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Statistics Department

**Data Quality Assessment Framework (DQAF)
for
Monetary Statistics**

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DATA QUALITY ASSESSMENT FRAMEWORK (DQAF) FOR MONETARY STATISTICS

Introduction

A. Purpose of the Framework

The main purpose of the Framework is to provide a flexible structure for the qualitative assessment of the monetary statistics (referred to as the statistics throughout the Framework). In this Framework the scope of monetary statistics refers to the balance sheets and surveys of the central bank and other depository corporations.

The Framework could be used in a variety of contexts, including the following:

- reviews performed in the context of IMF country work, e.g., the data module of the Reports on the Observance of Standards and Codes (ROSCs), technical assistance, and surveillance;
- self-assessments performed by national statistical offices, central banks, and other data producing agencies; and
- assessments by other groups of data users, such as financial market participants.

B. Structure of the Framework

The DQAF comprehensively covers the various quality aspects of data collection, processing, and dissemination. The Framework is organized in a cascading structure that progresses from the abstract/general to the more concrete/specific details.

The first level covers the **prerequisites** of quality and five **dimensions** of quality; assurances of integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility. For each of these prerequisites and five dimensions, there are **elements** (two-digit level) and **indicators** (three-digit level).¹

At the next level, **focal issues** that are specific to the compilation of monetary statistics are addressed. Below each focal issue, **key points** identify quality features that may be considered in addressing the focal issues. The key points are meant to be suggestive, not exhaustive.

Box A provides a view of the cascading structure employed in the Framework.

¹ The first three levels are common with other Data Quality Assessment Frameworks that have been developed to assess datasets. This design was implemented to ensure a common and systematic assessment across datasets. To date, frameworks have been developed for national accounts statistics, consumer price index, producer price index, government finance statistics, monetary statistics, balance of payments statistics, and income poverty statistics.

C. Content of the Framework

The elements and indicators within their respective dimensions are described below.

0. **Prerequisites of quality:** Although not itself a dimension of quality, this group of “pointers to quality” includes elements and indicators that have an overarching role as prerequisites, or institutional preconditions, for quality of statistics. Note that the focus is on the agency, such as a national statistical office, central bank, or a ministry/department. These prerequisites cover the following elements:
 - 0.1 legal and institutional environment,
 - 0.2 resources available for the statistical program,
 - 0.3 relevance, and
 - 0.4 other quality management.

1. **Assurances of integrity:** This dimension relates to the adherence to the principle of objectivity in the collection, compilation, and dissemination of statistics. The dimension encompasses institutional arrangements that ensure professionalism in statistical policies and practices, transparency, and ethical standards. The three elements for this dimension of quality are the following:
 - 1.1 professionalism,
 - 1.2 transparency, and
 - 1.3 ethical standards.

2. **Methodological soundness:** This dimension covers the idea that the methodological basis for the production of statistics should be sound and that this can be attained by following internationally accepted standards, guidelines, or good practices. This dimension is necessarily dataset-specific, reflecting different methodologies for different datasets. This dimension has four elements, namely:
 - 2.1 concepts and definitions,
 - 2.2 scope,
 - 2.3 classification/sectorization, and
 - 2.4 basis for recording.

3. **Accuracy and reliability:** This dimension covers the idea that statistical outputs sufficiently portray the reality of the economy. This dimension is also data specific, reflecting the sources used and their processing. The five elements of this dimension cover the following:
 - 3.1 source data,
 - 3.2 assessment of source data,
 - 3.3 statistical techniques,
 - 3.4 assessment and validation of intermediate data and statistical outputs, and
 - 3.5 revision studies.

4. **Serviceability:** This dimension relates to the need that statistics are disseminated with an appropriate periodicity in a timely fashion, are consistent internally and with other

major datasets, and follow a regular revision policy. The three elements for this dimension are as follows:

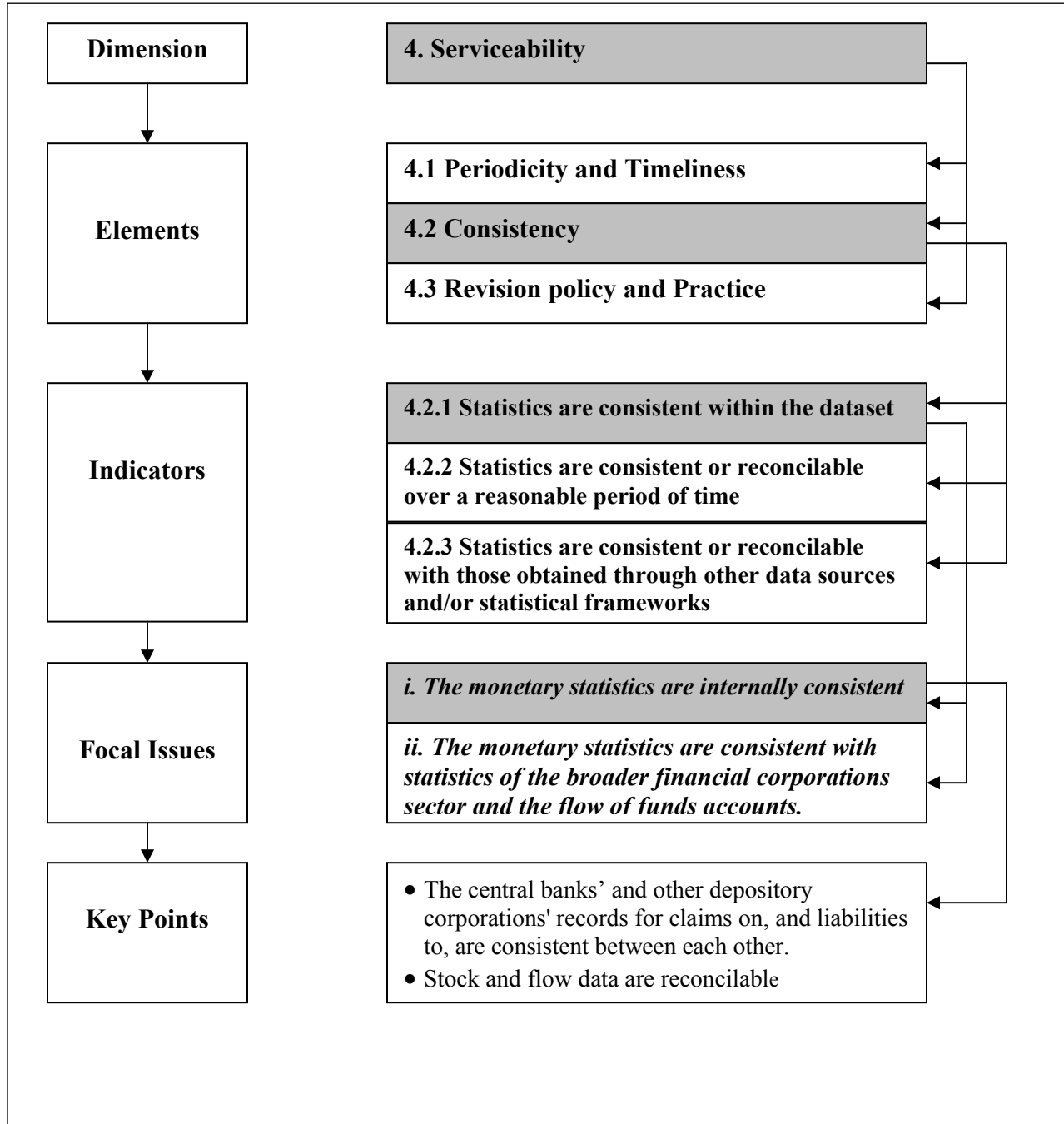
- 4.1 periodicity and timeliness,
- 4.2 consistency, and
- 4.3 revision policy and practice.

5. Accessibility: This dimension relates to the need for data and metadata to be presented in a clear and understandable manner on an easily available and impartial basis, that metadata are up-to-date and pertinent, and that a prompt and knowledgeable support service is available. This dimension has three elements, namely:

- 5.1 data accessibility,
- 5.2 metadata accessibility, and
- 5.3 assistance to users.

Box A: The Cascading Structure of the Data Quality Assessment Framework, DQAF July 2003, for the Monetary Statistics: An Example

Using serviceability as the example of a dimension of quality, the box below shows how the framework identifies three elements that point toward quality. Within consistency, one of those elements, the framework next identifies three indicators. Specifically, for each indicator, focal issues are addressed through key points that may be considered in identifying quality.



0. Prerequisites of Quality

0.1 Legal and institutional environment

— *The environment is supportive of statistics.*

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

i. The primary responsibility for collecting, processing, and disseminating the statistics is clearly established.

- A law, such as a statistical law, or other formal provision (e.g., inter-agency protocol or executive decree, supranational legislation) assigns primary responsibility as well as the authority to an agency (agencies) for the collection, processing, and dissemination of the statistics.
- Working arrangements are consistent with this assignment of responsibility.
- If more than one data producing agency is involved in producing parts of the statistics, arrangements are in place to promote consistency of methods and results.
- Conflicts or potential conflicts between the legal authority to produce the statistics and other laws or provisions (e.g., access to information law or bank secrecy laws) have been successfully resolved or reconciled with no major impairment to the data production.

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

i. Arrangements or procedures exist to facilitate data sharing and coordination between the agency (agencies) with the primary responsibility for compiling the statistics and other data producing agencies.

- Procedures are in place to provide for the effective and timely flow of source data (e.g., administrative data as well as survey data) to the data-producing agency (agencies).
- Contacts (e.g., regular meetings and workshops) are maintained with other data producing agencies to promote a proper understanding of data requirements, to avoid duplication of effort, and to take into account reporting burden (e.g., by discussing changes to administrative processes before they take place.)

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

i. The confidentiality of individual reporters' data is guaranteed and that guarantee is widely known.

- A law or other formal provision clearly states that individual data are to be treated as confidential, and shall not be disclosed or used for other than statistical purposes unless disclosure is agreed to in writing.
- In surveys and other statistical inquiries, respondents are informed of their rights and obligations with regard to the provision of information, and they are informed that the information they provide will be used for the purpose of producing statistics.

ii. Procedures are in place to prevent disclosure of individual reporters' data.

- Rules and regulations to prevent disclosure include penalties against staff who disclose confidential data.
- Access to individual data is restricted to staff who require the information in the performance of their statistical duties.
- Special aggregation rules are used to prevent residual disclosure when aggregations of survey or other confidential data are disseminated.
- Staff review all data prepared for dissemination for possible indirect disclosure of individual data and design tables and outputs in a way that prevents disclosure.
- Where unit records are made available (e.g., for research purposes), the confidentiality of the individual data is protected (e.g., by making all records anonymous, or ensuring that access to data is bound by confidentiality provisions).
- Confidentiality of data is appropriately guarded during storage and during the process of the destruction of records.
- Steps are taken to secure the premises of the data producing agency and its computer systems to prevent unauthorized access to individual data.

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

i. A law or other formal provision provides for the reporting of information needed to compile the statistics.

- The data producing agency has the legal authority to collect data required to compile the statistics.
- Collection activity is consistent with the legal authority.
- If reporting is mandatory, penalties for noncompliance (including misreporting) act as effective deterrent, even if such provisions rarely need to be employed.

ii. Other mechanisms are in place to provide for adequate reporting of data for compiling the statistics.

- The data producing agency considers carefully response burden (e.g., by actively pursuing alternative avenues to obtain data, adapting questions to reporters' terminology and record-keeping systems, carefully designing new surveys, closely monitoring response burden, and periodically evaluating existing surveys).
- The data producing agency provides assistance to respondents in completing and submitting forms (e.g., by providing a point of contact).
- The data producing agency seeks to secure cooperation by creating goodwill (e.g., by registering and dealing with respondents' complaints, indicating the purpose of the data collection, informing of measures to limit response burden, raising awareness of the importance of good quality statistics, and providing respondents with data upon request).

0.2 Resources

— *Resources are commensurate with needs of statistical programs.*

0.2.1 Staff, facilities, computing resources, and financing are commensurate with statistical programs.

i. Staff resources for compiling the statistics are adequate to perform required tasks.

- Overall, the number of staff is adequate to perform the required tasks.
- The qualifications of the staff are adequate, with their skills maintained and developed to perform the required tasks.
- A core staff with adequate training is maintained and staff turnover is manageable.
- Salary levels are adequate for the nature of the work and competitive with public administration conditions in the country.

ii. *Computing resources for compiling the statistics are adequate to perform required tasks.*

- Overall, sufficient resources are allocated and best efforts are made to exploit the full potential of effective computing technology for compiling and disseminating the statistical series.
- Software utilized for compiling and analyzing the statistical series is effective, periodically updated, and well adapted to perform existing and emerging tasks.
- Hardware is distributed adequately to facilitate the efficient collection and processing of data, and management of databases.
- Adequate protection is provided for computer resources, including through provision of emergency back-up systems for retrieval of statistical series and updates in the event of natural disasters, accidents, and other unusual events.

iii. *Physical facilities and other resources are adequate to perform required tasks.*

- Office building provide adequate working facilities (e.g., lighting, heat, and cooling).
- Office furniture and equipment (e.g., desks, chairs filing cabinets, telephones, and related equipment) are adequate to perform required tasks.
- Transportation arrangements (e.g., for data collection) are adequate.

iv. *Funding for compiling the statistics is adequate to perform required tasks.*

- Funding is reasonably secure for the identified needs of the statistical program.
- Budgeting practices provide clear information to financing authorities (e.g., when reviewing priorities for improvements, cutbacks, or increase in certain elements of programs).
- The funding horizon is amendable to planning for statistical developments (e.g., over a two- to three-year period).

0.2.2 Measures to ensure efficient use of resources are implemented.

i. *Management ensures that resources are used efficiently.*

- Periodic reviews of staff performance are conducted.

- Efficiencies are sought through periodic reviews of work processes, e.g., seeking cost effectiveness of survey design in relation to objectives, and encouraging consistent concepts, classification and other methodologies across datasets.
- When necessary, the data producing agency seeks outside expert assistance to evaluate statistical methodologies and compilation systems.

ii. Costing and budgeting practices are in place and provide sufficient information to management to make appropriate decisions.

- Resources used to compile the statistics are measured periodically (costing) and compared to other statistical programs.
- Budgeting procedures are used to help allocate resources.

0.3 Relevance

— *Statistics cover relevant information on the subject field*

0.3.1 The relevance and practical utility of existing statistics in meeting users' needs are monitored.

i. Specific actions are taken to ensure that current statistics meet needs of data users.

- Data users are consulted and/or kept informed on specific aspects of current data (e.g., usefulness in terms of detail, periodicity, and timeliness) through surveys, newsletters or seminars, with their feedback actively sought (e.g., e-mail address provided).

ii. Mechanisms are in place to identify new and emerging data requirements.

- A structured and periodic process of consultation (e.g., users' advisory committee or working groups) takes place with policy departments/ministries and other principal data users, which include academia, the press, and/or other private sector representatives, to review the usefulness of existing statistics and to identify emerging data requirements.
- The data producing agency regularly participates in statistical meetings and seminars organized by international and regional organizations and by professional organizations (e.g., International Statistical Institute (ISI) and International Association for Official Statistics (IAOS)).
- The data producing agency undertakes studies to help identify new and emerging data requirements.

0.4 Other quality management

— *Quality is a cornerstone of statistical work*

0.4.1 Processes are in place to focus on quality.

i. There is recognition throughout the organization that quality builds trust and thus is a cornerstone of statistical work.

- Management is sensitive to all dimensions of data quality, and promotes a shared concern for quality throughout the organization (e.g., mission statement emphasizes importance of quality, managers are held accountable for achieving quality).
- Staff training programs emphasize the importance of quality and give staff an understanding as to how quality may be achieved.
- The organization provides an infrastructure for quality by recognizing trade-offs, economies of scale, and interrelations between datasets.
- The organization has implemented externally recognized processes or activities that focus on quality (e.g., Total Quality Management, ISO 9000, quality initiatives within the European Statistical System, and independent evaluations).
- Information is publicly available on the organization's commitment to quality, including information about trade-offs affecting the statistical work program.

0.4.2 Processes are in place to monitor the quality of the statistical program.

i. Measures are in place for a systematic monitoring and review of quality.

- Monitoring processes are in place to inform managers on the quality achieved for ongoing statistical activities (e.g., response rates, editing rates, revisions history, timeliness evaluations).
- Compiling areas have access to expert guidance on the quality of their statistics and on strategies for improving data production.
- Periodic reviews are undertaken to identify steps necessary to maintain quality requirements.

0.4.3 Processes are in place to deal with quality considerations in planning the statistical program.

i. In planning the statistical program, quality issues (including implicit and explicit trade-offs among the dimensions of quality) are considered.

- Quality issues, such as the following, are addressed explicitly and taken into account in the work program planning process:
 - quality improvements identified during ongoing monitoring and in periodic reviews;
 - feedback from users on quality standards and on new and emerging data requirements; and
 - trade-offs among the dimensions of quality (e.g., resources availability, timeliness, and accuracy/reliability).

1. Assurances of Integrity

The principle of objectivity in the collection, processing, and dissemination of statistics is firmly adhered to.

1.1 Professionalism

— Statistical policies and practices are guided by professional principles.

1.1.1 Statistics are produced on an impartial basis.

i. The terms or conditions under which the statistics are produced are in accordance with professional independence.

- A law or other formal provision supports professional independence by, for example:
 - addressing the general need for the professional independence of the data-producing agency (e.g., the importance of professional independence in carrying statistical functions is clearly stated and recognized);
 - prohibiting interference from others, including other government agencies, in the compilation and/or dissemination of statistical information; and
 - ensuring that the choice, tenure, and reporting arrangements of the agency's head are supportive of the professional independence of the statistical agency (e.g., tenure does not usually coincide with that of current government; appointment and removal of head result from transparent processes with emphasis on professional qualifications and performance).
- If there is no law or formal provision to support professional independence,
 - traditions or cultures of professionalism are clearly recognized as essential to the credibility of statistical results (e.g., others, including other government agencies, understand the importance or noninterference); and
 - the choice, tenure, and reporting arrangements of the agency's head are supportive of the professional independence of the agency.

ii. Professionalism is actively promoted and supported within the organization.

- Recruitment and promotion are based on relevant aptitude and/or expertise in statistics (e.g., sampling techniques or in the subject matter area).

- Formal (using internal and outside experts) and on-the-job training in the methodology and compilation methods is provided, including participation in seminars, courses, and workshops arranged by regional and international organizations to further knowledge of statistical practices and providing easy access to professional literature.
- Processes and activities in the workplace promote a culture of professionalism (e.g., by professional accreditation of staff, peer review of statistical work, recognition of authors of methodological papers, organization of lectures and conferences, and the institutional support of professional bodies).
- Research and analysis (including rationale for the choice of methodologies) are encouraged and published subject to internal review and other processes to maintain the agency's reputation for professionalism.

1.1.2 Choices of sources and statistical techniques as well as decisions about dissemination are informed solely by statistical considerations.

i. The choices of data sources and statistical techniques are informed solely by statistical considerations.

- The choice of source data (e.g., among surveys, between surveys and administrative records, or between collected data and administrative records) is based on measurement objectives and data requirements.

ii. Decisions about dissemination are informed solely by statistical considerations.

- Decisions to disseminate data are based solely on statistical considerations.
- Decisions about the timing, media, and other aspects of dissemination are based solely on statistical considerations.

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

i. The data producing agency comments when its statistics are misinterpreted or misused.

- The data producing agency seeks to prevent misinterpretation or misuse of statistics by providing explanatory materials and briefings (e.g., to the media).
- There is a formal policy or well-established custom to deal with data misinterpretations or misuse of statistics.

- The data producing agency
 - monitors media coverage of its data (“clipping service”), and
 - comments publicly and in a timely manner on erroneous interpretations or misuse of the statistics in the media and in other fora.

1.2 Transparency

— *Statistical policies and practices are transparent.*

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

- i. Information is available to the public about the terms and conditions under which the statistical series are compiled and disseminated, including the obligation to compile and disseminate the statistics, the confidentiality of individual reporters’ data, and other key features.*
- Agency publications and/or websites reproduce material from the statistical law and other relevant documents about the terms and conditions under which official statistics are compiled and disseminated. These terms and conditions may refer to the obligation to compile and disseminate the statistics, the confidentiality of individual reporters’ data, and other key features (e.g., the codes of conduct under which official statistics are compiled and disseminated, the approval process for data dissemination, the procedures to hire and remove the head of the data producing agency).
- In public speeches and other gatherings, the agency makes an active and ongoing effort to inform about the terms and conditions under which it operates.
- Statistical publications identify where more information about the data producing agency and its products can be found.

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

- i. The public is made aware of internal government access to statistics prior to their release to the public.*
- Internal government access to statistics prior to release is made public in terms of who has access, and how long before the dissemination access is given.

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

i. Statistical products are clearly identified so that the public is aware of what the data producing agency takes responsibility for.

- Data released to the public are clearly identified as the data producing agency's product (e.g., by name, logo, and insignia).
- In the case of joint publications, the part attributable to the data producing agency is identified (e.g., statistics are clearly distinguished from policy interpretation).
- The data producing agency requests attribution when its statistics are used for reproduced.

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

i. Users of statistics are made aware in advance of major changes in methodology, source data, and statistical techniques.

- Advance notice is given to the public (e.g., articles in bulletins, briefings, or news releases) when major changes are introduced in methodology, sources, and statistical techniques.

1.3 Ethical standards

— *Policies and practices are guided by ethical standards.*

1.3.1 Guidelines for staff behavior are in place and are well known to the staff.

i. A clear set of ethical standards has been prepared.

- There are clear guidelines outlining correct behavior when the agency or its staff are confronted with potential conflict of interest situations.
- There are clear guidelines that make the connection between ethics and staff work (e.g., with respect to guarding against misuse and misrepresentation of statistics (see also 1.1.3)).
- A strong culture for maintaining ethical standards discourages political interference.

ii. Staff are made aware of the ethical standards.

- Management acknowledges its status as a role model and is vigilant in following the standards.

- New staff are made aware of the standards when they join the organization.
- Staff are reminded periodically of the standards (e.g., in staff training, announcements to staff, or by requiring staff to periodically reaffirm ethical practices or adhere to conflict of interest policy).

2. Methodological Soundness

The methodological basis for the statistics follows internationally accepted standards, guidelines, or good practices.

The methodological soundness dimension is assessed against the guidelines outlined in the *Monetary and Financial Statistics Manual (MFSM)*. Where a country has yet to fully adopt the *MFSM*, plans are in place to migrate to the guidelines of the *MFSM*. However, other internationally accepted good practices (e.g., *European System of Accounts 1995 (1995 ESA)* and the IMF's *A Guide to Money and Banking Statistics in International Financial Statistics (1984)*) will be taken into account in the assessment.

2.1 Concepts and definitions

— Concepts and definitions used are in accord with internationally accepted statistical frameworks.

2.1.1 The overall structure in terms of concepts and definitions follows internationally accepted standards, guidelines, or good practices.

i. Concepts and definitions used to compile monetary statistics are in broad conformity with guidelines outlined in the MFSM.

- Key concepts and definitions are in accord with the guidelines of the *MFSM*, and, except in the case of differences in treatment, the *1993 SNA* and the *1995 ESA*.
- Deviations from the above concepts and definitions are kept under review (see also 5.2.1).

2.2 Scope

— The scope is in accord with internationally accepted standards, guidelines, or good practices.

2.2.1 The scope is broadly consistent with internationally accepted standards, guidelines, or good practices.

i. The scope of monetary statistics is broadly consistent with guidelines outlined in the MFSM.

- The scope refers to the *Depository Corporations Survey* rather than the complete financial system.
 - The *Depository Corporations Survey* is the analytical presentation of the consolidated accounts of the resident financial corporations and quasi-corporations that are mainly engaged in financial intermediation and that issue liabilities included in the national definition of broad money.
 - Balance sheet data for all other depository corporations, as specified in the *MFSM*, are covered in the reports to the central bank.
- ii. Balance sheets of the depository corporations cover the activities of domestic branches as well as domestic headquarters.*
- The institutional coverage of monetary statistics includes the depository corporations' domestic headquarters and all domestic branches.
- iii. Deviations from the above institutional coverage are kept under review (see also 5.2.1).*

2.3 Classification/sectorization

— *Classification and sectorization systems are in accord with internationally accepted standards, guidelines, or good practices.*

2.3.1 Classification/sectorization systems used are broadly consistent with internationally accepted standards, guidelines, or good practices.

- i. Sectorization used for monetary statistics is in broad conformity with guidelines outlined in the MFSM (Chapter 3).²*

²There are slight differences between the *1993 SNA* and the *MFSM* in sectorization. In the *1993 SNA*, for example, the nonfinancial corporations sector is divided into three subsectors: public nonfinancial corporations, national private nonfinancial corporations, and foreign controlled private nonfinancial corporations. For monetary statistics, the nonfinancial corporations sector is divided only into two subsectors: public nonfinancial corporations and other nonfinancial corporations. Thus, other nonfinancial corporations are not divided into separate subsectors based on the residency of the units that own and control them. Two other significant areas of divergence exist between the two methodologies: the treatment of the subsectors of the financial corporations sector (disaggregation to five subsectors in the *1993 SNA* and to only three in the *MFSM*); and the extensive use of separate data categories for the nonprofit institutions serving households (NPISH) and household sectors in the *1993 SNA* and the use in the *MFSM* of only one category called “other resident sectors.” See Box 3.1 in the *MFSM* (Chapter 3).

- Institutional units are grouped into sectors that have similar characteristics as specified in the *MFSM*.
 - Sectorization first distinguishes between residents and nonresidents, and then delineates the various domestic sectors and subsectors.
 - Resident units of the economy are grouped into the following mutually exclusive institutional sectors shown in the *MFSM*:
 - Financial corporations (central bank, other depository corporations, other financial corporations);
 - Nonfinancial corporations (public nonfinancial corporations, other nonfinancial corporations);
 - General government (central government, state government, local government, social security funds);
 - Households; and
 - Nonprofit institutions serving households.
- ii. *Classification of financial instruments used for monetary statistics is in broad conformity with guidelines outlined in the MFSM (Chapter 4).***
- The classification scheme for financial instruments is based on the liquidity of financial instruments and the legal characteristics that describe the form of the underlying creditor/debtor relationship as specified in the *MFSM*. The scheme includes the following groups:
 - Monetary gold and SDRs,
 - Currency and deposits,
 - Securities other than shares,
 - Loans,
 - Shares and other equity,
 - Insurance technical reserves,
 - Financial derivatives,
 - Other accounts receivable/payable.
- iii. *Securities repurchase agreements (repos) and swaps are recorded as loans (Chapter 4).***
- Repos are treated as collateralized loans (or deposits if repurchase agreements are included in broad money) rather than as outright sales of securities.
 - Gold swaps are forms of repos and are recorded as collateralized loans when they involve the exchange of monetary gold for cash (in domestic or foreign currency).
- iv. *Deviations from the above classification/sectorization systems are kept under review (see also 5.2.1).***

2.4 Basis for recording

— *Flows and stocks are valued and recorded according to internationally accepted standards, guidelines, or good practices.*

2.4.1 Market prices are used to value flows and stocks.

i. Valuation rules follow the principle of market valuation in conformity with guidelines outlined in the MFSM (Chapter 5).

- Financial assets generally traded in markets on a regular basis are valued by directly using the price quotations from these markets.
- Monetary gold is valued at market prices.
- If not valued at market prices, stocks of financial assets and liabilities (including central bank securities) are valued as if they were acquired in market transactions on the reporting date of the balance sheet, with a view to using “fair values.”
- Loans are valued at current book value³ without adjustment for expected loan losses arising from anticipated defaults by borrowers in monetary statistics.⁴
- For the purpose of monetary statistics, shares and other equity on the asset side of the balance sheet are valued at market prices, but shares and other equity on the liability side are valued at historical or book values.⁵ Supplementary data on the market values of such shares and other equity are presented as memorandum items attached to the *Central Bank Survey* and *Other Depository Corporations Survey*.⁶

³ The book value for domestic currency loans is the outstanding principal amount at its original cost plus any accrued interest. Such valuation is herein referred to as the *book value* of a loan.

⁴ The data on loan loss provisions are useful and are recorded as expected loan losses among the memorandum items that accompany sectoral balance sheets.

⁵ These valuation procedures (described in greater detail in Chapter 5 of the *MFSM*) are not applicable in the *1993 SNA*, given that shares and other equity are not disaggregated in that system.

⁶ The *Central Bank Survey* is the analytical presentation of the consolidated accounts of the central bank and its branches. The *Other Depository Corporations Survey* is the analytical presentation of the consolidated accounts of the resident financial corporations (except the
(continued)

- Financial transactions are recorded when there is a change of ownership, on the basis of the market (or equivalent) prices at which assets and liabilities are bought and sold, and transactions are recorded when new securities are issued and securities are redeemed.
 - Valuation adjustments (including holding gains and losses on instruments) are presented in the valuation changes in the appropriate sectoral balance sheets, surveys, or other aggregated/consolidated presentations for the depository corporations sector (*MFSM*, Chapter 5, Table 5.1).
 - Other accounting rules, valuation criteria, and identification of divergences from international standards (*1993 SNA*, *MFSM* (Chapter 5), *1995 ESA*) are clearly described in explanatory notes.
- ii. Foreign-currency-denominated assets and liabilities are converted into domestic currency at prevailing market exchange rates at the end of the month or pertinent closing date in conformity with guidelines outlined in the MFSM (Chapter 5).*
- In accordance with the *MFSM* and *1993 SNA*, the appropriate exchange rate to be used for conversion from a transaction currency into the national currency is the market exchange rate prevailing on the transaction date. For conversion of stocks of foreign-currency-denominated assets (including SDRs) and liabilities, the market exchange rate prevailing on the balance sheet date is used. The mid-point between the buying and selling rates is used in converting both flow and stock data.
- iii. Deviations from the above valuation principles are kept under review (see also 5.2.1.).*

2.4.2 Recording is done on an accrual basis.

- i. Transactions are recorded on an accrual basis in conformity with guidelines outlined in the MFSM (Chapter 5).*
- In accordance with the *1993 SNA*, accrual accounting, which records transactions and other flows at the moment that the economic value is created, transformed, exchanged, transferred, or extinguished, is used.
 - Interest on financial assets or liabilities is treated as accruing continuously during the accounting period.

central bank) and quasi-corporations that are mainly engaged in financial intermediation and that issue liabilities included in the national definition of broad money.

- An interest arrear does not require separate recording if the interest has been recorded on an accrual basis prior to the interest becoming past due. After the interest becomes overdue, it continues to be included in the value of the outstanding obligation.⁷
 - Arrears in the payment of fees or similar charges associated with off-balance-sheet financial instruments are included in accounts receivable/payable on the balance sheet. The claim for the overdue payments represents a financial asset, even though the underlying off-balance-sheet instrument does not qualify as a financial asset.
- ii. Transactions are recorded simultaneously between parties in conformity with guidelines outlined in the MFSM (Chapter 5).*
- A transaction is recorded at the time it occurs (simultaneous recording).
 - When differences arise at the time of recording, adjustments are made so that the same transaction date is applied for the two parties to the transaction.
- iii. Deviations from the above recording rules are kept under review (see also 5.2.1).*

2.4.3 Grossing/netting procedures are broadly consistent with internationally accepted standards, guidelines, or good practices.

- i. Assets and liabilities are presented on a gross or net basis in conformity with guidelines outlined in the MFSM (Chapter 5).*
- Data are collected and compiled on a gross basis according to the general principle of the *MFSM* and *1993 SNA*.
 - In particular, claims on a particular transactor or group of transactions are not netted against the liabilities to that transactor or group of transactions.
- ii. For the central bank subsector and other depository corporations subsector, the data on financial assets and liabilities are aggregated into major categories—for example, loans classified by debtor sector and deposits classified by credit sector (see MFSM, Chapter 7, Tables 7.1, 7.2, and 7.3).*
- Some categories of data are presented in survey form on a net basis because of the analytical usefulness of the data in such forms, as specified in the *MFSM*.

⁷ Supplementary data may be compiled on total interest arrears, classified by debtor subsector. Supplementary data are also compiled for principal arrears.

- Whenever the data are presented on a net basis, the underlying data on a gross basis are also shown, in accordance to the *MFSM* general principle for such presentation.
- iii. ***In conformity with guidelines outlined in the MFSM, the Depository Corporations Survey is obtained by canceling out all financial flows and outstanding claims and liabilities between all depository corporations, while preserving the presentation of data on all stocks and flows that are claims on (and liabilities to):***
 - Financial corporations subsectors other than the depository corporations subsector;
 - Other domestic sectors; and
 - Nonresidents.
- iv. ***Deviations from the above recording rules are kept under review (see also 5.2.1).***

3. Accuracy and Reliability

Source data and statistical techniques are sound and statistical outputs sufficiently portray reality.

3.1 Source data

— *Source data available provide an adequate basis to compile statistics.*

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

i. The data collection programs employed to compile monetary data are adequate.

- A comprehensive and up-to-date financial sector institutional units register, including depository corporations and other financial intermediaries, is available as core data sources.
- Register maintenance procedures are adequate (including adding new units, deleting dead units, accounting for mergers and other changes).
- Institutional and geographical coverage is complete, or if not, exclusions are based on criteria that do not lessen the representativeness and usefulness of monetary statistics.
- Report forms have been developed, at least for depository corporations, according to sound design principles and have been field tested.
- Report forms are reviewed periodically to take account of changed circumstances and needs.

- The accounting records used for compiling the sectoral balance sheets contain sufficient details to classify data by financial instrument and economic sector as defined in the *MFSM*.
- In cases where sectoral balance sheets cannot rely exclusively on accounting records, supplementary data, such as sectoral reports and off-balance sheet items, are used.
- The statistical system allows the collection of supplementary information (e.g., outside the regular reporting schedule) to support the core compilation.
- The reporting agency (e.g., bank supervisory authority) consults with the monetary statistics compiling agency on changes in source data (e.g., update in the chart of accounts for commercial banks) that may affect the statistics.

ii. The data collection programs are sufficiently open and flexible to provide for new developments in sources.

- The data sources are kept under continuous review to ensure that the data collection system remains comprehensive.
- Financial markets and other sources of information (e.g., the financial press and research papers) are monitored to identify financial developments that need to be taken into account in the monetary statistics.
- Periodic meetings are held with the financial supervisory authority, financial market participants, and the business community to identify new developments that need to be taken into account in the monetary statistics' compilation system.

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

i. Source data from core data sources reasonably approximate internationally accepted good practices for compiling monetary statistics.

- Standards applied by financial corporations for preparing source balance sheet data are consistent with guidelines on the scope, instrument classification, sectorization, time-of-recording convention, and valuation of financial assets and liabilities as outlined in the *MFSM* or other internationally accepted good practices.
- Source data that do not reasonably approximate internationally accepted good practices are subject to specific procedures for adjustments as described in Section 3.3 Statistical techniques.

ii. Information is available on the extent to which supplementary data sources differ from international statistical guidelines.

- Compilers are aware of differences in practices, e.g., differences in valuation methods, between core data sources, or balance sheets, and supplementary data sources, such as financial market data and data reported from counterparties of depository corporations.
- Supplementary data sources that complement core data sources provide sufficiently detailed and comprehensive information regarding definition, scope, classification, valuation and time of recording, in consistency with international statistical guidelines.
- Qualitative information collected during the compilation is used to monitor the adequacy of the sources to the definition, scope, classification, valuation, and time of recording.

3.1.3 Source data are timely.

i. The data collection programs provide for the timely receipt of data.

- The accounting records of the central bank and other depository corporations, and the subsequently prepared sectoral balance sheets, become available sufficiently timely to meet recommended standards of timeliness and periodicity for disseminating the monetary statistics.
- The central bank employs rigorous follow-up procedures to ensure the timely receipt of depository corporations' data, including banks in the process of liquidation (e.g., by calling the respondent, or having direct contacts with the agency in charge of financial supervision).
- Administrative/accounting records are accessible in a timely manner, and (reporting agency) delays in updating individual records are not significant.

3.2 Assessment of source data

— *Source data are regularly assessed.*

3.2.1 Source data—including censuses, sample surveys, and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and nonsampling error; the results of the assessments are monitored and made available to guide statistical processes.

i. Accuracy of the source data from reporting financial corporations is routinely assessed.

- Automated (computerized) procedures facilitate the monitoring of the accuracy of data reported by individual financial corporations. The monitoring system should test the internal consistency of each institution's data (formal cross-checks) and identify out-of-trend movements (plausibility checks). Formal data inconsistencies and out-of-trend values are confirmed with respondents, either by the central bank or the reporting agency, and records are kept with the report forms.
- The source data are routinely analyzed for underreporting/misreporting, in particular to check for temporal consistency and consistency with other related data sources.
- High-value transactions are confirmed with the reporting financial institutions.
- The effects of changes to report forms are assessed.
- Procedures are established for addressing data compilers' queries concerning source data.
- Source data are analyzed in the context of revisions.

3.3 Statistical techniques

— *Statistical techniques employed conform to sound statistical procedures.*

3.3.1 Data compilation employs sound statistical techniques to deal with data sources.

i. Data compilation procedures are sound.

- Compilation procedures minimize processing errors such as coding, editing, and tabulation errors.
- Procedures for imputation and adjustment for nonresponse are soundly based.

ii. Appropriate measures are taken to adjust the source data.

- Sound estimation techniques are employed to adjust data for missing balance sheet items.

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

i. Sound statistical techniques are employed to adjust monetary statistics.

- When data that reasonably approximate underlying concepts and definitions, scope, and recording principles of monetary statistics do not exist, specific procedures are used to adjust data from various sources to improve coverage and conform to guidelines in international statistical manuals.

- Procedures are in place to check the accuracy of the translation from foreign currency to domestic currency.

ii. Data adjustments and transformations are made using sound techniques.

- Seasonal adjustments that were undertaken use internationally accepted methodologies.

3.4 Assessment and validation of intermediate data and statistical outputs

— *Intermediate results and statistical outputs are regularly assessed and validated.*

3.4.1 Intermediate results are validated against other information where applicable.

i. Secondary data sources are also used to verify the data in the other depository corporations' survey.

- Data on financial market operations and sample surveys are sometimes useful to check the accuracy of other depository corporations' balance sheets.

3.4.2 Statistical discrepancies in intermediate data are assessed and investigated.

i. The behavior of series is cross-checked with related series/indicators.

- The behavior of series is routinely assessed against related series, for instance:
- reported data on stocks and flows of securities within sectoral balance sheets are regularly assessed in relation to the corresponding data in a securities database maintained at the central bank, or against administrative records.
- if financial transactions data are reported, these data are reconciled with changes in the corresponding stock data collected through balance sheets and other flows.

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

i. In the event of large or unexplained fluctuations in monetary or credit aggregates, the central bank has established procedures for inquiry.

- Procedures are in place to investigate classification/sectorization errors or omissions as a source of fluctuations or discrepancies.
- Reported financial flow data are reconciled with changes in the corresponding stock data (sectoral balance sheets).

3.5 Revision studies

— *Revisions, as a gauge of reliability, are tracked and mined for the information they may provide.*

3.5.1 Studies and analyses of revisions are carried out routinely and used internally to inform statistical processes (see also 4.3.3).

i. Revisions to the monetary statistics are periodically assessed.

- Studies assess the initial estimates against revised or final estimates over a given period of time and comprise:
- studies of scale (frequency of revision and number of time series revised);
- studies of direction and magnitude of revisions.
- Studies investigate the sources of errors, omissions, and fluctuations in the data and explain the methods of revising the data.

ii. Measures are undertaken to incorporate the findings from revision studies into data compilation.

- Findings from revision studies are used to define the optimal revision cycle that is largely driven by the availability of major data sources.
- New sources of data, updated statistical techniques, and improved methodology are adequately maintained in records until published according to the revision cycle.

4. Serviceability

Statistics, with adequate periodicity and timeliness, are consistent and follow a predictable revisions policy.

4.1 Periodicity and timeliness

— *Periodicity and timeliness follow internationally accepted dissemination standards.*

4.1.1 Periodicity follows dissemination standards.

i. The periodicity of the monetary statistics follows the IMF data dissemination standards (SDDS or GDDS).

- Central bank and other depository corporations data are disseminated monthly (SDDS and GDDS).

4.1.2 Timeliness follows dissemination standards.

i. The timeliness of the statistical series follows the IMF data dissemination standards (SDDS or GDDS).

- The monthly data on the central bank are disseminated within two weeks after the end of the reference month (SDDS).
- The monthly data on the central bank are disseminated within one to two months after the end of the reference month (GDDS).
- The monthly data on the other depository corporations are disseminated within one month of the end of the reference month (SDDS).
- The monthly data on the other depository corporations are disseminated within two to three months of the end of the reference month (GDDS).

4.2 Consistency

— *Statistics are consistent within a dataset, over time, and with major datasets.*

4.2.1 Statistics are consistent within the dataset.

i. The monetary statistics are internally consistent.

- The central banks' and other depository corporations' records for claims on, and liabilities to, are consistent between each other.
- Stock and flow data are reconcilable.

ii. The monetary statistics are consistent with statistics of the broader financial corporations sector and the flow of funds accounts.

- Credits/liabilities to other financial corporations in the central bank survey and other depository corporations survey are consistent with liabilities/credits to the depository corporations in the other financial corporations' balance sheet.
- Monetary aggregates are consistent or reconcilable with the aggregates of monetary instruments held by money holding sectors in the flow of funds accounts.
- Credit aggregates are consistent or reconcilable with the debt aggregates calculated based on the flow of funds accounts.

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

i. The monetary statistics are consistent over time.

- Consistent time series are available for an adequate period of time (at least five years).
- When changes in source data, methodology, or techniques are introduced, historical series are reconstructed as far back as reasonably possible.
- Detailed methodological notes identify and explain the main breaks and discontinuities in the component time series, their causes, and adjustments made to maintain consistency over time.
- Unusual changes in economic trends are explained in the commentary included in the publication and in the database accessible by users.

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

i. The monetary statistics are consistent with other statistical systems, such as balance of payments statistics, the internal investment position, and government finance statistics.

- The net foreign assets in monetary statistics are largely consistent with the corresponding measure derivable from the international investment position.
- Transactions in net foreign assets in monetary statistics are largely consistent with the corresponding measure derivable from balance of payments statistics.
- The central government's records on the government deposits in, and government borrowing from, the depository corporations in government finance statistics are largely consistent with the comparable data in monetary statistics.

4.3 Revision policy and practice

— *Data revisions follow a regular and publicized procedure.*

4.3.1 Revisions follow a regular and transparent schedule.

i. The practice of revisions (e.g., from provisional estimates, for weight updates, for changes in methodology) follows a predictable pattern of which users of monetary statistics are informed.

- The revision cycle is predetermined and reasonably stable from year to year.
- The revision cycle is made known to the public.

- The reasons underlying the cycle (e.g., the availability of source data, the timing of revisions with related datasets, the timing for preparing important economic policy documents) are explained.
- Adequate documentation of revisions is included in the publication of the statistical series and in the database accessible to users.
- When revisions outside the regular cycle are called for (e.g., by the discovery of new source data, errors), they are made known to the public.

4.3.2 Preliminary and/or revised data are clearly identified.

i. Users are informed about the preliminary nature of the data.

- At the time of data dissemination, users are informed whenever data are preliminary.

ii. Users are informed about the revised nature of the data.

- At the time of data dissemination, users are informed whenever data are revised.

4.3.3 Studies and analyses of revisions are made public (see also 3.5.1).

i. Users are informed of results and studies of the revisions to the statistics.

- Revisions are measured, assessed, and explained in the monetary statistics publication and in the database accessible by users.
- Analysis of differences between the revised and preliminary data is published for major aggregates to allow an assessment of the reliability of the preliminary data.

5. Accessibility

Data and metadata are easily available and assistance to users is adequate.

5.1 Data accessibility

— Statistics are presented in a clear and understandable manner, forms of dissemination are adequate, and statistics are made available on an impartial basis.

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

i. The presentation of the monetary data is commensurate with users' needs.

- The monetary statistics are disseminated in a clear manner, with charts and tables to facilitate analysis.

- Data series are disseminated to meet a range of users' needs with various levels of detail (disaggregation).
- Commentaries on current-period developments are included.
- Estimates are disseminated at a detailed level and with time series.
- Monetary series subject to seasonality are disseminated in a seasonally adjusted form.

5.1.2 Dissemination media and format are adequate.

i. Monetary statistics are disseminated in formats to suit users' needs.

- Statistics are disseminated in ways that facilitate redissemination in the media (e.g., information releases).
- More comprehensive and/or detailed statistics are also disseminated in paper and/or electronic formats.
- Current statistics and longer time series can be accessed (perhaps for a fee) through an electronic database maintained by or on behalf of the data producing agency.

5.1.3 Statistics are released on a preannounced schedule.

i. Statistics are released on the preannounced schedule.

- A schedule announces in advance the dates the statistics are to be released.
- The statistics are released according to the preannounced schedule.

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

i. The monetary statistics are made available to all users of statistics at the same time.

- The public is informed that the statistics are being released and of the procedures to access them (e.g., Internet, publications).
- The statistics are made available to all interested users simultaneously.
- If the press is briefed in advance, embargos are imposed to prevent early public disclosure.

5.1.5 Statistics not routinely disseminated are made available upon request.

i. Monetary statistics not routinely disseminated are made available to users upon request.

- In addition to the monetary statistics routinely disseminated, other general statistics are made available upon request.
- Customized tabulations can be provided (perhaps for a fee) to meet specific requests.
- The availability of additional statistics and of the procedures for obtaining them are made known.

5.2 Metadata accessibility

— *Up-to-date and pertinent metadata are made available.*

5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from internationally accepted standards, guidelines, or good practices are annotated.

i. The monetary statistics metadata give adequate information about the meaning of the data and about the methodology used to collect and process them.

- A comprehensive sources and methods document is published and updated regularly, and it includes the following:
 - information on concepts, definitions, classifications, data sources, compilation methods, statistical techniques, and other relevant methodological aspects and procedures;
 - departures from internationally accepted standards, guidelines, or good practices;
 - information on source data (response rates, monitoring of source data, and studies of nonsampling errors) and other features related to data collection and compilation (method, sample frame, sample design and selection, estimation and imputation techniques, etc.), and on the nature of administrative data sources; and
 - main linkages with related major data systems.
- The SDDS/GDDS metadata, SDDS summary methodologies, and other related descriptions are reviewed and updated regularly.
- The metadata are readily accessible (e.g., websites, statistical publications) and their availability is cross-referenced in data releases, and otherwise well publicized (e.g., in catalogs).

5.2.2 Levels of detail are adapted to the needs of the intended audience.

i. Different levels of metadata detail are made available to meet users' requirements.

- General use information (e.g., a brochure) about the monetary statistics (e.g., how to locate the data) is available and made public.
- More specialized use information (e.g., background papers, working documents) is available and made public.

5.3 Assistance to users

— *Prompt and knowledgeable support service is available.*

5.3.1 Contact points for each subject field are publicized.

i. Adequate assistance is given to users of monetary statistics.

- Prompt and knowledgeable service and support are available to users of statistics.
- All statistical releases identify contact points for enquiries by mail, telephone, facsimile, or by e-mail.
- Material to raise awareness on the use of statistics is available (e.g., for schools and research).
- Access points for clients to obtain statistical information are well advertised.
- Assistance to users is monitored and reviewed periodically (e.g., time of response to e-mail requests).

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

i. Catalogs of publications and other services are available to users of monetary statistics.

- Catalogs of publications, documents, and other services to users are available, and updated regularly (e.g., each year if needed).
- The prices of the statistical products and services are clearly disclosed and assistance is provided in placing orders.