media.

1.2 Transparency

1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.

The terms and conditions under which the data are produced and disseminated are available to the public on the KNSO website and in the *Annual Report on the CPI*.

1.2.2 Internal governmental access to statistics prior to their release is publicly identified.

Approximately 3 days prior to the release, the Price Policy Division of the MOFE has access to the data to write their commentary. The press get the data under an embargo arrangement 1–2 days in advance of the release. This pre-release access is described in the SDDS metadata for the CPI and is generally known by the CPI users.

1.2.3 Products of statistical agencies/units are clearly identified as such.

The press releases (of both the KNSO and the MOFE) clearly indicate that the CPI is compiled by the KNSO. The KNSO website also clearly identifies the KNSO as the source for the CPI data.

1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.

The revision of the CPI to introduce new weights and item structure is announced at least six months in advance. At the time of the announcement, the new item structure is identified. There have not been any major changes in CPI methods in the recent past so no announcements have been required. For the upcoming revision, there will be no major change in methods introduced. There will, however, be a new supplemental index which uses annual weight updates, i.e. a chained Laspeyres index. The availability of this new index will not be announced in advance.

1.3 Ethical standards

1.3.1 Guidelines for staff behavior are clear and publicized.

There are code of conduct guidelines in the personnel manual of the KNSO and staff receive training on these. However, these are not published nor fully known by the public. Professional behavior is promoted by management and staff are encouraged to publish analytic articles. In addition, staff regularly participate in professional meetings.

2. Methodological soundness

2.1 Concepts and definitions

2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices: see dataset-specific framework

Concepts and definitions of consumption expenditures used for CPI weights conform to those in the ILO manual for purchases made by resident households for consumption purposes. Also, the index concepts and definitions conform to ILO guidelines.

2.2 Scope

2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices.

The CPI for Korea covers all urban households except for single person households, farmers and fisherman. According to the latest ILO resolution concerning household income and expenditure surveys, adopted by the Twelfth International Conference of Labour Statisticians (1973), the statistical unit for household expenditure surveys is a household, which may be either a one-person or multi-person household, or a family. There is no provision that single-person households should be excluded.

The CPI includes market purchases of consumer goods and services by resident households. Goods and services produced by the household for own consumption are not included. This is the approach taken by most countries. In the official CPI, owner-occupied rents are not included in the CPI but a supplemental index is produced and published which includes owner-equivalent rent.

2.3 Classification/sectorization

2.3.1 Classification/ sectorization systems used are broadly consistent with international standards, guidelines, or agreed practices.

The 1993 SNA definitions for household units and consumption transactions (purchasers' prices) is used. The CPI is a derivative of the ILO classification of consumption activities with nine major groups. A specific product classification designed for the Korean FIES and CPI is used for products.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks.

The price used in the CPI is the purchasers' price of the marketed goods and services at the time of the interview. Product specifications are provided at a detailed level so that specific transaction prices can be obtained.

2.4.2 Recording is done on an accrual basis.

The price recorded is at the time of the interview. For fresh foods the prices are those in effect on the day of collection in the week that includes the 5th, 14th, and 23rd of the month. For other items it is as of the day of collection in the week that includes the 14th of the month.

2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.

Used goods are not included in the CPI, so there is no need to establish weights by netting sales less cost to determine the retail margins for such goods.

3. Accuracy and reliability

3.1 Source data

3.1.1 Source data are collected from comprehensive data collection programs that take into account country-specific conditions.

Housing sampling lists are available from the population and housing censuses, and are used for updating the FIES sample following the quinquennial census. Establishment lists are available from the Census of Wholesale and Retail Trade and the Annual Survey of Wholesale and Retail Trade to use as a sampling frame for retail outlets. Within each city, the KNSO branch office identifies the central shopping districts (between 2 and 11, depending on the city). The establishment frame is then sorted by shopping district and type of store. The largest outlets, based on annual sales, are selected by store type within district. Between 242 and 2,250 outlets are selected per city depending on size of the city and number of enumerators.

The NSO conducts a monthly FIES to collect income and expenditure information. The survey covers households in urban areas but excludes single family, farm and fishing households. In 1995, the urban population was 78.5 percent of the total. The FIES covers 85.6 percent of urban households, resulting in overall coverage of about 68 percent of the total Korean population. The largest exclusion, single family households, account for 8.7 percent of the population. The FIES has a multistage sample design using probability proportionate to size (PPS) techniques at each stage. It includes 72 cities. (With the redesign in 2003, using the data from the 2000 Census of Population and Housing, the sample will also include rural areas.) The sample consists of about 5,200 households. Consumption purchases are collected via a monthly diary survey for 516 consumption categories/items which are used for weights in the CPI. The expenditures represent the market transaction prices for items purchased by the household, except for the owners' equivalent rent. For this latter item, owners estimate the rental value of their home. Information on consumption for own use is not collected because there is practically no such activity in the covered urban households.

Prices are collected monthly by personal interview or telephone for 509 items which cover the consumer basket. Items are selected if they represent .01 percent or more of consumption expenditures. For fresh foods, the prices are those in effect on the day of collection in the week that includes the 5th, 14th, and 23rd of the month. For other items, it is as of the day of collection in the week that includes the 14th of the month. School fees are collected quarterly because they change much less frequently than other items. The number of price quotations is approximately 102,000 each month (about 17,000 for food prices at each collection and 45,000 nonfood). For each item, the specific variety with the largest market share is selected by the KNSO and its detailed specification is recorded and maintained. In addition, a sample of 7,800 renters is surveyed each month, many as part of the FIES.

Ad hoc surveys are often conducted to get information on new and emerging products. This was done recently for private education to collect information on specific services provided

so that specifications can be developed for use in the next revision. In the past (and as part of the next revision) surveys will be conducted to get information on new products for possible inclusion in the new item structure.

3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.

The FIES and CPI are closely coordinated so that the definitions, scope and classifications are the same. The valuation concepts and reference periods for base prices and expenditures are consistent.

3.1.3 Source data are timely.

Expenditure data from the FIES are tabulated quarterly and available 3 months after the end of the quarter. Some rent data are collected from the FIES, but this is done by the KNSO field staff so that it is reported on a timely basis to meet CPI compilation dates.

3.2 Statistical techniques

3.2.1 Data compilation employs sound statistical techniques.

The CPI is compiled in accordance with ILO guidelines. The FIES is compiled for 516 items, which include 12 nonconsumption items, 401 commodities and 103 services.

Data on purchases of goods and services are appropriately used to compile CPI weights. Weights for owner-occupied housing are based on the estimated market rental values of such dwellings. Goods and services purchases are valued at the actual prices paid by consumers, regardless of the method of purchase. Goods and services produced for own final consumption are not included because they are negligible in covered urban households and would have no effect on the aggregate price movement in the CPI.

A simple arithmetic average of the monthly price observations for each item is computed at the city level and compared to the comparable average price for the base period to derive the long-term price change at the elementary aggregate level. The elementary indices are aggregated using a Laspeyres formula. For internal analysis, Paasche and Fisher indices are calculated each year after the latest FIES data become available. The current weight reference period and price reference period are the same—1995. When the new weights were introduced, the old index was linked to the new index using an annual overlap for calendar year 1995. The CPI series was recalculated from January 1995 to December 1996. The next revision will occur in January 2002 when weights for calendar 2000 will be introduced, the index will be revised back to January 2000, and the old index will be linked to the new index using the annual average indices for 2000 to calculate link factors.

Temporarily missing prices for regular items are imputed based on the price change for similar items. Seasonal items' prices are simply estimated by carrying forward the last reported price. For items that are permanently unavailable, a replacement outlet is selected that sells the identified specification or, if largely not available in the city, a new variety that

is similar in quality to the previous one is selected. If there are quality differences between the products, a quality adjustment is made by using the overlap price method. For high tech goods, hedonic methods are currently being tested. New products can enter as replacements for disappearing products. In some instances, when market studies indicate that a new product has gained significant market share and has a place in the item structure, it will be introduced as a targeted replacement in the sample. However, in most instances new products are only introduced every 5 years at the time of the CPI revision.

3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

The implicit deflator for private household consumption is available from the BOK national accounts estimates. This measure is probably less widely accepted than the CPI because much of the household consumption estimates are derived as a residual using commodity flow techniques (see national accounts section on the GDP expenditure estimates). However, it does implicitly cover purchases by households excluded from the CPI (single person households, farmers, fishermen).

3.3 Assessment and validation

3.3.1 Source data—including censuses, sample surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.

Sampling errors for the FIES are published annually together with the nonresponse rate (about 17 percent of households). Data are edited to identify outliers and households are questioned about these unusual expenditures. For the price survey, no sampling errors are available and would not be meaningful due to the judgmental nature of the outlet selection. Nonresponse (near zero) is not an issue in the price survey due to the personal visits made by enumerators. Price data are edited to identify outliers and re-interviews are conducted to verify the reported prices and circumstances. A quality assessment audit is done by independently collecting the same data—enumerators indicated that differences occurred in 0.1–0.2 percent of the cases.

Weights for elementary item indices in the CPI are derived from the FIES which is designed to cover all of the CPI target population. It is difficult to determine coverage for the price survey. Although the variety specifications (1–3 varieties per item) represent those with the largest market shares, the value of expenditures on these varieties is not systematically recorded. The expenditure data come from various sources with different definitions (purchases, sales, production, enumerator estimates) and referring to different time periods. It is believed that the sales value of the sample of varieties would represent somewhere between 30–50 percent of actual consumer expenditures.

Consumption expenditures from the FIES are compared across household types, across areas, and over time to ensure consistency of the estimates. Imputations are made for non responding households by using estimates for households with similar characteristics in the same city. For the CPI, the weights are only changed once every 5 years. The FIES and CPI

are closely coordinated to use the same concepts, definitions, classifications and base reference period. For the CPI, item prices are validated in relation to their price history and compared across cities to assure temporal and cross-sectional consistency.

3.3.2 Main intermediate results are validated against other information where applicable

The FIES expenditure estimates and CPI prices are compared with marketing and industry sources to assure their reasonableness and consistency. The CPI price trends are compared with comparable series from the PPI, import price index and export price index.

3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated and available to guide users.

At the time of the CPI revision in February 1997, data for the previous 2 years were revised and the results compared with the original estimates. The sources of differences (new weights, new products) were analyzed and made available to users. Apart from revisions at the time of reweightings, the monthly CPI is not revised once published.

3.4 Revision studies

3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.

The CPI estimates have been revised every 5 years when there is a weight revision. At that time the CPI is recompiled from the base year through the current period (about 2 years). A revision study is conducted to identify reasons for the revisions—weight update, new and dropped commodities, changes in coverage, changes in methodology.

The revised CPI index is systematically lower than the original index after the weight revision. This is well known as the substitution effect that is prevalent in a fixed base CPI. Because of this bias and recent international attention that has been given to it, the KNSO compiles a chain Laspeyres index, a Paasche index and a Fisher index for internal review to evaluate the effects of the substitution bias. With the next revision (with data for January 2002), a chain Laspeyres index will be published monthly as a supplemental measure. It would also be helpful for the KNSO to publish the Fisher index annually as the new FIES weights become available. This could be done as part of an article that explains the differences among the alternative measures.

4. Serviceability

4.1 Relevance

4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place.

The KNSO Statistics Committee serves as the primary source for input on the relevance of the CPI to users. Because of its broad-based representation (business, labor, academia,

consumers), the Committee's views and recommendations are highly regarded and closely followed by the KNSO. A user survey conducted several years ago ascertained that users were satisfied with the CPI program outputs.

4.2 Timeliness and periodicity

4.2.1 Periodicity follows dissemination standards.

The CPI is published monthly according to the SDDS requirements.

4.2.2 Timeliness follows dissemination standards

The CPI is released 1–2 working days after the end of the reference month. Major category and city indices are published in the *Consumer Price Index Monthly*. Detailed item indices appear in the *Annual Report on Consumer Prices*. All data are available on the KNSO website on the day of release. Timeliness exceeds SDDS requirements.

4.3 Consistency

4.3.1 Statistics are consistent or reconcilable over a reasonable period of time.

Time series are available for the CPI going back to 1965. Erratic movements in the index that may be caused by unusual shocks (oil prices, exchange rates, natural disaster) are explained in the monthly press release. When revised series are introduced every 5 years, the CPI is recalculated from the new base period forward and then linked to comparable components of the old series to provide a consistent time series. It is not possible to revise series for methodology changes and source data improvements back past the last revision.

4.3.2 Statistics are internally consistent.

There are no discrepancies within the CPI estimates. The all-items CPI and all-cities CPI are the same. Item and group indices by area are compared on a regular basis and differences between the two are explained in the monthly CPI publication. There are no monthly revisions to CPI.

4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

As mentioned in 3.4, components of the CPI are compared with components of the PPI for consumer goods and comparable CPI components in the import price index. These tend to show consistency over time. However, there are occasional differences with the changes in the import prices due to differing market conditions and lags in exchange rate effects.

4.4 Revision policy and practice

4.4.1 Revisions follow a regular, well-established and transparent schedule.

Revisions are conducted every 5 years and this is generally known to the public. The next revision is scheduled for February 2002. Revision dates are announced about six months in advance. The press release announcing the 2002 revision is scheduled for early June 2001.

Revisions to date have been in accordance with standard ILO guidelines to update weights on a 5-year cycle. Because the FIES is conducted regularly, the weights could be updated more frequently if necessary. As part of the next revision, a supplemental chain Laspeyres index that will be published which will reflect annual weight updates. Annual weight updates in the CPI represent the best international practice.

4.4.2 Preliminary data are clearly identified.

Not applicable. There are no revisions to the monthly CPI estimates.

4.4.3 Studies and analyses of revisions carried out routinely are made public.

No revisions are made to monthly data. A detailed analysis of the results of the 5-year revision was made available at the time the revised data were released. A very detailed report was also published in the *Annual Report on the CPI*.

5. Accessibility

5.1 Data accessibility

5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).

CPI data are presented for all 509 items and for higher level aggregations on the KNSO website. Indices for major groups and categories and for cities are available in the monthly CPI publication. Table layouts are clear, concise, and easily readable.

5.1.2 Dissemination media and formats are adequate.

The CPI is released on the 1st or 2nd of the month through a press release. At the same time, all detailed data are available on the KNSO website (including 509 item indices by city). The *Consumer Price Index Monthly* publication is available about a week after the release.

5.1.3 Statistics are released on a pre-announced schedule.

The CPI is released on the dates pre-announced in the advance release calendar. It is well known by most users that the official release date will be the 1st or 2nd of the month.

5.1.4 Statistics are made available to all users at the same time.

The CPI estimates are provided to the press 1–2 days before release on an embargo basis. However, there are no lock up procedures to ensure an effective embargo. On the day of release, the data are available to all other users at the same time.

5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.

Nonpublished (non-confidential) CPI data are available upon request. Only about 10 such requests are received per year.

5.2 Metadata accessibility

5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from international standards are annotated.

The KNSO publishes a brief technical description of the CPI in the monthly publication. A summary methodology page for the CPI is available on the DSBB. A more detailed description of the methodology is published in the *Annual Report on the CPI* in both Korean and English. Documentation explicitly identifying differences from international standards is not produced, although most procedures conform to international standards.

5.2.2 Different levels of detail are provided depending on intended audience and type of collection.

KNSO publishes metadata on their website, on the DSBB, in their press release, and in their publications that are targeted at various levels of user interest.

5.3 Assistance to users

5.3.1 Contact person for each subject field is publicized.

A CPI help desk with a knowledgeable CPI analyst is available for users.. The chief contact for the CPI is publicized in the release.

5.3.2 Catalogues of publications, documents, and other services, including information on any charges, are widely available.

The KNSO publishes a catalogue of information services, *Statistical Products and Services Catalogue 2001*, that is available free of charge in print and on the KNSO website.

III. PRODUCER PRICE INDEX

0. Pre-requisites of quality

0.1 Legal and institutional environment

0.1.1 The responsibility for collecting, processing, and disseminating statistics is clearly specified.

The BOK collects PPI data under the auspices of Article 86 of the Bank of Korea Act of April 1, 1998, which authorizes the collection of data needed by the BOK. Detailed data from the mining and manufacturing census is provided to BOK under a formal arrangement with the KNSO. Data on shipments from this source are used as the weights. The KNSO also provides data on agriculture for use in the PPI.

0.1.2 Data sharing and coordination among data producing agencies are adequate.

The BOK and the KNSO cooperate well in the exchange of needed information.

0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.

The confidentiality and privacy provisions for the PPI, along with disclosure penalties, are covered by the Statistics Law. Computer programs and systems are safeguarded from unauthorized access and tampering. Confidential data are adequately secured.

0.1.4 Statistical reporting is ensured through legal mandate and/or measures implemented to encourage voluntary response.

The BOK is not covered by the mandatory reporting provisions of the Statistics Law. To compensate for this, it maintains excellent external relations with sample respondents, which result in high voluntary response rates (nearly 100 percent).

0.2 Resources

0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.

The BOK has 25 staff (14 professional and 11 contractual) at headquarters and 12 professional/clerical staff in the Branch Offices (to maintain contacts with respondents and collect monthly data) engages in PPI work. The staff are knowledgeable of PPI concepts, methods and practices. All staff undergo internal training in price concepts and methods and the more senior staff are sent for external training to develop and maintain their skills.

The staff and resources allocated are sufficient to maintain the PPI program and work on measures to make identified improvements. The resource level is commensurate with the agency's responsibility for monitoring price change.

There is adequate computing power to produce and disseminate the PPI. Monthly estimation is done on the BOK main computer and data entry, review and analysis is accomplished on PC workstations. Each staff member has a PC. Adequate attention is paid to upgrading software and technology if it is cost effective.

0.2.2 Measures to ensure efficient use of resources are implemented.

Measures of most costs (salaries, benefits, and equipment) are available and reviewed on a quarterly basis to assure that program resources are utilized within budget levels. Each year during the regular budget cycle, resource levels are reviewed to ensure cost effectiveness.

0.3 Quality awareness

0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.

The PPI staff are very sensitive to ensuring that they produce an index using processes and procedures that yield high quality results. Procedures for monthly processing are in place and documented in the *Manual for Compiling the PPI*, which serves as a reference manual for staff and a training guide for new staff. Production schedules are in place and thoroughly monitored to ensure timely completion of each activity. Data review is conducted by experienced economists with respondent follow up as needed to verify the accuracy of the index.

The Prices Subcommittee of the KNSO's Statistics Committee also provides oversight and advice on the PPI program in the BOK. This includes advice on priorities and improvements. The BOK also has two academic advisors on statistical methods and procedures who give advice on a variety of areas including the PPI. A new quality assessment team will be organized this year for assessing the quality awareness in the BOK's statistical programs, including the PPI.

The Prices Subcommittee provides advice on new and emerging user needs for the PPI. The PPI staff keep up to date on new developments in index methodology by attending international meetings and training courses and monitoring new information on other agencies' websites. They also receive feedback from respondents about their needs and requirements.

1. Integrity

1.1 Professionalism

1.1.1 Statistics are compiled on an impartial basis.

Staff are highly professional, make their own decisions with respect to the PPI program, and are independent with no interference from outside.

The analyses in releases, reports and articles are objective. Prescriptive analysis on policy/ political issues is not done by PPI staff. At times when sensitive PPI data are being compiled, the work area is secured with access limited to those working on the PPI. This ensures that no outside influence from other areas can be exerted during data review.

1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.

PPI staff selects data sources, and statistical techniques to be used. Because of the voluntary nature of reporting by establishments, the staff are quite conscious of respondent burden. They continuously keep up to date on the latest methodology as demonstrated by having draft PPI Manual chapters on the IMF's website translated into Korean. The PPI staff are currently developing plans for improving the index in variety of ways with the next revision in 2003.

1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.

The BOK has the authority to make commentary on the interpretation of statistics and has prepared commentary in the past on erroneous interpretations of PPI results and misuse of the PPI that sometimes appear in the media.

1.2 Transparency

1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.

These terms and conditions are presented on the BOK website, with references to their availability appearing in the *Monthly Bulletin*.

1.2.2 Internal governmental access to statistics prior to their release is publicly identified.

The BOK releases PPI data 24 hours in advance to government agencies that have a need and request the information. This practice, however, is not described in the DSBB metadata. All other users have access to the data at the time of release.

1.2.3 Products of statistical agencies/units are clearly identified as such.

The PPI data are clearly identified with the BOK in releases and publications.

1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.

There have been no changes in methodology to the PPI since the last revision in 1998. For the next revision (2003) changes in methodology and data sources will be announced at least six months in advance.

1.3 Ethical standards

1.3.1 Guidelines for staff behavior are clear and publicized.

The BOK code of conduct is, provided to each employee and is, published in technical manuals and reports so that the public is also aware of them. High professional standards are expected and observed by staff in the PPI.

2. Methodological soundness

2.1 Concepts and definitions

2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices.

The PPI has been developed based on the United Nations' 1979 PPI Manual. Staff use 1993 SNA concepts for the valuation of prices and weights. Staff keep up to date on current developments in PPI methodology through the draft PPI Manual on the IMF's website and international meetings. PPI revision plans being developed for the 2003 revision include implementing the methodology of the draft PPI Manual.

2.2 Scope

2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices.

The PPI includes domestic transactions at market prices in normal trade, but exclude transactions in free trade zones and bonded warehouses. It also excludes illegal activities as well as own-account productive activity. The exclusion of free trade zones and bonded warehouses deviates from international standards.

2.3 Classification/sectorization

2.3.1 Classification/ sectorization systems used are broadly consistent with international standards, guidelines, or agreed practices.

The PPI uses 1993 SNA concepts of institutional units and transactions. The Korean Standard Industrial Classification (KSIC) is used for classification of industries and commodity groups within industry (it has 5-digit industry coding, appended with a 3-digit commodity

classification). This commodity classification does not conform to any international standard. A Korean Central Product Classification (KCPC), derived from the Central Product Classification (CPC), is under development at the KNSO and will be used by the BOK with the next revision.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks.

Weights and prices follow 1993 SNA valuation rules. Stage of processing indices using net weights for input price indices are not produced, but are being studied for possible introduction during the next PPI revision. Product specifications and pricing are thorough and designed to capture contract transaction prices.

2.4.2 Recording is done on an accrual basis.

The PPI follows the 1993 SNA timing rules that call for recording output, shipments, and sales at current prices at the time they are produced.

2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.

Stage of processing indices in the Korean PPI are calculated by splitting the commodity weights proportionate to their end use (final demand, intermediate consumption, and raw materials) and then aggregating the commodity indices according to stage of processing. This is in accordance with international practices and consistent with 1993 SNA concepts.

3. Accuracy and reliability

3.1 Source data

3.1.1 Source data are collected from comprehensive data collection programs that take into account country-specific conditions.

For mining and manufacturing, the 1995 industry census was used as the sampling frame for selecting commodities and establishments. For Agriculture, the 1995 agricultural census was used as the sampling frame. For services, 15 industries for which pricing tests indicated that price collection was feasible were selected. For these industries the largest companies in each region were selected.

The PPI weights represent the market value of shipments for domestic use in mining and manufacturing, domestic sales of marketed commodities in agriculture, and value of output in the selected services industries. The PPI weights cover 65 percent of total output in the Korean economy. In manufacturing, they represent 95.8 percent of shipments (works of art, ships, aircraft, weapons, and jewelry are excluded because they are difficult to price). The PPI weights have full coverage (100 percent) in mining, agriculture, transportation, communication, finance, real estate, advertising, legal and engineering services and business

services (excluding R&D). Construction and trade activities are not included. Korea is one of the few countries that has expanded its PPI beyond the traditional goods coverage to also include services.

The major source of weights are the two censuses (mining /manufacturing, agriculture), which do not require additional weight adjustments. In services, the weights estimates are taken from the 1995 input-output (I-O) tables, which represent full coverage and are already adjusted.

Data on weights for mining, manufacturing, and agriculture are available at the 5-digit industry level. Commodity detail is also available within each industry at the 8-digit level. (The KSIC consists of a 5-digit classification for industry with three additional digits for classification of commodities within industry.) The I-O table contains 70 services, along with value of output data for many sub items. The output weights used for the PPI service industries are sub items in the table. This provides sufficient detail for good analysis of producer price changes.

The establishments selected for the price survey cover 85.6 percent of the PPI universe. The weight of selected sample establishments covers over 90 percent in most major groups. For many services (leasing, advertising, legal and engineering, business), the selected establishments cover 70 to 80 percent of the weight. These data are published in the *Report on the 1995 PPI Revision*, page 6, that is available on the BOK website.

Commodity samples are selected using cutoff sampling. In mining, manufacturing and agriculture, all commodities with a relative importance of .0001 are selected. For services, a cutoff of .0005 is used for products in the chosen industries. Establishments are also selected using a cutoff sample in which the 3 or 4 largest establishments are selected in each industry. For service industries, the 3 or 4 largest companies in each region are selected. The products for transactions to be selected are determined by selecting those with the largest market share, based on industry and trade association data. The specific transaction selected in the establishment is the one with the largest value transaction/contract for that product. These procedures are reviewed on a 5-year cycle at each revision.

Data are collected for 896 commodities and 75 services from 4,000 establishments. There are 3,200 commodity prices and 1,800 services prices collected each month. The transaction specification is determined at the establishment level based on the typical transaction for the product/service selected in the sample. This provides detail by commodity and 5-digit industry which is more than sufficient for effective analysis of price trends. Prices are collected once per month for most items on a day of the week that includes the 15th of the month, except for fresh foods whose prices are collected three times at ten day intervals on the 10th, 20th, and last day of the month.

Unincorporated enterprises are included in the censuses so that shipments and sales information is included. These enterprises are also included in the output estimates available from the I-O table for service industry products. These data generally only measure market output and therefore do not include specific estimates of production for own use. This is standard practice among most countries. While it would be desirable to have estimates of

production for own use included, this is difficult to accomplish. (In fact, agriculture census data include production for own use but these are excluded in the PPI weights because most country PPIs represent only marketed products.)

Annual surveys are available from the NSO for mining, manufacturing and agriculture that could be used for producing annual weights. However, these survey results are only available with a two year lag. Also, the I-O tables are only updated once every 5 years, so there will not be new service industry weights until 2003 when the I-O table for 2000 will be available. For the next PPI revision, the staff will investigate the possibility of doing annual weight updates assuming that the I-O tables will be updated on an annual basis, which is planned from 2003 onward.

Ad hoc surveys are often conducted to get information on new and emerging products. This was done recently to select a new sample for video monitors, and such an approach is used when market trends indicate that new product varieties are gaining market prominence. In the past (and as part of the next revision) surveys will be conducted to get information on new products for possible inclusion in the new item structure. In several industries affected by deregulation, ad hoc surveys are conducted to set up a new sample for the industry and commodities involved.

3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.

All source data used for weights and prices meet the definition, scope, classification, valuation, and timing requirements of the PPI. All relate to domestic market transactions of the selected establishments during the collection period, and are at basic prices.

3.1.3 Source data are timely.

The source data for weights is received at the time it is released by the respective agencies. Information on prices are collected directly by the BOK and are available for index compilation by the end of the reference month.

3.2 Statistical techniques

3.2.1 Data compilation employs sound statistical techniques

Index estimates are produced at the 4- or 5-digit industry level and detailed product level for all sectors covered by the PPI. These detailed indices are also aggregated to provide estimates at higher levels of industry aggregation and by stage of processing.

The PPI weights represent value of shipments or sales for goods production and value of output for service production. The service sector weights come from the national accounts I-O tables in which the appropriate adjustments for inventories have already been made in the estimates of total output.

For each transaction in an establishment, the long-term price relative is calculated (current price/base price). The commodity index is calculated as the simple arithmetic average of the establishment price relatives. This formula is known to have a potential bias and its use is discouraged. The first level that weights are applied is for the commodity relatives. The Laspeyres formula is then used to aggregate the commodity indices to the industry level indices, and then industry indices are aggregated to higher levels (4,3,2,1 digit and total). Commodity weights are also split by end use (final demand, intermediate consumption, raw materials) to use in aggregating commodity prices by stage of processing. Both the base prices and the weights refer to calendar year 1995. When the new index with a 1995 base reference period was introduced in June 1998, the index was recalculated from January 1995 through June 1998 using 1995 annual average prices as the base reference period. The old index (1990=100) prior to 1995 was linked to the new index using annual linking factors developed as the ratio of the 1995 annual average index on new reference base to the 1995 annual average index on the old reference base. These factors were then applied to the old index series prior to 1995 to adjust to the level of the new index. The one shortcoming in the Korean methodology is the use of the average of price relatives for the basic level index. The use of either the geometric mean or a ratio of average prices (which is not possible in the Korean situation because the transactions are too heterogeneous) is the preferred method.

Temporarily missing prices for regular and seasonal products are simply estimated by carrying forward the last reported price. For products that are permanently unavailable, a replacement product that is similar in quality to the unavailable one is selected. If there are quality differences between these products, a quality adjustment is made by using the production value of the quality difference or by using the overlap price. For high-tech goods, hedonic methods are currently being tested. New products can enter as replacements for disappearing products. In some instances, when they have gained significant market share and have a place in the item structure, the new products are added to supplement the sample. However, in most instances new products are only introduced every 5 years at the time of the PPI revision.

3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

The goods producing sector of the economy is well covered by the PPI.

The service industries in the PPI only represent about 44 percent of total services output. The most widely used alternative to the overall PPI is the implicit GDP deflator for all economic activity.

3.3 Assessment and validation

3.3.1 Source data—including censuses, sample surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.

No information is produced on sampling or nonsampling errors in the PPI. Response rates are nearly 100 percent, so there is no problem of nonresponse. Large price changes are

investigated and verified with the respondent to ensure accuracy. The BOK price collectors visit the establishments several times during the course of the year to collect a variety of other information. During these visits, they also verify with the respondents the appropriateness of specifications and prices that are used in the PPI.

The PPI universe represents 65 percent of total output, and the PPI sample of establishments represent 85.6 percent of the PPI universe. Thus, the PPI sample covers 55 percent of the economic activity.

The PPI data are reviewed on a flow basis as they are received and large differences from prices reported for the preceding period are verified with the respondent and explanations for the differences are obtained. Industry publications and internet websites of companies are also used to compare price levels and trends for individual products. As previously mentioned, onsite verification of prices with respondents is done periodically during the year.

3.3.2 Main intermediate results are validated against other information where applicable

The PPI staff regularly compare PPI and stage of processing (SOP) indices with private sector measures (such as raw material price indices) for consistency. Also, regular analysis of trends between comparable CPI and export price indices is done.

3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated and available to guide users.

Overall, PPI and SOP indices are consistent. There are occasional differences in short-term trends between components of the SOP indices and the PPI industry indices, but this is to be expected because the SOP indices provides measures of component changes within industry and commodity. Comparisons between the overall CPI and the SOP indices for final demand generally show similar trends.

3.4 Revision studies

3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.

The PPI is final when published. There are no preliminary monthly estimates. Every 5 years when there is a weight revision, a study is conducted to identify the causes of revisions—weight update, new and dropped commodities, changes in coverage, changes in methodology. The revised PPI index is systematically lower than the original index after the weight revision. This is well known as the substitution effect that is prevalent in a fixed base index. Because of this bias and recent international attention that has been given to it, the BOK plans to compile a test chain Laspeyres index to see if it helps to mitigate the effects of the substitution bias. Annually, a Paasche index is produced to compare with the PPI and identify areas of substantial divergence. A Fisher index could also be produced to more precisely measure the substitution bias.

4. Serviceability

4.1 Relevance

4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place.

The BOK held its first user conference in December 2000 to educate users on availability of BOK data and proposed methodologies. It also provided an opportunity for users to provide feedback on the BOK data in general. There was no direct comment on PPI data. There are plans to hold additional user conferences in the future (possibly two per year). For the PPI, input from users on the type of indices and detail made available is solicited annually by a user survey card that is included in the *Monthly Prices* report. Feedback is also received from respondents during the normal onsite reviews by BOK collection staff. The Prices Subcommittee also provides advice on new and emerging needs of PPI users.

4.2 Timeliness and periodicity

4.2.1 Periodicity follows dissemination standards.

The PPI is published monthly, according to the SDDS requirements.

4.2.2 Timeliness follows dissemination standards

The PPI is generally released around the 5th day after the end of the reference month and the SOP indices are published in the monthly prices publication about the middle of the month. This exceeds SDDS requirements.

4.3 Consistency

4.3.1 Statistics are consistent or reconcilable over a reasonable period of time.

Consistent time series are available for the PPI going back to the last revision in 1995. Prior to that, a consistent historical time series exists only for the goods producing activities as services were first introduced in 1995. Erratic movements in the index that may be caused by unusual shocks (oil prices, exchange rates, natural disaster) are explained in the monthly press release. When revised series are introduced every 5 years, the PPI is recalculated from the new base period forward and then linked to comparable components of the old series to provide a consistent time series. It is not possible to revise series for methodology changes and source data improvements back past the last revision.

4.3.2 Statistics are internally consistent.

There are no discrepancies within the PPI estimates. The PPI and SOP indices are compared on a regular basis and differences between the two are explained in the monthly prices publication.

4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

As mentioned in 3.4, components of the PPI for consumer goods are compared with comparable CPI components, and the PPIs for raw materials and intermediate goods shows consistency with comparable components of the import price index. However, there are occasional differences with the changes in the export prices due to differing market conditions and exchange rate effects.

4.4 Revision policy and practice

4.4.1 Revisions follow a regular, well-established and transparent schedule.

Revisions are conducted every five years and this is generally known to the public. The next revision is scheduled for mid-2003. Revision dates are announced to the public more than three months in advance. Revisions are scheduled around the availability of weight source data from mining and manufacturing census and the new I-O table.

4.4.2 Preliminary data are clearly identified.

Not applicable. There are no monthly revisions to PPI estimates.

4.4.3 Studies and analyses of revisions carried out routinely are made public.

No revisions are made to monthly data. A detailed analysis of the results for the five-year revision is made available at the time the revised data are released.

5. Accessibility

5.1 Data accessibility

5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).

PPI data are presented at 5-digit detail and for higher level aggregations on the BOK website. Industry detail at the 2- and 3-digit level is available in the monthly price publication. Table layouts are clear, concise, and easily readable.

5.1.2 Dissemination media and formats are adequate.

The PPI is released around the 5th day of the following month through a press release. At the same time, all detailed data are available on the BOK website (including SOP indices). The monthly prices publication is available in the middle of the month. These dissemination media and formats are quite adequate.

5.1.3 Statistics are released on a pre-announced schedule.

An advance release calendar for the next quarter is available on the BOK website and reference to this appears in the *Monthly Bulletin*. The date provided in the advance release calendar for the PPI indicates release no later than the 10th working day of the following month. However, it is generally released around the 5th day of the month.

5.1.4 Statistics are made available to all users at the same time.

The PPI estimates are made available to all users at the same time.

5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.

Nonpublished (non-confidential) are available upon request. Only about 10 such requests are received per year.

5.2 Metadata accessibility

5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from international standards are annotated.

The BOK publishes the *Guide to Economic Statistics* which covers the methodology used in the PPI. A more detailed description of methodology for the PPI is available in the *Report on the 1995 PPI Revision*, which is on the BOK website. This is only available in Korean and an English translation would be very useful for international users. Documentation explicitly identifying differences from international standards (such as not using CPC and using average of relatives formula) is not produced.

5.2.2 Different levels of detail are provided depending on intended audience and type of collection.

Summary PPI metadata appears on the BOK website and the DSBB, and detailed PPI documentation of methods in Korean is provided on the BOK website.

5.3 Assistance to user

5.3.1 Contact person for each subject field is publicized.

The BOK has a call desk handled by an economist to assist users with data questions. The PPI contact number is on the BOK and DSBB websites.

5.3.2 Catalogues of publications, documents, and other services, including information on any charges, are widely available.

The BOK website has a list of publications. In addition the Economic Information Office can advise users about available publications and services, including charges.

IV. GOVERNMENT FINANCE STATISTICS

0. Pre-requisites of quality

0.1 Legal and institutional environment

0.1.1 The responsibility for collecting, processing, and disseminating statistics is clearly specified.

Articles 44 and 45 of the Budget and Accounting Act of 1961 (as amended in 1975) stipulate that the MOFE is responsible for collecting, compiling and submitting final data on the central government budget execution to the Board of Audit and Inspection (BAI) and to the National Assembly. Article 109 of the Act mandates the Government to publish actual data on the budget execution. The Local Autonomy Act and the Local Finance Act regulate the compilation of local governments budget execution data, and attribute the responsibility for compiling and disseminating statistics on the local governments to the Ministry of Government Administration and Home Affairs (MOGAHA).

The responsibility for disseminating statistics on the government operations following the national budget classification and internationally accepted definitions and classifications (hereafter referred to GFS) is covered under the Government Organization Act, and is attributed by Presidential Decree to the Treasury Bureau, MOFE. Data on the central government consolidated budget are compiled and disseminated by the Government Procurement and Accounting Policy Division (GPAPD), within the Treasury Bureau. Data on the local government budget execution are compiled and disseminated by MOGAHA. Both Ministries collaborate to put together the main aggregates on the operations of the general government (revenue, expenditure, balance, and financing) required by the SDDS. These data are disseminated by the Treasury Bureau.

0.1.2 Data sharing and coordination among data producing agencies are adequate.

Budget execution data are reconciled at a micro level with relevant data from the government accounts at BOK on a monthly basis. This reconciliation is done through the National Audit and Inspection Information System (NAIS) maintained by BAI.

There is little statistical cooperation between GFS compilers and compilers of other macroeconomic statistics. There is no regular data sharing between GFS and national accounts compilers because the latter have access to detailed data on the government operations at the BOK. GFS and monetary data compilers rely on the monthly reconciliation of government financing data and BOK data undertaken by the BAI and therefore only reconcile data on government financing on an annual basis.

0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.

The confidentiality and privacy provisions for government finance statistics, along with disclosure penalties, are covered in the Statistics Law of January 1999. Data collection staff

are advised about confidentiality restrictions and regulations. Computer programs and systems have a security system and “firewall” to prevent unauthorized access and tampering.

0.1.4 Statistical reporting is ensured through legal mandate and/or measures implemented to encourage voluntary response.

The Budget and Accounting Act stipulates matters regarding book keeping records of central government data (Article 106), and attributes to the head of each central government agency the responsibility for reporting actual budget execution data to the MOFE (article 107). The Local Autonomy Act (article 125) stipulates matters regarding book keeping records of local government data and attributes to the head of each local government agency the responsibility for reporting actual budget execution data to the MOGAHA

0.2 Resources

0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.

Staff, financial and computing resources are adequate to compile data on central government operations. Actual data on central government budget accounts are compiled through the National Financial Information System (NAFIS), and the compilation process is fully computerized. Compilers at the MOFE undergo external and internal training on the IMF's 1986 *Government Finance Statistics Manual (GFSM 1986)* and have sufficient knowledge of the concepts and recommendations of this Manual.

Staff, financial and computing resources, are commensurate with the needs required to compile local governments budget execution data following the budget classification system. However, this system does not yet allow the derivation of data following the *GFSM* recommendations. Data are compiled by the MOGAHA through the Local Budget Information System (LBIS). Steps have already been initiated to upgrade the LBIS and there are plans to disseminate detailed data on local governments following the *GFSM 1986* starting with the data for the year 2002.

Staff training at central and local levels is provided by various government institutes open to all relevant staff (e.g., National Institute of Professional Administration, National Tax Officers Training Institute, the Central Office Training Institute, and the Audit and Inspection Training Institute)

0.2.2 Measures to ensure efficient use of resources are implemented

The efficiency of present arrangements is monitored regularly to ensure the most cost-effective use of resources. In addition, BAI regularly inspects the work performed by government agencies, and the duties of their employees, in order to improve the operation and quality of government services.

0.3 Quality awareness

0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.

Quality awareness and monitoring are highly focused on the collection and processing of statistics with restricted emphasis on disseminating aspects, including those to ensure timely, comparable and easily accessible data and metadata to serve the basis for public debate and analysis. Awareness of the importance of using internationally accepted concepts, definitions and classifications is uneven and has yet to permeate to all data producing units.

The Government Accounting Settlement Guidelines (both at central and local levels) require that data be reported truthfully, accurately and in a timely manner. The Guidelines call for cross checks with data from the BOK prior to them being submitted to the MOFE and the MOGAHA. Data provided by the central and local budget offices are monitored for conformity with the Guidelines on a regular basis. Clarifications and/or corrections are requested to validate the statistics compiled. The NAFIS and LBIS systems provide for automatic cross checks of data reported by central and local government agencies, respectively.

Fiscal accounts are routinely inspected by BAI , including through field inspections, and annual fiscal data are audited by BAI prior to being submitted to the National Assembly, as required by the Budget and Accounting Act, Articles 44–45. Annual data are considered final after being audited. Irregularities found by the audit are acted upon and resulting collections and or refunds are recorded in the budget of the year in which the collections and/or refunds occur.

The GPAPD follows closely developments in the international statistical community as part of efforts to anticipate future data needs. The NAFIS was developed to respond to the need to allow real-time monitoring of key statistics, including details on government spending and debt, and there are plans to shift its basis to a double entry accounting and accrual basis. The views of academia and research institutes are sought to gauge the relevance and practical utility of existing fiscal statistics. However, processes to consult with a broad spectrum of users (e.g., user's surveys or other systematic processes to obtain feedback from users on data quality issues) are not yet in place.

1. Integrity

1.1 Professionalism

1.1.1 Statistics are compiled on an impartial basis.

There is a culture of proceeding in such manner that strong informal safeguards support the professional independence of both the compiling unit and the compilation process. Staff are highly professional, make their own decisions with respect to data compilation, and are independent with no interference from outside.

The compilation and dissemination of budget execution data and GFS are undertaken by the MOFE while the budget is prepared by the Ministry of Budget and Planning (MPB). Within MOFE, statistics are compiled by the GPAPD, within the Treasury Bureau, while fiscal policy analysis is undertaken by the Economic Policy Bureau.

1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.

GFS are automatically derived from accounting data and are compiled by the GPAPD. Detailed budget execution data are reported monthly by each central government agency to the GPAPD.

1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.

The MOFE has the authority to comment on the interpretation of statistics it disseminates. In the past the GPAPD staff have commented on erroneous interpretations of results and/or misuse of the GFS data that appeared in the media, research institutes, or NGOs papers. These comments are posted on the MOFE website.

1.2 Transparency

1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.

All Acts and Presidential and Ministerial Decrees are published in the Korean official gazette and are posted on the websites of the relevant Ministries. Laws and regulations are also available in public libraries (served by computerized search facilities) and universities. The Government Accounting Settlement Guidelines are also published and easily accessible. English translations are becoming increasingly available on official websites.

1.2.2 Internal governmental access to statistics prior to their release is publicly identified.

There is no internal government access to statistics prior to their release. The publication of monthly GFS data is approved by the Director General of the Treasury Bureau (delegated by the Minister) and the publication of the quarterly and annual data is approved by the Minister of Finance and Economy. The approval process is made public through the delegation Decree.

1.2.3 Products of statistical agencies/units are clearly identified as such.

The information on GFS is identified by source.

1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.

Changes in methodology for compiling GFS require changes in the Budget and Accounting Act for the year in which the changes would take place. The changes are announced publicly in a draft form and comments are sought from the public for a period of 20 days. Comments received are taken into account before the changes are finalized and included in the relevant Budget and Accounting Act.

1.3 Ethical standards

1.3.1 Guidelines for staff behavior are clear and publicized.

Public officials are bound by a code of conduct outlined in The Code of Ethics for Civil Servants. The Code specifies, inter alia, an obligation of loyalty to the State, honesty and service to the people, and professional and personal integrity. Moreover, the quality of the MOFE staff and their professional values are ensured by a strict selection process and by long established institutional traditions. The statistical activity of the MOFE is covered under the Statistics Law. There are no specific guidelines for GFS compiling staff behavior. Staff's professionalism is encouraged (e.g., cooperation with research institutes, holding of lectures and participating in them, exposing staff to experiences elsewhere).

2. Methodological soundness

2.1 Concepts and definitions

2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices.

Concepts and definitions for GFS presented in the *Government Finance Statistics in Korea (GFSK)* yearbook approximate those recommended in the IMF's 1986 *Government Finance Statistics Manual (GFSM)*. In February 2000 and, in anticipation of the forthcoming new *Government Finance Statistics Manual*, the Government Accounting Standard Advisory Board was established to guide the move from a single- to a double-entry system and from cash to accrual basis; the new accounting system is planned to take effect starting in the year 2003.

Concepts and definitions used in the national budget and accounting systems, and therefore budget execution data (Budget Settlement Statement), differ from those in the GFS disseminated following the 1986 *GFSM*. For example, the concept "revenue" in the Budget Settlement Statement corresponds roughly the *GFSM* concepts of revenue, plus part of financing (disbursements), part of lending minus repayment (repayments of government lending for policy purposes and sales of equities by the government) and part of financing (government borrowing domestically and abroad); conversely, the national concept of "expenditure" corresponds roughly to expenditure, government lending for policy purposes, purchases of equity by the government, and debt amortization payments. Moreover, different national definitions of budget aggregates are used depending on the purpose of the definition.

The use of the same terminology for concepts with different definitions in the two sets of statistics (budget execution data and GFS) published in the *GFSK* is not always clear-cut.

2.2 Scope

2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices.

Statistics presented following the *GFSM* 1986 cover only the consolidated central government sector, as defined in Korea. (see classification/sectorization)¹. The MOGAHA publishes the settled accounts (local budgets execution data) in the *Financial Yearbook of Local Governments* following national budget definitions. Local government budgets do not cover education expenditures, which are consolidated as a separated budget account (Education Special Account) managed by the Provincial Offices of Education and consolidated by the Ministry of Education. Data on the Education Special Account are compiled and disseminated in the *Statistical Yearbook of Education* published by the Ministry of Education. Consolidated statistics on the general government aligned with the *GFSM* 1986 are not compiled. There are plans to compile these statistics starting with the data for the year 2002.

2.3 Classification/sectorization

2.3.1 Classification/ sectorization systems used are broadly consistent with international standards, guidelines, or agreed practices.

The definition of the central government sector used in Korea's GFS follows the definition of the *GFSM* 1986, and therefore differs from that recommended in the *1993 SNA*. The **central government sector** comprises all central government agencies whose authority extends over the full territory of Korea and the social security funds operating at the national level. The **consolidated central government sector** covers, in addition, public funds owned by the government, and/or with government participation, whose operations are viewed as important to the pursuit of government policy objectives (extra-budgetary funds). The **consolidated public sector** comprises the consolidated central government and the nonfinancial public enterprises (NFPEs). The nature/characteristics of some extra-budgetary funds is not totally clear— including government-owned and government-managed funds — which renders the definition of consolidated central government sector somewhat blurred.

The current **central government budget** is comprised of one general account (GA) which covers central government general expenditures financed by central government general tax revenue and 22 special accounts (SA). Special accounts are used to manage funds raised from specific sources that are spent on particular purposes and are subdivided according to their purposes as follows: i) special accounts to finance specific programs –these accounts

¹ Local governments accounted for about 28 percent of general government revenue and 21 percent of general government expenditure based on data disseminated for 1999, the latest data dissemination in the NSDP.

are financed by the operating income of the respective NFPEs and by transfers from the general account; ii) special accounts established for managing special funds –e.g., the Fiscal Financing Special Account; this account is financed from income from government property and surpluses from other public funds; and, iii) special accounts for expenditures financed with earmarked revenues. **Extra-budgetary funds**, currently 43, are included in the budget documents but are not technically part of the budget proper (the branch ministries or agencies have a wider discretion over the use of the extra-budgetary funds they manage, and are required only to report on their use to the National Assembly). Data for the consolidated central government aligned with the *GFSM 1986* are presented in aggregate and separately by GA, SAs, and extra-budgetary funds.

The annual GFS data presented in the *GFSK* cover the central government agencies regardless of the budget accounting form through which the activities of the respective agency are recorded. Therefore, data on the **consolidated central government** cover the budget proper (general account plus special accounts excluding the NFPE's special accounts), government foreign borrowing on-lent to enterprises, and extra-budgetary funds except for the Foreign Exchange Stabilization Fund. This Fund is excluded from GFS data, and is consolidated in the monetary authority accounts, which is consistent with the recommendations of the 1986 *GFSM*. The *GFSK* includes separate annual data for the consolidated central government, the NFPEs, and the consolidated public sector. Annual data published in the IMF's *Government Finance Statistics Yearbook (GFSY)* cover the consolidated central government (and thus exclude the NFPEs), with budgetary accounts and extra-budgetary accounts presented separately; the latest data reported and published in the *GFSY* refer to 1997.

Data on the economic classification of the expenditure of the consolidated central government is disseminated monthly; a functional classification is disseminated annually. Data on lending minus repayments include changes in equity and are presented on a gross and net basis. Privatization receipts are classified under lending minus repayments (net lending and net acquisition of equities).

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks.

Transactions are valued on a current market price basis. All transactions are undertaken through the BOK and transactions in foreign currency are converted to local currency using the mid-point exchange rate prevailing in the market at the moment they take place. Debt outstanding is valued at face value. Debt denominated in foreign currencies is valued at appropriate foreign exchange rates as at the end of each period.

2.4.2 Recording is done on an accrual basis (as specified in the draft GFS Manual). However, the current assessment uses the 1986 GFSM that calls for data on a cash basis.

Transactions of the general account and the special accounts excluding those of the NFPEs are recorded on a cash basis, as recommended by the 1986 *GFSM*. Transactions of the special accounts of the NFPEs and of the extra-budgetary funds are recorded on an accrual

basis. The preparation to change the recording system to an accrual basis, as recommended by the forthcoming *GFSM*, is on going (see 2.1.1).

Data on revenue assessed and not collected are compiled and presented in the Statement of Credit. Data on expenditure commitments (purchases under contract where production extends over more than one accounting period) are compiled and presented in the Statement of Contract Authorization. The maturity structure of these payments is presented in this statement. Revenue assessed and not collected and expenditure commitments are recorded separately as resources carried over to the following year in the budget execution data but are not included in the GFS. Payments under existing expenditure commitments (carried over) are not recorded separately from payments for new commitments.

2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.

All transactions are shown on a gross basis. Tax refunds are shown as negative tax revenue. Borrowing and amortization are shown on both a gross and a net basis. Intergovernmental transfers can be clearly identified and are eliminated from the appropriate expenditure and revenue items when the accounts are consolidated.

3. Accuracy and reliability

3.1 Source data

3.1.1 Source data are collected from comprehensive data collection programs that take into account country-specific conditions.

Source data, including those on extra-budgetary funds, compiled through NAFIS have sufficient detail to allow the compilation of GFS statistics for the central government aligned with the 1986 *GFSM*. The detailed classification of extra-budgetary funds is fully aligned with that of the budgetary funds (the general account and special accounts). Information on all transactions among the central government units and accounts (both budgetary and extra-budgetary) is available to allow the consolidation of inter-unit accounts.

Source data for local governments has sufficient detail to allow the compilation of local government statistics aligned with the 1986 *GFSM*. However, computer systems are not yet equipped to process and derive GFS data aligned with the recommendations of this Manual.

3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.

Detailed source data for the central government are fully reconcilable with the GFS definitions and classification system. Since the national functional classification of expenditure is more aggregated than that recommended in the 1986 *GFSM*, disaggregated accounting data are used to derive the GFS functional classification. The time of recording and valuation of source data are consistent with the recommendations of the 1986 *GFSM*. The budget accounting system (NAFIS) provides for the full automatic derivation of central government GFS (budget and extra-budgetary accounts).

3.1.3 Source data are timely.

Source data on central government operations are available on a timely basis. The NAFIS generates comprehensive and timely monthly source data on central government operations (budget and extra-budgetary accounts), presented following the 1986 *GFSM* recommendations. Central government debt data are also available on a timely basis. Local governments data are available but they are not processed to compile GFS following the 1986 *GFSM* recommendations

3.2 Statistical techniques

3.2.1 Data compilation employs sound statistical techniques

No estimates are undertaken. Data are based on complete information for central government agencies.

3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

Not applicable.

3.3 Assessment and validation

3.3.1 Source data—including censuses, sample surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.

Information is derived from source data which is not readily available elsewhere and cannot be validated from any secondary sources. In the cases where second sources exist, such as intra-government units transfers, there are automatic cross checks for accuracy.

3.3.2 Main intermediate results are validated against other information where applicable.

Monthly GFS data on net lending/borrowing from the BOK and other depository corporations are not explicitly reconciled with monetary statistics. However, a detailed monthly reconciliation is undertaken directly between each central government agency and the BOK, prior to sending the accounting data to the MOFE. Central government debt stocks and flows are reconciled by the Division in charge of public debt in the Treasury.

3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated and available to guide users.

Statistical discrepancies are rare owing to the detailed monthly reconciliation undertaken and the automatic cross checks imbedded in the data compilation system.

3.4 Revision studies

3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.

No revision studies are undertaken (see 4.4.1).

4. Serviceability

4.1 Relevance

4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place.

Article 109 of the Budget and Accounting Act stipulates that the Government should disseminate detailed central government data for the preceding year and following the budget classification at the time of the dissemination of the approved budget for the following year. Therefore, processes are in place to ensure that the compilation of detailed GFS for the central government is done following the budget preparation timeframe—each year actual data for the preceding year are published together with the presentation of the budget for the following year. Data are used by the Ministry of Planning and Budget to inform the budget process. The views of academia and research institutes are sought to gauge the relevance and practical utility of existing GFS. Processes to consult with a broad spectrum of users are not yet in place.

4.2 Timeliness and periodicity

4.2.1 Periodicity follows dissemination standards.

The GFS detailed data for the central government are disseminated on a monthly basis, and aggregate data for the general government are disseminated on an annual basis. Data on main aggregates—revenue, expenditure, balance, and financing (domestic and foreign)—for both the central and general governments are disseminated on a monthly and annually basis, respectively, as required in the SDDS.

4.2.2 Timeliness follows dissemination standards.

Monthly GFS data for the central government are generally disseminated within one month after the reference period. However, data for earlier months of the fiscal year may take longer to disseminate due to work pressures associated with the closing of the preceding fiscal year. For example, data for February 2001 was only disseminated on April 10.

Quarterly GFS data for the central government are disseminated within one month after the reference quarter. Preliminary annual GFS data for the central government are disseminated within one month after the reference year. Final annual data (main aggregates) are disseminated in May of the following year. Detailed annual budget execution data and detailed data presented following the 1986 *GFSM* are published around the end of the year

following the reference year, after being presented to the National Assembly. General government operations estimates (main aggregates only) are disseminated 11 months after the reference year.

4.3 Consistency

4.3.1 Statistics are consistent or reconcilable over a reasonable period of time.

There are no significant breaks in series over a reasonable period of time. Unusual changes in trends are explained in the MOFE press releases.

4.3.2 Statistics are internally consistent.

Data are internally consistent. Components of revenue, expenditure and net lending , and financing add to aggregates. Detailed revenue, expenditure and net lending, and financing data agree with the aggregates in summary table. Intra-government operations cancel out. The NAFIS system has embedded substantial internal cross checks aimed at ensuring the internal consistency of the fiscal accounts.

Data on central government debt stocks and flows are reconcilable although they have a different coverage. Contracts authorized are not included in the GFS although they are included in the data on outstanding debt. Also, following the recommendations of the 1986 *GFSM*, the Foreign Exchange Stabilization Fund is excluded from GFS data and is consolidated in the accounts of the monetary authorities subsector. However, to conform with the Budget and Accounting Act, bonds issued by this Fund are included in the outstanding debt of central government.

4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

The overall budgetary position does not coincide with the available financing reported by the BOK. Data on the budget surplus /deficit published by the BOK (based on the government accounts in BOK) differ from data published in the *GFSK* owing to differences in institutional and transactions coverage between the two data sets. GFS data include net foreign borrowing on-lent to enterprises not included in the BOK's government data. Moreover, the BOK classifies cash in the Treasury (government cash) as a government deposit in the BOK thus affecting the measure of net credit to the government. Starting in 2001, the BOK has ceased to publish data on the budget deficit/surplus.

GFS data (foreign grants, external financing, and external debt) are not reconciled with balance of payments data.

4.4 Revision policy and practice

4.4.1 Revisions follow a regular, well-established and transparent schedule.

There is not yet a well established revisions schedule. Minor revisions to monthly data are incorporated in the monthly cumulative data disseminated for the following month(s). Starting in 2001, a final revision to monthly data takes place at the time annual data are considered final (in May of the following year).

4.4.2 Preliminary data are clearly identified.

Monthly data released indicate that data are preliminary.

4.4.3 Studies and analyses of revisions carried out routinely are made public.

No revision studies are undertaken.

5. Accessibility

5.1 Data accessibility

5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).

Annual central government data presented in the GFSK follow closely the presentation recommended in the 1986 *GFSM*. Main tables (Summary Table, Revenues and Grants, Expenditure by Function, Expenditure by Economic Type, Net Lending including Net Acquisition of Equities, Financing by Type of Debt Holder, Outstanding Debt, and Aggregated Accounts of NFPEs) are provided in Korean and in English, and detailed tables are provided only in Korean. Data interpretation and meaningful comparisons are undermined by the lack of explanatory notes and metadata. The GFS for the period in question are compared with figures for previous periods. However, GFS are not easily comparable with the budgetary data for the corresponding period.

Quarterly data on central government budget execution presented in the quarterly press release are compared with the annual budget and with actual data for the corresponding period of the previous year. The data presented enables policy makers to monitor the implementation of the budget. These data are only presented in Korean.

Monthly main aggregates of central government data aligned with the *GFSM 1986* are disseminated on a cumulative basis on the MOFE web site and are compared with data from the corresponding period of the previous year. These data are presented in English.

5.1.2 Dissemination media and formats are adequate.

Detailed financial statements on the execution of the central budget following national concepts are disseminated in the *Financial Yearbook of the Central Government*, published

in nine volumes. Annual data on the execution of the local budgets are disseminated in the *Financial Yearbook of the Local Governments*, published in one volume. These publications (only in Korean) are available at main libraries. However, the sheer detail provided can only be used by expert users.

Detailed annual central government data aligned with the *GFSM 1986* are published in the *GFSK*, and cumulative monthly aggregates are released in the MOFE website via information releases. However, recently released data and longer time series cannot be accessed through an electronic database.

5.1.3 Statistics are released on a pre-announced schedule.

GFS release dates have generally not met the dates pre-announced in the advance release calendars. Between July 2000 and May 2001 delays of between 4 to 9 days occurred in most of the months.

5.1.4 Statistics are made available to all users at the same time.

There is no pre-release access to monthly and quarterly data. The media accredited to the MOFE has pre-release access to annual data one or two days prior to public release. Annual data are released through a press release, containing the embargo dates clearly indicated in the cover of the corresponding press release. However there are no lock up provisions to ensure an effective embargo. SDDS metadata needs to be corrected to reflect the pre-release access to annual data.

5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.

All annual data are published in a dedicated publication. Details on central government data (for both the budget classification and the GFS classification) are available on a monthly and quarterly basis and are provided upon request.

5.2 Metadata accessibility

5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from international standards are annotated.

Data published in the *GFSK* are not accompanied by explanatory notes to facilitate proper interpretation. The differences in concepts used in Korea and, in particular, in the two sets of statistics disseminated in the *GFSK*, are not clearly documented in the statistical publication to allow a meaningful cross check and to facilitate the understanding of the two sets of statistics.

The key relationships between data on the consolidated budget and GFS are explained in the *GFSK* (in Korean only). However, bridge tables showing the links between the concepts used in the two systems are not published.

5.2.2 Different levels of detail are provided depending on intended audience and type of collection.

The main concepts used in the national budget are detailed in various published documents including the Budget and Accounting Act and its Presidential Decree and are outlined in “An Introduction to the National Budget” published by the MPB in April 2001. However, the availability of this information is not evident to data users and needs to be made clear, e.g., in the *GFSK* publication, the SDDS metadata, and the MOFE website.

The key concepts and methodology used in the GFS and their relation with the 1993 *SNA* are outlined (only in Korean) in the *GFSK*. However, a detailed description of concepts, sources, and basis of recording used to compile these statistics is not available to inform analysts and other users of the statistics.

There are no summary methodological statements on the DSBB. Draft statements provided to STA are being reviewed with the Korean officials.

5.3 Assistance to users

5.3.1 Contact person for each subject field is publicized.

The contact person for GFS is publicized.

5.3.2 Catalogues of publications, documents, and other services, including information on any charges, are widely available.

A catalogue of publications is not available to guide users.

V. MONETARY STATISTICS

0. Prerequisites of quality

0.1 Legal and institutional environment

0.1.1 The responsibility for processing, and disseminating statistics is clearly specified.

Monetary statistics are compiled in accordance with Article 86 of the Bank of Korea Act (1998) which states that “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 finances, 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 government organizations and any juristic or individual person.”

Article 42 of the General Banking Act also states the terms under which commercial and specialized banks are to submit balance sheet accounts to the BOK and that the BOK may publish the reported data. Although the General Banking Act relates only to financial institutions maintaining reserves requirements with the BOK, other financial institutions

included in Korea's broad money aggregate, M3, file monthly balance sheet returns requested by the BOK.

The monetary statistics team in the BOK's Economic Statistics Department (ESD) is identified in the BOK's *Guide to Economic Statistics* as the compilers of Korea's monetary statistics.

0.1.2 Data sharing and coordination among other data producing agencies are adequate.

The monetary statistics team has access to information from the BOK's International Department, Information Systems Management Department, Payment Systems and Treasury Services Department, and Budget and Management Department for the purpose of compiling monetary statistics. There is a timely flow of relevant information to the monetary statistics team, including information on the balance sheet of the Foreign Exchange Stabilization Fund (FESF) used to compile the monetary authorities account.

0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.

The confidentiality of individual respondents' data collected by the BOK is guaranteed by the Statistics Law (Articles 13 and 14), which requires that material of a confidential nature belonging to individuals, juristic persons, or organizations collected for statistical compilation shall be protected from disclosure and used only for statistical compilation. The Law applies to the BOK. Financial institutions reporting to the BOK are informed that the requested data will be held in confidence and used only for statistical purposes. The *Guidelines on Compilation and Dissemination* (September 1999), prepared by the ESD management instructs staff of the requirement to ensure that source data are kept confidential and not divulged. In particular, no one except the statistician in charge is allowed to see or copy data that are provided in strict confidentiality. New staff, including temporary staff, are apprised of the guidelines. To prevent disclosure of information, there is restricted access to the monetary statistics team's working area when the data are under compilation, and reported data are secured in lockable file cabinets and password protected computer systems.

Procedures for protecting the confidentiality of respondents' data could be further strengthened by the introduction of techniques for identifying the number of respondents contributing to an individual statistical series to prevent inadvertent disclosure of aggregate data with less than three contributors.

0.1.4 Statistical reporting is ensured either through legal mandate and/or measures implemented to encourage voluntary reporting.

The Bank of Korea Act and the Statistics Law provide the legal basis for the collection of statistical information that supports the compilation of monetary statistics. Article 42 of the General Banking Act specifies the format and timeliness with which the commercial and specialized banks should report to the BOK. However, the BOK does not have the legal mandate to impose penalties for noncompliance with the statistical reporting requirements.

0.2 Resources

0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.

The monetary statistics team is comprised of twelve professional staff with between two and ten years experience in the compilation of monetary statistics. The team is comprised of the head, three economists, and eight assistant/associate economists. Each staff member is assigned specific tasks and responsibilities in compiling the monetary statistics. Two staff members have recently participated in the IMF's Monetary and Financial Statistics training courses, and are developing an understanding of the concepts and definitions recommended in the *Monetary and Financial Statistics Manual (MFSM)* that will facilitate closer harmonization of Korea's monetary statistics with international guidelines.

Available computer resources are commensurate with the task of collecting and compiling monetary statistics. All of the commercial and specialized banks report electronically via the BOK wire system, and most of the other financial institutions that report to the BOK also use the BOK wire system for reporting their monthly balance sheet statistics. It is planned that all financial institutions will soon begin reporting electronically to facilitate more timely compilation and dissemination of the broad money aggregate, M3, which is currently released with a long time lag.

0.2.2 Measures to ensure efficient use of resources are implemented.

In October each year, the monetary statistics team prepares its budget for the following year, which the Planning Department evaluates. During the year, the program and use of resources is monitored on a quarterly basis. The program is reviewed annually.

0.3 Quality awareness

0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.

In 1999, the ESD worked to establish an institutional structure to enable it to disseminate statistics in a more transparent and reliable manner. An expert with a doctorate from outside the BOK was recruited to improve sample designs for various statistics compiled within the Department and conducted a survey of statistical methods and training programs for staff. In December 2000, a meeting with users of statistics was convened to discuss data requirements and related issues. In the future, the BOK plans to hold at least two such meetings a year.

To provide greater flexibility in staffing policy, temporary contract employees are used to bolster human resources, and several committees have been established to assist in the conduct of research and in improving the quality of the BOK's statistics. For example, one group was established to improve source data, and another to improve seasonal adjustment methods. In recognition of the importance of international statistical manuals and the need to

be in compliance with the IMF's recently issued *MFSM*, the BOK has translated the Manual into Korean and its implications for Korea's monetary statistics are under review.

While there is no formal statistics review body in the BOK, several mechanisms are in place that go some way to achieving the objective (i) the Audit Department of the Bank of Korea reviews annually the consistency and accuracy of the published statistics, (ii) the Statistical Planning and Development Team of the BOK's ESD also reviews the BOK's statistical publications for accuracy and comprehensiveness, and (iii) the Board of Audit and Inspection reviews the BOK's statistical publications on an ad hoc basis. Moreover, a data quality assessment team will be created by the BOK in June 2001, comprising BOK staff not currently working in the ESD but with statistical compilation experience.

The BOK has provided, via its website, technical documents describing plans to introduce revised definitions of the monetary aggregates. The BOK also invites user comments on the relevance and usefulness of the monetary statistics via its website. Senior staff of the monetary statistics team review developments in the domestic financial system on an ongoing basis and assess implications for the scope and definition of Korea's monetary statistics.

1. Integrity

1.1 Professionalism

1.1.1 Statistics are compiled on an impartial basis.

The BOK encourages its staff to write research papers that may be published by the BOK and attributed to the authors. The ESD also encourages its staff to prepare research papers for circulation within the Department as a means of sharing knowledge. The BOK organizes lectures, in which outside experts are invited to give presentations on statistical and other issues.

1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.

The report forms used to collect data for compiling monetary statistics are derived from report forms used for prudential supervision and have been adapted to incorporate statistical concepts. The BOK's *Explanation of Monetary and Financial Statistics* (1995) documents sources, methods, and the classification of accounts used in compiling the monetary statistics published by the BOK. The BOK staff are highly professional and make independent decisions on statistical matters.

1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.

The BOK regularly monitors media coverage of its statistical products. Where there is erroneous interpretation of the monetary statistics, the head of the monetary statistics team will contact the reporter.

1.2 Transparency

1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.

The Bank of Korea Act and the Statistics Law are available from the websites of the BOK and the KNSO, respectively. Detailed description of methodologies and explanations are provided to users upon request.

1.2.2 Internal governmental access to statistics prior to their release is publicly identified.

There is no pre-release of monetary and financial statistics to government ministries.

1.2.3 Products of statistical agencies/units are clearly identified as such.

The BOK's publications clearly identify the BOK as the publisher. The monetary statistics team is clearly identified in the BOK's *Guide to Economic Statistics* as the responsible compiling unit in the BOK.

1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.

Advance notice and explanations are provided when major statistical methodological changes are envisaged. For instance, users have been notified, via the MOFE and BOK websites, of plans to introduce revised monetary aggregates based on the concepts and definitions recommended in the *MFSM*.

1.3 Ethical standards

1.3.1 Guidelines for staff behavior are clear and publicized.

Guidelines for staff conduct are contained in the BOK's *Guidelines on Compilation and Dissemination of Statistics* (September 1999), but they are not disseminated to the public. This two-page internal document is explained to new staff members, including temporary staff. Periodically, the BOK's Personnel Department will remind staff of aspects of professional conduct. High professional standards are expected and observed by the monetary statistics team.

2. Methodological soundness

2.1 Concepts and definitions

2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices.

The analytical framework used by the BOK in compiling surveys of the monetary authorities and deposit money banks (DMBs) reflects concepts and principles that are, in general, based on the IMF's *Draft Guide to Money and Banking Statistics in International Financial Statistics* (December 1984). The financial survey published by the BOK is analogous in scope to the depository corporations survey recommended in the *MFSM*. However, the analytical framework used by the BOK provides four measures of money based on a combination of both liquidity and institutional factors that does set a single delineation of money holding and money issuing sectors.

The monetary survey is derived by consolidating the accounts of the monetary authorities (BOK and the Foreign Exchange Stabilization Fund) and the DMBs. The financial survey is derived by the consolidation of the monetary and other financial institutions surveys. The monetary and credit aggregates identified in the financial survey are broad money, M3, (comprising currency in circulation, deposits, debentures issued, bills sold, certificates of deposit, reverse repurchase agreements, and adjustments for checks in the course of transmission), and net claims on government, claims on government agencies, claims on official entities, claims on private sector, foreign assets, foreign liabilities, other assets, and other liabilities.

The monetary and financial surveys published by the BOK do not provide the full range of instrument and sector detail recommended in the *MFSM*. Some additional financial instrument detail is provided in supplementary tables in the BOK's main publications, but reconciliation with data in the surveys is complicated by heterogeneous groupings of financial instruments across the tables. The terminology used to describe the surveys could also be usefully reviewed in the context of the *MFSM*.

2.2 Scope

2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices.

No single definition of broad money is prescribed in the *MFSM*, in recognition that national definitions of broad money vary considerably across countries. For each country, the national definition of broad money is used in determining the institutional units covered by the depository corporations survey.

Korea's monetary statistics provide a broad coverage of the domestic financial system. The broadest money measure in Korea, M3, includes the monetary liabilities of the Bank of Korea, commercial banks, commercial banks' trust accounts, specialized banks, development institutions, investment institutions, savings institutions, and life insurance companies.

However, the coverage of the monetary statistics at the level of the M2 monetary survey is based on institutional arrangements in Korea and is limited to the BOK and the commercial and specialized banks to facilitate analysis of linkages between the monetary base and the monetary liabilities of financial institutions required to maintain reserves with the central bank. The MCT monetary aggregate adds the commercial banks' trust accounts to the M2 monetary survey. The compilation of both liquidity and institutional based monetary aggregates means that a common definition of the money holding and money issuing sectors does not exist across Korea's monetary aggregates, necessitating particular care in interpreting developments in the aggregates and the relationships between the aggregates.

All financial institutions included in the financial survey report balance sheet data to the BOK on a monthly basis. Financial institutions having their operating license suspended do not report to the BOK. In these circumstances, the last balance sheet reported by the financial institution is carried forward in the monetary statistics. The balance sheets of closed financial institutions, signaled by the cancellation of operating licenses, are excluded from the monetary statistics from the date of closure.

The reported balance sheets of the commercial banks and specialized banks include the financial accounts of headquarters and branches located in Korea only. The reported balance sheets do not include financial accounts of the banks' branches located outside of Korea. Some financial institutions in Korea operate so called "offshore" accounts. These accounts are separate from the institutions' general banking activities and are used for raising funds and making loans exclusively with nonresidents. The "offshore" accounts are managed and booked by the institutions' head office located in Korea and are included on the balance sheet reported to the BOK, in line with the Financial Accounting Standards of the Financial Supervisory Authority. The offshore accounts of commercial and specialized banks and other financial institutions are included (on a net basis) in the monetary statistics.

In line with international guidelines, the monetary authorities accounts comprise the BOK and the Foreign Exchange Stabilization Fund (FESF). The FESF is an agency of government that undertakes monetary authority functions.

2.3 Classification/sectorization

2.3.1 Classification/sectorization systems used are broadly consistent with international standards, guidelines, or agreed practices.

Following the *MFSM*, Korea' monetary statistics make a distinction between resident and nonresident account holders. However, the sectorization of the resident (domestic) sector deviates from the *MFSM* and is presented in the monetary and financial surveys as follows (i) government; (ii) government agencies; (iii) official entities; (iv) central bank; (v) DMB; (vi) other financial institutions (monetary survey only); and (vii) private sector. The private sector encompasses both nonfinancial private corporations and financial private corporations (such as mutual funds, pension funds, securities dealers, KAMCO, and securitization vehicles) that are not included in the financial survey. The accounts of households are not separately identified, although some additional sectoral detail on household accounts with the DMBs is available in supplementary tables published in the BOK's monthly bulletin. Moreover,

claims on official entities includes institutional units (nonfinancial public enterprises, local government, and the Korean Deposit Insurance Corporation) that belong to separate economic sectors, and the definition of DMBs does not follow the recommendations of the *Guide*, in particular because they are defined on the basis of reserve requirements with the BOK, rather than on the liquidity characteristics of their liabilities.

At the level of the monetary and financial surveys and sectoral balance sheets, the system of classifying financial instruments largely follows international guidelines, except that information on financial derivatives, shares and other equity, and insurance technical reserves is not presented. The following deviations from international guidelines were also noted:

- All trust accounts are classified as deposits regardless of their liquidity characteristics; some trust accounts are illiquid and do not have the characteristics of deposits.
- In line with international guidelines, import deposits are not included in M3 because of their liquidity characteristics. However, these restricted deposits are not separately identified in the surveys published by the BOK as recommended in the *MFSM*.
- Deposits with suspended financial institutions continue to be classified as demand deposits despite not being accessible while the financial institution is suspended (usually around 3 months). While the *MFSM* recommends excluding such deposits from broad money, their typically short-term restriction in Korea supports their inclusion in broad money. However, these deposits would be more accurately classified outside of demand deposits and, therefore, excluded from M1. In addition, and in line with the recommendations of the *MFSM*, these deposits could be separately identified in the BOK's publications.
- SDR allocations are classified as part of the foreign liabilities of the BOK rather than as part of shares and other equity (capital).
- Positions in financial derivatives are identified on the reported balance sheet but are not separately identified in the surveys or sectoral balance sheets. Instead they are classified as part of other assets and other liabilities.
- Domestic borrowing by financial institutions is not separately identified in the monetary statistics as recommended in the *MFSM*, but indistinguishably included in other liabilities. Moreover, borrowings from central government by financial institution are indistinguishably included in net credit to government in the monetary statistics.
- Repurchase and reverse repurchase agreements are recorded as separate items on the reported balance sheet. Repurchase agreements and reverse repurchase agreements with resident institutions are classified as deposits and loans, respectively, at the level of the M3 financial survey, in line with international guidelines. However, at the level of the M2 monetary survey, repurchase and reverse repurchase agreements

with resident institutions are classified under other items, except for repurchase agreements with central government which are classified as part of net claims on government. In line with international guidelines, repurchase and reverse repurchase agreements with nonresidents are classified as foreign liabilities and foreign assets, respectively, in both the monetary and financial surveys.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks.

All financial corporations other than the BOK value financial assets and financial liabilities on their reported balance sheet in accordance with international standards. Article 55 of the Financial Accounting Standard issued by the Financial Supervision Authority (FSA) requires that traded financial instruments be valued using market prices and loans be valued on a book value basis with no adjustment made for provisions. Article 68 of the Financial Accounting Standard requires that translation of assets and liabilities denominated in foreign currencies be done using market exchange rates in effect at the balance sheet date. The rates quoted by the BOK are used by the commercial banks to translate foreign currency denominated assets and liabilities. In line with international guidelines, the Financial Accounting Standards requires revaluations to take place as of the balance sheet date. In contrast, the BOK values its financial assets and financial liabilities at book value, and foreign currency denominated assets and liabilities are revalued twice yearly (June and December).

2.4.2 Recording is done on an accrual basis.

The *MFSM* specifies the use of accrual accounting so that interest due but not paid on financial instruments is incorporated into the outstanding amount of the financial asset or liability, rather than being treated as part of other accounts receivable/payable. The Financial Accounting Standards issued by the FSA requires interest to be accrued on a monthly basis, but does not require accrued interest to be incorporated into the underlying financial instrument.

In accordance with the Financial Accounting Standards, transactions in financial instruments are recorded on the transaction date.

2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.

A general principle in macroeconomic statistics is that data should be collected and compiled on a gross basis. In particular, claims on a particular transactor or group of transactors should not be netted against liabilities to that transactor or group. The general principle for the presentation of data on a net basis is that the underlying gross data should also be shown.

The BOK's monetary and financial surveys appear to distinguish between gross foreign assets and gross foreign liabilities. However, foreign assets presented in the BOK's publications include, indistinguishably, the following accounts on net basis (i) balances of commercial and specialized banks' "off-shore" accounts, and (ii) DMB inter-office accounts

with overseas branches. Foreign assets and foreign liabilities shown in the BOK's monetary and financial surveys are, therefore, lower than if presented on a purely gross basis.

The monetary and financial surveys are obtained by canceling appropriate claims and liabilities. However, at the level of the M2 monetary survey, foreign currency denominated debentures issued by DMBs (classified as part of foreign liabilities) are only partially adjusted to account for holdings by resident financial institutions. This occurs due to the time lag between compiling the M2 and M3 monetary survey. Data on the debentures held by other financial institutions are not available when the M2 survey is compiled.

3. Accuracy and reliability

3.1 Source data

3.1.1 Source data are collected from comprehensive data collection programs that take into account country-specific conditions.

The BOK collects balance sheet report forms from the central bank, commercial and specialized banks, and other financial institutions issuing liabilities included in the financial survey. The report forms used by the BOK for monetary statistics compilation are similar but not identical to those used by the FSA in Korea for prudential supervision. The report forms solicit detailed information on financial institutions' holdings and issuances of financial instruments. Sectoral information for loans and deposits is generally sufficient for meeting *MFSM* guidelines.

The reported balance sheets are prepared by respondents on the basis of accounting records. The BOK does not use supplementary data in compiling the monetary statistics, with the exception of adjustments that are made for loan transfers/sales by suspended financial institutions using information provided by the KDIC.

3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and timing of recording required.

The source data, compiled in accordance with the BOK's *Manual on Monetary and Financial Statistics Reports* and the FSA's Financial Accounting Standards, provide a reasonable approximation to the required definitions, scope, classification, valuation, and timing of recording, with two exceptions (i) the use of nationality by some banks to determine the residency of the individual household account holder possibly distorting the measurement of foreign assets and foreign liabilities in Korea's monetary statistics, and (ii) the recording of losses of overseas branches on the books of the banks' head office located in Korea, which leads to an understatement of foreign assets and a temporary overstatement of foreign liabilities in the monetary statistics.²

² The residency status of corporations is determined based on their registration certificates.

The BOK's *Manual on Monetary and Financial Statistics Reports* provides guidance to respondents on completing the report forms. The suite of guidance reports issued by the BOK includes a general guidance manual (1988) supplemented by specific guidance manuals for DMBs (1994), development institutions (1995), investment institutions (1995), and savings and life insurance institutions (1995). Updates to the manuals were issued in December 1997 and November 2000.

The BOK monetary statistics team visits the DMBs annually to review the accuracy of the classifications of the underlying accounting data on the reported balance sheets.

3.1.3 Source data are timely

The balance sheet report forms should be filed with the BOK by the 20th of the month, but reports from some institutions are typically not received by the BOK until the 25th of the month.

3.2 Statistical techniques

3.2.1 Data compilation employs sound statistical techniques.

The structure of the balance sheet report forms provide highly detailed data for compiling monetary statistics. Detailed instructions have been prepared by the BOK to guide respondents in completing the report forms. The potential for processing errors is minimized by the use of electronic reporting and processing procedures, and detailed documentation of the mappings used in compiling the surveys from the reported balance sheets.

3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

The balance sheets of financial institutions that have their operating license suspended are included in the financial survey. The last reported balance sheet of the suspended financial institutions is carried forward into the current month's statistics. Adjustments are made by the BOK's monetary statistics team to the balance sheet data carried forward to reflect any sales or transfer of assets by the suspended financial institutions.

3.3 Assessment and validation

3.3.1 Source data—including censuses, sample surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.

The monetary statistics team visits the commercial and specialized banks annually to review their reporting to the BOK. Automated data validation procedures are employed to check the internal consistency of reported data.

3.3.2 Main intermediate results are validated against other information where applicable.

Not applicable.

3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated and made available to guide users.

Procedures are in place to investigate classification and sectorization errors as part of the data validation procedures noted above

3.4 Revision studies

3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.

The monetary statistics team cross-checks preliminary data reported by the financial institutions with final data, and material discrepancies are investigated.

4. Serviceability

4.1 Relevance

4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place.

The Bank of Korea makes available to users a statistical response center, a telephone response system that directs users with inquiries to the appropriate statistical unit. In December 2000, a meeting with users was convened in which data requirements were identified. The BOK plans to hold at least two such meetings a year.

The Bank of Korea issued updates to its *Manual on Monetary and Financial Statistics Reports* in 1997 and 2000. In addition, the monetary statistics team has translated the *MFSM* into Korean to facilitate the introduction of relevant methodological changes.

4.2 Timeliness and periodicity

4.2.1 Periodicity follows dissemination standards.

The monetary authority survey and the M2 monetary survey are disseminated on a monthly basis, consistent with the specifications of the SDDS.

4.2.2 Timeliness follows dissemination standards.

The monetary authority survey and the M2 monetary survey are disseminated in accordance with the timeliness specifications of the SDDS.

4.3 Consistency

4.3.1 Statistics are consistent or reconcilable over a reasonable period of time.

Brief footnotes to the published data describe the main breaks in series.

4.3.2 Statistics are internally consistent.

Automated error-checking systems are employed to check the consistency of the reported data.

4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

The monetary statistics team checks the consistency of the monetary statistics with flow data from the balance of payments and government finance statistics.

Inconsistencies across Korea's macroeconomic statistics have been identified, some of which could not be explained. Factors identified as affecting the intersectoral consistency of Korea's macroeconomic statistics are noted below:

The gross foreign asset and foreign liability positions in the monetary and BOP statistics differ because of netting of accounts in the monetary statistics. Bond issues by the FESF are recorded as a foreign liability in the monetary authority accounts and recorded as a foreign liability of central government in the BOP statistics.

Net credit to the government according to the BOK (based on the government accounts in BOK) differ from GFS data published by the MOFE owing to conceptual differences (institutional and transactions coverage) between the two data sets. GFS data include net foreign borrowing on-lent to enterprises that are not included in the government finance data published by the BOK. Moreover, the BOK classifies cash in the Treasury (government cash) as a government deposit in the BOK thus affecting the measure of net credit to the government.

The presentation of the flow of funds statistics facilitates reconciliation with the M2 monetary survey, but reconciliation with the M3 financial survey is complicated by the broader institutional coverage used in the flow of funds statistics.

4.4 Revision policy and practice

4.4.1 Revisions follow a regular, well established, and transparent schedule.

A timetable for the release of preliminary and final data is provided in the BOK's *Guide to Economic Statistics*, April 2001. Revised data are also clearly indicated in the BOK's publications. In addition, the BOK's revision and release procedures are documented in the BOK's *Guide To Economic Statistics*, April 2001.

4.4.2 Preliminary data are clearly identified.

Preliminary monetary aggregates, calculated on the basis of summary reports provided by the banks, are clearly indicated as such in the BOK's publications.

4.4.3 Studies and analyses of revisions carried out routinely are made public.

The monetary statistics team analyzes changes between preliminary and final data. Material data revisions by reporting institutions are investigated by the monetary statistics team. Revision analyses are not made public.

5. Accessibility

5.1 Data accessibility

5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).

The BOK's *Money and Banking Statistics Bulletin* provides charts and tables, but is available in the Korean language only. The BOK's *Monthly Statistical Bulletin* provides information on Korea's monetary statistics in both the English and Korean language, but does not provide charts. Neither publication carries commentary on developments in the monetary aggregates.

5.1.2 Dissemination media and formats are adequate.

Preliminary and final statistics are available in press releases, bulletins, and the BOK's web site. The BOK's web site also provides access to time series data.

5.1.3 Statistics are released on a pre-announced schedule.

The BOK provides an advance release calendar for a whole year on a no-later-than basis. The BOK's *Guide to Economic Statistics* identifies preliminary data being available "around the 10th in the following month" and final data being available "around the 20th in the following month." The exact release date is announced one week prior to release, and statistics are released on schedule.

5.1.4 Statistics are made available to all users at the same time.

The BOK makes its statistical products available to users simultaneously via press release and its website, although web-based access sometimes lags the press release.

5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.

Users are provided non-confidential sub-aggregates upon request.

5.2 Metadata accessibility

5.2.1 Documentation on concepts, scope, classification, basis for recording, data sources, and statistical techniques is available, and differences from international standards are annotated.

The SDDS metadata describes the broad scope, main concepts, and definitions used in compiling the M2 monetary survey. The metadata could usefully elaborate on the institutional approach used to compile the M2 monetary survey and could also describe deviations from international guidelines, for instance in the areas of sectoral classification of accounts, classification of financial instruments, and netting procedures.

5.2.2 Different levels of detail are provided depending on intended audience and type of collection.

The BOK's publications and website provide datasets for the monetary and financial survey, and the analytical accounts of the monetary authorities, commercial and specialized banks, trust accounts, and other financial institutions. Aggregated balance sheet accounts of the financial institutions are also available.

5.3 Assistance to users

5.3.1 Contact person for each subject field is publicized.

Contact information is available from Korea's page on the SDDS and the BOK's *Guide to Economic Statistics*. In addition the BOK provides a telephone response system that directs users to the appropriate statistical unit.

5.3.2 Catalogues of publications, documents, and other services, including information on any changes, are widely available.

A lists of statistical publications is provide in the BOK's *Guide to Economic Statistics* (April 2001).

VI. BALANCE OF PAYMENTS STATISTICS

0. Prerequisites of quality

0.1 Legal and institutional environment

0.1.1 The responsibility for collecting, processing, and disseminating balance of payments statistics is clearly specified.

The BOK is responsible for collecting and compiling Korea's BOP statistics. Article 86 of the Bank of Korea Act identifies BOP statistics among those that the BOK may collect and compile for the formulation of its monetary and credit policies. Article 10-3 of the Foreign Exchange Transactions Regulation also states that the BOK can request information from

transactors or foreign exchange banks on international transactions for the purpose of compiling BOP statistics. The BOK's role in compiling and disseminating BOP statistics is recognized by the KNSO, which, on July 22, 1976, granted the BOK formal approval (authorization number 30108) to disseminate BOP statistics. Article 15 of the Statistics Law requires the BOK to disseminate the statistics.

0.1.2 Data sharing and coordination among data producing agencies are adequate.

The working arrangements among government agencies for the provision of statistical data to the BOK for BOP compilation are adequate. There are arrangements for the timely provision of monthly administrative and other data to the BOK, including information on exports and imports from the Korea Customs Service (KCS), foreign direct investment transactions from the Ministry of Commerce, Industry, and Energy (MOCIE), foreign purchases and sales of domestic stocks and bonds from the Financial Supervisory Service (FSS), international aid flows from the Korea International Cooperation Agency, and information on long-term loans by the Korean Export-Import Bank. Some of the agencies provide confidential information while in other cases only summary aggregates are made available. Regular meetings are held with the KCS to discuss data reporting and other issues and there are occasional contacts with some of the other data producing agencies.

0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.

The confidentiality of individual respondents' data collected by the BOK is guaranteed by the Statistics Law (Articles 13 and 14), which requires that material of a confidential nature belonging to individuals, juristic persons or organizations collected for statistical compilation shall be protected from disclosure and used only for statistical compilation. In the surveys administered by the Balance of Payments Team (BOP Team) of the BOK's Economic Statistics Department, respondents are informed that the data requested will be held in confidence and used only for statistical purposes. In new surveys, respondents are informed of the purpose of the survey, the importance of the balance of payments statistics, and the legal basis for the collection.

The Guidelines on Compilation and Dissemination of Statistics (September 1999), prepared by the management of the BOK's Economic Statistics Department, instructs staff of the requirement to ensure that source data collected are kept confidential and not divulged. In particular, no one except the statisticians in charge are allowed to see or copy data that are provided in strict confidentiality. New staff, including temporary staff, is apprised of the guidelines. To prevent disclosure of data, there is restricted access to the BOP work area when the data are being compiled and the data are secured in lockable file cabinets and in computer systems.

0.1.4 Statistical reporting is ensured through legal mandate and/or measures implemented to encourage voluntary response.

The Bank of Korea Act and the Statistics Law collectively provide the legal basis for the collection of statistical information for compiling BOP statistics. Article 32 of the Foreign Exchange Transactions Act and Article 31 of the accompanying Decree specify penalties for

non-compliance with reporting requirements. However, the legal and administrative bases to require reporting of data for BOP statistics is weak, as the BOK does not itself have the legal authority to impose penalties on respondents who do not comply with reporting requirements. The BOK has asked the KNSO to amend the Statistics Law to address this situation.

In the conduct of statistical collections, the BOK explains to survey respondents the importance of the data being sought for policy formulation in order to encourage response. The BOK has found the approach mostly successful.

0.2 Resources

0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.

The BOP Team is comprised of a staff of 11 professionals and is equipped with 14 Pentium III personal computers, which are LAN connected and linked to the host computers—IBM 967/R16 and HDS Pilot/34. The BOP Team has access to required software, including SAS and RATS. At present, the BOP Team employs three temporary contract workers to assist in follow up efforts and in other tasks. The contracts are typically for three months, with the possibility of extension. In 2000, the BOP Team had access to three contract employees for about nine months of the year. The contract workers are recruited on the basis of referrals from universities.

The staff is knowledgeable in balance of payments concepts and compilation methods and most have several years of compilation experience. For operational use, the BOP Team has translated into Korean the IMF's *Balance of Payments Manual*, fifth edition (*BPM5*). On occasion, staff travel abroad to study compilation methods in other countries and are required to take continuing courses in statistics and economics offered by the BOK's training institute.

A large segment of the data employed in compiling the BOP statistics is collected and processed by the Foreign Exchange Analysis Team of the BOK's International Department, which manages the Foreign Exchange Transactions (KFX) reporting system. The KFX is based on the reporting by domestic financial institutions of all foreign currency transactions that result in changes in the banks' foreign currency position in Korea. Other agencies also contribute significant source data, such as in the area of trade statistics and inward direct and portfolio investment transactions. Given these arrangements, the staffing is adequate to perform existing tasks, including processing of data from a number of small surveys administered by the BOP Team.

0.2.2 Measures to ensure efficient use of resources are implemented.

In October of each year, the BOP Team prepares its budget for the following year, which the BOK's Planning Department evaluates. During the year, the program and use of resources is monitored on a quarterly basis. The program is reviewed each year. On occasion, the BOP Team has used outside consultants to develop statistical compilation systems, such as in the development of trade volume indices.

0.3 Quality awareness

0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.

In 1999, the BOK's Economic Statistics Department worked to establish an institutional structure that will enable it to compile and disseminate statistics in a more transparent and reliable manner. An expert with a doctorate in statistics was recruited outside the BOK to improve sample designs for various statistics compiled within the Department and to conduct a study of statistical methods and a training program for staff. In December 2000, a meeting with users of statistics was convened to discuss data requirements and related issues. The BOK plans to hold two such meetings a year. There are plans to establish an assessment unit within the BOK to conduct assessments of data quality. The unit will comprise individuals knowledgeable about statistics but who do not presently work in the Economic Statistics Department.

To provide greater flexibility in manpower policy, several committees were established to assist in the conduct of research and to improve the quality of statistics. For example, one group was established to improve source data and another to improve seasonal adjustment methods. Each year, the staff in the BOP Team is assigned special research projects to develop aspects of the BOP compilation system. Progress on these assignments is assessed each quarter. Temporary contract employees are also used to bolster staff resources.

In recognition of the importance of international statistical manuals and the need to be in compliance with them, the BOK has translated into Korean the *BPM5* and other international statistical manuals.

1. Integrity

1.1. Professionalism

1.1.1 Statistics are compiled on an impartial basis.

The BOP statistics are compiled on an impartial basis. The BOK encourages its staff to write research papers. In early 2001, a member of the BOP Team prepared a paper that dealt with economic growth under balance of payments constraints. The research papers are subject to review by a panel of 6–10 BOK staff selected by the Personnel Department. The BOK publishes a small number of the research papers, which are attributed to the individual authors. Also, the Economic Statistics Department encourages its staff to prepare research papers for circulation within the Department, as a means of spreading knowledge. The BOK organizes lectures in which outside experts are invited to give presentations on statistical and other economic issues.

1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.

The choices of data sources and statistical techniques for BOP compilation are determined entirely by the BOK staff. Analysis in reports is objective and relates to current developments in the balance of payments. There is no discussion of policy issues.

1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.

The BOK provides regular press briefings in connection with the release of the balance of payments statistics. It regularly monitors national press coverage of its statistical products and where there is an erroneous interpretation of the balance of payments statistics, the Head of the BOP Team will contact the reporter to explain the situation.

1.2 Transparency

1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.

There is a statement in the *Monthly Balance of Payments (Monthly BOP)* that the BOK endeavors to present its statistics in a transparent manner, keep individual respondent data confidential, provide users with advance notification of dissemination dates, disclose to the public the methods used in constructing the statistics, provide prompt and courteous assistance in replying to requests from users of statistics, develop new statistics, and improve timeliness with which the data are released. The *Monthly BOP* also provides a centralized telephone number for the Economic Statistics Information Center where users can obtain additional information on balance of payments and other economic statistics.

1.2.2 Internal governmental access to statistics prior to release is publicly identified.

There is internal governmental access to statistics on the day prior to the official release date, but this is not publicly mentioned in the metadata posted on the DSBB or in a BOK publication.

1.2.3 Products of the BOK are clearly identified as such.

The BOK's statistical publications are clearly identified as products of the BOK.

1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.

The press was informed in advance when the BOK was preparing to convert the balance of payments statistics to the *BPM5* and when it was planning to introduce advance release calendars for its statistical products. New statistical initiatives are also sometimes announced in audits of the BOK by the National Assembly, e.g., plans to introduce international

investment position statistics. In the future, the BOK plans to provide users of statistics with advance notice of major changes in methodology, source data, and statistical techniques.

1.3 Ethical standards

1.3.1 Guidelines for staff behavior are clear and publicized.

Guidelines for staff behavior are contained in the BOK's *The Guidelines on Compilation and Dissemination of Statistics* (September 1999), but these are not disseminated to the public. This two-page internal document is explained to new staff members, including contract workers. Periodically, the Personnel Department will remind staff of aspects of professional behavior. High professional standards are expected and observed by the BOP Team.

2. Methodological soundness

2.1 Concepts and definitions

2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices.

The overall structure of the BOP statistics is in broad conformity with the guidelines presented in the *BPM5*. The BOK's *Guide to Economic Statistics* notes that all income, including interest and dividend income, is recorded on a payment basis, which is not in conformity with *BPM5*.

2.2 Scope

2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices.

Although an attempt is made to define residency in conformity with the *BPM5*, the text in the Foreign Exchange Transactions Act defines residency in a manner that is not in accord with the *BPM5*. Also, banks have advised that national passports are regularly used to determine residency for compiling money and banking statistics, which would have application for the KFX reporting system. The BOP statement covers transactions denominated in foreign currencies and in won, although the focus of the primary collection system—the KFX reporting system—is on foreign currency transactions. In principle, all resident institutional units engaged in transactions with nonresidents are covered. However, goods transactions with North Korea are not recorded in the balance of payments. Also, only partial data are compiled on reinvested earnings viz., for the foreign branches of domestic banks.

Deviations from the *BPM5* guidelines are not clearly identified in public sources.

2.3 Classification/sectorization

2.3.1 Classification/sectorization systems used are broadly consistent with international standards, guidelines, or agreed practices.

The BOK's classification of current transactions is broadly consistent with the *BPM5*, with the exception that transportation services cannot be fully disaggregated by mode of transport, as data by mode of transport are not available for other transportation services. Insurance transactions are recorded on a net basis (premiums minus claims), which is not in conformity with *BPM5*.

In the financial account, reporting on foreign direct investment is based on the Foreign Investment Promotion Act, which is believed to cover mostly long-term direct investment in the form of equity (including capital goods) and long-term loans. Thus, the foreign direct investment data does not include trade credits or short-term loans with affiliated entities, which are recorded as part of other investment on the basis of other data sources. Because of data availability, the concept of reinvested earnings on direct investment is applied only for the operations of foreign branches of domestic banks. The BOP Team intends to develop a system to measure reinvested earnings on outward and inward direct investment. Data are not available to record direct investment on a directional basis (i.e., netting of asset and liability transactions between entities in a direct investment relationship).

Net settlements with respect to financial derivatives are classified under portfolio investment (identified separately), rather than under the new *BPM5* functional category of financial derivatives. However, stock index futures and options traded on the domestic stock exchange cannot be separately identified in source data and are included under currency and deposit liabilities of other sectors (the amounts are calculated as a residual item).

Nonresident transactions in domestically issued money market instruments cannot be separately identified and are combined with the data on bonds and notes under portfolio investment (transactions in money market instruments issued abroad by residents are separately identified). Any purchases by residents of foreign currency-denominated securities issued abroad by resident entities are classified as transactions in foreign assets rather than as transactions that reduce Korea's foreign liabilities. The BOK intends to change this treatment when it introduces international investment position statistics.

In deriving measures of the financial flows of the banking sector (and merchant banks and development institutions) the net change in outstanding claims between two months is taken as a measure of the net flows for the items currency and deposits, loans (partly), and other assets. In a separate exercise, the valuation adjustments associated with these instruments are computed and recorded separately under other investment, other assets/liabilities, rather than under the specific instruments to which the valuation adjustments apply.

The *BPM5* contains a sectoral classification—monetary authorities, general government, banks, and other sectors—for selected current and financial account items. The *Monthly BOP* provides, for selected financial account items, only a partial sectoral classification—deposit money banks, development institutions, public loans (covering general government), and

private borrowing (including government enterprises). In the BOP statistics, merchant banks and development institutions were not classified as banks even though they perform many of the same functions of a bank and their liabilities form part of broad money. Also, the external borrowing of the Foreign Exchange Equalization Fund in 1998 was classified as part of general government, although the Korean government finance and money and banking statistics treat the Equalization Fund as part of the monetary authorities sector (the foreign assets of the Fund are correctly classified as assets of the monetary authorities). The BOP Team intends to reclassify the Equalization Fund to the monetary authorities sector.

Deviations from the *BPM5* guidelines are not clearly identified in public sources.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks.

Transactions are valued at market prices.

Transactions reported in the KFX reporting system are converted to US dollars, the unit of account, at the rates prevailing at the time of the transaction; goods transactions are converted by the KCS using the average exchange rate of the previous week; and monthly data on inward portfolio investment transactions, which represent won transactions, are converted to US dollars at average monthly exchange rates.

In deriving measures of the financial flows of the banking sector (and merchant banks and development institutions) the net change in outstanding claims between two months is taken as a measure of the net flows for the items currency and deposits, loans (partly), and other assets. In a separate exercise, the valuation adjustments associated with these instruments are recorded separately under other investment, other assets/liabilities.

Reserve transactions in foreign exchange are also derived from stock data and are adjusted to remove the effects of exchange rate fluctuations (no price adjustment is required as the source data on securities are recorded at book values).

2.4.2 Recording is done on an accrual basis.

Transactions, including interest and dividend income, are recorded on a payment basis, as the KFX reporting system is the data source used for compiling income and several other BOP series. Data on reinvested earnings are not compiled, except for the net profits/losses of overseas branches of domestic banks.

The BOK's *Guide to Economic Statistics* notes that all income, including interest and dividend income, is recorded on a payment basis.

2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.

Current account items are recorded on a gross basis, while financial account items are recorded on a net basis, separately for asset and liability components. Any income and service distributions subject to withholding taxes at source are recorded net (rather than gross) of taxes withheld, as the source data are based on settlements. The KFX reporting system does permit some netting of transactions (the BOP Team makes adjustments for selected transactions to record them on a gross basis).

3. Accuracy and reliability

3.1 Source data

3.1.1 Source data are collected from comprehensive data collection systems that take into account country-specific conditions.

The primary data sources employed by the BOP Team to compile the monthly balance of payments statistics are the trade statistics compiled by the KCS and the foreign exchange transactions data (KFX) compiled by the BOK's International Department. The KFX also provides position data on financial institutions'—the BOK, deposit money banks, merchant banks, and development institutions—external assets and liabilities denominated in foreign currencies. In the KFX reporting system, all foreign currency settlements must be reported, although transactions below \$1,000 do not require detailed reporting. There is no requirement for the reporting institutions to reconcile changes in their foreign currency positions with the reported transactions system (i.e., closed reporting system).

These primary source data are supplemented with information from several secondary data sources. These include administrative data on foreign direct investment in Korea compiled by MOCIE, data on nonresident sales and purchases of domestic securities compiled by the FSS, the BOK survey on portfolio investment abroad, information on international aid from the Korea International Cooperation Agency, and several small surveys in the area of transportation, communication, and construction services and of credit card companies.

There is complete coverage of financial institutions in the KFX reporting system. The reporting system does permit netting and the BOP staff endeavors to adjust the data to a gross basis where it can. The coverage of the secondary data sources is also believed to be mostly comprehensive. There is comprehensive coverage of transactors in the surveys administered by the BOP Team.

It is believed that the MOCIE data on foreign direct investment have become less comprehensive following liberalization. The reported data are believed to cover equity (including capital goods) and long-term loans; short-term loans and trade credits between affiliated companies are not captured, although these transactions are recorded elsewhere in the balance of payments on the basis of other data sources. The MOCIE data are monitored with the KFX reports and there are plans to review the data sources for direct investment, including coverage of non-cash transactions.

3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.

The KFX reporting system provided good coverage of transactions in the period prior to liberalization, when few resident entities were permitted to conduct transactions with nonresidents via accounts abroad. Following liberalization, enterprises and individuals were permitted to hold accounts abroad, but there is no reporting system for BOP statistics to measure transactions conducted via accounts with banks abroad (except for foreign exchange transactions to establish the account), although some transactions are captured in existing surveys (e.g., transportation services and portfolio investment abroad). Similarly, there is no reporting system for BOP statistics to record transactions conducted via intercompany accounts. Following the second stage of liberalization in January 2001, the BOP Team has been preparing to implement statistical collections to close these gaps. Information from the Foreign Exchange Review Division of the BOK's International Department will be used to identify transactors with accounts abroad for purposes of conducting additional surveys.

The focus of the KFX reporting system is on foreign currency transactions. The banks do not report on won-denominated transactions with nonresidents. The conversion of foreign currency into (and withdrawal from) a won-denominated account with banks would be captured in the KFX, but the subsequent uses made of the won funds would not be captured, apart from trading in domestic equities and bonds and notes, data for which are provided by the FSS.

There is no reporting mechanism to systematically record non-cash transactions in the BOP statistics, such as share exchanges, stock dividends, debt to equity conversions, and arrears.

See also item 3.2.2 for a discussion of classification issues.

3.1.3 Source data are timely.

The source data identified above are timely. The BOP Team conducts follow-ups with late respondents via telephone in order to collect information to meet publication deadlines.

3.2 Statistical techniques

3.2.1 Data compilation employs sound statistical techniques.

Professional staff at the assistant and associate economist levels are required to document their work practices, which serves as a practical training tool for new staff.

3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

For goods transactions, several adjustments are made to the trade statistics to improve coverage and timing: survey information is used to construct timing adjustments with respect to petroleum imports delivered outside the customs boundary and for the delivery of ship

exports following testing; imports recorded on a cif basis are converted to an fob basis through the application of a factor that is determined on the basis of volume and freight earnings information periodically obtained from the Korea Ship Owners' Association, the International Shipping Agencies' Association of Korea, airline companies, and the Korea Airports Authority; and coverage adjustments are included for smuggled exports and imports, based on information provided by the KCS. Also, certain export and import series from the trade statistics are used to compile estimates of current and capital transfers that do not involve cash. Some of the trade data used in these estimates may not be related to transfer transactions.

Data on receipts and payments for communication services are sourced from the KFX reporting system, which records net settlements for such transactions. The BOP Team uses information from an annual survey of telecommunications companies to record communication services on a gross basis. The data for the past year are used to gross up the data for the current period, which are later revised when new information becomes available. On a net basis, the survey information and bank-reported settlements data are broadly the same.

Adjustments based on survey information are also made to travel credits and debits recorded in the KFX reporting system in order to cover credit card transactions. Credit card transactions are recorded on a net basis in the KFX reporting system but it was also found that coverage was incomplete. The data on travel receipts are also augmented with information from the two domestic airlines on passenger fares received from nonresidents for domestic flights (won-denominated transactions).

A methodology has been developed to record construction activity abroad, most of which is classified under direct investment abroad because the contracts typically extend beyond one year. A sample of large construction companies that have large overseas contracts is surveyed for information on profits. The methodology permits a reallocation to direct investment and services of the data on construction services reported in the KFX.

Shipping companies and the two national airlines are surveyed for data on operational and financial leases. These data are used in lieu of the data reported in the KFX reporting system, which combines the two types of leasing operations. For financial leases, the payments are allocated between interest and principal.

In 1999, it was determined that the commercial banks were required to book, at the end of each year, an external liability (intercompany) to their branches abroad on account of any losses sustained by the branches that would require the Korean head office to advance additional capital to branches in the near future. This booking does not appear to represent a transaction, but rather a commitment to cover the losses in the future. Moreover, there was no offsetting debit entry recorded in the external accounts of the Korean banks, which created errors and omissions in the balance of payments. In order to balance the accounts, the BOP Team created an offsetting debit entry under foreign direct investment abroad in the amount of the net losses incurred by the branches. When the capital was eventually advanced to the branches, the transitory intercompany liability was unwound. The actual payment of the cash did not give rise to the creation of an asset in the books of the Korean head office. This most

unusual arrangement appears to be related to reporting requirements for prudential purposes, which has an adverse effect on residency-based statistics required for BOP and monetary and financial statistics.

In the KFX reporting system, loan assets of financial institutions are recorded net of loan loss provisions. For those loan transactions that are derived from stock data, the BOP Team collects, via a monthly survey, information on loan loss provisions, which it adds back to the stock of loans for purposes of calculating measures of loan transactions that are not influenced by the loss provisions. This provides a better measure of the underlying loan transactions.

3.3 Assessment and validation

3.3.1 Source data—including censuses, sample, surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.

The surveys administered by the BOP Team achieve comprehensive coverage. Sample surveys are not conducted.

There is no requirement for the reporting financial institutions to reconcile changes in their foreign currency positions with the reported transactions data in the KFX reporting system (i.e., closed reporting system). In some months, the net difference between the increase or decrease in foreign exchange holdings and the reported transactions can be as much \$2 billion and the BOK staff use information on the currency composition of foreign exchange reserves and banking claims to estimate the effect of valuation changes in each month. Data are also available on changes in claims that are due to loan loss provisioning, which are not transactions (see item 3.2.2, above). There nevertheless remains some unexplained differences, which in 2000 amounted to about US\$300 million a month (without regard to sign). The BOP team indicated that in most years the unexplained differences were considerably smaller.

High-value or other unusual transactions identified in primary or secondary data sources are queried with transactors or with the agency responsible for the data. In the survey of outward portfolio investment transactions, respondents are required to provide a reconciliation of the factors that contributed to the net change in positions between two reporting periods.

A new electronic reporting system—the Foreign Exchange Information Network (FEIN)—for gathering information on foreign currency settlements effected via the domestic banking system is being introduced. Under the FEIN system, launched in September 2000, one set of data will be reported by financial institutions, replacing the use of the BOK Wire, in which “provisional” data are first reported with limited classification detail and followed by more comprehensive “final” data at a later date. When fully operational, the FEIN system is expected to reduce the incidence of revisions in the KFX reporting system.

3.3.2 Main intermediate results are validated against other information where applicable.

The stock data reported on the portfolio investment survey by financial institutions is checked against selected information in the KFX. Some checks between the stock and flow data reported in the KFX reporting system are made by the BOP Team.

The data on investment income are reported in the KFX reporting system. At this time, no comparisons are made between the reported income and the associated data on the stock of external financial assets and liabilities. The KFX is used to check certain information reported in the smaller surveys on ship exports and airline imports. Data on the volume of international travelers as compiled by the Korea National Tourism Organization is monitored with the recorded data on travel receipts and payments each month.

3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated.

Each year following the annual revision cycle, the BOP Team prepares an internal report that tries to determine major factors that might be contributing to errors and omissions.

3.4 Revision studies

3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.

See item 3.3.3, above.

4. Serviceability

4.1 Relevance

4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place.

In December 2000, a meeting was held with a group of users of BOK statistics. It is planned to hold similar meetings on a twice-yearly basis. In the past year, BOK staff participated in two international statistical meetings that dealt with international trade in services and a seminar on external debt statistics. The BOK is also participating in the IMF-sponsored 2001 Coordinated Portfolio Investment Survey.

4.2 Timeliness and periodicity

4.2.1 Periodicity follows dissemination standards.

The BOK disseminates monthly BOP statistics, thereby exceeding the quarterly periodicity prescribed by the SDDS for BOP statistics. The BOK also disseminates a range of other external sector statistics on a monthly basis—trade statistics, data on international reserves/foreign currency liquidity, and external debt.

4.2.2 Timeliness follows dissemination standards.

The BOK disseminates preliminary monthly BOP statistics no later than one month after the end of the reference month (mid-February for December statistics and early March for January statistics), thereby exceeding the timeliness of one quarter prescribed by the SDDS for BOP statistics.

4.3 Consistency

4.3.1 Statistics are consistent or reconcilable over a reasonable period of time.

When the BOP statistics were converted to a *BPM5* basis in early 1998, the monthly data were revised back to 1980 and made available in a special publication and on the BOK's website. The publication provided an overview of the major changes in moving to *BPM5*. The BOK also adopted the 10 percent-ownership criterion for defining a direct investment relationship in April 1999 (previously 20 percent), but this change in the foreign direct investment threshold was not announced to the public.

Following the financial crisis in 1997, there arose a break in the data on international reserve assets. Between November 1997 and August 1999, the BOK published two measures of reserves—official reserves and useable official reserves—under the agreement with the IMF. Useable official reserves excluded the BOK's overseas deposits with branches of domestic banks and the swap fund with Thailand. The official reserves measure included these claims. The BOP transactions data for reserve assets were compiled from the official reserves series, but this had no significant effect on the compiled flow figures.

The correction to the flow measures derived from position data reported by banks for the recording of loan losses of foreign branches of domestic banks (see item 3.2.2, above) was announced in a press release when data for the previous year were revised. Unusual changes in economic trends—such as the large increase in errors and omissions following the financial crisis—was identified in a special report to the Congress. There was no formal disclosure of information on the large errors and omissions to the public.

4.3.2 Statistics are internally consistent (e.g., accounting identities observed).

In the 1997–99 period, the level of errors and omissions in the BOP statement averaged about \$5 billion a year (net debits), falling to \$1.4 billion in 2000 (net credit). Each year following the annual revision cycle, the BOP Team prepares an internal report that tries to determine major factors that might be contributing to errors and omissions. One possible problem during the period following the financial crisis was the possible under-recording of export bills sold to banks.

4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

The data on the foreign assets and liabilities of financial institutions from the KFX reporting system are normally not reconciled with the monetary and financial statistics. The external debt flows are normally not reconciled with the external debt statistics compiled by the BOK's International Department, although the BOP Team is now conducting such comparisons in connection with development of international investment position statistics. The current account statistics are consistent with the data on the external sector in the national accounts with the exception that goods transactions with North Korea are excluded from the BOP statistics but are included in the national account measures. The BOP Team also intends to review this issue in 2001.

4.4 Revision policy and practice

4.4.1 Revisions follow a regular, well-established and transparent schedule.

Preliminary monthly BOP statistics are available at the end of the following month. Revisions are made when there is a change of over US\$30 million a month in the import-export statistics of the KCS and when data from the monthly KFX reporting system are revised. The monthly and annual BOP statistics of the previous year are finalized during June–July of the following year. Further changes are seldom made, but at the time of finalizing the 1999 figures the BOP statistics for 1998 were also revised. An outline of the statistical revision policy is provided in the BOK's *Guide to Economic Statistics* and work is underway to post the revision policy on the BOK's website.

4.4.2 Preliminary data are clearly identified.

In the BOK's statistical publications, the preliminary data are identified with the letter "p."

4.4.3 Studies and analyses of revisions carried out routinely are made public.

When the final balance of payments figures are released, factors contributing to the difference with the preliminary statistics are analyzed. In most cases, they result from the revision of the import-export statistics, foreign exchange receipts and payments, other source data, additional data collected from companies or related associations, and the correction of errors. In the briefings to the press, the causes of the revisions are explained and some written explanations of the revisions are presented in the press release.

5. Accessibility

5.1 Data accessibility

5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).

The press release contains a short analysis of current-period developments. In the *Monthly BOP*, which is released about two weeks after the press release, the statistics are presented in a way that facilitates proper interpretation and meaningful comparisons of longer time series. The data are presented in columnar form in a series of tables that first highlight summary aggregates and then progressively provide additional component detail. The publication contains six years of annual data and monthly data for 20 months. Longer time series, back to 1980, are available on the BOK's website. The presentation of the BOP statistics is broadly in line with the standard components presented in the *BPM5*. Seasonally adjusted BOP statistics are not compiled and disseminated, but there are plans to develop such statistics as part of the BOP Team's work program for 2001. Direction of trade statistics and a commodity breakdown of goods exports and imports as well as unit value and volume indices provide additional analytical information. Each year, the April and September issues of the *Monthly Bulletin* provide an analysis of the data.

5.1.2 Dissemination media and formats are adequate.

The dissemination formats for the BOP statistics are adequate. The BOP data are first published in a press release and made available at the same time on the BOK's website—on-line database system called BOKIS. An abbreviated version of the press release is made available in English at the same time. Data back to 1980 are available on BOKIS for most series. The data are later published in the *Monthly BOP* and the *Monthly Bulletin*.

5.1.3 Statistics are released on a pre-announced schedule.

The BOP statistics are released on scheduled according to an advance release calendar, which gives approximate release dates (on a no-later-than basis) one year in advance and the precise release date one week ahead of release. There is a notice in the *Monthly BOP* and the *Monthly Bulletin* informing users of statistics that the advance release calendar can be found on the BOK's website.

5.1.4 Statistics are made available to all users at the same time.

The data are released simultaneously to all interested users at 12:00 pm on the day of the release. The data are made available to the press under embargo conditions at 9:00 am on the day of release (press conference begins at 10:00 am). The press is obliged to respect the embargo until the time of official release.

5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.

Unpublished (but non-confidential) specialized tabulations and sub-aggregates can be provided to accommodate requests from users.

5.2 Metadata availability

5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from international standards are annotated.

A very brief description of the Korean BOP statistics is provided in the BOK's *Guide to Economic Statistics*, (available in English) including information on the standard components, source data, accounting conventions, compilation practices, and other relevant information. The *Monthly BOP* also provides some basic information about BOK's statistics. The BOK's Summary Methodology for BOP statistics is posted on the DSBB, providing information on the analytical framework, concepts, definitions, classifications, scope of the data, accounting conventions, nature of basis data, and compilation practices. The BOK also provides methodological information for publication in the IMF's *Balance of Payments Statistics Yearbook*.

5.2.2 Different levels of detail are provided depending on intended audiences and type of collection.

Most of the metadata on the balance of payments appears in the *Guide to Economic Statistics*, which provides only basic information.

5.3 Assistance to users

5.3.1 Contact person for each subject field is publicized.

The telephone number for the contact person for BOP statistics is provided in the press release, the *Guide to Economic Statistics*, and the *Monthly BOP*. The BOK also operates the Automatic Response System, a central telephone system that directs users to appropriate sites for assistance. Assistance to users of statistics is also available in English.

In June 2000, the BOK published a revised edition of *An Easily Understood Guide to Economic Indicators*, which is one of the most popular books published by a public institution in Korea.

5.3.2. Catalogues of publications, documents, and other services, including information on any charges, are widely available.

A list of the statistical products produced by the BOK is presented in the *Guide to Economic Statistics*. The BOK does not charge for its publications (except for *An Easily Understood Guide to Economic Indicators*)

DATA QUALITY ASSESSMENT FRAMEWORK—GENERIC FRAMEWORK

(March 2001)

Quality Dimensions	Elements	Indicators
0. Prerequisites of quality¹¹	<p>0.1 Legal and institutional environment – <i>The environment is supportive of statistics.</i></p> <p>0.2 Resources – <i>Resources are commensurate with needs of statistical programs.</i></p> <p>0.3 Quality awareness – <i>Quality is recognized as a cornerstone of statistical work.</i></p>	<p>0.1.1 The responsibility for collecting, processing, and disseminating statistics is clearly specified.</p> <p>0.1.2 Data sharing and coordination among data producing agencies are adequate.</p> <p>0.1.3 Respondents' data are to be kept confidential and used for statistical purposes only.</p> <p>0.1.4 Statistical reporting is ensured through legal mandate and/or measures implemented to encourage voluntary response.</p> <p>0.2.1 Staff, financial, and computing resources are commensurate with institutional programs.</p> <p>0.2.2 Measures to ensure efficient use of resources are implemented.</p> <p>0.3.1 Processes are in place to focus on quality, to monitor the quality of the collection, processing, and dissemination of statistics, to acknowledge and deal with tradeoffs within quality, and to guide planning for existing and emerging needs.</p>
<p>1. Integrity</p> <p><i>The principle of objectivity in the collection, processing, and dissemination of statistics is firmly adhered to.</i></p>	<p>1.1 Professionalism – <i>Professionalism in statistical policies and practices is a guiding principle.</i></p> <p>1.2 Transparency – <i>Statistical policies and practices are transparent.</i></p> <p>1.3 Ethical standards – <i>Policies and practices are guided by ethical standards.</i></p>	<p>1.1.1 Statistics are compiled on an impartial basis.</p> <p>1.1.2 Choices of sources and statistical techniques are informed solely by statistical considerations.</p> <p>1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.</p> <p>1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.</p> <p>1.2.2 Internal governmental access to statistics prior to their release is publicly identified.</p> <p>1.2.3 Products of statistical agencies/units are clearly identified as such.</p> <p>1.2.4 Advance notice is given of major changes in methodology, source data, and statistical techniques.</p> <p>1.3.1 Guidelines for staff behavior are clear and publicized.</p>

DATA QUALITY ASSESSMENT FRAMEWORK—GENERIC FRAMEWORK

(March 2001)

Quality Dimensions	Elements	Indicators
<p>2. Methodological soundness</p> <p><i>The methodological basis for the statistics follows international standards, guidelines, or agreed practices.</i></p>	<p>2.1 Concepts and definitions – <i>Concepts and definitions used are in accord with standard statistical frameworks.</i></p> <p>2.2 Scope – <i>The scope is in accord with internationally accepted standards.</i></p> <p>2.3 Classification/sectorization – <i>Classification and sectorization systems are in accord with internationally accepted standards.</i></p> <p>2.4 Basis for recording – <i>Flows and stocks are valued and recorded according to internationally accepted standards.</i></p>	<p>2.1.1 The overall structure in terms of concepts and definitions follows international standards, guidelines, or agreed practices: see dataset-specific framework.</p> <p>2.2.1 The scope is broadly consistent with international standards, guidelines, or agreed practices: see dataset-specific framework.</p> <p>2.3.1 Classification/ sectorization systems used are broadly consistent with international standards, guidelines, or an agreed practices: see dataset-specific framework.</p> <p>2.4.1 Market prices are used to value flows and stocks. 2.4.2 Recording is done on an accrual basis. 2.4.3 Grossing/netting procedures are broadly consistent with international standards, guidelines, or agreed practices.</p>

DATA QUALITY ASSESSMENT FRAMEWORK—GENERIC FRAMEWORK

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Quality Dimensions	Elements	Indicators
<p>3. Accuracy and reliability</p> <p><i>Source data and statistical techniques are sound, and output data sufficiently portray reality.</i></p>	<p>3.1 Source data – <i>Source data available provide an adequate basis to compile statistics.</i></p> <p>3.2 Statistical techniques – <i>Statistical techniques employed conform to sound statistical procedures.</i></p> <p>3.3 Assessment and validation – <i>Source data are regularly assessed and results validated.</i></p> <p>3.4 Revision studies – Revisions, as a gauge of reliability, are tracked and mined for the information they may provide.</p>	<p>3.1.1 Source data are collected from comprehensive data collection programs that take into account country-specific conditions.</p> <p>3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.</p> <p>3.1.3 Source data are timely.</p> <p>3.2.1 Data compilation employs sound statistical techniques.</p> <p>3.2.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.</p> <p>3.3.1 Source data—including censuses, sample surveys and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and non-sampling error; the results of the assessments are monitored and made available to guide planning.</p> <p>3.3.2 Main intermediate results are validated against other information where applicable.</p> <p>3.3.3 Statistical discrepancies and other potential indicators of problems in statistical outputs are investigated.</p> <p>3.4.1 Studies and analyses of revisions are carried out routinely and used to inform statistical processes.</p>

DATA QUALITY ASSESSMENT FRAMEWORK—GENERIC FRAMEWORK

(March 2001)

Quality Dimensions	Elements	Indicators
4. Serviceability <i>Statistics are relevant, timely, consistent, and follow a predictable revisions policy.</i>	4.1 Relevance – <i>Statistics cover relevant information on the subject field.</i> 4.2 Timeliness and periodicity – <i>Timeliness and periodicity follow internationally accepted dissemination standards.</i> 4.3 Consistency – <i>Statistics are consistent over time, internally, and with major data systems.</i> 4.4 Revision policy and practice – <i>Data revisions follow a regular and publicized procedure.</i>	4.1.1 Processes to monitor the relevance and practical utility of existing statistics in meeting users' needs are in place. 4.2.1 Periodicity follows dissemination standards. 4.2.2 Timeliness follows dissemination standards. 4.3.1 Statistics are consistent or reconcilable over a reasonable period of time. 4.3.2 Statistics are internally consistent (e.g., accounting identities observed). 4.3.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks. 4.4.1 Revisions follow a regular, well-established and transparent schedule. 4.4.2 Preliminary data are clearly identified. 4.4.3 Revisions are made public to users.

DATA QUALITY ASSESSMENT FRAMEWORK—GENERIC FRAMEWORK

(March 2001)

Quality Dimensions	Elements	Indicators
<p>5. Accessibility</p> <p><i>Data and metadata are easily available and assistance to users is adequate.</i></p>	<p>5.1 Data accessibility – <i>Statistics are presented in a clear and understandable manner, forms of dissemination are adequate, and statistics are made available on an impartial basis.</i></p> <p>5.2 Metadata accessibility – <i>Up-to-date and pertinent metadata are made available.</i></p> <p>5.3 Assistance to users – <i>Prompt and knowledgeable support service is available.</i></p>	<p>5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).</p> <p>5.1.2 Dissemination media and formats are adequate.</p> <p>5.1.3 Statistics are released on a pre-announced schedule.</p> <p>5.1.4 Statistics are made available to all users at the same time.</p> <p>5.1.5 Non-published (but non-confidential) sub-aggregates are made available upon request.</p> <p>5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from international standards are annotated.</p> <p>5.2.2 Different levels of detail are provided depending on intended audience and type of collection.</p> <p>5.3.1 Contact person for each subject field is publicized.</p> <p>5.3.2 Catalogues of publications, documents, and other services, including information on any charges, are widely available.</p>