Former Yugoslav Republic of Macedonia: Report on the Observance of Standards and Codes—Data Module, Response by the Authorities, and Detailed Assessments Using Data Quality Assessment Framework

This Report on the Observance of Standards and Codes on Data Module for the **former Yugoslav Republic of Macedonia** was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on **September 16, 2004.** The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of the former Yugoslav Republic of Macedonia or the Executive Board of the IMF.

The Response by the Authorities on this report, and the Detailed Assessment Using the Data Quality Assessment Framework (DQAF) are also included

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FORMER YUGOSLAV REPUBLIC OF MACEDONIA

Report on the Observance of Standards and Codes (ROSC)—Data Module

Prepared by the Statistics Department

Approved by Robert W. Edwards and Michael Deppler

September 16, 2004

The Report on the Observance of Standards and Codes (ROSC)—data module—provides an assessment of FYR Macedonia's macroeconomic statistics against the recommendations of the *General Data Dissemination System (GDDS),* complemented by an assessment of data quality based on the IMF's Data Quality Assessment Framework (DQAF July 2003). The DQAF lays out internationally accepted practices in statistics, ranging from good governance in data-producing agencies to practices specific to datasets.

The datasets covered in this report are national accounts, consumer and producer price indices, government finance, monetary, and balance of payments statistics as recommended by the GDDS. The agencies that compile the datasets assessed in this report are the State Statistical Office (SSO), the Ministry of Finance (MOF), and the National Bank of the Republic of Macedonia (NBRM).

The datasets to which this report pertains can be accessed in print and on the Internet:

> SSO: http://www.stat.gov.mk
> MOF: http://www.finance.gov.mk
> NBRM: http://www.nbrm.gov.mk

FYR Macedonia signed in April 2001 a Stabilization and Association Accord with the European Union (EU) and is seeking membership in the EU. The SSO is collaborating closely with the Statistical Office of the European Communities (EUROSTAT) to harmonize standards and methodologies.

This report is based on information provided prior to and during a staff mission from February 18–March 3, 2004 and publicly available information. The mission team from the IMF Statistics Department comprised Messrs. Reitmaier (Head), Dippelsman, Fassler, Pritchett, Ms. Zhao (all STA), Mr. D. Smith (Expert), and Ms. Diaz-Zelaya (STA Administrative Assistant).

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ACRONYMS

1995 ESA	*European System of Accounts 1995*
1993 SNA	*System of National Accounts 1993*
BPM5	*Balance of Payments Statistics Manual*, fifth edition
CPA	Classification of Products by Activity
CPI	Consumer Price Index
COFOG	Classification of Functions of Government
COICOP	Classification of Individual Consumption by Purpose
DQAF	Data Quality Assessment Framework, July 2003 version
DSBB	Dissemination Standards Bulletin Board
EU	European Union
EUROSTAT	Statistical Office of the European Communities
GDDS	General Data Dissemination System
GDP	Gross Domestic Product
GFS	Government Finance Statistics
GFSM 1986	*A Manual on Government Finance Statistics*, 1986
GFSM 2001	*Government Financial Statistics Manual 2001*
HBS	Household Budget Survey
IMF	International Monetary Fund
MFSM	*Monetary and Financial Statistics Manual*
MOF	Ministry of Finance
NACE	Statistical Classification of Economic Activities in the European Communities
NBRM	National Bank of the Republic of Macedonia
PPI	Producer Price Index
PRODCOM	List of Products of the European Communities
ROSC	Report on the Observance of Standards and Codes
RPI	Retail Price Index
SSO	State Statistical Office

I. OVERALL ASSESSMENT

1.   This data module of the Report on the Observance of Standards and Codes (ROSC) for FYR Macedonia indicates a statistical system built on a solid legal foundation and for the most part devoted to disseminating quality statistics to the general public. In some cases, the system lacks adequate resources and has shortcomings in data collection.

2.   FYR Macedonia participates in the General Data Dissemination System (GDDS); its metadata were first posted on the IMF's Dissemination Standards Bulletin Board (DSBB) in February 2004. As documented in this paper's Appendix, FYR Macedonia meets most GDDS recommendations for macroeconomic statistics. In an exception, coverage of the government finance statistics (GFS) does not extend to comprehensive central and general government data, but periodicity recommendations across all data categories are fully met or exceeded. Likewise, with few exceptions, FYR Macedonia's macroeconomic statistics are disseminated within the periods recommended under the GDDS.

3.   In applying the IMF's Data Quality Assessment Framework (DQAF), the mission arrived at these main conclusions as follows below.

4.   **Prerequisites of quality and assurances of integrity**:

- The **State Statistical Office** (SSO) operates in a favorable legal and institutional environment. The requirement for enterprises to respond to industrial surveys could be better enforced. Although resources are adequate for the national accounts, there is a critical shortage of personnel for the compilation of price indices. The relevance of statistical series is monitored by informing the Statistical Council and meeting with users. Appropriate quality management processes are in place, particularly for the national accounts. The SSO has fostered an environment of professionalism, transparency, and adherence to ethical standards.

- The **Ministry of Finance** (MOF) provides an appropriate institutional environment for compiling budgetary transaction data but not for compiling statistics for general government. Staff and computing resources are insufficient to satisfactorily compile consolidated GFS on stocks and flows in accordance with the *Government Finance Statistics Manual 2001* (*GFSM 2001)*. The relevance of fiscal data suffers from a lack of consultation with users. MOF officials are objective and impartial, following laws and MOF codes. The transparency of fiscal data could be enhanced by publishing information on practices and procedures for data compilation and dissemination. A strong MOF culture for maintaining ethical standards discourages outside interference.

- The **National Bank of the Republic of Macedonia** (NBRM) has a legal and institutional environment that supports compilation and dissemination of monetary and balance of payments statistics. Resources are adequate, and the relevance of statistics is ensured by extensive informal contact with users. Processes are in place

for monitoring quality. The statutory independence of the NBRM and the recruitment of qualified staff promote professionalism. NBRM achieves transparency by publishing relevant legislation and providing data simultaneously to all users. The *Code of Conduct* establishes ethical standards.

5. **Methodological soundness** is upheld usually in all statistical areas. Some deviations from international standards exist in the details of concepts and definitions, scope, and sectorization. Notable is the lack of consolidated government finance statistics (GFS) for general government. The basis for recording is appropriate for GFS, but international standards are not fully applied in national accounts, price statistics, monetary, and balance of payments statistics.

6. **Accuracy and reliability** are generally addressed, although some deficiencies were observed. Source data have some shortcomings in most statistics. Suitable processes for assessment and validation of source, intermediate, and output data are in place in most cases. Deficiencies in statistical techniques were observed in deflation methods for the national accounts and application of the index formula for prices. Revision studies could be developed further, particularly for the producer price index and GFS.

7. **Serviceability** of disseminated macroeconomic statistics is for the most part adequate. The frequency and timeliness of disseminated data typically follow GDDS recommendations. Compiling agencies could make additional joint efforts to ensure consistency of macroeconomic data. Shortcomings exist in revision policy and practice, and revisions are not always identified or explained to the public.

8. **Accessibility.** Significant efforts have been made to improve the accessibility of macroeconomic data. For example, the SSO and NBRM have disseminated advance calendars for data releases. Published methodological notes and other metadata are sometimes incomplete.

9. Section II of this report provides a summary assessment of data quality by agency and dataset. This is followed by staff recommendations in Section III. The authorities' response to this report and a volume of detailed assessments are presented in separate documents.

II. ASSESSMENT BY AGENCY AND DATASET

10. An assessment of the quality of six macroeconomic datasets—national accounts, consumer price index, producer price index, government finance, monetary, and balance of payments statistics—was conducted using the Data Quality Assessment Framework (DQAF) and a four-point rating scale (Table 1). The DQAF covers the various dimensions of data quality. Assessments of the prerequisites of data quality and the assurances of integrity (Dimensions "0" and "1" of the DQAF) are documented for each data-producing agency in Tables 2a–c. The assessments of methodological soundness, accuracy and reliability, serviceability, and accessibility (Dimensions "2" to "5" of the DQAF) are presented for each dataset in Tables 3a–f.

Table 1. FYR Macedonia: Data Quality Assessment Framework July 2003—Summary Results

Key to symbols: O = Practice Observed; LO = Practice Largely Observed; LNO =Practice Largely Not Observed; NO = Practice Not Observed; NA = Not Applicable

Dimensions/Elements	National Accounts	Consumer Price Index	Producer Price Index	Government Finance Statistics	Monetary Statistics	Balance of Payments Statistics
0. Prerequisites of quality						
0.1 Legal and institutional environment	LO	O	LO	LO	O	O
0.2 Resources	O	LNO	LNO	LO	O	O
0.3 Relevance	O	O	O	LO	O	O
0.4 Other quality management	O	LO	LO	LO	O	O
1. Assurances of integrity						
1.1 Professionalism	O	O	O	O	O	O
1.2 Transparency	O	LO	LO	LO	O	O
1.3 Ethical standards	O	O	O	O	O	O
2. Methodological soundness						
2.1 Concepts and definitions	O	O	LO	LO	O	O
2.2 Scope	LO	O	LO	LNO	LO	LO
2.3 Classification/sectorization	O	O	O	LO	LO	O
2.4 Basis for recording	LO	LO	O	O	O	LO
3. Accuracy and reliability						
3.1 Source data	LO	LO	LO	LO	O	LO
3.2 Assessment of source data	O	O	LO	LO	LO	O
3.3 Statistical techniques	LNO	LNO	LNO	LO	O	LO
3.4 Assessment and validation of intermediate data and statistical outputs	O	O	O	LO	O	O
3.5 Revision studies	O	LO	LNO	LNO	O	LO
4. Serviceability						
4.1 Periodicity and timeliness	LO	O	O	O	O	O
4.2 Consistency	O	O	O	LO	LO	O
4.3 Revision policy and practice	LO	LO	LO	LNO	LO	LO
5. Accessibility						
5.1 Data accessibility	O	O	O	LNO	O	O
5.2 Metadata accessibility	LO	O	LO	LO	O	O
5.3 Assistance to users	O	O	O	LO	O	O

Practice observed: current practices generally in observance meet or achieve the objectives of DQAF internationally accepted statistical practices without any significant deficiencies. **Practice largely observed:** some departures, but these are not seen as sufficient to raise doubts about the authorities' ability to observe the DQAF practices. **Practice largely not observed:** significant departures and the authorities will need to take significant action to achieve observance. **Practice not observed:** most DQAF practices are not met. **Not applicable:** used only exceptionally when statistical practices do not apply to a country's circumstances.

Table 2a. FYR Macedonia: Assessment of Data Quality—Dimensions 0 and 1:
State Statistical Office

0. Prerequisites of quality	1. Assurances of integrity
Legal and institutional environment. The State Statistics Act of 1997 assigns to the State Statistical Office (SSO) a leadership role in the compilation and coordination of the official statistics of the country. Coordination of system-wide statistical plans is based on a five-year annual statistical plan that helps to articulate short-term and medium-term objectives and the annual "Programme of Statistical Research" prepared under the guidance of the Statistical Council of the Republic of Macedonia, an advisory body appointed by the Parliament.	**Professionalism.** The Law on Statistics states that the SSO is an independent professional administrative organization with its own legal status. No external agencies may interfere with the compilation or dissemination of the data produced by the SSO. Only statistical considerations are taken into account when choosing sources of data and statistical techniques, as well as in making decisions about dissemination of the data. The SSO is entitled to comment on misuse of its statistics and does so, as needed.
The SSO is responsible for setting the standards of classification and methodology to be used in the compilation of the statistics. Data sharing and coordination among data-producing agencies is effective and defined in detail within the statistical program. The law guarantees the confidentiality of the data used for statistical purposes and establishes adequate penalties for noncompliance. However, the SSO faces a problem of low response to business surveys that affects the quality of the derived statistics.	**Transparency.** References to the Law are provided in the questionnaires employed by the SSO in its data collection program. The complete text of the Law is reproduced in Macedonian and English on the SSO's website. There is no internal government access to the national accounts statistics prior to their release to the public, but the statistics on the Consumer Price Index (CPI) and the Producer Price Index (PPI) are made available to the government one day before their release. This practice has not been publicly identified. The SSO clearly identifies its products as such and requests attribution when its data are reproduced by others.
Resources. The SSO devotes sufficient resources to the compilation of the national accounts statistics. However, there is an evident lack of staff resources employed in the compilation of the price indices. This lack of resources compromises the capability to undertake development work in these statistics, although the routine compilation work is efficiently performed with the systematization of the work and computerized system of data processing.	**Ethical standards.** Guidelines and standards for staff behavior are posted on the SSO intranet. As public servants, SSO staff members are required to adhere to the norms of conduct as provided by the Law on Civil Servants.
Relevance. The SSO monitors users' needs on a current basis by inviting users to provide comments on the statistics through its website and through meetings, and by following up on data requests to the agency. It also closely follows developments regarding international standards, particularly the guidelines of EUROSTAT.	
Other quality management. The SSO closely collaborates with EUROSTAT in implementing international standards for the compilation of statistics. The SSO monitors the response rates to its surveys and implements measures to improve the statistics but does not invoke penalties for noncompliance. Although quality management processes are generally functioning well, support for the price index program could be increased.	

Table 2b. FYR Macedonia: Assessment of Data Quality—Dimensions 0 and 1: Ministry of Finance

0. Prerequisites of quality	1. Assurances of integrity
Legal and institutional environment. The MOF provides an appropriate institutional environment for compiling budgetary transactions data but not for compiling GFS for general government. Treasury collects, processes, and disseminates accounting data on transactions only of certain government entities. MOF source data on local governments are not shared with the fiscal data compiler. **Resources.** At current staffing levels and commitments and computing capabilities, Treasury cannot satisfactorily compile consolidated GFS on general government stocks and flows in accord with *GFSM 2001*, and a capability for such activity can be expected only with appropriate resource enhancements and training. **Relevance.** A limited structured and periodic process of consultation takes place with policy departments, ministries, and other data users, such as academia, the press, and other private sector representatives, to review the usefulness of fiscal data and to identify emerging data requirements, such as the need for reported data on all financial stocks and flows of general government. **Other quality management.** The accounting and auditing systems for general government have an embedded mechanism of checks to help ensure quality of fiscal data. However, routine feedback from public users on data quality and on data needs is not sought.	**Professionalism.** The Law on Civil Servants assists in ensuring impartiality on the part of civil servants. It mandates that a civil servant act impartially and without influence of political parties, not be guided by his/her own political beliefs or personal financial interests, and refrain from misuse of authority. **Transparency.** Practices and procedures for data compilation and dissemination are not usually reported. Internal government access to reported fiscal data prior to release is not made public. Data released to the public are not always identified as the data-compiling agency's product. **Ethical standards.** Aside from the Law on Civil Servants, the Code for Behavior of Employees of the MOF mandates professionalism, objectivity, confidentiality, and political neutrality in staff work. Also, a strong culture for maintaining ethical standards discourages political interference. But there is no documentation that MOF management acknowledges its status as a role model and is vigilant in following ethical standards.

Table 2c. FYR Macedonia: Assessment of Data Quality—Dimensions 0 and 1:
National Bank of the Republic of Macedonia

0. Prerequisites of quality	1. Assurances of integrity
Legal and institutional environment. The NBRM's responsibility for monetary and balance of payments statistics is clearly established in the relevant legislation. Data sharing arrangements are made with other departments of the NBRM and the Customs Office and are effective. The legislation includes compulsory reporting and protects the confidentiality of individual data, and these provisions are communicated to data suppliers. **Resources.** Staff, computing, and financing are broadly adequate. Changes are made on a continuing basis to bring about more efficient use of resources. For example, increasing use is being made of electronic supply of data. **Relevance** is assured by extensive informal contact with users and by following the recent international standards, namely the *Monetary and Financial Statistics Manual*, the fifth edition of the *Balance of Payments Manual*, and European Union Standards. **Other quality management** processes are in place for monitoring quality and making continuing improvements to statistics. The NBRM shows a recognition of trade-offs, for example, by requiring less detailed information for small balance of payments transactions.	**Professionalism.** Professionalism is ensured by a range of measures. The NBRM legislation gives independence to the governor, council, and NBRM. The Code of Conduct for staff emphasizes professionalism and objectivity. Professional competence plays a key role in recruitment and promotion. Training and professional development is provided. Choices of statistical methodology are based solely on statistical considerations. The NBRM is able to comment on public misuse of statistics and has done so. **Transparency** is achieved by making laws and procedures available to the public, releasing data simultaneously to interested parties, and identifying statistics as NBRM products. Notice of major methodological changes has been given in advance. **Ethical standards** for staff are established in the Code of Conduct communicated to all NBRM staff. The Code covers conflict of interest, outside employment, and employment after leaving the NBRM.

Table 3a. FYR Macedonia: Assessment of Data Quality—Dimensions 2 to 5:
National Accounts

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
Concepts and definitions. The national accounts are compiled following the conceptual framework of the *European System of Accounts 1995 (1995 ESA)*. **Scope.** All tables and accounts recommended by the GDDS are compiled. Quarterly estimates of GDP at constant prices by production are also available but were not assessed. A few discrepancies with the international standards exist in the scope of the production and assets boundaries. **Classification/sectorization.** Institutional units, transactions and other flows are in accordance with the *1995 ESA*. The Classification of Products by Activity (CPA) is used in the classification of products, and the Classification of Individual Consumption by Purpose (COICOP) is used to classify household consumption. The Classification of Functions of Government (COFOG) has not yet been implemented for the classification of general government expenditures. **Basis of recording.** Value added, and all components of GDP estimates by expenditure are in line with the international standards of valuation. All transactions are recorded on an accrual basis with the exception of general government income and expenditure (cash basis). Transactions between establishments of the same enterprise are deemed not to be recorded on a gross basis.	**Source data.** A suitable statistical register has not yet been completed. The SSO has a regular program with monthly, quarterly, and annual surveys covering a wide range of economic activities although not all results are suitable for national accounts compilation. In practice, most of the compilation of the national accounts estimates at current prices, and particularly GDP, relies on financial statements of enterprises obtained from administrative databases. **Assessment of source data.** Sampling errors are calculated for the household survey and other surveys based on random sampling methods. The data used in the compilation of the national accounts are carefully assessed, and the best available sources are used in their compilation. **Statistical techniques** for the compilation of volume measures of value added in some activities and for measuring taxes on products are not adequate. No inventory valuation adjustment is made. **Assessment and validation of intermediate data and statistical outputs.** Estimates are validated at all stages of processing. No discrepancy is shown between GDP estimates using different approaches. **Revision studies.** The series have been revised once in the year 2001. The causes of revisions were documented and used to inform the statistical processes.	**Periodicity and timeliness.** FYR Macedonia exceeds GDDS recommendations in periodicity. Timeliness falls slightly short of GDDS standards. **Consistency.** Data are consistent internally and over time for a long period. The break in the series in 1997 is explained in methodological notes that were widely disseminated. All components for the rest of the world account are consistent with the balance of payments compiled by the NBRM, except expenditures of nonresidents. **Revision policy and practice.** There is no explicit revision policy established, although the practice for annual regular revisions is known. Causes of revisions to the series in 2001 were published and explained to users.	**Data accessibility.** National account statistics are disseminated in the publications with sufficient level of detail, although they lack charts. Statistics are released simultaneously to all users in accordance with a preannounced schedule posted on the website of the SSO. The public is informed of the statistics being released and of the procedures to access the data through the publications of the SSO. **Metadata accessibility.** Metadata are posted on the GDDS bulletin board of the IMF, but not on the website of the SSO. Special series of publications on methodology are available, and methodological notes are included in the current publications of the SSO. However, there are no comprehensive metadata easily available to the public beyond the GDDS metadata. **Assistance to users** is generally good. All statistical publications contain information on how to contact the SSO (telephone and facsimile numbers, website address, address, etc.). No contact name is given, except in the GDDS metadata.

Table 3b. FYR Macedonia: Assessment of Data Quality—Dimensions 2 to 5: Consumer Price Index

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
Concepts and definitions used are consistent with the *System of National Accounts 1993 (1993 SNA)* and the new Consumer Price Index Manual. There is an excellent level of detail for both goods and services. **Scope.** The consumer price index (CPI) weights cover both urban and rural households of all types and all income levels, including the agricultural sector. All types of expenditures are reflected, including those made to the informal sector. Food produced for own consumption is also included. **Classification.** The CPI is tabulated using both a national classification based on that of the former Socialist Federal Republic of Yugoslavia and the COICOP, which is the recommended international standard. **Basis for recording.** Both prices and weights are determined on an accrual basis using market and/or transaction values. However, sales of durable goods such as vehicles are not netted out from purchases for the calculation of market basket weights.	**Source data.** In general, the source data for the CPI are excellent. However, the new Household Budget Survey (HBS) only collects diary data and does not include a question on the estimation of imputed rent for owner-occupied dwellings. A recall module to collect more complete data on purchases of durable goods as well as recurring monthly expenses is also lacking. **Assessment of source data.** Both price and weight source data for the CPI are carefully assessed for atypical values, consistency, nonresponse, and incomplete data. **Statistical techniques.** There is a methodological problem with regard to the application of the index formula that could potentially cause a bias in the index. The treatment of missing prices could also be improved. **Assessment and validation of intermediate data and statistical outputs.** The CPI is compared for consistency with the Retail Price Index (RPI), the PPI, and relevant data from other sources such as agricultural price data. **Revision studies.** Although studies are made informally for major revisions, no formal studies are prepared and published except for those on the HBS results that are used for estimating the new CPI market basket weights.	**Periodicity and timeliness.** The monthly CPI is published within three days of the end of the reference month, thereby meeting GDDS standards for periodicity and timeliness. **Consistency.** The CPI is generally consistent over time with the exception of a change in the index calculation methodology that was introduced in 2000. This change was documented at the time the revised index was published. **Revision policy and practice.** CPI weight revisions follow a regular, well established five-year schedule. This is possible because of the availability of expenditure data from the continuous HBS. Although revision studies are published for the HBS, no studies are published for the CPI.	**Data accessibility.** The CPI is disseminated in a number of different media including a press release, a monthly bulletin, the Internet, and a recorded phone message. Short-term trends in the index are well presented; however, the presentation of long-term services may be improved. **Metadata accessibility.** CPI metadata are available in both summary and detail. **Assistance to users.** In general, assistance to users is well handled. However, additional data are provided to users only on the basis of a written request to the SSO Information Department.

Table 3c. FYR Macedonia: Assessment of Data Quality—Dimensions 2 to 5:
Producer Price Index

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
Concepts and definitions. In general, the PPI is based on concepts and definitions consistent with the *1993 SNA* and the new PPI Manual. However, tabulations are made exclusively by commodity aggregation. No tabulations are made by industrial classification (economic activity). **Scope**. The weights for the PPI cover all production sold to the domestic market. Since production sold for export is not included, the scope of the index does not completely conform to international standards. **Classification**. The SSO has moved completely to European standards for the classification within the PPI. Products are classified by a ten-digit extension of the List of Products of the European Communities (PRODCOM) and economic activities are classified by a one-digit extension of the Statistical Classification of Economic Activities in the European Communities (NACE). **Basis for recording** for the PPI conforms to international standards. The index employs factory-gate market prices (excluding taxes), and all values are reported on an accrual basis.	**Source data**. In general, the source data for the PPI are good, but the coverage of small private enterprises needs to be improved. **Assessment of source data**. Although the source data for the PPI are thoroughly checked for accuracy, little statistical analysis is conducted for the industrial survey sample upon which the enterprise sample for the PPI is based. **Statistical techniques**. There is a methodological problem with regard to the application of the index formula that could potentially cause a bias in the index. The treatment of missing prices could also be improved. **Assessment and validation of intermediate data and statistical outputs**. The PPI is compared for consistency with the RPI, the CPI, and relevant data from other sources. **Revision studies**. No formal revision studies are carried out for the PPI.	**Periodicity and timeliness**. The monthly PPI is published within fifteen days of the end of the reference month, thereby meeting GDDS standards for periodicity and timeliness. **Consistency**. The PPI is generally consistent over time with the exception of a change in index calculation methodology that was introduced in 2000. This change was documented at the time the revised index was published. **Revision policy and practice**. PPI weight revisions follow a regular, well established, five-year schedule based on data from the annual industrial survey; however, no formal revision studies are carried out and published.	**Data accessibility**. The PPI is disseminated in a number of different media including a press release, a monthly bulletin, the Internet, and a recorded phone message. Short-term trends in the index are well presented; however, the presentation of long-term services may be improved. **Metadata accessibility**. Metadata on the PPI are only available in a very summarized format. **Assistance to users**. In general, assistance to users is well handled. However, additional data are provided to users only on the basis of a written request to the SSO Information Department.

Table 3d. FYR Macedonia: Assessment of Data Quality—Dimensions 2 to 5:
Government Finance Statistics

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
Concepts and definitions. National concepts and definitions, similar to those in *GFSM 1986*, are followed. No migration path from the *GFSM 1986* to the *GFSM 2001* methodology has been established or documented. **Scope.** Consolidated GFS for transactions are not compiled for general governments, even though adequate data are available. Domestic debt data for central government, while compiled, are not reported. **Classification/sectorization.** Most transaction categories are classified by using the methodology set out in Chapter IV of the *GFSM 1986*. Aggregates that do not conform to this framework are privatization receipts and grants received, which are treated in financing. **Basis for recording.** Transactions of central and local governments, recorded only on a cash basis, are recorded at the time of payment, in accord with *GFSM 1986*.	**Source data.** While usually adequate, national charts of accounts do not align well enough with GFS. However, most source data now exist for an adequate consolidation of data for different levels of government. **Assessment of source data.** All source data are not adequately assessed. No automated procedures are used to facilitate the monitoring of the accuracy of data reported by any individual government unit. **Statistical techniques.** Compilation procedures are not typically documented or updated periodically. Bridge tables linking 2003 and 2004 charts of accounts with GFS classification have not been constructed. **Assessment and validation of intermediate data and statistical outputs.** Fiscal data and other macroeconomic data, except for external debt data of the NBRM and external net borrowing, are not usually compared or reconciled. The process for validating data is not well established. **Revision studies.** There is no evidence in recent years that studies of data revisions are conducted even though occasional revisions occur.	**Periodicity and timeliness.** Budgetary central government data, except for domestic debt data, are usually available after approximately one month. While reporting is often delayed, it is within GDDS recommendation. **Consistency.** Fiscal data are consistent within the dataset; deficits, for example, equal financing. Classifications for monthly and annual data are the same. Fiscal and monetary reports on government deposits and their changes are not always consistent. **Revision policy and practice.** Reasons underlying revisions (e.g., the availability of revised source data) are not usually identified. Revised data are not usually identified. Data revisions are not explained.	**Data accessibility.** Fiscal data for major aggregates are disseminated mainly according to *GFSM 1986*. MOF commendably publishes a *Bulletin* with fiscal data at no cost, and fiscal data also are available on websites. Dissemination media are adequate. Fiscal data are released to all users at the same time. No schedule announces in advance the dates that fiscal data are released. **Metadata accessibility.** A comprehensive practices and procedures document is not published. Only limited methodological notes and other metadata are accessible in the MOF *Bulletin* and websites. **Assistance to users.** The MOF *Bulletin* identifies contact points for enquiries and identifies MOF websites with data. No catalogs of publications, documents, and other services to users are available.

Table 3e. FYR Macedonia: Assessment of Data Quality—Dimensions 2 to 5: Monetary Statistics

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
Concepts and definitions used are broadly consistent with the framework for compiling monetary statistics as recommended in the *Monetary and Financial Statistics Manual (MFSM)*. **Scope** is broadly in line with the *MFSM* guidelines. One deviation is the exclusion of savings houses from the depository corporations survey. **Classification/sectorization** are broadly consistent with the *MFSM* guidelines. One deviation is that some *MFSM*-recommended categories of financial assets are not separately shown in monetary statistics, such as shares and other equity and insurance technical reserves. **Basis for recording** is largely in accord with the *MFSM* guidelines. All financial assets and liabilities are valued at market price or fair value with one minor exception. The only nontradable long-term securities issued by the Bank Rehabilitation Agency, small in magnitude, are recorded at book value.	**Source data** are collected on a timely basis and provide the information needed for classification/sectorization in monetary statistics as recommended in the *MFSM*. **Assessment of source data.** The source data are primarily generated from accounting records of the banking sector. Processes are in place for routinely reviewing and assessing source data for accuracy and reliability. However, there is a need to review these processes to ensure their effectiveness as data inconsistencies and misclassifications have been identified by users on several occasions. **Statistical techniques.** Sound statistical techniques are employed in data compilation. Forms for reporting data are designed to encourage use of computer programs to facilitate prompt data processing and minimize processing errors. **Assessment and validation of intermediate data and statistical outputs** are conducted routinely. Statistical discrepancies and other potential problems are investigated and taken into account in future work programs. **Revisions studies** are carried out routinely to ensure the reliability of data revision procedures and used to inform future statistical processes.	**Periodicity and timeliness** meet the GDDS recommendations. **Consistency** is ensured by routinely checking the consistency of data on interbank positions, and maintaining consistent time series over a reasonable period of time. However, discrepancies with GFS are not routinely investigated and fully reconciled. **Revision policy and practice** are largely adequate. Revisions follow a regular pattern. Preliminary data and revised data are always clearly identified. One deviation is that revision studies are not made available to the public.	**Data accessibility** is closely in line with best international practices. Presentation of statistics is clear, dissemination format adequate, dissemination of data to all users at the same time, and an advance release calendar published. **Metadata accessibility** is adequate with information on underlying methodology used for compiling the published data available publicly. Detailed supplementary data are published to better meet users' needs. **Assistance to users** is provided extensively through addressing users' queries and information requests. Detailed contact information is published on the NBRM website. A catalog of the NBRM statistical publications is updated regularly and posted on the NBRM website.

Table 3f. FYR Macedonia: Assessment of Data Quality—Dimensions 2 to 5:
Balance of Payments Statistics

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
Concepts and definitions. The conceptual framework closely follows the fifth edition of the *Balance of Payments Manual* (*BPM5*).	**Source data** are generally adequate in coverage and timeliness. An omission is that only the net value of transactions through exchange bureaus is recorded, and it is all assumed to be private current transfers. There are some gaps due to netted transactions and authorized accounts held abroad, but new surveys have been undertaken to address these problems in the near future. Reinvested earnings and aid in the form of technical assistance are not measured. There are no sources for estimates of smuggling.	**Periodicity and timeliness** are better than recommended by the GDDS. **Consistency.** Data are consistent internally and over time. They are consistent with monetary data, but there are some minor differences with national accounts. **Revision policy and practice.** A consistent revision policy is practiced. Preliminary data are identified. Revision studies for each month are available on request, but not published.	**Data accessibility.** Data are available in several formats and released simultaneously on the NBRM website in Macedonian and English. Additional data are available on request. A release schedule has recently been added to the NBRM website. **Metadata accessibility.** Metadata are available on the NBRM website. **Assistance to users.** Contact points are provided in all publication formats. Prompt and knowledgeable assistance is provided. A list of publications is included on the NBRM website.
Scope. The scope of data follows *BPM5*, except that reinvested earnings are not included.			
Classification/sectorization generally follow *BPM5* principles.	**Assessment of source data.** There is a range of checks for internal consistency, comparisons with other sources, and routine queries of large transactions.		
Basis for recording. Valuation principles are suitable, being reasonable approximations of *BPM5* principles. The timing basis is generally according to time of payment, with adjustments to an accrual basis for a few major items. Goods are recorded at the time of customs clearance. Interest is recorded on a due-for-payment basis, instead of an accrual basis.	**Statistical techniques.** The quality of reported information is carefully assessed. The adjustment to derive imports f.o.b. is updated annually. Adjustments for some shortcomings in source data are not made. **Assessment and validation of intermediate data and statistical outputs** is undertaken rigorously at all stages. **Revision studies.** Revisions are carefully monitored and the causes investigated. Steps are taken to follow up on persistent problems. There have been no long-term studies of revision patterns.		

III. RECOMMENDATIONS

11.   Based on the review of FYR Macedonia's statistical practices, on discussions with the data-producing agencies and on responses from data users (summarized in Appendix III of the Detailed Assessments volume), the mission has a set of recommendations. They are designed to increase further FYR Macedonia's adherence to internationally accepted statistical practices and would, in the mission's view, enhance the analytical usefulness of FYR Macedonia's statistics. Some additional technical suggestions are included in the Detailed Assessments volume.

Cross-cutting recommendations

- Improve response rates for surveys by invoking the tools available under the statistical law.

- Give priority to the completion of the statistical register of businesses.

- Establish a well-defined revision policy that includes formal revision studies and their publication.

- Ensure consistency between GFS and monetary statistics by establishing formal procedures for regular review and reconciliation.

National Accounts

- Improve procedures for compiling GDP volume measures by production, particularly the estimates of value added by economic activity and taxes on products.

- Implement inventory valuation adjustments for GDP by expenditure and production.

- Revise data collection forms to expand the scope of production and capital formation estimates.

Price Indices

- Increase human resources devoted to price indices.

- Change the methodology for the application of the Laspeyres index formula so that long-term price changes are reflected in the weights when changes are made to the index reference period.

- Include exports in the coverage of the PPI.

- Add a recall component to the HBS diary survey to better capture expenditures on durable goods, rent, and other monthly household utilities in the CPI.

Government Finance Statistics

- Establish a formal plan to migrate in stages to the implementation of *GFSM 2001*.

- Compile and disseminate consolidated GFS for transactions and debt of central government and general government.

- Establish bridge tables linking the 2003 and 2004 national charts of accounts with *GFSM 2001* classifications.

Monetary Statistics

- Improve the institutional coverage of monetary statistics by including savings houses.

- Present separately all *MFSM*-recommended categories of financial assets in monetary statistics.

Balance of Payments Statistics

- In conjunction with the SSO, use surveys to better understand cash transactions through exchange bureaus.

- Incorporate the results of supplementary surveys covering known data gaps, such as reinvested earnings, selected netted transactions, and authorized accounts abroad.

Table 4. FYR Macedonia: Overview of Current Practices Regarding Coverage, Periodicity,
and Timeliness of Data Compared to the Recommendations of the GDDS

GDDS Data Category	Coverage (meets GDDS)	Periodicity		Timeliness	
		GDDS	FYR Macedonia	GDDS	FYR Macedonia
COMPREHENSIVE FRAMEWORK					
Real sector: National Accounts	Yes	A	A	10–14 months	15 months
Fiscal sector: Central govt. operations	No	A	M	6–9 months	6 months
General govt. operations	*No*	*A*	*NA*	*6–9 months*	*NA*
Central govt. debt	*No*	A	*M*	6–9 months	*6 months*
Financial sector: Depository Corporations Survey	Yes	M	M	2–3 months	1 month
External sector: Balance of payments	Yes	A	M	6–9 months	75 days
DATA CATEGORIES AND INDICATORS					
Real Sector					
National accounts aggregates:					
GDP (nominal and real)	Yes	A	A	6–9 months	11 months
Gross national income, capital formation, saving	*Yes*	*A*	*A*	*6–9 months*	*12 months*
Production index/indices					
Manufacturing or industrial production index/indices	Yes	M	M	6 weeks	25–28 days
Primary commodity, agricultural, or other indices, as relevant	No	As relevant	NA	3 months	NA
Price indices:					
Consumer price index	Yes	M	M	1–2 months	3 days
Producer price index	*Yes*	*M*	*M*	*1–2 months*	*10 days*
Labor market indicators:					
Employment	Yes	A	A	6–9 months	5 months
Unemployment	Yes	A	A	6–9 months	5 months
Wages/earnings (all sectors)	Yes	A	M	6–9 months	30–45 days
Fiscal Sector					
Central government aggregates:					
Central govt. budgetary aggregates: revenue, expenditure, balance, and financing with breakdowns (debt holder, instrument, currency)	Yes	Q	M	1 quarter	1 quarter
Interest payments	*Yes*	*Q*	*M*	*1 quarter*	*1 quarter*
Central government debt:					
Central govt. debt: domestic and foreign debt, as relevant, with appropriate breakdowns (debt holder, instrument, currency)	Yes (foreign debt only)	Q, A	M	1–2 qtrs	2 quarters
Government guaranteed debt	*No*	*A*	*NA*	*1–2 qtrs*	*NA*
Financial Sector					
Broad money and credit aggregates	Yes	M	M	1–3 months	1 month
Central bank aggregates	Yes	M	M	1–2 months	1 month
Interest rates:					
Short- and long-term govt. security rates, policy variable rate	Yes	M	D, M	1/	Yes
Money or interbank market rates and a range of deposit and lending rates	*Yes*	*M*	*D, M*	*1/*	*Yes*
Stock market:					
Share price index, as relevant	*Yes*	*M*	*D*	*1/*	*Yes*
External Sector					
Balance of payments aggregates	Yes	Q, A	M	6 months	75 days
Public and publicly guaranteed external debt outstanding, with maturity breakdown	Yes	Q	Q	1–2 qtrs	25 days
Public and publicly guaranteed debt service schedule	Yes	Twice yearly	M	3–6 months	25 days
Private external debt not publicly guaranteed	*Yes*	*A*	*M*	*6–9 months*	*45 days*
International reserves:					
Gross official reserves denominated in U.S. dollars	Yes	M	M	1–4 wks	45 days
Reserve-related liabilities	*No*	*M*	*NA*	*1–4 wks*	*NA*
Merchandise trade:					
Total exports and total imports	Yes	M	M	8 wks–3 months	30 days
Major commodity breakdowns with longer time lapse	*Yes*	*M*	*M*	*8 wks–3 months*	*30 days*
Exchange rates: spot rates	Yes	D	D	1/	Yes

Italics indicate encouraged categories.
1/ Dissemination as part of a high-frequency (e.g. monthly) publication.

INTERNATIONAL MONETARY FUND

FORMER YUGOSLAV REPUBLIC OF MACEDONIA

Report on the Observance of Standards and Codes (ROSC)

Response by the Authorities

September 16, 2004

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I. GENERAL REMARKS

The State Statistical Office of the Republic of Macedonia (SSO), Ministry of Finance (MOF) and National Bank of the Republic of Macedonia (NBRM) found that ROSC mission assessment of the Macedonian's macroeconomic statistical data confirm our intention to harmonize the standards and methodologies towards achieving good quality of the statistical data.

Appreciating the experience of using the DQAF for assessing quality of the statistical data, we share the view that achieving the good statistical practices are the most important for transition economies. Macedonian's main goal is to become a member country of EU and in this context we are working to improve our statistics as a part of reform in our policies to meet many requirements for EU accession.

As participant in GDDS, Macedonian authorities pay much attention to produce higher quality of the macroeconomic data as well as to improve the transparency in dissemination of statistics to meet user's needs.

Reacting to the summary and detailed assessment of macroeconomic data as result of the ROSC mission, Macedonian authorities share their general agreement with the Fund's findings.

A description of the mission's main recommendations and the authorities' implementation plans are detailed below.

II. ACTION PLAN FROM THE MACEDONIAN AUTHORITIES ON FUND STAFF PROPOSALS	
Cross-cutting recommendations	
Fund Staff Proposals	**Comments**
1. Improve response rates for surveys by invoking the tools available under the statistical law.	In order to improve the response rates for surveys and ensure the quality and relevance of the statistical data collected, the SSO will maximally use the available tools under statistical law especially with consistently applying the penalty prescriptions.
2. Give priority to the completion of the statistical register of businesses.	The one of the priorities in the SSO is already completion of the statistical register of businesses. The SSO has planned to complete it in the course of establishing the relations with structural business statistics and business demography. For achieving this action, additional staff has to be engaged.
3. Establish a well-defined revision policy that includes formal revision studies and their publication.	We agree to implement this recommendation with a view to bringing the current country practices closer to best international practices.
4. Ensure consistency between GFS and monetary statistics by establishing formal procedures for regular review and reconciliation.	Formal procedures for regular review and reconciliation of the two datasets is going to be established. Also, new classification of expenditure is prepared which is consistent with GFS 2001 and will be implemented in 2005. There is ongoing project for changing the revenue classification according to the GFS 2001. In the same time, the Law on Accounting will be amended. From the SSO point of view, identification of the transactions within the GFS is needed for the calculation of General Government Consumption and the set of accounts of the Government sector.

A. National Accounts	
Fund Staff Proposals	**State Statistical Office of the Republic of Macedonia (SSORM) Comments**
High priority	
1. Improve procedures for compiling GDP volume measures by production, particularly the estimates of value added by economic activity and taxes on products.	The SSO has started with improving the accuracy of GDP volume measures, by compiling the estimates at the more detailed level permitted by source data. The SSO has revised the series of volume measures of the wholesale and retail trade industries to be consistent with the method used for the compilations at current prices and volume measures of FISIM. Revised series of GDP annual volume measures for the period 1997-2003 will be published in 2005.
2. Identify production units belonging to multi-establishment enterprises to support the collection of data on transactions between establishments of the same enterprise on a gross basis.	The SSO will take into account the implementation of this recommendation. In the framework of the surveys that has been conducted within the Sector for National Accounts for this aim, have to be done appropriate changes and inclusion in the existing data warehouse. This will be in function of the forthcoming activities for establishing the regional accounts.
3. Implement inventory valuation adjustments for GDP by expenditure and production.	The methodology for calculation of changes in inventories at prices of previous year will be changed and the correspondent methodological revision of the estimates of changes in inventories at current prices will be done. In reality, data for inventories are taken from the annual financial reports (aggregation by type and stage of processing). The more appropriate data for branch statistics could be obtain from structure statistics when they will be developed, in order to implement inventory valuation adjustments.

4.	Improve business survey data. This requires completing the statistical register of business, improving techniques of sample selection, and improving estimation methods to estimate the target population of the surveys.	We agree with this recommendation giving priority in improving the business survey data and techniques of sample selection, also having in mind the good cooperation in exchanging the source data among the SSO, NBRM and MOF and applying the international methodological recommendations and their changes.
5.	Revise data collection forms to expand the scope of production and capital formation estimates.	The SSO will revise data collection forms to expand the scope of production. The SSO will make efforts to collect data on defense - related capital goods in order to include them in capital formation estimates -some contacts have been made with institutions. In the existing questionnaire, there is an item for investment in non tangible assets "investment for production of artistically products" – annually. Items for valuables like monuments we will put in the questionnaire and check other existing sources more appropriate (enterprises, budget institution data or additionally available data in BOP or branch statistics or HBS). This action SSO is planning to conduct during the 2005.
Lower priority		
6.	Provide the metadata for national accounts on the SSO's website.	Proposal will be taken into account.

B. Price Indices

Fund Staff Proposals	State Statistical Office of the Republic of Macedonia (SSORM) Comments
High priority	
1. Increase human resources devoted to price indices.	As the implementation of the proposal requires additional funds and there is a Government intention for decreasing of public administration employees, it seems in the time being this recommendation is not applicable.
2. Change the methodology for the application of the Laspeyres index formula so that long-term price changes are reflected in the weights when changes are made to the index reference period.	The SSO is planning to implement this recommendation. If the base price is changed every year weight have to be revised with price change for the same year. For CPI SSO is planning to harmonize reference period both for weights derived from HBS and CPI.
High priority	
3. Include exports in the coverage of the PPI.	If the export were included in the index, than it would be the different type of PPI. In the methodology there are several types of indices depend of coverage. It means coverage domestic market only, import or export. SSO has currently survey of the unit value index of export and import and in the future plan will be established as import and export price indices.
4. Add a recall component to the HBS diary survey to better capture expenditures on durable goods, rent, and other monthly household utilities in the CPI.	The SSO will consider recommendation concerning imputed rents for owner-occupied dwellings but expert support is needed .The SSO will also consider adding a recall module for purchases of certain durable goods and monthly expenditures with next HBS revision.

	Lower priority	
5.	Implement procedures for introducing new products into the index between the five-year index revisions.	With the new weights structure (January 2005) SSO consider revising the method of replace products. However there is a practice to replace old fashion products with new one between the five year index revisions
6.	Calculate the weight for automobile purchases in the CPI market basket as the total value of purchases less sales and make the necessary changes to the HBS questionnaire in order to obtain data for making this calculation.	At the present time it is difficult to do this calculation because there is no available data about sale of second- hand cars.
7.	Modify the dissemination format for the Price indices to better present the long-term behavior of the index. The presentation should include both tables and graphs.	According the current SSO dissemination policy, all statistical reports should be revised in order to include more information like graphs and different kind of tables.
8.	Formally make known to the public the prior access to the CPI and PPI by the Prime Minister and the Minister of Finance.	The SSO will consider announcing the users in order to inform them for the prior access to the CPI and PPI by the Prime Minister and Minister of Finance.

C. Balance of Payments Statistics

Fund Staff Proposals	**NBRM Comments**
High priority	
1. In conjunction with the SSO, use surveys to better understand cash transactions through exchange bureaus.	NBRM will consider this recommendation. On the basis of the results from the analysis of the data provided by different data sources from the NBRM and SSO, which can be discussed with the IMF technical mission (planed for the end of 2004 or beginning of 2005), we can consider the possibility for changing the current methodology for compiling current account.

2.	Incorporate the results of supplementary surveys covering known data gaps, such as reinvested earnings, selected netted transactions, and authorized accounts abroad.	The results from supplementary surveys (selected netted transactions and authorized accounts abroad) are going to be incorporated in the BOP data, as soon as possible, after cross-checking of the quality of this data with other data sources. After dissemination of the data from the annual DI survey, and resolving the methodological issues on monthly interpolation and extrapolation of the data, NBRM is going to incorporate the data for reinvested earnings in the BOP.
Lower priority		
3.	Modify legislation or procedures to facilitate the prosecution of those who refuse to cooperate in supplying data for surveys.	NBRM took an initiative for amendments to the Law on Infractions, which calls for introduction of mandatory penalties for the residents failing to report on time or failing to report at all.
4.	Consider publicly stating the NBRM release policy; in particular, the policy should state that there is no advance internal government access.	
5.	Develop a policy to give advance notice of major changes in methodology. Apply this policy when the results of the new surveys are incorporated in the balance of payments statistics.	Proposals will be taken into account. In order to achieve better transparency NBRM is going to introduce these proposals as soon as possible.
6.	Document and publicly state the existing revisions policy.	
7.	Make the more detailed quantification and explanations of revisions publicly available on the NBRM website.	
8.	Document the policy on release of data to all users at the same time on the NBRM website.	

D. Monetary Statistics	
Fund Staff Proposals	**NBRM Comments**
High priority	
1. Improve the institutional coverage of monetary statistics by including saving houses.	National Bank of the Republic of Macedonia (NBRM) collects data from saving houses, but these data are not included in the Monetary survey of the banking system. According to GDDS - Plans for improvement for the Republic of Macedonia, this will be done in a medium-term.
2. Present separately all MFSM-recommended categories of financial assets in monetary statistics.	NBRM classification of Financial assets is broadly consistent with MFSM recommendation. Certain assets NBRM has separately shown in the balance sheets, but for internal purpose only. In future, these data will be shown in balance sheet that is published in the Bulletin and on the web-site.
Lower priority	
3. Revalue nontraded securities held by the banking sector, using estimated fair value.	Regarding valuation of financial assets, according to MFSM, all assets should be recorded at market or fair value. In our recording, all securities are valued at fair value, except one security - Long-term security issued by the Bank Rehabilitation Agency, which is recorded at book value. In NBRM accounting, securities held to maturity are recorded according to IAS (International accounting standards), where securities held to maturity are initially recognized at cost and are carried at amortized cost. In our accounting, securities held to maturity are recorded according to IAS 39, except this security. By end of 2004 we intend to make appropriate discounting of this security.

4.	The NBRM, in coordination with the MOF, should establish formal procedures for reviewing regularly the consistency of monetary data with corresponding measures in the GFS dataset and for investigating sources of any discrepancies, leading to full reconciliation of the two datasets.	Being aware that for the quality of the statistics, data from NBRM and Ministry of Finance (MOF) should be consistent, NBRM is cooperating with MOF for monetary statistics data. As a next step, formal procedure for regular review and reconciliation of the two datasets is going to be established.
5.	Establish procedures for systematic documentation of revision studies and analyses and publish the results.	The proposal will be taken into account. NBRM is going to establish and publish formal revision policy, and according to this policy the results of revision studies and analyses will be prepared and published. In monetary statistics only in very few cases preliminary data are different from final data.

E.   Government Finance Statistics

Fund Staff Proposals	Ministry of Finance of the Republic of Macedonia (MOF) - Comments
High priority	
1. Establish a formal plan to migrate in stages to the implementation of GFSM 2001.	These are ongoing activities. New classification of expenditure is already prepared, which is consistent with GFSM 2001 and will be implemented in 2005. Also, there is ongoing project for changing the revenue classification according to GFSM 2001. In the same time, the Law on Accounting will be amended.
2. Compile and disseminate consolidated GFS for transactions and debt of central government and general government.	We accept this recommendation. At the moment, the data on public debt are decentralized in several institutions. There is ongoing project for consolidation of data within the MOF in the Debt Management Unit, which is planned to become Debt Management Department. After completing the implementation of centralized database and the software, the Division/Department will disseminate consolidated GFS data.

3.	Establish bridge tables linking the 2003 and 2004 national charts of accounts with GFSM 2001 classifications.	There are ongoing activities for preparation of bridge tables.
Lower priority		
4.	Enhance staffing levels and training for the Treasury to permit a process of adequate and improved compilation of consolidated GFS on central government and general government stocks and flows in accord with GFSM 2001, and enhance computing system to automatically compile data in conformity with GFSM 2001.	These are ongoing activities.
5.	Establish a documented plan to migrate in stages to the implementation of GFSM 2001.	We accept this recommendation.
Lower priority		
6.	Establish, perhaps for 2005, a national chart of accounts for all general government sub sectors that aligns substantially more closely with GFSM 2001 classifications.	These are ongoing activities.
7.	Document and utilize bridge tables linking 2003 and 2004 national charts of accounts with GFSM 2001 classifications.	We accept this recommendation.
8.	Identify data revisions, explain revisions, and disseminate information summaries of studies on revisions, in a manner easily accessible by users.	We accept this recommendation.
9.	Disseminate an advance calendar with a schedule identifying the dates on which fiscal data, in publications and websites, are to be released.	We accept this recommendation.
10.	Publish a catalogue or brochure of publications, documents, websites, and other services to users of fiscal data.	We accept this recommendation.

INTERNATIONAL MONETARY FUND

FORMER YUGOSLAV REPUBLIC OF MACEDONIA

**Detailed Assessments Using the Data Quality Assessment Framework
(DQAF July 2003)**

Prepared by the Statistics Department

Approved by Robert W. Edwards and Michael Deppler

September 16, 2004

This document contains a detailed assessment by dataset of the elements and
indicators that underlie the data quality dimensions discussed in FYR
Macedonia's Report on the Observance of Standards and Codes (ROSC)—
Data Module. It also includes as appendices the DQAF generic framework and
the results of the users' survey.

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ACRONYMS

1995 ESA	*European System of Accounts 1995*
1993 SNA	*System of National Accounts 1993*
BPM5	*Balance of Payments Statistics Manual*, fifth edition
CPA	Classification of Products by Activity
CPI	Consumer Price Index
COFOG	Classification of Functions of Government
COICOP	Classification of Individual Consumption by Purpose
DQAF	Data Quality Assessment Framework, July 2003 version
DSBB	Dissemination Standards Bulletin Board
EUROSTAT	Statistical Office of the European Communities
GDDS	General Data Dissemination System
GDP	Gross Domestic Product
GFS	Government Finance Statistics
GFSM 1986	*A Manual on Government Finance Statistics*, 1986
GFSM 2001	*Government Financial Statistics Manual 2001*
HBS	Household Budget Survey
IMF	International Monetary Fund
MFSM	*Monetary and Financial Statistics Manual*
MOF	Ministry of Finance
NACE	Statistical Classification of Economic Activities in the European Communities
NAD	National Accounts Department
NBRM	National Bank of the Republic of Macedonia
PPI	Producer Price Index
PRODCOM	List of Products of the European Communities
ROSC	Report on the Observance of Standards and Codes
RM	Republic of Macedonia
RPI	Retail Price Index
SSO	State Statistical Office

DETAILED ASSESSMENT USING THE DATA QUALITY ASSESSMENT FRAMEWORK (DQAF)

The following detailed information on indicators of statistical practices in the areas of national accounts, prices, government finance, money and banking, and balance of payments statistics was gathered from publicly available documents and information provided by the Macedonian officials. This information, which is organized along the lines of the generic DQAF (see Appendix II), was used to prepare the summary assessment of data quality elements, based on a four-part scale of observance, shown in FYR Macedonia's Report on the Observance of Standards and Codes (ROSC)—Data Module.

I. NATIONAL ACCOUNTS

0. Prerequisites of quality

0.1 *Legal and institutional environment*

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

The national accounts statistics of FYR Macedonia are compiled and disseminated by the State Statistical Office (SSO). The main legal basis for the compilation of the official statistics of the country is the Act on the State Statistics adopted by Parliament in 1997 and published in the *Official Gazette* No. 54/97. This legal instrument assigns to the SSO a leadership role in the compilation of the statistics. The responsibility of the SSO for the compilation of national accounts statistics is clearly defined in the "Programme of Statistical Research," which according to the law is prepared by the SSO under the guidance of the Statistical Council of the Republic of Macedonia and submitted for approval to the government. This program lists all the official statistics to be compiled by the SSO and the other authorized bodies.

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

Coordination of system-wide statistical plans is based on a five-year annual statistical plan, the "Programme of Statistical Research for the period 2003–2007." It specifies the data sources for each one of the statistics, as well as the deadlines for the provision of the data to the compiler agency. Furthermore, there is great cooperation between agencies on the timely provision of data for compilation of national accounts—mainly administrative data from the Central Register Office, the Tax Revenue Office, and other departments of the Ministry of Finance (MOF). Other data needed for the compilation of national accounts, including the balance of payments and data on the execution of the general government's budget, are received in a timely manner from the central bank and the MOF, respectively.

SSO maintains close contacts with other data-producing institutions to discuss and agree on new requirements of data. For example, additional information required for statistical purposes is normally added to administrative sources. This is the case of the financial

statements of enterprises that all legal entities are obliged to submit to the Central State Register, which include a statistical questionnaire to satisfy the needs of national accounts compilation. These statements are electronically transferred to the SSO.

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

The Act on the State Statistics, drafted with the technical assistance of the Statistical Office of the European Communities (EUROSTAT) and the statistical offices of Denmark and Switzerland, contains clear provisions guaranteeing the confidentiality of the data provided to the SSO and other authorized statistical agencies. Article 35 of this law states that "individual data to be collected, processed, and released for statistical purposes shall be utilized for statistical purposes only." Individual data may be disclosed only with a written agreement.

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

Article 3 of the Act on the State Statistics defines who shall report to the statistical agencies. Article 26 of this legal instrument states that "the reporting units shall provide the SSO with statistical data set up in compliance with the Law and with the Programme of Statistical Research, free of charge."

Article 54 of the Law establishes high penalties that may be imposed on reporting units that fail to comply with providing data to the SSO and other authorized bodies. Fines are prescribed for both the reporting institution and the person responsible in the reporting unit for providing the data. Reporting to the SSO has become of significant concern, as the response rate among private sector enterprises to surveys is low, while the share of the private sector in economic activity is on the rise. Thus, maintaining an adequate coverage of the surveys has become more difficult as compared with previous years when production was more concentrated in large public-owned enterprises.

Notwithstanding the failures to report, the SSO relies on the good will of respondents to obtain the information rather than enforcing the law; until now there have been no cases where penalties have been applied. To increase awareness and motivation to collaborate with the statistical work, the SSO encourages respondents to provide the information. The SSO sends letters to the reporting units informing them of the purposes of the statistical research for which their data is needed.

0.2   Resources

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

Eighteen staff members work in the National Accounts Department (NAD) at present. The current staffing is considered adequate for the actual workload of the department, although

additional staff will be required for implementing a planned extended program of national accounts. The program will include, among other things, the compilation of quarterly GDP estimates by expenditure, quarterly GDP estimates by production at current prices, and supply and use tables. Although three additional staff members are being authorized for the NAD, these may not be enough to properly cover the planned work program.

Most of the NAD staff members are qualified economists with experience in the field of national accounts. Training in national accounts concepts and methodology is provided on-the-job basis as well as in courses and seminars organized by international organizations, including the IMF in Vienna and in Washington, D.C. Internal seminars are being conducted in computing and in English language skills. Many NAD staff have been working in the department or in other units of the SSO for reasonably long periods, although some key employees have left the institution in recent years for higher salaries in the private sector. The comparatively low salaries in the public sector may be a deterrent to recruiting and retaining young professionals.

Computing resources are adequate in terms of hardware and software for data processing and dissemination of national accounts statistics. All staff have the latest generation of personal computers available for working in an intranet network environment, with e-mail access for everyone. Data is properly protected by restricted access to the databases through authorized user names and passwords. Emergency daily backups are made and kept on magnetic tapes, properly safeguarded in the SSO facilities.

Access to the SSO building is restricted to authorized persons only. The building and equipment provide the necessary facilities to perform the work.

The SSO activity is mainly funded by the State Budget, and sufficient funds are made available to perform the tasks established in the annual statistical program. Budgetary reviews are made during the year to consider new tasks not projected at the time of the budget preparation.

0.2.2   Measures to ensure efficient use of resources are implemented

All staff prepare weekly reports about work performed. The SSO plans to introduce regular work performance reviews of the staff every six months in the current year. Choices for data sources are made with a view to their cost effectiveness. Thus, for example, intensive use is made of administrative data sources adapted to fit the needs of the statistical work through interinstitutional agreements. Surveys are also designed with consideration of their cost efficiency.

The SSO uses consistent concepts, definitions, and classifications for all the statistics it produces and encourages the other statistical entities to use the same classifications. Furthermore, the Statistics Law establishes that the SSO has among its functions the prescription, development, and harmonization of the methodological bases of the statistical work. Article 15 of the Act on the State Statistics states that the SSO is obliged to issue its

opinion concerning the methodology suggested by any authorized statistical entity. Furthermore, the Law requires that unified standard classifications and nomenclatures be used. In accordance with the Law, these standards are published in the *Official Gazette* of the Republic of Macedonia.

The SSO has sought outside expertise to evaluate the statistical methodologies and compilation systems used for compiling national accounts. A special evaluation report was prepared by an external expert commissioned by EUROSTAT in 2001. The SSO has also prepared self-assessment reports, and submitted them to EUROSTAT, with whom the agency has close working relations in adopting the statistical standards of the European Union.

The SSO does not employ cost accounting procedures to measure the actual resources used in compiling national accounts, although the allocation of resources to this program is done through the budget, following detailed budgetary processes.

0.3 Relevance

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

The SSO monitors users' needs using different instruments. It invites users to comment on the statistics through its website, and its Information Department processes their responses to inform management. Although there is not an established schedule for meetings with users, the NAD conducts occasional meetings with users to discuss the national accounts statistics program. The Information Department also obtains a sense of users' needs by analyzing requests of data to the institutional library. The SSO also obtains updates on international standards on providing national accounts to the public through its participation in statistical meetings and seminars organized by international organizations, particularly EUROSTAT.

0.4 Other quality management

0.4.1 Processes are in place to focus on quality

Management is highly committed to quality of the statistical products. Recent initiatives are the participation in the IMF's General Data Dissemination Standards and in the Data module ROSC. The authorities have requested technical assistance from the Fund for the improvement of the quarterly data on GDP estimates. External evaluations of the statistics have been performed by EUROSTAT in 2000. The staff is aware of the importance of quality, which is also emphasized during internal training.

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

Response rates to the statistical surveys are under scrutiny, and measures are taken for its improvement. Records of revisions history of national accounts are kept and used to inform the compilation processes.

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

The SSO monitors the quality of its surveys and takes measures to improve the quality of the results; thus, it has recently increased the sample size of the quarterly survey on enterprises for the compilation of the quarterly national accounts.

Recommendation: The SSO should improve the response rates for surveys by invoking available tools within the statistical law.

1.   Assurances of integrity

1.1   Professionalism

1.1.1   Statistics are produced on an impartial basis

The Act on State Statistics states that the SSO is an independent professional administrative organization with its own legal status. No external agencies have interfere in the compilation or dissemination of the data produced by the SSO. Although the head of the SSO is appointed by the government, this position has been filled by a professionally qualified person selected from inside the institution.

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

Only statistical considerations are taken into account when choosing sources of data and statistical techniques as well as deciding about dissemination of the data. In principle, the timing of data dissemination follows statistical international standards although a slight delay in dissemination occurred in 2003 with respect to the national accounts for 2002.

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

The SSO seeks to prevent misinterpretation or misuse of the statistics by providing explanatory notes in its press releases, publications, and website, and by meeting with users. The institution is entitled to react to misuse or misinterpretation of its data, and it usually does so through the Information Department in the form of letters to the users or meetings with the press.

1.2 Transparency

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

References to the Act on State Statistics are provided in the questionnaires employed by the SSO in its data collection program. The complete text of the Act is reproduced in Macedonian and in English on the SSO's website. The specialized publications on national accounts issued by the SSO contain the list of other publications available on the subject as well as information on how to obtain them.

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

There is no internal government access to national accounts statistics prior to their release to the public.

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

All publications of the SSO are clearly identified by the name and logo of the institution. The SSO publications always state the source of the data published. The institution requests attribution when its data are reproduced by others.

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

Usually there are no advance notices of major changes in the data, but at the time of publication explanatory notes are provided. Nevertheless, main users of data are invited to discuss the changes in methodology before its implementation.

1.3 Ethical standards

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

Guidelines and standards for staff behavior are posted on the intranet of the SSO. Furthermore, SSO staff members, as public servants, have to adhere to the norms of conduct as provided by the Law on Civil Servants.

2. Methodological soundness

2.1 Concepts and definitions

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

Macedonia's national accounts statistics are compiled following the conceptual framework of the *European System of Accounts 1995* (*1995 ESA*). First estimates of national accounts, replacing the previous data based on the material product system, were introduced starting with data of 1990 using the *System of National Accounts 1993* (*1993 SNA*).

2.2 Scope

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

National accounts statistics of Macedonia cover all the tables and accounts that the International Secretariat Working Group on National Accounts (ISWGNA) determined as a minimum requirement, and, therefore, the statistics meet the data coverage recommended by the IMF for countries participating in the GDDS. Moreover, the accounts also include quarterly estimates of GDP at constant prices by production. Work is also under way to compile GDP quarterly estimates at current prices using the production account and quarterly GDP by expenditure both at current and at constant prices.

Annual data on national accounts are available for the following series:

- Annual value added and GDP at current and at constant prices by activity for the period 1990–2002.

- Annual expenditures on GDP at current and at constant prices for the period 1990–2002.

- Annual value-added components at current prices by activity for the period 1997–2002.

- Sequence of accounts (up to the financial accounts) for the total economy and by sector (including the external sector) since 1994. Although data by institutional sector are available up to the year 2002, these estimates have been published only up to 1996, being the data of more recent years considered as preliminary and not apt for publication yet.

- Quarterly GDP estimates at constant prices by economic activity. Data are available for the period 1997 up to the third quarter of 2003. The chainlink reference period is 1997.

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The delimitation of the constituent units of the economy is in accordance with international standards. Workers who work less than a year in another country are included as residents. A few discrepancies exist with the international standards in regards to production boundary. All own-account production for own-final consumption of agriculture products is included, as prescribed in the international standards. Own construction and repairs of dwellings are also included in production, although expenditures on research and development conducted by the enterprises themselves are not identified from the data sources, and as such they are not recorded as output. Mineral exploration, production of computer software, and entertainment, literary, and artistic originals are included in the production boundary. No illegal activities are included in the national accounts of Macedonia.

Owing to the lack of detailed data sources, defense-related capital goods that could be used for civilian purposes are not identified.

2.3 Classification/sectorization

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

Macedonian national accounts follow most of the international standards classifications. Institutional units, transactions, and other flows are in accordance with the *1995 ESA*. The Classification of Products by Activity (CPA) is used in the classification of products and the Classification of Individual Consumption by Purpose (COICOP) is used to classify household consumption. The Classification of Functions of Government (COFOG) has not yet been implemented for the classification of general government expenditures.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks

Market prices are used to evaluate flows and stocks in the Macedonian national accounts. Output is valued at basic prices, and intermediate consumption is valued at purchase prices excluding the deductible part of the value-added taxes. Total exports and imports are valued on an f.o.b. basis. Transactions in foreign currency are converted to the national currency using the daily average exchange rate at the time they take place.

2.4.2 Recording is done on an accrual basis

With the exception of general government income and expenditure, recording of all transactions is done on an accrual basis. Source data for government are on a cash basis, and no adjustments are made at present for their conversion to an accrual basis for national accounts compilation purposes. Some adjustments to the cash basis of recording for a partial conversion to an accrual basis are being made experimentally by the compilers for further improvements of the statistics in meeting international standards.

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

Transactions between establishments within the same enterprise are deemed to be recorded net, since the main data source for the compilation of GDP is the financial statements of enterprises, not the data of establishments.

Recommendation 1: Revise data collection forms to obtain the necessary data to expand the scope of production and capital formation estimates.

Recommendation 2: Identify production units belonging to multi-establishment enterprises to support the collection of data on transactions between establishments of the same enterprise on a gross basis.

3. Accuracy and reliability

3.1 Source data

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

Compilers of national accounts statistics in Macedonia use a wide range of data sources in compiling the estimates. The SSO has a regular program with monthly, quarterly, and annual surveys covering a range of economic activities. These surveys collect data in monetary terms as well as data on quantities for numerous variables (production, inputs, inventories, number of employees, etc.). These data are processed and disseminated in the form of indices and/or absolute values (usually sample values rather than estimates for the target population). For some of the survey data, the lack of sufficient coverage (partly due to low response rates) has limited its usefulness. Compilers then use it only as alternative source data, mainly for validating the estimates. In practice, most of the compilation of national accounts estimates at current prices, and particularly GDP, relies on financial statements of enterprises obtained from administrative databases.

A good register of households, based on the Population and Housing Census, constitutes the basis for selecting representative samples for the labor and income and expenditure surveys conducted by the SSO. However, no satisfactory statistical register exists of enterprises or establishments. Work on a statistical register is in progress. In the meantime, for selecting business respondents and checking for the exhaustiveness of the data collected from enterprises, the SSO maintains a business register based on administrative records. The business register is based on information obtained through the Central Register Office, which keeps records of all legal entities. In accordance with the law, all operating enterprises and those legal entities requesting a license to initiate operations must register with the SSO, providing identification details. These include the classification of economic activity at the 5–digit level of the Statistical Classification of Economic Activities in the European Communities (NACE).

Other administrative registers used in the compilation of national accounts are those maintained by the tax revenue office, the pension fund, and the health fund. Staff obtain information from these on the number of employed persons contributing to these funds, as well as information on taxes and contributions.

Most of the samples used in the business statistics surveys of the SSO are of a cut-off type, that is, care is being taken to obtain a reasonable coverage. But, as mentioned above, the response rate to these surveys is not satisfactory. Among the surveys conducted by the SSO are the mining, manufacturing, and electricity survey (conducted monthly, quarterly, and annually), the monthly and quarterly surveys on internal trade, the construction survey, the transport survey, the hotel and restaurant survey, and the agriculture survey. Monthly surveys on establishments also provide data on employment and wages and salaries by industrial activity.

From the monthly mining, manufacturing, and electricity survey, which is based on a sample of about 540 establishments, statistics are compiled and published in the form of indices for production, employment, and inventories of finished goods, and quantities produced of selected products. The annual survey of this group of economic activities is based on a larger sample including about 850 establishments. This survey collects data on production, sales, inventories, employment, wages, and salaries, as well as detailed data on intermediate consumption. Results from this survey are not widely disseminated but are mainly used internally in the SSO.

The monthly survey on internal trade provides statistics in the form of values and indices for the retail and wholesale trade on turnover and employment. Quarterly surveys for internal trade are based on a larger sample, although the statistics produced are the same as for the monthly survey. The monthly survey of catering trade and services (restaurants and hotels) provides statistics on turnover by type of service in the form of value and indices. Many different physical indicators are given as results of the transport surveys by type of service.

As mentioned before in this report, the main source data for the compilation of the annual national accounts are the financial statements of all operating legal units that, according to the law, are obliged to provide them to the Central Register Office. These financial statements are electronically transmitted to the SSO. One of the advantages of this source data over the statistics surveys is its comprehensiveness, since all the corporate sector, including each government unit and the nonprofit institutions, are obliged to submit their financial statements. Furthermore, the enterprises must fill out a questionnaire for statistical purposes, which is part of the financial statements. The data collected through these means are sufficiently detailed to derive estimates for the complete sequence of accounts for the corporate sector of the economy and for the general government and the nonprofit institutions. The data for government cover the extrabudgetary funds, local governments, capital stocks, and all defense-related expenditures, although the latter are not provided with sufficient breakdown to distinguish between capital formation and military expenses.

Annual estimates of household income and expenditure are available, based on a regular household survey conducted by the SSO. The survey is based on a random two-stage stratified sampling method. The sample includes 5,000 units selected from an updated sampling framework based on the results of the 1994 housing and population survey. Coverage of the survey is comprehensive, including all residents at the national level.

Price indices compiled by the SSO and used for the calculation of national accounts at constant prices are the monthly producer price index (PPI) and the consumer price index (CPI). The PPI provides indices at the 2–digit level of the industrial classification (NACE, rev. 1) and uses the same concept of basic prices employed in the valuation of output in national accounts. The CPI represents the consumption expenditures at the national level for all income groups of the population—urban and rural. The concept of price used in the CPI is the same as the price used in national accounts for the valuation of household consumption expenditures, that is, the purchasers' price.

The SSO compiles detailed monthly statistics on foreign trade based on customs documents. Also, quarterly unit value indices of exports and imports are compiled (monthly indices are compiled but only published at the time the annual data are available). The detailed data of the balance of payments are available quarterly from the central bank. It should be mentioned that the central bank also processes the information of trade from customs documents to produce foreign trade statistics, which differs slightly from the respective statistics of the SSO. National accounts compilers use the data of the balance of payments in the compilation of national accounts, except for the travel item for which the SSO makes an upward adjustment on exports.

The SSO department of national accounts has been conducting a quarterly survey of enterprises for the last three years as the basis for implementing, shortly, calculations of quarterly GDP by activity at current prices. This survey is based on a sample that covered 80 percent of value added, although nonresponse is still high. The sample includes with certainty all enterprises with more than 14 employees as well as a random sample of small enterprises. The household income and expenditure survey provides quarterly estimates since 2002.

The compilers of national accounts maintain close contact with the business community through the Chamber of Commerce in whose meetings they participate. They also hold formal and informal meetings with a large range of users and data providers to explain the national accounts program and to follow up on new developments that need to be taken into account in the compilation of the statistics. An example of such meetings is a seminar conducted by the SSO in 2003 to discuss the statistical program; the seminar was attended by more than 70 participants representing all areas of the economy.

Also, the press is continuously monitored for information on new activities that should be included in the national accounts compilation system. Changes in administrative procedures that can affect the statistics are discussed with the supplying agencies, and solutions are adopted to assure the continuity of data supply. In fact, there is a very good degree of

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cooperation with public institutions that provide data for national accounts, particularly the MOF, the central register office, and the central bank.

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

In general, source data are consistent with the definitions, scope, and classifications of national accounts statistics. A discrepancy exists between the units of observation of the data used to compile the production accounts and the required statistical unit needed for the compilation of production by economic activity. For practical reasons, the data available for the compilation of the production accounts are the financial reports of the enterprises and not data from establishments. Therefore, the classification of value added by economic activity is done by the main activity of the institutional units and not by establishments. Minor adjustments are needed to the data on compensation of employees and expenditures on production from the financial reports in order to align them with the definitions used in national accounts.

Data collected cover all economic activities. In total, about 90 percent of total value added is produced by the corporate sector, which is fully covered by the data sources. The coverage is good for each economic activity at the 5–digit level of the industrial classification.

3.1.3 *Source data are timely*

All source data are collected and processed in a timely fashion to meet the timeliness and periodicity requirements of the annual national accounts estimates. Deadlines for the provision of source data by other units of the statistical system, including other units of the SSO, needed for the compilation of national accounts are clearly stipulated in the statistical program. As for the compilation of quarterly GDP at current prices, late returns to the quarterly survey do compromise the timeliness of these estimates.

3.2 **Assessment of source data**

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*

Sampling errors are calculated at a detailed level of the estimates for the household survey and other surveys based on random sampling methods. The coverage of the data is under scrutiny for all surveys conducted by the SSO, and remedies are taken to improve their representativeness, usually by extending the size of the samples and making efforts to obtain late responses. Staff apply logical and mathematical procedures to raw data to identify outliers. The contact respondents to the surveys to obtain clarifications on the data, as needed. Source data are analyzed to correct for underreporting and misreporting, particularly by checking temporal consistency and other related source data. Thus, financial reports data

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on wages and salaries are corrected for underreporting by comparing the respective data obtained from the labor survey.

3.3 *Statistical techniques*

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

Compilation procedures have integrated automatic processes to check for consistency of the source data at the individual level of the financial reports. Outliers identified when processing the data from financial reports of the enterprises are verified with the central register office for possible errors of data input. Staff also validate source data by consistency checks at different levels of aggregation of the data, comparing them with other alternative source data.

Staff use appropriate procedures for making adjustments for missing observations in the surveys of the SSO. Grossing-up factors for surveys based on random samples are scientifically derived from the sample design.

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

Adjustments for the unobserved economic activity (the economic activity of units not included in the reporting system) use adequate procedures and available source data mostly related to the estimated variables. Estimates for the nonobserved economic activity are explicitly published in the SSO publications on national accounts. In 2001 the imputations for informal activities of the unincorporated sector and the adjustments for underreporting for the corporate sector represented 18.4 percent of total value added of the economy, equivalent to 14.9 percent of GDP. A breakdown of this adjustment shows that for the informal activities of the unincorporated sector it was 4.6 percent and for undervaluation/underreporting of the nonfinancial corporate sector 10.2 percent.

Estimates for the economic activity of the unincorporated sector are made for each relevant industry (it is not necessary in agriculture since the unincorporated agriculture sector is covered in the source data). To do so, staff multiply the estimated number of employed persons (in the household unincorporated sector plus those self-employed reporting to the tax authority but not producing financial statements) by the average value of the estimated variables per employed person in the small enterprises of the corporate sector for the same economic activity. Staff estimate the number of employees at the 2–digit level of the industrial classification by analyzing the data on the total number of employed persons derived from the labor force survey. They also analyze the numbers of employed reported in the financial statements of the enterprises plus those self-employed reporting to the tax authorities (revenue office of the MOF).

Estimates for underreporting in the nonfinancial corporate sector are done by comparing the average wages and salaries of employees in the financial reports with the corresponding

figures derived from the monthly business surveys conducted by the SSO. The differences in wages and salaries per employee are multiplied by the number of employees reported by the enterprises. The result is added to compensation of employees and to value added, with a corresponding decrease in the estimate of intermediate consumption. About 50 percent of the total adjustment for underreporting falls in the wholesale and retail trade services.

Production approach

Annual estimates of output at current prices for the corporate sector are made at the detailed level of each enterprise and for products in the case of agriculture. Similarly, estimates of intermediate consumption at current prices for the corporate sector are calculated at the detailed level of the enterprises. The reliance on fixed ratios in deriving the estimates is very low, since all components of the production account at current prices are obtained year by year from the financial reports. The reliance on obsolete fixed ratios for the estimates of volume measures is insignificant even when a single indicator method is used, since estimates are calculated at prices of previous year.

The estimates of the imputed rents for owner-occupied dwellings are based on a cost approach as the sum of estimated values of consumption of fixed capital, intermediate consumption, taxes on production and operating surplus. These estimates are obtained applying fixed ratios of a benchmark estimate to the total average value of the stock of dwellings. The latter is obtained based on the data of the last census of housing and population updated by prices and by the net quantities of housing units added to the stock (based on construction statistics). An asset lifespan of 55 years is assumed in the estimate of consumption of fixed capital.

No inventory valuation adjustment is made to the book value change of inventories in the calculations of output, which is derived from the financial statement of enterprises as the sum of sales and changes in inventories. Likewise, no adjustments for holding gains are made for the calculations of intermediate consumption.

Consumption of fixed capital is obtained from the financial reports of the enterprises. No revaluation adjustments are made to these data that, according to the compilers, represent market replacement prices. However, revaluation adjustments are made to the reported value of capital stock and consumption of fixed capital reported by the government units.

The staff use a single indicator method to compile volume measures of GDP. In general, the volume measure estimates are compiled at the 2–digit level of the industrial classification. Previous year's value estimates are extrapolated by volume or physical indicators to obtain the volume estimates for current year estimates. For manufacturing activities not covered by the industrial production indices or if volume indices for some manufacturing activities are not reliable, value added is directly deflated by the producer price index of the respective activity. The latter practice is not recommended because it has implicit the unrealistic assumption that there are no changes in the relative prices of outputs and inputs. More appropriate would be the derivation of volume indices of output by deflation of the respective

data at current prices and the application of these indices to the extrapolation of value added of the previous year.

Volume measures of economic activity do not include comprehensive volume measure estimates for output and inputs. The lack of these estimates does not allow for a more comprehensive consistency check of input-output coefficients and implicit deflators.

The volume measures of net taxes on products are obtained by assuming they have the same growth rate as total value added in the economy. This practice is not recommended because volume changes in taxes depend on the tax base of the current year as well as the tax rates applied in the base years So an appropriate procedure would be to extrapolate at detailed levels taxes of the previous year by volume measures of the tax base, or the equivalent, by applying the tax rates of the previous year to the volume measures of the tax base for the current year. Custom duties volume measures are obtained by extrapolating the previous year estimates by the volume growth rate of total imports. More accurate estimates could be obtained instead by applying the same procedure at the detailed level of imports.

No volume measure estimates of trade margins are compiled; instead, the value added of wholesale trade is deflated by the wholesale price index and the value added of the retail trade is deflated by the retail price index. Appropriate techniques require estimating the trade margins of the industry in volume terms by extrapolation of the base year data by volume measures of the goods sold at detailed levels of commodities.

GDP volume change compiled at prices of previous year is chain-linked to produce series on a fixed reference period of 1995.

Expenditure approach

All components of GDP estimates by expenditure are derived independently, although for publication the discrepancy between the GDP estimate by production and the independent estimate by expenditure is added to the estimate of change in inventories. Household consumption expenditure is published at the 2–digit level of the Classification of Individual Consumption by Purpose (COICOP). General government consumption expenditure is not yet classified according to the Classification of Functions of Government (COFOG). Gross-fixed capital formation is cross-classified by sector of ownership and industry as well as by type of asset. Changes of inventories are compiled at the detailed level of the reporting units (enterprises) using book value data from their financial statements.

Estimates of the main expenditure categories are based on actual data collected for the respective period of accounts. The reliance on the use of fixed ratios is not significant and is mostly limited to the allocation of some imported goods, like vehicles and other durables, to different users.

General government final expenditure excludes incidental sales. Expenses of residents abroad are included in household consumption expenditure and in imports. Symmetrically,

household consumption expenditure excludes expenditures in consumption by nonresidents, which are recorded as export of services. It should be noted that expenditures of nonresidents in the domestic territory used in the calculation of national accounts is calculated by the SSO based on its own source data collected for this purpose and differs from the respective estimate in the balance of payments compiled by the NBRM. No estimates of valuables are included in capital formation.

Volume measures of household consumption expenditure are compiled at a very detailed level of the data (370 items). Components of the CPI are used for deflating appropriate expenditures on final consumption of households. The implicit deflator of household consumption expenditure is consistent with the CPI. Government consumption expenditure is compiled at prices of previous year by deflating cost components. It should be noted that the compensation of employee component of government consumption is not consistent with the respective volume measure in calculating value added for the government, which is based on the number of employees.

No inventory valuation adjustment is made for estimating changes in inventories. The respective estimates at prices of previous year are obtained by deflating total book value changes by the PPI. Changes in inventories of goods for resale are deflated by the retail price index instead of using the PPI that better reflects the movements of the reposition prices in the market for these goods. It should be noted that while the decrease of inflation in the latest years implies lower holding gains in inventories held by producers, even slight changes in prices make the inventory valuation adjustment necessary. By not making this adjustment, these estimates are likely to be overvalued.

3.4   Assessment and validation of intermediate data and statistical outputs

3.4.1   Intermediate results are validated against other information where applicable

The staff validate estimates at all stages of processing. Intermediate results are checked against other alternative data sources available. Output estimates for export-intensive industries are compared with the appropriate data on foreign trade. Implicit deflators of output are compared with relevant price indices. Volume indicators derived by deflating current values of national accounts estimates are compared with available industrial production indices. Data from administrative sources are compared with similar data from statistical surveys.

3.4.2   Statistical discrepancies in intermediate data are assessed and investigated

Discrepancies in intermediate data sources are assessed and investigated on an ongoing basis. The causes of discrepancies are investigated, and measures are taken for improving the data, as necessary.

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

At present there is no supply and use framework available to check for the consistency of GDP estimates derived by different approaches. It should be mentioned that the compilation of supply and use tables is included in the development plans of the SSO. In fact, GDP estimates by production and by expenditure are compiled independently. No discrepancy is shown between both estimates of GDP, because the differences are assimilated in the components of final expenditures, mainly in the estimates of changes in inventories. Discrepancies are in general low (on the order of 4 to 5 percent) and reconciliation efforts are applied to reduce their magnitude before finalizing the estimates.

3.5 *Revision studies*

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

So far, the comprehensive data on national accounts, published 15 months after the end of the reference year, is final unless methodological changes are introduced. The series have been revised once in 2001 when the data for 1997–99 were revised due to improvements in the source data and methodology. These improvements comprised the introduction of estimates for the informal economy, changes in the methodology for the compilation of volume indices, and the introduction of the NACE classification. The cause of revisions was documented in publications and explained to users by different means.

Recommendation 1: Improve business survey data. This requires completing the statistical register of businesses, improving techniques of sample selection, and improving estimation methods to estimate the target population of the surveys.

Recommendation 2: Compile volume measures of all components of the production accounts, not only value added. This involves separate calculations of output, intermediate consumption and value added, even when a single indicator method is applied. Perform these calculations at disaggregated level of the data (4–digit level of the industrial classification). Since data are available at current prices, the implicit deflators of some of the components of the production account would allow for a more comprehensive check of consistency of the estimates.

Recommendation 3: Recalculate taxes on products and imports by applying the base year rate to volume measures of the current year at the most disaggregated level permitted by the source data. This is equivalent to extrapolating base year taxes at disaggregated levels by the volume indices of the products on which the taxes are levied.

Recommendation 4: Implement inventory valuation adjustments for GDP by expenditure and production.

4. Serviceability

4.1 Periodicity and timeliness

4.1.1 Periodicity follows dissemination standards

Macedonia compiles a comprehensive set of annual national accounts, thus complying with the GDDS standards. Furthermore, it also compiles quarterly GDP estimates by production at constant prices and will extend these estimates for the compilation of quarterly GDP by production at current prices.

4.1.2 Timeliness follows dissemination standards

The comprehensive set of national accounts for 2001 was published in March 2003, falling short by a few days in meeting the dissemination standards recommended in the GDDS. The annual GDP estimate for 2002 was published in November 2003, two months later than the prescribed dissemination standards for this core indicator.

4.2 Consistency

4.2.1 Statistics are consistent within the dataset

The discrepancy between GDP estimates by production and by expenditure is not shown explicitly although it has been kept at reasonable levels over time. GDP estimates and its components at current prices are consistent with the respective volume measures and implicit deflators.

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

National accounts data series of Macedonia are consistent for an adequate period of time. Consistent series of national accounts are available for the period 1997–2002. The break in the series in 1997 is explained in methodological notes in the special publications on national accounts, the *Statistics Yearbook,* and data distributed internally in the country and abroad. The practice is to explain unusual changes in economic trends.

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

All components for the rest of the world account are consistent with the respective components of the balance of payments compiled by the NBRM, except expenditures of nonresidents for which the SSO adjusts for coverage. Comprehensive source data used for compiling government finance statistics are obtained from the MOF.

4.3 Revision policy and practice

4.3.1 Revisions follow a regular and transparent schedule

No explicit revision policy has been established, but, in practice, the preliminary annual accounts are published within 10 months after the end of the reference year and a comprehensive set of accounts is published in March, 15 months after the end of the reference year. As all the information is considered final at the time these estimates were compiled there are no expectations of future revision unless changes in the methodology or developments in source data require changes in the estimates. The public is aware of this procedure through the advance release calendar posted on the website of the SSO, by practice, and through the State Statistical Programme published in the *Official Gazette*.

4.3.2 Preliminary and/or revised data are clearly identified

The preliminary and/or revised data are clearly identified in the publications of the SSO with references to footnotes and foreword explanations of the causes of revisions. They are also identified in all other forms of data dissemination used by the SSO.

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

The revisions of the series for 1997–99 published in 2001 were widely discussed with users of the statistics even before their publication. Explanations of these revisions are contained in the dedicated publication of the series.

Recommendation: Establish a well-defined revision policy.

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)

Estimates are disseminated in the publications with a sufficient level of detail and well designed tables that facilitate the understanding of the figures, although they lack charts. The release reports contain explanatory text and tables but only a limited number of charts that might contribute to a better understanding of trends presented by the data. The detailed time series are presented only for the last three years, and only the main aggregates are presented for longer periods. Detailed data for previous years can be obtained by consulting the publications in the library of the SSO and/or by request.

5.1.2   Dissemination media and format are adequate

National accounts are first disseminated in a report distributed to a wide number of users in all sectors of the economy. Simultaneously, these reports are posted on the website of the SSO. National account data are also available on the website and in the *Statistical Yearbook*, the *Monthly Bulletin* (quarterly GDP), and the "Statistical Review Series: Gross Domestic Product of the Republic of Macedonia."

5.1.3   Statistics are released on a preannounced schedule

National accounts statistics are released in accordance with a preannounced scheduled posted on the website of the SSO.

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

Statistics on national accounts are made available to all users at the same time. The public is informed of the release of the statistics and of the procedures to access the data through the publications of the SSO and through the website of the institution. Additional information on how to obtain data from the SSO has been widely advertised by the informative pamphlets sent to thousands of users and potential users. A catalog of publications is sent to 7,000 actual and potential users.

5.1.5   Statistics not routinely disseminated are made available upon request

Besides the statistics disseminated, other general statistics are made available upon request. Customized tabulations may be obtained by request and for a fee, which is normally charged for private users. Students are charged with lower fees, and government institutions receive the service free of charge. The public is informed of the availability of additional data and the procedures to obtain them.

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 internationally accepted standards, guidelines, or good practices are annotated

Metadata are posted on the GDDS bulletin board of the IMF. There are no metadata posted on the website of the SSO. Special series of publications on methodology are available, and methodological notes are included in the current publications of the SSO. However, no comprehensive metadata are easily available to the public beyond the GDDS metadata.

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

Levels of detail of the metadata disseminated are general, and no more information for specialized users is available.

5.3   *Assistance to users*

5.3.1   Contact points for each subject field are publicized

Assistance to users is good. The Information Department of the SSO centralizes the reception of data requests, addresses the compilers when special processing is needed, and monitors the delivery of the data to the users promptly. All statistical publications contain details on ways to contact the SSO (telephone and facsimile numbers, website address, address, etc.). No contact name is given, except in the GDDS metadata.

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

Catalogs of publications are available in Macedonian and English. The catalogs highlight the latest publications and are updated annually.

Recommendation: Provide the metadata for national accounts on the SSO's website.

Table 1. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for National Accounts
(Compiling Agency: State Statistical Office)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; SDDS = Complies with SDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
0. Prerequisites of quality							
0.1 Legal and institutional environment			X			Weaknesses in compliance with reporting to business surveys	
0.2 Resources		X					
0.3 Relevance		X					
0.4 Other quality management		X					
1. Assurances of integrity							
1.1 Professionalism		X					
1.2 Transparency		X					
1.3 Ethical standards		X					
2. Methodological soundness							
2.1 Concepts and definitions		X					
2.2 Scope			X			Lack of coverage of production for own use on research and development and consumption of own-produced manufactured goods; defense related expenses on capital goods that may be used for civil purposes are not in the scope of assets.	
2.3 Classification/sectorization		X					
2.4 Basis for recording			X			Use of cash basis for government's revenues and expenditures. Transactions between establishments of the same enterprise are deemed to be recorded on a net basis.	

Table 1. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for National Accounts
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Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
3. Accuracy and reliability							
3.1 Source data			X			Unit of observation in the production account is the enterprise, not the establishment, and lack of accurate and reliable data based on business surveys.	Short term: Improvements in calculation of quarterly and annual GDP volume measures. Improvements of the experimental calculations of expenditure components of quarterly GDP will be researched. Medium term: Compilation of input-output tables. Introduction of the COFOG classification. Improvements of sector accounts.
3.2 Assessment of source data		X					
3.3 Statistical techniques				X		Compilation of volume values for some economic activities and for taxes on products and imports are inadequate. No valuation adjustments of changes in inventories.	
3.4 Assessment and validation of inter-mediate data and statistical outputs		X					
3.5 Revision studies		X					
4. Serviceability							
4.1 Periodicity and timeliness			X			Estimates are disseminated slightly later than recommended by GDDS.	
4.2 Consistency		X					
4.3 Revision policy and practice			X			No revision policy has yet been established, although the practice for annual regular revisions is known.	
5. Accessibility							
5.1 Data accessibility		X					
5.2 Metadata accessibility			X			Insufficiently comprehensive metadata available to the public.	
5.3 Assistance to users		X					

II. PRICE STATISTICS (CONSUMER PRICE INDEX)

0. Prerequisites of Quality

0.1 Legal and institutional environment

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

The Consumer Price Index (CPI) is compiled and disseminated by the State Statistical Office (SSO) of the Republic of Macedonia. The main legal basis for the compilation of the official statistics of the country is the Act on the State Statistics adopted by the Parliament in 1997 and published in the *Official Gazette* No. 54/97. This legal instrument assigns to the SSO a leadership role in the compilation of the statistics. The responsibility of the SSO for the compilation of price statistics is clearly defined in the "Programme of Statistical Research," which according to the law, is proposed by the SSO for the approval of the government. This program lists all the official statistics to be compiled by the SSO and other authorized bodies.

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

Since essentially all the data used directly in the compilation of the CPI are collected and processed by the SSO, data sharing and coordination for the production of the CPI is excellent. The main source of data for CPI weights is the Household Budget Survey (HBS). The HBS is carried out by the Department for Labor Market, Labor Force Survey (LFS), Living Standards and Prices within the Social Statistics Sector of the SSO, the same department responsible for compiling the CPI.

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

The Act on the State Statistics, drafted with technical assistance from the European Statistical Office (EUROSTAT) and the statistical offices of Denmark and Switzerland, contains clear provisions guaranteeing the confidentiality of the data provided to the SSO and other authorized statistical agencies. Article 35 of this law states that "individual data to be collected, processed and released for statistical purposes shall be utilized for statistical purposes only." Individual data may be disclosed only with a written agreement of the respondent.

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

Article 3 of the Act on the State Statistics defines what units shall report to the statistical agencies. Article 26 of this legal instrument states that "the reporting units shall provide the SSO with statistical data set up in compliance with the law and with the Programme of Statistical Research, free of charge."

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Article 54 of the law establishes high penalties that may be imposed on reporting units that fail to comply with the provision of data to the SSO and the other authorized bodies of the statistical system. Fines are prescribed for both the reporting institution and the person responsible for providing the data within the reporting unit.

No significant problems have arisen with regard to cooperation for the collection of price data for the CPI. Although reporting is legally required, the SSO has fostered a spirit of voluntary cooperation for the collection of CPI data and has not needed to formally apply the mandatory reporting law.

0.2   Resources

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

Only one full-time SSO staff member is assigned directly to oversee the tabulation and publication of the CPI and the Retail Price Index (RPI). However, SSO staff from other departments assist with field operations (13 enumerators in the regional offices shared with other programs), data entry (2 data-entry personnel shared with other programs), and computer processing (1 programmer shared with other programs). Backup for overseeing CPI compilation and publication is handled by the staff member in charge of the HBS and supervisors at higher levels. This represents a serious deficiency in human resources dedicated directly to the CPI program.

The SSO staff currently involved in the compilation of the CPI as well as other SSO staff members in the Sector for Social Statistics are qualified economists with years of experience in index tabulation. A number of these staff members have participated in international training seminars on compiling price indices including those sponsored by the IMF in Vienna and the U.S. Bureau of Labor Statistics in Washington, D.C. Internal seminars are being conducted in computing. Training in English has also been provided.

Some key SSO employees have left the institution in recent years for employment in the private sector and in international institutions at higher salaries. The comparatively low salaries in the public sector may deter the recruitment and retention of young professionals.

Computing resources are adequate in terms of hardware and software for data processing and dissemination of the price statistics. Each staff member has access to a personal computer of the latest generation working in an intranet network environment with e-mail access. Data are properly protected by restricted access to the databases through authorized user names and passwords. Emergency daily backups are made and kept on magnetic tapes, which are properly safeguarded in the SSO facilities.

Access to the SSO building is also restricted to authorized persons only. The building and equipment provide the necessary facilities to perform the work.

The SSO activity is funded by the State Budget, which requires the SSO to work within a very tight budget to perform the tasks established in the annual statistical program. Budgetary reviews are made during the year to consider new tasks not projected at the time of the budget preparation.

Recommendation: Increase the staff dedicated directly to the CPI program so that there are sufficient personnel for research, development and backup. This is especially important given the index revision scheduled to be completed by January 2005.

0.2.2   Measures to ensure efficient use of resources are implemented.

All staff members prepare weekly reports to inform management on work performed. Regular work performance reviews of the staff every six months are to be introduced in the current year. Surveys are designed on the basis of the needs for each statistical series, taking into account considerations of cost and efficiency of data collection.

The SSO uses consistent concepts, definitions, and classifications for all the statistics it produces and encourages other statistical entities to use the same classification systems. Furthermore, the statistics law establishes that the SSO has among its functions to prescribe, develop, and harmonize the methodological bases of the statistical work. Article 15 of the Act on the State Statistics states the SSO is obliged to issue its opinion concerning the methodology suggested by any authorized statistical entity. Furthermore, the law requires that unified standards, classifications, and nomenclatures shall be used. In accordance with the law, these standards are published in the *Official Gazette* of the Republic of Macedonia.

The SSO has sought outside expertise to evaluate the SSO and the statistical series that it compiles.

The SSO does not employ cost accounting procedures to measure the actual resources employed in the compilation of the CPI, although resources are allocated to this program through a detailed budgetary process.

0.3   Relevance

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

The SSO monitors users' needs using different instruments. This invites users to comment on the statistics through its website. Their responses are processed by the Information Department to inform the SSO management. Although no schedule is established for meetings with users, occasional meetings with users are held to discuss the price statistics program. The Information Department also analyzes users' requests for data through that department.

SSO staff are also updated on international standards for the tabulation and provision of price statistics to the public through participation in statistical meetings and seminars organized by international organizations.

0.4   Other quality management

0.4.1   Processes are in place to focus on quality.

The SSO is highly committed to quality for all its statistical products. Although the SSO does not participate in a formal total quality management system such as ISO 9000, management has implemented an internal system that has most of the elements of such a system. A detailed five-year plan has been developed (2003–2007) that is partitioned into separate one-year plans monitored on an ongoing basis.

Advisory groups that include both producers and users of official statistical series have been established, and missions have been carried out to provide outside review of the statistical program of the SSO. Statistical assessment missions commissioned through EUROSTAT took place in 1998 and 2001. Recent initiatives on quality improvement are participation in the IMF's General Data Dissemination System (GDDS) and the ROSC data module, both in February 2004. The SSO has also established a separate European Integration and International Cooperation Department.

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

Each employee is interviewed regularly regarding his/her particular stewardship. In addition, staff members are also made aware of the importance of quality through internal training programs. Systems have been established to ensure that all data are reviewed properly to eliminate errors in published data.

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

The SSO monitors the quality of all its statistical programs with regard to trade-offs between improvements and available resources. In particular, the SSO replaced the old quarterly HBS recall survey with a new HBS diary survey, since it felt that the new survey would provide more accurate data on household expenditures for the CPI market basket. In spite of this significant improvement in the expenditure data available for the use of the CPI program, some gaps in the data needed for the CPI still remain as described in Section 3.1.1.

Some deficiencies exist in the support provided by the SSO quality management program for research, development, and staff training for the CPI. With such a small number of people involved in the compilation of the CPI there is not time for research and development for the index. This research and development is especially essential now that a revision of the index is under way. Since budgetary resources are very scarce for the SSO, it is difficult for management to allocate resources in a manner that provides for all of the needs of all its

statistical producing entities. Thus, the attention given to the CPI seems to be inadequate in this environment.

Recommendation: Increase the relative amount of resources dedicated to the CPI program.

1. Assurances of integrity

1.1 Professionalism

1.1.1 Statistics are produced on an impartial basis.

The Act on State Statistics states that the SSO is an independent professional administrative organization with its own legal status. No external agencies have influence on the compilation and dissemination of the data produced by the SSO. Although the head of the SSO is appointed by the government, this position has been held by a professionally qualified person selected from inside the institution.

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

The SSO takes only statistical considerations into account when choosing sources of data and statistical techniques as well as in making decisions about dissemination of the data. The timing of data dissemination follows statistical international standards.

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

The SSO seeks to prevent misinterpretation or misuse of the statistics by providing explanatory notes in the press releases and other publications, and on its website. Explanations are also provided during meetings with users. The institution is entitled to react to the misuse or misinterpretation of its data. Although these official responses occur infrequently, they are generally handled through the Information Department in the form of letters to the users or meetings with the press.

1.2 Transparency

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

References to the Statistical Act are provided in the questionnaires the SSO employs in its data collection program. The complete text of the Act on State Statistics is reproduced in Macedonian and in English on the SSO's website. 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.

For information purposes only, the CPI is provided to the Minister of Finance and the Prime Minister one day prior to its release. This is not made known to the public. However, there has historically never been any pressure put on the SSO to modify the index series before publication.

Recommendation: Formally make known to the public the prior access to the CPI by the Prime Minister and the Minister of Finance.

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

All publications by the SSO are clearly identified by its name and logo. The SSO publications always state the sources of the data published. The institution requests attribution when its data are reproduced by others.

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

Generally, no advance notices are given to users about major changes in the index; however, at the time of publication, explanatory notes are provided.

1.3   Ethical standards

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

Guidelines and standards for the staff behavior are posted on the intranet of the SSO. Furthermore, as public servants, SSO staff members have to adhere to the norms of conduct as provided by the law for civil servants**.**

2.   Methodological soundness

2.1   Concepts and definitions

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

In general, the determination and specification of CPI market basket items and the estimation of corresponding weights are based on concepts and definitions of household consumption that are consistent with the *1993 SNA* and the new *CPI Manual*.

The SSO tabulates expenditure data on both services and commodities in sufficient detail to permit analysis at all levels of detail for the Classification of Individual Consumption by Purpose (COICOP) and the Central Product Classification (CPC).

2.2   *Scope*

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

The weights for the CPI market basket are based on expenditure data from the 1998 Household Budget Survey (HBS) and on sales data from the 1998 Retail Trade Survey and the 1996–98 Agricultural Survey. The basic structure of the weights is derived from the results of the 1998 HBS, which covered all types of households regardless of size and income—both urban and rural. Households are included, whose major economic activities are unincorporated business, farming, and/or fishing.

The market basket items and their corresponding weights are determined based on market transactions data corresponding to purchases of goods and services for consumption. The value of production for own consumption of food items is based on market transaction values imputed to this consumption.

Although paid rent is included in the CPI market basket, imputed rent for owner-occupied housing is not reflected in the CPI weights.

2.3   *Classification/sectorization*

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

The tabulation and publication of the CPI is based on the National Uniform Classification System of the former Socialist Federal Republic of Yugoslavia as well as COICOP. The index has been available in the COICOP format since 2001.

2.4   *Basis for recording*

2.4.1   Market prices are used to value flows and stocks.

Both market basket weights and monthly prices used in compiling the CPI are based on market prices including taxes, trade and transportation margins, and applicable discounts. Detailed characteristic data including terms of transactions are included as part of the specifications for monthly price collection.

2.4.2   Recording is done on an accrual basis.

Both the expenditure data from the HBS and the price data for the monthly price survey are recorded on an accrual basis.

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

For the current CPI, the weight for personal transportation vehicle purchase was determined using data on sales for new vehicles from the retail trade survey. These data were used owing to a judgment that the HBS data on vehicle purchase were too thin and not representative of the true level of purchase of vehicles in FYR Macedonia. Purchases and sales of used vehicles were not taken into account in determining the weight for personal transportation vehicle purchase.

Since the internationally recommended procedure for estimating the CPI market basket weight for vehicle purchase is to use vehicle purchases net of vehicle sales, the approach used for the current CPI does not conform to this procedure.

Recommendation: Calculate the weight for automobile purchases in the CPI market basket as the total value of purchases less sales and make the necessary changes to the HBS questionnaire in order to obtain data for making this calculation.

3.   Accuracy and reliability

3.1   Source data

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

Although the basic structure of the weights for the CPI market basket is derived from expenditure data from the HBS, sales data from the Retail Trade Survey and the Agricultural Survey are also used in determining the weights. The new HBS is a continuous fifteen-day diary survey of 5,040 households per year. The households are interviewed in 24 fifteen-day panels of 210 households selected in a two-stage stratified sampling procedure based on population census of 2002 covering both the urban and rural sectors of the country. Even though tabulations of expenditure data from these surveys are available on an annual basis with a one-year processing cycle, the weights for the CPI are only updated once every five years.

Before 2002, the HBS was a quarterly recall survey in which all households were interviewed once each quarter for one year. There was a much smaller sample and no diary data were collected. The current CPI weights are derived from the 1998 HBS recall survey. Since only diary data on expenditures are collected for the current HBS, the efficiency of the HBS is not maximized. Certain types of expenditures, such as those on housing, automobiles, and major household durables, as well as rents and other household services and utilities, are better covered with a recall survey. Since the current survey only reports those expenditures actually made during the fifteen-day diary period, only those rents paid or those automobiles purchased during that period would be recorded. Even with the large sample of 5,040 households interviewed, the total actual time covered aggregated across all households

during the diary survey is very small for certain durable items. This aggregated time period could be greatly expanded by adding a recall component to the HBS.

For the current CPI, the HBS expenditure data for 1998 were supplemented by data from the annual retail trade survey (TRG 12) and the annual agriculture survey for estimating the CPI market basket weights and selecting the list of CPI market basket items. These surveys are based on a purposive sample, which includes most of the large enterprises and as many of the smaller enterprises as possible. Because of the inherent variability of the agricultural production and sales, the SSO uses three years of survey data from the agricultural survey for helping to determine the weights for agricultural products in the CPI market basket. For the nonagricultural items, only one year of data are used from the retail trade survey. The retail trade and agricultural survey data were used to provide additional item detail that is not provided directly by the HBS. They were used to support the data that were judged to be thin in the HBS survey.

For the current CPI, approximately 11,500 monthly price quotations are collected from approximately 1,500 outlets, for 518 items, in 8 major cities of Macedonia. Although prices are not collected in rural areas and smaller towns and cities, the market basket item weights are determined using HBS data representative of the entire population of Macedonia.

Prices are collected from a sample of outlets that includes supermarkets, open markets, department stores, retail shops, specialized shops, and appropriate government entities. This purposive sample is determined based on retail sales data and the judgment of SSO staff and supervisors. The item specifications are sufficiently detailed to ensure that the same item varieties are priced each period.

An annual review is conducted to update the list of market basket items and the outlets used for pricing. Prices are collected for the new list of items with corresponding outlets for the year prior to their introduction to have adequate reference base year data to support the annual change of the reference base for the index.

For the most part, the survey questionnaires for the HBS and the price collection survey are well designed and provide for an efficient collection of data needed for CPI compilation. However, the HBS survey instrument does not include a question on the estimation of imputed rent for owner occupants. There is also no recall component for durable goods, rent, household fuels, water, and other public services.

Recommendation 1: Add a question to the HBS survey instrument to obtain an estimate of the value of imputed rent for owner-occupied dwellings.

Recommendation 2: Add a recall module to the HBS to obtain more complete data on the purchase of durable goods, rent, household fuels, water, and other monthly expenditures for public services.

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

In general, source data are consistent with the needs of the CPI program with regard to scope, classification, valuation, and time of recording. However, no data are currently collected on the estimation of imputed rent for owner-occupied housing.

3.1.3   *Source data are timely.*

Both monthly price data and expenditure data needed for the estimation of CPI market basket weights are collected and processed on a timely basis. The HBS expenditure data as well as the retail trade data and the agricultural trade data are processed on a one-year cycle. Tabulations of these data are available for use in the index no later than one year after the end of the calendar year for which the data are collected. This corresponds well with the five-year updates of the CPI market basket weights and the annual change of the index reference base and the annual reviews of the item list and the price collection outlets.

In general, prices are collected using SSO price collectors. In those instances where this is not the case, the respondents for the monthly price survey are aware of the deadlines set for reporting.

3.2   **Assessment of source data**

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.*

The collection and tabulation of HBS data is carried out using extensive consistency checks and editing and control for extreme values. Statistical analysis is also carried out to determine the sample variation for all tabulated values. These data are published along with the survey results. Appropriate adjustments are also made for nonresponse.

While estimates of sample variation are not made for the CPI monthly price data, these data are monitored closely for extreme values and other types of processing errors. When an error is suspected, the processor and/or interviewer is contacted to determine the source of the error. When necessary, the respondent is recontacted.

Random post enumeration checks on the data are not conducted for either survey.

3.3 Statistical techniques

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

The SSO has established editing procedures for processing both expenditure data from the HBS and monthly price data for the compilation of the CPI. These procedures include checks for consistency, extreme values, and coding errors. HBS data are augmented with data from alternative sources where the HBS data are considered incomplete and/or too thin. Appropriate adjustments are made for nonresponse.

Prices for temporarily unavailable items are carried forward until these items are again available for pricing. If it is determined that the current specification of the item is no longer available, a new comparable item specification is selected for pricing. If no comparable item specification is available and/or the outlet is no longer available for pricing, a new reserve outlet is initiated and an alternative item specification is used. Item specifications are selected and prices for these specifications are collected for the first month of the year in a sample of reserve outlets that have been previously selected for the CPI market basket items.

For seasonally unavailable items, the last reported prices are also carried forward; however, the typically high prices for the first month or two after the items again appear in the market are not compared to the prices that have been held constant. Rather, prices are introduced only after the seasonal items are fully available in the market. This procedure does eliminate some short-term variation in the index but does not introduce a long-term bias since the procedure is self-correcting.

Prices for product specifications that become permanently unavailable during the year are held constant until the beginning of the next year when the sample of outlets and specifications is updated. Prices for new types of product specifications that are expected to be used in the index for the following year are collected, but are not used in the index. These prices are used for estimating base year price for the following year. New items are introduced into the index only during the weight revisions that take place every five years.

The treatment of missing prices described above has several drawbacks. Although the process is self-correcting for seasonally unavailable items and for specifications that are only temporarily unavailable, the prices that are held constant and then replaced by prices for new specifications or held constant until the end of the year have the potential of introducing bias into the index.

Recommendation 1: Implement a self-correcting process for the imputation of all missing prices.

Recommendation 2: Institute procedures for linking in new item specifications to replace item specifications that are no longer available.

Recommendation 3: Implement procedures for the introduction of new products into the index between the five-year index revisions.

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

The weights for the CPI market basket are determined in accordance with recommendations of the *1993 SNA* and the new *CPI Manual*. The expenditure data, upon which the CPI weights are based, cover all types of expenditures by the surveyed households including those in parallel markets. The weights reflect the economic cost to consumers of goods and services in the period in which they were purchased regardless of how the expenditures were financed whether by cash purchase or by credit.

The survey instruments for both the current and the previous HBS do not contain a question that facilitates the estimation of the imputed rental cost for owner-occupied housing. Owner-occupied imputed rentals are not estimated and included in the CPI weights. Only the actual rental payments by tenants are included.

The value of food produced for own consumption is estimated at market transaction prices at the time produced and included in the weights for food for the CPI. Other types of consumption of own production are not collected for the HBS and are not reflected in the CPI weights.

The CPI is computed by applying the Laspeyres index formula with price relatives that compare national-level monthly average prices at the product level with corresponding national-level annual average prices for the previous year. The city-level average prices are equally-weighted arithmetic means. The national-level average prices are computed using city-level average prices and city weights based on total retail sales in the base period. These city weights are held constant for five years. The annual average prices at the national level are simple arithmetic averages of the monthly national average prices.

Prior to 2000, the CPI was computed using market basket weights derived from the 1993 HBS and retail sales data augmented with agricultural survey data for the period 1991–93. These weights were introduced as part of the index revision in January 1995. The January 1995 index had a reference base of 1994 = 100; however, the weights were not updated from 1993 to 1994. For each year after 1995 the market basket weights were updated for price change when the reference base was changed to the next year. Except for the initial weights not being updated for price change between the HBS survey year and the reference period for the first year of the new index, this methodology produced a CPI arithmetically identical to a Laspeyres index with long-term price relatives.

In 2000, the index calculation methodology was changed. The weights were no longer updated annually for price change. In other words, the reference base was changed each year, but the weights remained at their 1998 relative levels. Because of this lack of annual updating of the weights, the new index calculation formula is technically no longer a Laspeyres index.

The long-term price relative component of the Laspeyres is being ignored. Since price changes from 1998 have not been extreme, the expected empirical impact of this "change in the index formula" is probably not significant. However, in periods of large changes in prices, the application of the current index calculation methodology could cause significant biases in the CPI.

Recommendation 1: Revised HBS weights should be updated for price changes between the HBS reference period and the reference period for the revised index.

Recommendation 2: Hold the reference period for the upcoming revised index constant for the five-year period between revisions.

3.4 Assessment and validation of intermediate data and statistical outputs.

3.4.1 Intermediate results are validated against other information where applicable.

Monthly CPI series are compared for consistency with commensurate data from the RPI, the PPI, the agricultural prices survey, and other relevant price data.

3.4.2 Statistical discrepancies in intermediate data are assessed and investigated.

Unusual and/or unexpected index movements are investigated to determine their causes. In one case it was determined that the prices for meat products were unusually low in certain cities due to direct sales to consumers of meat imported from Europe that was intended for sale to meat processors. In this case the temporary price decreases were determined to be legitimate since the meat was actually sold to the consumers at the lower prices.

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

Since only national-level price indices are compiled, there is no possibility of discrepancies arising from imputation inconsistencies between aggregations by product or by geographical area.

3.5 Revision studies

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

Since no preliminary data are published for the CPI, there are no revision studies of published index data. However, revision studies are carried out with regard to the scheduled five-year revisions of the market basket items and weights. Extensive analysis is conducted on the results of the annual HBS diary survey including analysis of sampling error for these data, as well as their adequacy for use in the CPI. The results of these studies of the annual HBS data are published annually as part of the documentation of the survey.

Although no formal revision studies are carried out directly for the CPI, the HBS data are being compared with corresponding data from other sources to determine whether the expenditure data from the HBS are adequate for determining the weights for the CPI market basket or whether they need to be supplemented. The SSO is presently studying the possibility and/or need to increase the frequency of CPI item and weight revisions.

Recommendation: Study the substitution bias for the CPI using data from the annual HBS.

4. Serviceability

4.1 Periodicity and timeliness

4.1.1 Periodicity follows dissemination standards.

The CPI is compiled and published monthly, thus meeting GDDS standards.

4.1.2 Timeliness follows dissemination standards.

The CPI is published on the first work day of the month following the reference month of the index, thus exceeding the GDDS standards.

4.2 Consistency

4.2.1 Statistics are consistent within the dataset.

Since CPI tabulations are made only at the national level based on national-level average prices, there is no issue with regard to internal consistency for tabulations across geography as opposed to tabulations by product groups.

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

The SSO produces both the RPI and the CPI. These indices differ only in the weights employed and slightly in the list of market basket of products and services that are covered. Historical price index series are available since 1980 for both the RPI and the CPI. A change in the index calculation methodology was implemented in 2000. The new indices were linked to the old indices to obtain a continuous historical series. This methodological change was documented in the January 2000 monthly index release. The index was not recalculated backward based on the new calculation methodology. Other than the documentation given in the January 2000 monthly CPI release, no detailed documentation exists about the change in index calculation methodology that was implemented.

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

The CPI is consistent with other national statistical series such as the RPI, the PPI, agricultural price statistics, and national accounts.

4.3 Revision policy and practice

4.3.1 Revisions follow a regular and transparent schedule.

The CPI market basket list of items and corresponding weights are revised every five years. The last two revisions were carried out in 1995 and 2000. The SSO has begun the CPI revision for 2005.

Since the HBS is carried out on an annual/continuous basis, it does not determine the timing of the CPI weight revisions. If desired, more frequent revisions of the CPI market-basket weights could be implemented without the need to wait for a new HBS.

Although the five-year revision schedule is not made known officially to the public, major index users are aware of this schedule. The annual HBS is currently published with excellent documentation for the typical index user. This documentation serves partially for the CPI revision. However, published documentation for the 2000 CPI revision is limited to the description given in the monthly statistical release for the January 2000 index.

4.3.2 Preliminary and/or revised data are clearly identified.

Preliminary data are not published for the CPI.

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

Although detailed documentation of the CPI price collection and index tabulation methodology is available, no official revision studies for the CPI are conducted or published.

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 CPI is disseminated in a number of formats including the "Monthly Report" that has a news-release-type format, the *Monthly Bulletin* that includes all SSO monthly series, the *Statistical Yearbook of the Republic of Macedonia*, the SSO website, and an automated telephone recording. Although a separate monthly report presenting the CPI in a COICOP

format is disseminated, the COICOP CPI format is not included in the *Monthly Statistical Bulletin*.

Although a limited number of graphs are included in the *Monthly Bulletin* and the yearbook, there are no graphs in the monthly report. Analysis of important changes for the current index month are included in the monthly report but not in the *Monthly Bulletin*. However, a short methodological note is included in the *Monthly Bulletin*, but not in the monthly report. While the presentation of short-term trends in the index is well done, it is difficult to determine long-terms trends in the index using only the published data. There is no good graphical presentation of the long-term behavior of the index.

Recommendation: Modify the dissemination format for the CPI to better present the long-term behavior of the index. The presentation should include both tables and graphs.

5.1.2   Dissemination media and format are adequate

Basically the same index data on the CPI are released in all formats, except that the CPI based on the COICOP classification is only released in a separate monthly report. Unpublished detailed series are available upon request.

5.1.3   Statistics are released on a preannounced schedule

The CPI is disseminated according to a preannounced quarterly calendar.

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

The CPI is released to all users simultaneously on the first business day of the month following the reference month for the index.

5.1.5   Statistics not routinely disseminated are made available upon request

More detailed data on the CPI are made available to users upon written request to the Information Department of the SSO.

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 internationally accepted standards, guidelines, or good practices are annotated.

A published detailed documentation of the CPI is available. This documentation includes a description of both the price collection and index tabulation process. The weighting structure for the calculation of average prices used in the calculation of monthly index price relatives is explained. The index calculation formula is also given. Examples of price collection forms are included.

Price Statistics (Consumer Price Index)

FYR Macedonia has only recently (February 2004) gained GDDS status. Only a preliminary version of the GDDS metadata is available. The SSO staff are presently reviewing these data for accuracy.

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

A short description of the CPI is included in the *Monthly Statistical Bulletin* and in the *Statistical Yearbook of the Republic of Macedonia*. A more detailed documentation is published separately. In addition, an official publication presents index market basket weights and detailed CPI data for the previous five-year period that is published every five years when the CPI is revised. The last publication was in 2000.

5.3   *Assistance to users*

5.3.1   *Contact points for each subject field are publicized.*

All statistical products of the SSO include the telephone number, facsimile number, mailing address, and e-mail address of the Information Department. The address of the SSO website is also included. Enquiries regarding statistical series are handled through the Information Department. Each enquiry is passed on to the appropriate person responsible for the given index series. Unpublished data are available only upon written request to the Information Department.

Assistance to users is monitored periodically by studies of requests for statistical data through the Information Department.

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

A catalog of SSO publications, including sale prices for the products, is available to the public. However, the only publications referring to the CPI included in the catalog are the *Monthly Statistical Report of the Republic of Macedonia*, the *Statistical Yearbook of the Republic of Macedonia*, and the annual publication containing the HBS results. The Monthly Report on the CPI is not listed but is available through the Information Department. Publications on the detailed documentation of the CPI and the last CPI revision are not listed in the catalog.

Table 2. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Consumer Price Index
(Compiling Agency: State Statistics Office)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; SDDS = Complies with SDDS Criteria

Element	NA	O	LO	LNO	NO	Comments on Assessment	GDDS Plans for Improvement and Timeframe
0. Prerequisites of quality							
0.1 Legal and institutional environment		X					
0.2 Resources				X		There is only one person working directly on the CPI at the central office. There is a need for additional personnel to serve as backup and to conduct research and development for the index.	
0.3 Relevance		X					
0.4 Other quality management			X			Some deficiencies in support provided by the SSO quality management program for research, development, and staff training for the CPI.	
1. Assurances of integrity							
1.1 Professionalism		X					
1.2 Transparency			X			Public not informed of one-day previous access for information purposes only by the Prime Minister and the Finance Minister. Generally no advance notice is given for major changes in the index. However, a short documentation is given at the time of publication of the revised index.	
1.3 Ethical standards		X					
2. Methodological soundness							
2.1 Concepts and definitions		X					
2.2 Scope		X					
2.3 Classification/sectorization		X					
2.4 Basis for recording			X			Sales of durables, such as those for vehicles, are not netted out of purchases for the CPI weights.	

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(Compiling Agency: State Statistics Office)

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Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
3. Accuracy and reliability							
3.1 Source data		X				The HBS does not include a question on imputed rent for owner-occupied dwellings, nor does it contain a recall module to provide more data on purchases of consumer durables and monthly expenses such a rent, fuel, water, electricity, etc.	Short term: Enhance sample of item specifications.
3.2 Assessment of source data		X					
3.3 Statistical techniques				X		Problems with the index calculation formula that could potentially result in biases for the index. Treatment of missing price could be improved.	Medium term: Update weights using the new HBS. Ensure compliance with the harmonized CPI.
3.4 Assessment and validation of inter-mediate data and statistical outputs		X					
3.5 Revision studies			X			Although studies are made on an informal basis, no formal studies are prepared except for the HBS results (used for CPI weights).	
4. Serviceability							
4.1 Periodicity and timeliness		X					
4.2 Consistency		X					
4.3 Revision policy and practice			X			Even though revision studies are published for the HBS, no studies are published for the CPI.	
5. Accessibility							
5.1 Data accessibility		X				While the presentation of short-term trends in the index is well done, it is difficult to determine long-terms trends in the published data. Very few graphs.	
5.2 Metadata accessibility		X					
5.3 Assistance to users		X					

III. PRICE STATISTICS (PRODUCER PRICE INDEX)

0. Prerequisites of quality

0.1 *Legal and institutional environment*

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

The Producer Price Index (PPI) is compiled and disseminated by the State Statistical Office (SSO) of the FYR Macedonia. The main legal basis for the compilation of the official statistics of the country is the Act on the State Statistics adopted by the Parliament in 1997 and published in the *Official Gazette* No. 54/97. This legal instrument assigns to the SSO a leadership role in the compilation of the statistics. The responsibility of the SSO for the compilation of price statistics is clearly defined in the "Programme of Statistical Research," which, according to the law, is proposed by the SSO for the approval of the government. This program lists all the official statistics to be compiled by the SSO and other authorized bodies.

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

Since essentially all the data used directly in the compilation of the PPI are collected and processed by the SSO, data sharing and coordination for the production of the PPI is excellent. The main source of data for estimating PPI weights and selecting the enterprise sample for monthly price collection is the Annual Industrial Survey, carried out by the Sector for Business Statistics, the same sector responsible for compiling the PPI.

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

The Act on the State Statistics, drafted with technical assistance from the European Statistical Office (EUROSTAT) and the statistical offices of Denmark and Switzerland, contains clear provisions guaranteeing the confidentiality of the data provided to the SSO and other authorized statistical agencies. Article 35 of this law states that "individual data to be collected, processed and released for statistical purposes shall be utilized for statistical purposes only." Individual data may be disclosed only with a written agreement of the respondent.

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

Article 3 of the Act on the State Statistics defines what units shall report to the statistical agencies. Article 26 of this legal instrument states that "the reporting units shall provide the SSO with statistical data set up in compliance with the law and with the Programme of Statistical Research, free of charge."

Article 54 of the law establishes high penalties that may be imposed on reporting units that fail to comply with the provision of data to the SSO and the other authorized bodies of the statistical system. Fines are prescribed for both the reporting institution and the person responsible for providing the data within the reporting unit.

For the current PPI enterprise sample, no significant problems have arisen with regard to cooperation for the collection of price data for the PPI. However, since the sample is a judgment sample, it may be that the sample selection was oriented toward those enterprises that have shown in the past that they will cooperate.

0.2   Resources

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

Only one full-time SSO staff member is assigned directly to oversee the tabulation and publication of the PPI. The bulk of data collection for the PPI is handled using a monthly mail survey. However, SSO staff from other departments assist with data entry (2 data-entry personnel shared with other programs) and computer processing (1 programmer shared with other programs). Backup for overseeing PPI compilation and publication is handled by staff and supervisors from other entities. This represents a serious deficiency in human resources dedicated directly to the PPI program and limits the development and research that can be accomplished.

The SSO staff currently involved in the compilation of the price statistics are qualified economists with years of experience in index tabulation. A number of these staff members have participated in international training seminars on compiling price indices including those sponsored by the IMF in Vienna and the U.S. Bureau of Labor Statistics in Washington. Internal seminars are being conducted in computing. Training in English has also been provided.

Some key SSO employees have left the institution in recent years for employment in the private sector and in international institutions at higher salaries. The comparatively low salaries in the public sector may deter the recruitment and retention of young professionals.

Computing resources are adequate in terms of hardware and software for data processing and dissemination of the price statistics. Each staff member has access to a personal computer of the latest generation working in an intranet network environment with e-mail access. Data are properly protected by restricted access to the databases through authorized user names and passwords. Emergency daily backups are made and kept on magnetic tapes, which are properly safeguarded in the SSO facilities.

Access to the SSO building is also restricted to authorized persons only. The building and equipment provide the necessary facilities to perform the work.

The SSO activity is funded by the State Budget, which requires the SSO to work within a very tight budget to perform the tasks established in the annual statistical program. Budgetary reviews are made during the year to consider new tasks not projected at the time of the budget preparation.

Recommendation: Increase the staff dedicated directly to the PPI program so that there are sufficient personnel for research, development, and backup. This is especially important given the index revision scheduled to be completed by January 2005.

0.2.2   Measures to ensure efficient use of resources are implemented

All staff members prepare weekly reports to inform management on work performed. Regular work performance reviews of the staff every six months are to be introduced in the current year. Surveys are designed on the basis of the needs for each statistical series, taking into account considerations of cost and efficiency of data collection.

The SSO uses consistent concepts, definitions, and classifications for all the statistics it produces and encourages other statistical entities to use the same classification systems. Furthermore, the statistics law establishes that the SSO has among its functions to prescribe, develop, and harmonize the methodological bases of the statistical work. Article 15 of the Act on the State Statistics states the SSO is obliged to issue its opinion concerning the methodology suggested by any authorized statistical entity. Furthermore, the law requires that unified standards, classifications, and nomenclatures shall be used. In accordance with the law, these standards are published in the *Official Gazette* of the Republic of Macedonia.

The SSO has sought outside expertise to evaluate the SSO and the statistical series that it compiles.

The SSO does not employ cost accounting procedures to measure the actual resources employed in the compilation of the PPI, although resources are allocated to this program through detailed budgetary processes.

0.3   Relevance

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

The SSO monitors users' needs using different instruments. It invites users to comment on the statistics through its website. Their responses are processed by the Information Department to inform the SSO management. Although no schedule is established for meetings with users, occasional meetings with users are held to discuss the price statistics program. The Information Department also analyzes users' requests for data through that department.

SSO staff are also updated on international standards for the tabulation and provision of price statistics to the public through participation in statistical meetings and seminars organized by international organizations.

0.4   Other quality management

0.4.1   Processes are in place to focus on quality

The SSO is highly committed to quality for all its statistical products. Although the SSO does not participate in a formal total quality management system such as ISO 9000, management has implemented an internal system that has most of the elements of such a system. A detailed five-year plan has been developed (2003–2007) that is partitioned into separate one-year plans monitored on an ongoing basis.

Advisory groups that include both producers and users of official statistical series have been established, and missions have been carried out to provide outside review of the statistical program of the SSO. Statistical assessment missions commissioned through EUROSTAT took place in 1998 and 2001. Recent initiatives on quality improvement are participation in the IMF's General Data Dissemination System (GDDS) and the data module ROSC, both in February 2004. The SSO has also established a separate European Integration and International Cooperation Department.

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

Each employee is interviewed regularly regarding his/her particular stewardship. In addition, staff members are also made aware of the importance of quality through internal training programs. Systems have been established to ensure that all data are reviewed properly to eliminate errors in published data.

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

The SSO monitors the quality of all its statistical programs with regard to trade-offs between improvements and available resources. However, some deficiencies exist in the support provided by the SSO quality management program for research, development, and staff training for the PPI. With such a small number of people involved in the compilation of the PPI there is not time for research and development for the index. This research and development is especially essential now that a revision of the index is under way. Since budgetary resources are very scarce for the SSO, it is difficult for management to allocate resources in a manner that provides for all the needs of all its statistics producing entities. Thus, the attention given to the PPI seems to be inadequate in this environment.

Recommendation: Increase the relative amount of resources dedicated to the PPI program.

1. Assurances of integrity

1.1 Professionalism

1.1.1 Statistics are produced on an impartial basis

The Act on State Statistics states that the SSO is an independent professional administrative organization with its own legal status. No external agencies have influence on the compilation and dissemination of the data produced by the SSO. Although the head of the SSO is appointed by the government, this position has been held by a professionally qualified person selected from inside the institution.

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

The SSO takes only statistical considerations into account when choosing sources of data and statistical techniques as well as in making decisions about dissemination of the data. The timing of data dissemination follows statistical international standards.

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

The SSO seeks to prevent misinterpretation or misuse of the statistics by providing explanatory notes in the press releases and other publications, and on its website. Explanations are also provided during meetings with users. The institution is entitled to react to the misuse or misinterpretation of its data. Although these official responses occur infrequently, they are generally handled through the Information Department in the form of letters to the users or meetings with the press.

1.2 Transparency

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

References to the Statistical Act are provided in the questionnaires the SSO employs in its data collection program. The complete text of the Act on State Statistics is reproduced in Macedonian and in English on the SSO's website. 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

For information purposes only, the PPI is provided to the Minister of Finance and the Prime Minister one day prior to its release. This is not made known to the public. However, there has historically never been any pressure put on the SSO to modify the index series before publication.

Price Statistics (Producer Price Index)

Recommendation: Formally make known to the public the prior access to the PPI by the Prime Minister and the Minister of Finance.

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

All publications by the SSO are clearly identified by its name and logo. The SSO publications always state the sources of the data published. The institution requests attribution when its data are reproduced by others.

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

Generally, no advance notices are given to users about major changes in the index; however, at the time of publication, explanatory notes are provided.

1.3   Ethical standards

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

Guidelines and standards for the staff behavior are posted in the intranet of the SSO. Furthermore, as public servants, the SSO staff has to adhere to the norms of conduct as provided by the law for civil servants**.**

2.   Methodological soundness

2.1   Concepts and definitions

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

In general, the definitions, the determination of items for monthly price collection, and the estimation of weights are based on concepts consistent with the *1993 SNA* and the new *PPI Manual*. However, tabulations are made exclusively by commodity aggregation. No tabulations are made by industry (economic activity) that take into account secondary products.

Recommendation: Prepare tabulations for the PPI by industry (economic activity) that take into account secondary products.

Price Statistics (Producer Price Index)

2.2 Scope

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

The PPI covers core mining and manufacturing activities as well as energy, fuel, and water. Agriculture is covered by a separate agricultural producer price index.

Although the PPI covers all sales of production to the domestic market, it excludes sales of production for export.

Since the weights for the PPI at the 2–digit NACE (Statistical Classification of Economic Activities in the European Communities) level are based on data from national accounts, all production estimated in national accounts, with the exception of production sold for export, is included in the weights. In other words, the coverage of the PPI reflects the sales from all enterprises, including those sales that are estimated/imputed for nonreporting enterprises in the Annual Industrial Survey.

Recommendation: The scope of the PPI should be expanded to include exports in the coverage of the PPI.

2.3 Classification/sectorization

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

The SSO has moved completely to European standards for the classification within the PPI. Products are classified by the National Nomenclature of Industrial Products that is a 10–digit extension of the 8–digit PRODCOM (List of Products of the European Communities) system. Economic activities are classified by the National Classification of Activities, that is, as a 5–digit extension of the 4–digit NACE system. The transition to the European systems was carried out in 2002.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks

Market prices are used to value domestic sales for industrial output that are used for determining the weights for the PPI. Prices collected in the monthly PPI mail survey are for narrow product specifications, including transaction characteristics. The prices are factory gate and exclude taxes.

2.4.2 Recording is done on an accrual basis

Both producer prices and weights are valued on an accrual basis.

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

Transactions between establishments within the same enterprise are recorded generally on a gross basis for the determination of PPI weights.

3. Accuracy and reliability

3.1 Source data

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

The source data for weights for the PPI are the Annual Industrial Survey and national accounts for total enterprise sales at the 2–digit NACE classification. The Annual Industrial Survey data are also used for constructing a sampling frame for the selection of enterprises for the monthly price collection for the index.

Approximately 800 enterprises are surveyed for the industrial survey. The sample for the PPI monthly price survey is currently 238 enterprises. In general, the enterprises in the PPI sample are the larger enterprises. The goal of the sampling procedure used was to include those enterprises, with the most production at the 10–digit level of the national industrial classification system.

The business register for FYR Macedonia is legal but contains a number of errors with regard to industrial classification. The SSO maintains its own statistical register with corrections for any errors that are detected. Attempts have been made for several years to conduct what is essentially a census of all enterprises on the internal statistical register. However, a number of enterprises have either refused to cooperate and/or never returned a survey form. It should be noted that the small enterprises are buried in government forms that are "legally required." The SSO is currently attempting to share data with the tax authority to improve the internal statistical register and to obtain data on total sales that are missing from the Annual Industrial Survey.

Since the process described above has resulted in a sample of enterprises that, in some sense, is self selected, the result is a sample of enterprises for the PPI that provides excellent cooperation. However, the current sample also provides insufficient coverage of small private enterprises. Even if the sample of enterprises providing data for the Annual Industrial Survey were improved, it is unlikely that the PPI enterprise sample would be more representative. The solution for the PPI sample is to select a sample of enterprises with lower sales at the 10–digit level to represent the smaller producers that are excluded on a judgmental basis. An even better approach would be to select enterprises classified by NACE at the 4–digit level and then select products to represent these enterprises. This would guarantee better coverage at the 4–digit NACE level.

Because of the process by which the enterprise sample is selected, there are no significant problems with the monthly price survey for the PPI. This survey provides approximately 470 price quotations from 238 enterprises.

Recommendation 1: Institute procedures to obtain an enterprise sample that better reflects smaller enterprises.

Recommendation 2: Ensure that the enterprise sample adequately covers for as many 4–digit NACE categories as possible.

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

In general, source data are consistent with the needs of the PPI program with regard to scope, classification, valuation, and time of recording.

3.1.3   Source data are timely

Both monthly price data and industrial sales data needed for the estimation of PPI weights are collected and processed on a timely basis. Tabulations for the Annual Industrial Survey are available for use in the index no later than one year after the end of the calendar year for which the survey data are collected. This corresponds well with the five year schedule for major revision of the sample of products and enterprises and the estimation of new weights for the PPI. The industrial survey data are also used in the annual review of the list of products and enterprises for the index.

Prices for the PPI are collected using a monthly mail survey. Respondents for this survey are aware of the deadlines set for reporting, and the response rate is very high (more than 230 out of 236). However, there have been some problems with the loss of respondents in certain sectors such as footwear and other leather goods.

3.2   Assessment of source data

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

The Annual Industrial Survey, upon which the PPI enterprise sample and weights are based, is well reviewed for keying errors, atypical values, and general accuracy of the data. However, little statistical analysis is conducted. In some sense, the sample for the annual survey is self-selected, since only those enterprises reporting data are included. No attempt is made to expand the survey results to represent the entire population.

3.3   *Statistical techniques*

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

Compilation procedures for the PPI minimize coding and keying errors. Atypical values are reviewed with interviewers and with respondents when necessary. The mail questionnaire requires that the respondent enter both the previous month's price as well as the current month's price. These data are compared to the previous month's data to help ensure that the same product specification is being priced.

Since the weights for the PPI at the 2–digit NACE level are from national accounts, it is assumed that these data have been grossed-up to national levels.

The treatment for missing prices is different from that used for the CPI. When a price is missing at the 10–digit level, the weighted average price is determined using only those enterprises reporting. This results in the implicit imputation of the missing price using the 10–digit group price change. However, if a missing enterprise reports a price in a future month, this procedure is not self-correcting.

When all prices for a 10–digit group are missing, the group is dropped from the index, and the price change is implicitly imputed by the change in price for the entire PPI.

New products are only introduced every five years during a major revision when the weights and the enterprise and product samples are revised

Recommendation 1: Implement a self-correcting process for the imputation of all missing prices.

Recommendation 2: Institute procedures for linking in new product specifications to replace product specifications that are no longer available.

Recommendation 3: Implement procedures for introducing new products into the index between the five-year index revisions.

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

The weights for the PPI are estimated with a process that involves various stages and several sources. The first step is the estimation of weights at the 2–digit industrial level. Data on the value of gross output from national accounts at the 2–digit level are reduced by the value of exports based on data from the Survey of Exports and Imports. The goal of this process is to have the weights reflect the value of total production sold on the domestic market. It should be noted that international recommendations require that the PPI cover exports.

Price Statistics (Producer Price Index)

For the next step in the estimation of PPI weights, tabulations on total enterprise sales are made by product at the 10–digit level. These sales are then reduced proportionately using the 2–digit national accounts data reduced by exports. The final step is to select the enterprises with the most sales by 10–digit product category for price collection. Each price quotation carries a weight that reflects its relative importance with the sample of enterprises that have been selected for the 10–digit category. The relative weight is based on sale of the 10–digit product, not total sales of the enterprise.

The PPI is computed by applying the Laspeyres index formula with price relatives that compare monthly weighted average prices at the product level with corresponding annual weighted average prices for the previous year. The annual average prices are simple arithmetic averages of the monthly average prices.

Prior to 2000, the PPI was computed using weights derived from the 1993 Annual Industrial Survey and 2–digit level data from national accounts. These weights were introduced as part of the index revision in January 1995. The January 1995 index had a reference base of 1994 = 100; however, the weights were not updated from 1993 to 1994. For each year after 1995 the weights were updated for price change when the reference base was changed to the next year. Except for the initial weights not being updated for price change between 1993 and 1994 (the reference period for the first year of the new index), this methodology produced a PPI arithmetically identical to a Laspeyres index with long-term price relatives.

In 2000, the index calculation methodology was changed. The weights were no longer updated annually for price change. In other words, the reference base was changed each year, but the weights remained at their 1998 relative levels. Because of this lack of annual updating of the weights, the new index calculation formula is technically no longer a Laspeyres index. The long-term price relative component of the Laspeyres index is being ignored. Since price changes from 1998 have not been extreme, the expected empirical impact of this "change in the index formula" is probably not significant. However, in periods of large changes in prices, the application of the current index calculation methodology could cause significant biases in the PPI.

Recommendation 1: Weights revised during major revisions should be updated for price change between the reference period for the weights and the reference period for the revised index.

Recommendation 2: Hold the reference period for the upcoming revised index constant for the five-year period between revisions.

3.4   Assessment and validation of intermediate data and statistical outputs

3.4.1   Intermediate results are validated against other information where applicable

Monthly PPI series are compared for consistency with commensurate data from the Retail Price Index (RPI), the CPI, the agricultural price survey, and other relevant price data.

Price Statistics (Producer Price Index)

3.4.2 Statistical discrepancies in intermediate data are assessed and investigated

Unusual and/or unexpected index movements are investigated to determine their causes.

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

Since the PPI is tabulated only by product aggregation, there is no possibility of discrepancies arising from imputation inconsistencies between aggregations by product or by industry (economic activity).

3.5 Revision studies

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

Since no preliminary data are published for the PPI, there are no revision studies of published index data.

Some analysis is carried out in association with the five-year cycle for major revisions of the index weights, the list of products, and the enterprise sample. However, no formal revision studies have been carried out.

Recommendation: Study the substitution bias for the PPI using data from the Annual Industrial Survey.

4. Serviceability

4.1 Periodicity and timeliness

4.1.1 Periodicity follows dissemination standards

The PPI is compiled and published monthly, thus meeting GDDS standards.

4.1.2 Timeliness follows dissemination standards

The PPI is published on the twelfth, or the first work day after the twelfth, of the month following the reference month of the index, thus exceeding the GDDS standards.

4.2   Consistency

4.2.1   Statistics are consistent within the dataset

Since PPI tabulations are made only by product aggregation, and not by industry (economic activity), there is no issue with regard to internal consistency between the two types of aggregation.

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

A change in the index calculation methodology for the PPI was implemented in 2000. The new indices were linked to the old indices to obtain a continuous historical series. This methodological change was documented in the January 2000 monthly index release. The index was not recalculated backward based on the new calculation methodology. Other than the documentation given in the January 2000 monthly CPI release, no detailed documentation exists about the change in index calculation methodology that was implemented.

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

The PPI is consistent with other national statistical series such as the RPI, the CPI, agricultural price statistics, and national accounts.

4.3   Revision policy and practice

4.3.1   Revisions follow a regular and transparent schedule

The PPI weights are revised every five years. The last two revisions were carried out in 1995 and 2000. The SSO has begun the PPI revision for 2005.

Since the Industrial Survey is carried out on an annual/continuous basis, it does not determine the timing of the PPI weight revisions. If desired, more frequent revisions of the PPI weights could be implemented.

Although the five-year revision schedule for the PPI weights is not made known officially to the public, major index users are aware of this schedule. Documentation for the 2000 PPI revision is limited to the description given in the monthly statistical release for the January 2000 index.

4.3.2   Preliminary and/or revised data are clearly identified

Preliminary data are not published for the PPI.

Price Statistics (Producer Price Index)

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

No revision studies for the PPI are published.

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 PPI is disseminated in a number of formats including the "Monthly Report" that has a news-release-type format, the *Monthly Bulletin* that includes all SSO monthly series, the *Statistical Yearbook of the Republic of Macedonia*, the SSO website, and an automated telephone recording.

Although a limited number of graphs are included in the *Monthly Bulletin* and the yearbook, there are no graphs in the monthly report. Analysis of important changes for the current index month are included in the monthly report but not in the *Monthly Bulletin*. However, a short methodological note is included in the *Monthly Bulletin* but not in the monthly report. While the presentation of short-term trends in the index is well done, it is difficult to determine long-terms trends in the index using only the published data. There is no good graphical presentation of the long-term behavior of the index.

Recommendation: Modify the dissemination format for the PPI to better present the long-term behavior of the index. The presentation should include both tables and graphs.

5.1.2   Dissemination media and format are adequate

Basically the same index data on the PPI are released in all formats. Unpublished detailed series are available upon request.

5.1.3   Statistics are released on a preannounced schedule

The PPI is disseminated according to a preannounced quarterly calendar.

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

The PPI is released to all users simultaneously on the tenth, or the first work day after the tenth, of the month following the reference month for the index.

5.1.5   Statistics not routinely disseminated are made available upon request

More detailed data on the PPI are made available to users upon written request to the Information Department of the SSO.

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 internationally accepted standards, guidelines, or good practices are annotated

Only a short documentation is presently available for the PPI. However, the SSO is in the process of preparing a document that gives a detailed documentation of the index.

FYR Macedonia has only recently (February 2004) gained GDDS status. Only a preliminary version of the GDDS metadata is available. The SSO staff are presently reviewing these data for accuracy.

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

A short description of the PPI is included in the *Monthly Statistical Bulletin* and in the *Statistical Yearbook of the Republic of Macedonia*. A more detailed documentation is not yet available.

Recommendation: Prepare and publish a complete documentation of the PPI.

5.3   Assistance to users

5.3.1   Contact points for each subject field are publicized

All statistical products of the SSO include the telephone number, facsimile number, mailing address, and e-mail address of the Information Department. The address of the SSO website is also included. Enquiries regarding statistical series are handled through the Information Department. Each enquiry is passed on to the appropriate person responsible for the given index series, and unpublished data are available only upon written request to the department.

The Information Department also monitors periodically requests for statistical data.

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

A catalog of SSO publications, including sale prices for the products, is available to the public. However, the only publications referring to the PPI included in the catalog are the *Monthly Statistical Report of the Republic of Macedonia* and the *Statistical Yearbook of the Republic of Macedonia*. The "Monthly Report" on the PPI is not listed but is available through the Information Department.

Table 3. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Producer Price Index
(Compiling Agency: State Statistics Office)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; SDDS = Complies with SDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
0. Prerequisites of quality							
0.1 Legal and institutional environment			X			Low response rate to enterprise surveys undermine the quality of source data for index weights.	
0.2 Resources				X		There is only one person working directly on the PPI at the central office. There is a need for additional personnel to serve as backup and to conduct research and development for the index.	
0.3 Relevance		X					
0.4 Other quality management			X			Some deficiencies in support provided by the SSC quality management program for research, development, and staff training for the PPI.	
1. Assurances of integrity							
1.1 Professionalism		X					
1.2 Transparency			X			Public not informed of one-day previous access for information purposes only by the Prime Minister and the Finance Minister. Generally no advance notice is given for major changes in the index. However, a short documentation is given at the time of publication of the revised index.	
1.3 Ethical standards		X					

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Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
2. Methodological soundness							
2.1 Concepts and definitions			X			Tabulations are made exclusively by commodity aggregation. No tabulations are made by industry (economic activity) that take into account secondary products.	
2.2 Scope			X			Sales of production for export are excluded from the coverage of the index.	
2.3 Classification/sectorization		X					
2.4 Basis for recording		X					
3. Accuracy and reliability							
3.1 Source data			X			Insufficient coverage of small private enterprises.	
3.2 Assessment of source data			X			Little statistical analysis is conducted for the industrial survey upon which the enterprise sample for the PPI is based.	
3.3 Statistical techniques				X		Problems with the index calculation formula that could potentially result in biases for the index. Treatment of missing price could be improved.	
3.4 Assessment and validation of inter-mediate data and statistical outputs		X					
3.5 Revision studies				X		Although analysis is made at the time of weights revisions, no formal revision studies have been carried out.	

Table 3. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Producer Price Index
(Compiling Agency: State Statistics Office)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; SDDS = Complies with SDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
4. Serviceability							
4.1 Periodicity and timeliness		X					
4.2 Consistency		X					
4.3 Revision policy and practice			X			Although there is a regular program established for major index revisions, no formal revision studies published.	
5. Accessibility							
5.1 Data accessibility		X				While the presentation of short-term trends in the index is well done, it is difficult to determine long-terms trends in the published data. Very few graphs.	
5.2 Metadata accessibility			X			Although a short documentation is available, there is no detailed documentation available for the PPI.	
5.3 Assistance to users		X					

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IV. GOVERNMENT FINANCE STATISTICS

0. Prerequisites of quality

0.1 Legal and institutional environment

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

Through informal provisions in the Ministry of Finance (MOF), the Treasury Department of the MOF is assigned with primary responsibility as well as authority for the collection, processing, and dissemination of accounting data on fiscal operations of the general government. The MOF provides an appropriate institutional environment for compiling budgetary transaction data, but not for compiling government finance statistics (GFS) for general government. No specific law authorizes the compilation of fiscal statistics. The Law on Budgets (*Official Gazette* of the Republic of Macedonia (RM) No. 63/2000, 37/2002 and 51/2003), and other updated revisions, authorizes from 2004 the Treasury Department to maintain accounts for central government budget execution, extrabudgetary accounts (except for the Deposit Insurance Fund), and social security funds. This authority does not cover local governments. Treasury is the source of these records on central government transactions. The consistency of foreign debt data, compiled and reported by the National Bank of the Republic of Macedonia (NBRM), and the foreign financing data is promoted through arrangements between these two entities. No data on domestic debt, while internally available, are disseminated to the public. The unit responsible for compiling GFS, the Treasury, has control over the dissemination process, but there is no documentation that ensures this authority. There is usually an adequate liaison between the Treasury, which compiles fiscal data, and the Budgets and Funds Department, responsible for budget policy.

Recommendation: Propose a law authorizing the MOF compilation of GFS for the general government.

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

The fiscal data compiling entity, the Treasury, maintains the source accounts on the central government transactions, except for the Deposit Insurance Fund, and thus maintains the effective and timely flow of these source data. The NBRM, according to existing procedures, sends external debt data directly to Treasury. Contacts are maintained between Treasury and NBRM on external financing and debt to promote a proper understanding of data requirements, to avoid duplication of effort and reporting. While source data on local governments are maintained with the MOF Budgets and Funds Department, these data have not been shared with the Treasury, the fiscal data compiler. The Treasury was observed as not compiling or disseminating any data on local governments or on the Deposit Insurance Fund. In view of the similarity between budgetary account reporting and reporting under *A Manual on Government Finance Statistics (GFSM 1986)*, the Treasury makes adjustments to the accounting data and reports data in a similar format to that in *GFSM 1986*.

Government Finance Statistics

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

Public nonfinancial and financial corporations, as mandated by the Law on Public Enterprises, release their income statements and balance sheets to the MOF Budgets and Funds Department on a regular annual basis. These enterprise data are considered by the MOF, by entity or in the aggregate, to be confidential. The justification for this policy in view of needs for transparency of government data is unclear. To compile government balance sheets consistent with the *Government Financial Manual Statistics (GFSM 2001)*, data on the aggregate of equity values of these enterprises, which is part of government's financial assets, are needed. Monthly and annual data on the central government by subsector (except for the Deposit Insurance Fund) are made available routinely to the public.

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

The Law on Budgets provides the Treasury with the legal authority to collect data required to compile the transaction data for all government entities of the budgetary central government. The NBRM, in accordance with the Law on the National Bank of the Republic of Macedonia (see, e.g., Article 19), collects external debt data and provides these data to the Treasury. The Law for Financing Local Government Units provides the Budgets and Funds Department with the authority to collect data on local governments according to the MOF approved chart of accounts. While no law specifically relates to collecting data on the central government Deposit Insurance Fund, there is expected to be no difficulty in the needed collection of transaction and stock data on this fund. The mission urged the collection of these data. The Law on Public Enterprises provides the same authority for MOF collection of annual data on public enterprises. Collection activity is broadly consistent with the legal authority. Penalties for local governments and public enterprises are identified in these laws.

0.2   Resources

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

The three staff members of the Treasury who spend only part of their time compiling accounting data on central government transactions are currently an adequate number to complete their assignments. At current staffing levels and commitments, however, Treasury lacks resources to adequately compile consolidated GFS on general government stocks and flows in accord with *GFSM 2001*, and a capability for such activity cannot be expected without appropriate training. In view of the present employment situation in Macedonia, staff turnover is manageable and salary levels are adequate for the nature of the work. However, there is no evidence that existing Treasury officials, who have understandings of *GFSM 1986* and *GFSM 2001*, have ensured that broad knowledge of GFS concepts and methodology is widely disseminated among staff involved in determining and monitoring fiscal policy.

Adequate computing resources are allocated and best efforts are made to exploit the potential of effective computing technology for compiling and disseminating GFS. The current computing system, however, does not have the flexibility to access government accounting records and automatically compile fiscal data in conformity with *GFSM 1986* or *GFSM 2001*. Office buildings provide adequate working facilities.

Funding is reasonably secure for the identified needs of the statistical program. The funding horizon is amenable to planning for statistical developments that are needed in the coming years in view of the expected migration to *GFSM 2001*.

Recommendation: Enhance staffing levels and training for the Treasury to permit a process of adequate and improved compilation of consolidated GFS on central government and general government stocks and flows in accord with GFSM 2001, and enhance computing system to automatically compile data in conformity with GFSM 2001.

0.2.2   Measures to ensure efficient use of resources are implemented

Periodic reviews of staff performance are conducted. In view of the limited staff and other resources engaged in data compilation, no further efficiencies are envisioned. The Treasury, which has officials with expertise in *GFSM 2001* and is currently considering steps needed for its implementation, has not yet sought outside expert assistance to evaluate current statistical methodologies and compilation systems.

0.3   Relevance

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

Users of fiscal data are widespread among policymakers, analysts, and other domestic and international bodies. A limited structured and periodic process of consultation (e.g., users' working groups) takes place with policy departments, ministries and other principal data users, which include academia, the press, and other private sector representatives, to review the usefulness of existing fiscal data and to identify emerging data requirements. In accord with the Act on State Statistics (Articles 10–13, a Statistics Council has been created to assess the adequacy of published data. The extent to which the MOF participates in such data review activities is unclear. In any event, the relevance of existing fiscal statistics in meeting public users' needs is not monitored.

The Budgets and Funds Department, the Customs Administration, and the Tax Policy and Administration Department receive daily fiscal data on budgetary central government transactions. The NBRM and the State Statistics Office (SSO) receive these transaction data on a monthly basis. The Budgets and Funds Department receives local government transaction data on a monthly basis.

While MOF officials have participated in the IMF-GFS courses, there is no evidence of regular participation in statistical meetings and seminars. The Treasury has not conducted studies to help identify new and emerging data requirements or user needs.

0.4 *Other quality management*

0.4.1 *Processes are in place to focus on quality*

The accounting and auditing systems for general government have an embedded mechanism of checks to help ensure quality of fiscal data. Management is sensitive to needs for fiscal data quality, but there is no mission statement that emphasizes the importance of quality and no evidence that managers are held accountable for achieving quality. With its focus on good data on budget execution of the central government, there has not yet been a focus by management on the need for consolidated GFS for the central or general government. No staff training programs emphasize the importance of quality and give staff an understanding as to how to achieve quality, but data quality is periodically emphasized. The Treasury has not implemented externally recognized processes or activities that focus on quality. No information is available on the Treasury'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*

Monitoring processes are not in place to inform managers on the quality achieved for ongoing statistical activities (e.g., response rates, editing rates, revisions history, and timeliness evaluations). Compilers have exhibited only limited access to expert guidance on the quality of their statistics and on strategies for improving data production. MOF officials indicated that periodic reviews have been 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*

Quality issues are addressed and largely taken into account in the work program. Feedback is routine from the NBRM, but routine feedback from public users on data quality and on data needs is not sought.

Recommendation: Implement a structured and periodic process of consultation with policy departments and other principal data users, including those in the private sector, to review the usefulness of existing fiscal data and to identify emerging data requirements.

1. Assurances of integrity

1.1 Professionalism

1.1.1 Statistics are produced on an impartial basis

The Law on Civil Servants (*Official Gazette* of the RM No. 59/2000) assists in ensuring impartiality on the part of civil servants by mandating that civil servants must perform their activities conscientiously and professionally, in accordance with the constitution and law. In accordance with Article 18, a civil servant also must act impartially and without influence of political parties, not be guided by his/her own political beliefs or personal financial interests, and refrain from misuse of authority. According to Article 20, these civil servants are obliged to keep a state secret and an official secret in a manner and under conditions stipulated by law and other regulations. Also, there are customs and traditions of professionalism that are recognized as essential to the credibility of statistical results, and the choice, tenure, and reporting arrangements of the agency's head have been supportive of the professional independence of the Treasury. The output of the Treasury is not altered or suppressed by those responsible for policy development.

In accordance with the Law on Civil Servants, recruitment and promotion are based on relevant aptitude and/or expertise, although no specific criteria in the area of statistics was observed as being in place. Only quite limited on-the-job training in the GFS methodology and compilation methods is provided, and there has been only limited participation in seminars and workshops. However, the staff from the MOF has attended IMF courses in GFS methodology to expand its knowledge of statistical practices and garner easy access to professional literature. Processes and activities in the workplace promote a culture of professionalism. However, there has not been significant peer review of statistical work, recognition of authors of methodological papers, organization of lectures and conferences, and the institutional support of professional bodies. Also, there is no evidence that research and analysis 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

There is no evidence that compilers are under political or other outside influence in choosing the most appropriate sources and methods for compiling GFS. For its source data for compiling central government transaction data, the Treasury uses its accounting data on central government operations. External debt data compiled by the NBRM are provided to the Treasury. While local government data are available in the MOF, the Treasury is not using these important fiscal data in its reports.

Decisions to disseminate fiscal data are based on MOF needs for reporting accounting data on transactions of central government budgetary, extrabudgetary, and social security entities and largely not on statistical considerations of statistical conventions such as *GFSM 1986* or

GFSM 2001. The same focus is relevant for decisions about the timing, media, and other aspects of fiscal data dissemination.

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

Staff behavior is consistent with high ethical standards. Treasury has a custom of being able to provide expert advice on technical aspects of reported fiscal data and does respond to misinterpretations of fiscal data. However, explanatory material is not routinely provided in press releases to prevent erroneous interpretations or misuses of fiscal data. MOF officials such as the Minister of Finance and the Cabinet of the Minister, and not the Treasury, monitor media coverage and comment publicly and in a timely manner on erroneous interpretations or misuse of reported fiscal data 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

MOF publications and websites reproduce accounting data that the Treasury compiles in accordance with the Law on Budgets. The practices and procedures for data compilation and dissemination, while reflecting MOF policies, are not indicated in the MOF *Bulletin* or on its websites. In brief, terms and conditions for compiling and disseminating data are not adequately reported. There is no evidence that MOF officials, in public speeches and other gatherings, make an active and ongoing effort to inform the public about the terms and conditions under which fiscal data are compiled and disseminated. The monthly MOF statistical publication, the *Bulletin,* identifies websites where more information about the MOF and its information products can be found.

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

Internal government access to fiscal data by policymakers prior to their release is not made public in terms of who has access and how long before the dissemination access is given. The Treasury operates on the understanding that no prior approval is required for its release of fiscal data.

Recommendation: Publicly report that MOF officials outside of the Treasury have access to fiscal data prior to their public release.

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

Data released to the public through the MOF *Bulletin* are not always identified as the data-producing agency's product (e.g., by name, logo, and insignia). See, for example, tables on pages 30–33 of the *Bulletin* (7–8, 2003). The data-compiling agency requests attribution

when its statistics are used or reproduced. Specifically, the MOF indicates in its *Bulletin* that this publication source is to be cited as the source of data used.

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

No advance notice in recent years has been given to the public (e.g., articles in the *Bulletin*, briefings, or news releases) if or when major changes have been introduced in methodology, sources, and statistical techniques. Specifically, while no advance notice has been given in recent years, there is no evidence that major changes in such techniques have been introduced during that period.

1.3   Ethical standards

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

The Law on Civil Servants is the major documentation available with guidelines outlining correct behavior when the agency or its staff members are confronted with potential conflict of interest. Additional documented guidelines are provided for MOF officials in the *Code for Behavior of Employees of the MOF*, which mandates professionalism, objectivity, confidentiality, and political neutrality in staff work (e.g., with respect to guarding against misuse and misrepresentation of data). Also, a strong culture for maintaining ethical standards in government discourages outside interference. (Note that there is no code of conduct for nongovernmental public sector workers, which account for roughly five sixths of all public sector employees.)

There is no documentation where MOF management acknowledges its status as a role model and is vigilant in following the ethical standards, or where new staff members are made aware of the standards when they join the organization. But MOF staff members are reminded periodically of ethical standards.

2.   Methodological soundness

2.1   Concepts and definitions

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

Nationally developed concepts and definitions similar to those in *GFSM 1986* are followed. Specifically, there are major linkages between nationally reported aggregates of fiscal data and those in *GFSM 1986*. However, some aggregates are not properly defined according to the international statistical conventions. The distinction between domestic and foreign financing and debt is based on the residency criteria of the IMF's *Balance of Payments Statistics Manual* (fifth edition, 1993).

The *GFSM 2001* prescribes complete reporting over time of comprehensive general government stocks and flows, where transactions are reported on an accrual basis, and summary data on transactions are reported on a cash basis. While the authorities are considering the possible adoption of a "migration path" from the 1986 to the 2001 system, no migration path for implementing *GFSM 2001* in stages has been established.

In response to queries, the mission described the fundamental aspect of the *GFSM 2001* methodology as a call for compiling a comprehensive and integrated set of data, including data on balance sheets, transactions, and other economic flows (such as holding gains). It also discussed analytical reasons to establish a documented migration path for implementing aspects of the 2001 methodology in a series of nationally determined stages over time. One stage, for example, would typically include establishing a balance sheet. In this regard, the mission was pleased to observe that preliminary considerations were being made for compiling balance sheet data of the national government. The mission stated that the *GFSM 2001* methodology calls for compiling both complete accrual data and summary cash data. It also indicated that the statistical reporting system for the *GFSM 2001* methodology accommodates, for example, the use of accounting records based only on cash records. The mission noted the need over time for reporting, in line with *GFSM 2001*, data on certain memorandum items such as contingent liabilities, arrears, and social security obligations.

Recommendation: Establish a documented plan to migrate in stages to the implementation of GFSM 2001.

2.2 Scope

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

Reported fiscal data do not cover all general government activities. Consolidated GFS for central and general governments are not compiled and disseminated. Reported data cover only the operations of entities of the budgetary central government, the National and Regional Road Fund (a relatively small extrabudgetary fund), and social security funds (part of the general but not central government); no local government data are reported, even though these data are available in the MOF Budgets and Funds Department. (See Chapter I, sections I.A. and I.B. of the *GFSM 1986*.) Data are accessible monthly for the Treasury on all cash transactions of the general government except for the relatively limited amount of transactions of the Deposit Insurance Fund, for which data need to be collected. There is for the budgetary central government a summary table of major components, a table on revenue, and tables on expenditure by economic type and by functions of government (see, e.g., pages 30–33 in the *Bulletin* of 7–8, 2003).[1]

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[1] The *Bulletin* sometimes uses revenue and expenditure in a manner inconsistent with that in *GFSM 1986*. In its table on page 32 (7–8, 2003), for example, "revenue" means receipts and "expenditure" means payments.

While no data are reported on central or general government gross debt (classified by residency, i.e., foreign/ domestic, or the holder of the liabilities), the NBRM reports data on the external debt of the central government. Domestic debt data, while available in the MOF, are not reported. Transaction data are available for the social security funds and the National and Regional Road Fund (see, e.g., pages 35–38 in the *Bulletin* of 7–8, 2003). All annual and monthly transaction data that are reported are considered as final. Available monthly data, for central government and local governments, are revised on occasion to ensure that data for the 12 months of the fiscal year sum to reported annual data. Annual data of general government units cover separately all units of the central government except for the Deposit Insurance Fund. The mission observed that the availability of monthly data on general government subsectors permits the consolidation of aggregate monthly data on central and general government as well as the consolidation of comprehensive consolidated annual data on central and general government. Thus, it urged the dissemination of these annual data as soon as feasible (e.g., through the *GFS Yearbook*).

Recommendation: Compile and disseminate consolidated GFS for all transactions and debt of central government and general government in accordance with GFSM 2001.

2.3   *Classification/sectorization*

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

Most but not all transaction categories are classified by using the methodology set out in Chapter IV of the *GFSM 1986*. These include tax and nontax revenue and current and capital expenditure. Current expenditure includes data on compensation, goods and services, transfers, interest payments, and payments related to government guarantees.

However, some aggregates are not consistent with that framework. Privatization receipts are included in reporting on financing rather than under lending minus repayments, as called for in *GFSM 1986*. Some grants received are reported in financing rather than under grants. National charts of accounts, which are similar for all general government units, are not adequately detailed to conform closely enough to GFS classifications, including those classifications required to compile consolidated data on various levels of general government. The national classification of crisis-related expenditure cannot be translated into GFS classifications. There is no reporting on financing data by creditor aside from the breakdown between foreign and domestic creditors.

Data on annual expenditure of the budgetary central government according the Classification of Functions of Government (COFOG) are compiled and reported in the *Bulletin*. Data on the budgetary central government from 2004 are available on the basis of the budget execution and on the more comprehensive basis that includes special or own accounts maintained by some ministries and recorded by the Treasury. The mission underscored the importance of using these more comprehensive data in disseminated statistics on government. Data on debt

guarantees and arrears are compiled in MOF but are not reported in the *Bulletin* or on MOF websites; the mission urged the routine dissemination of these data.

In general, fiscal data compiled historically in accordance with the *GFSM 1986* methodology or currently in accord with *GFSM 2001* methodology allow for cross-country comparison of data. See, for example, the IMF's *Government Finance Statistics Yearbook* and the IMF's *International Financial Statistics*.

Institutional sectors are defined in accordance with the *System of National Accounts 1993 (1993 SNA)*, the *GFSM 1986*, and the *GFSM 2001*, but sectoral descriptions are not fully identified. Fiscal data are provided separately only for the budgetary central government, one extrabudgetary fund, and social security funds. No consolidated data on central government are compiled. No local government data are reported to the public even though local government data are collected by the MOF.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks

Transactions are valued on the basis of the amount of payments in cash, or in cash equivalents. Data on gross domestic debt, available internally in the MOF, are not reported. External debt of long-term credits by creditor, valued on the basis of the remaining balance of the face value, is reported in the NBRM *Monthly Report* (i.e., the amount that the government is obligated to pay when the debt matures). Amounts of external debt denominated in foreign currency are converted to U.S. dollars using the midpoint between the buying and selling market rates on the date for which recording occurs.

2.4.2 Recording is done on an accrual basis

Transactions of central and local governments, recorded only on a cash basis, are recorded as close as possible to the time of payment, in accord with *GFSM 1986*. More precisely, receipts are reported at the time that deposits are received, and payments are reported at the time government authorized payment orders are executed.

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

All transactions are shown on a gross basis, except for financing transactions and corrective transactions, such as refunds of taxes and overpaid expenses, which are shown net. Such procedures for cash transactions are consistent with both *GFSM 1986* and *GFSM 2001* methodologies.

3.   Accuracy and reliability

3.1   Source data

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

Data sources are adequate to allow the future compilation of government finance statistics for the general government and its subsectors, excluding the Deposit Insurance Fund. A comprehensive register of individual public sector units also is available. The public sector includes 24 public enterprises (which report to parliament or the MOF), as well as general government units. Institutional and geographical coverage of data sources is complete. GFS codes are not currently embedded in the national charts of accounts; appropriate bridge tables, which could facilitate compilation closely in accord with GFS methodology from the underlying accounting information, have not yet been constructed. Qualitative information on the data sources for budgetary central government transactions is collected to monitor the adequacy of the sources.

Compilers regularly review data sources for budgetary operations to ensure that this part of the data collection system remains comprehensive, but such policies and reviews are not documented. Problems owing to material gaps in the coverage of data collection are identified and addressed. Treasury, the data-compiling agency, records all transactions of the budgetary central government, but it does not review data sources of other general government entities to ensure that the data collection system becomes comprehensive. The MOF plans to review its policy regarding the possible implementation of *GFSM 2001*.

Most data are available to allow consolidation of data for different levels of government. (Consolidation requires information on all transactions and financial claims among government units for which data are being consolidated.) Data for government units are available with adequate timeliness. Extrabudgetary and social security data, while not currently available with precisely the same classifications as those of the budgetary central government, can be used to consolidate data. Treasury, with approval of the MOF, has the authority to collect data of sufficient quality and detail from all parts of general government. It also has systems (both automatic and manual) that are adequate for handling data to compile consolidated GFS for general government.

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

The definitions, scope, sectorization, time of recording, and valuation of transactions and debt embedded in source data are not adequately identified in reports. The classification of source data does not conform closely enough to internationally accepted good practices. National charts of accounts for central and local governments do not align well enough or closely enough with GFS classifications for an identification of transactions in accord with *GFSM 1986* or *GFSM 2001* classifications. As examples, tax data do not distinguish between

taxes on individuals and other legal entities, and transfer payments do not always identify the type of recipient. No bridge tables linking national classification codes for transactions or stocks, for 2003 or for the different national codes for 2004, have yet been completed to help ensure the accurate and detailed reporting in accord with either of these methodologies.[2]

The mission urged that careful consideration should be given to establishing new charts of accounts that more directly align with *GFSM 2001*, particularly in the event that much of the existing detailed national classifications are not needed.[3] Source data used to compile transactions and debt data for the general government and its subsectors need to be sufficiently detailed to allow classifications to follow internationally accepted good practices. (Following an adoption of national classifications that align more closely with GFS methodology, the ideal way of compiling GFS is from a Financial Management Information Management System (FMIS) that integrates the preparation of budget policy data, accounting reports, and GFS.)

While all country reporting for the *GFS Yearbook* in 2003 is based on the classifications in the *GFSM 2001*, there is no necessary presumption that recording or reporting systems in individual countries have changed. The IMF has used a bridge table linking the *GFSM 1986* classifications with the *GFSM 2001* classifications to change existing reports to those based on *GFSM 2001*. Also, to the extent that national account data are not available for certain transactions such as consumption of fixed capital, there simply would be no reported entries for these items. If accounting records are only available for cash transactions, which is usually the case, these data will be published in the *GFS Yearbook*. While the *GFSM 2001* identifies the ideal reporting of both summary cash data and comprehensive accrual data, the important issue is that compilers report the precisely identified basis of recording and use the main account data that are available (possibly a mix of cash and accrual data) for the accrual reporting and simply the cash data for the summary cash table for the *GFS Yearbook*.

Recommendation: Establish, perhaps for 2005, a national chart of accounts for all general government subsectors that aligns substantially more closely with GFSM 2001 classifications.

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[2] A fiscal reform project under Bearing Point (funded by the United States Assistance for International Development) is working with the MOF to establish a bridge table linking 2003 data and one linking the differently classified 2004 data with *GFSM 2001* classifications. Bearing Point officials are also considering a proposal to establish (possibly in 2005) a new in-between chart of accounts for economic classifications, substantially different from existing and *GFSM 2001* classifications, which would permit a closer link to *GFSM 2001* classifications. The national chart of accounts also covers expenditure by Classification of Functions of Government (COFOG) categories and by entity within government.

[3] In brief, it may be possible to use the structure and codes of *GFSM 2001* and add, within that structure, codes to satisfy national or budgetary needs for additional classifications.

3.1.3　Source data are timely

Source data are available with sufficient timeliness and periodicity from reporting units to meet timely dissemination of statistics for general government and its subsectors. Reporting units are aware of certain deadlines set for reporting. General government entities, including the National and Regional Road Fund, and social security entities, report monthly data to the MOF within 15 days of the end of the reporting month and annual data within 2 months of the end of the fiscal year. Treasury compiles timely source data on budgetary central government and has experience in employing follow-up procedures to ensure the timely delivery of other source data (e.g., by maintaining regular contact with the reporting units).

3.2　Assessment of source data

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

No automated procedures are used to facilitate the monitoring of the accuracy of data reported by any individual government sector units. Manual procedures test the internal consistency of each institution's data. Data inconsistencies and out-of-trend values are confirmed with these reporting units, and documented. Data compilers analyze these source data for misreporting, in particular to check for temporal consistency and consistency with other related data sources. The compilers address questions concerning the accuracy of these source data through direct contacts with reporting agencies. Procedures for routine discussions of data reconciliation are in place for facilitating the monitoring of monetary and fiscal records related to government deposits and external debt, but summary results of these discussions are not available.

Not all source data for the central or general government are adequately assessed. However, source data for the budgetary central government are assessed carefully. External financing data of the MOF and external debt data of the NBRM are reconciled. There is limited evidence that transactions between government subsectors are checked.

3.3　Statistical techniques

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

Compilation procedures strive to minimize processing errors such as coding, editing, and tabulation errors. All reported data are considered as final. Monthly data are revised occasionally when more accurate data, such as the release of annual data that are inconsistent with monthly data, become available. Compilation procedures are neither documented nor updated periodically. Discrepancies between total transactions and changes in deposits of budgetary central government are periodically but not fully identified.

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

Bridge tables linking national charts of accounts, for 2002/03 or for 2004, with GFS classifications have not been constructed. One major reason is that government classifications of accounting data do not conform closely enough to detailed classifications called for in *GFSM 1986* or *GFSM 2001*. The structure of the account data is close enough to *GFSM 1986* that compilation of estimates of data for aggregates in *GFSM 1986*, with certain adjustments, is feasible.

In view of the absence of certain details in the chart of accounts, significant further refinements, or a substantially different set of national classifications (possibly structured in accord with *GFSM 2001*), are needed to permit (i) the complete translation of nationally reported accounting data to statistics that would fully conform with *GFSM 1986* or *GFSM 2001*, and (ii) the accurate consolidation of stock and flow statistics on the central government, and consolidation of stock and flow statistics on the general government.

Recommendation: Document and utilize bridge tables linking 2003 and 2004 national charts of accounts with GFSM 2001 classifications.

3.4   Assessment and validation of intermediate data and statistical outputs

3.4.1   Intermediate results are validated against other information where applicable

The process of validating the accuracy of detailed classified accounting data used in reported data is not well established. Significant effort is expended on internal and external audits and on reconciling data.[4] However, the reports of the MOF internal auditors (to be soon identified as the Department for Internal Audit), while sent to the specific audited agencies, are not sent to the MOF Treasury to ensure proper classifications. While receipts and payments seem to be fully accounted by the Treasury, there is no assurance of proper final classifications of these transactions. In this context, there is limited evidence of procedures in place to fully ensure that accounting data are accurate or that final reporting of statistics is based only on the latest most accurate and reliable source data.

3.4.2   Statistical discrepancies in intermediate data are assessed and investigated

The mission was informed that expenditure by economic type and by function has been cross-checked for consistency, and the expenditure data by economic type and by function in the *Bulletin* have been consistent.

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[4] All public sector entities, consistent with the Law on State Audit (*Official Gazette of RM*, No. 654/97 and 70/2001), are subject to external audit by the General State Auditor.

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

Fiscal data and other macroeconomic data, except for external debt data of the NBRM, are not usually compared or reconciled.

The NBRM routinely conducts bilateral data reconciliations with external donors and creditors, and investigates significant discrepancies. However, concepts and compilation methods are not sufficiently identified to fully and carefully conduct data comparisons. Statistical users of fiscal data have identified this as an area in which improvements can be made.

Recommendation: Routinely reconcile fiscal data with data in other macroeconomic statistical areas and periodically document status of reconciliations.

3.5   Revision studies

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

There is no evidence that studies and analysis of data revisions are conducted, even though fiscal data are occasionally revised. Accounting data are regularly archived and could be retrieved for revision studies, for the occasions that data are revised.

4.   Serviceability

4.1   Periodicity and timeliness

4.1.1   Periodicity follows dissemination standards

Data on selected aggregates of revenue, expenditure, balance, and financing with some breakdown by instrument are reported on a monthly basis for the subsectors of the central government. External debt data of central government are reported on a monthly basis. Domestic debt data, while compiled, are not reported.

4.1.2   Timeliness follows dissemination standards

Monthly aggregate data on revenue, expenditure, balance, and financing with some breakdown by instrument are available for subsectors of the central government within roughly one month of the reported month. External debt data of central government on a monthly basis are available after a period of 45 days of the reporting month. Budgetary central government data, except for domestic debt data, are usually available after approximately one month. While reporting is often delayed somewhat, the timeliness of the reporting is within GDDS recommendations.

Statistical users have called for more timely routine dissemination of monthly data. The MOF *Bulletin*, published monthly through 2002, has been released much less frequently in the past year, roughly about once a quarter. MOF authorities indicated plans to disseminate, monthly fiscal data on the MOF website, in English and Macedonian, in a timely manner.

4.2   Consistency

4.2.1   Statistics are consistent within the dataset

Fiscal data are consistent within the dataset. Deficits/surpluses equal financing. Major aggregates equal the sum of their components. (See the MOF *Bulletin,* e.g., page 30 in 7-8, 2003). Concepts, definitions, and classifications for monthly and annual fiscal data are the same.

The sum of monthly transaction data equals annual data; this equality reflects either the accuracy of monthly data or the revisions that are made occasionally to monthly data for those years where differences occur. If observed differences are significant, care is made to ensure that revisions to monthly data are made in those specific months where the errors are uncovered. During recent years, the statistical discrepancies have not been large. For 2003, for example, there were no differences between monthly and annual data. Net foreign borrowing data and foreign liabilities occasionally are reconciled. (See evidence of reconciled data, e.g., in the MOF *Bulletin*, 7–8, 2003, page 19).

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

Many consistent time series are available for five years in the *Bulletin*. Some statistical users are concerned about a lack of years for which annual data are released on websites. There is no evidence in recent years of changes in source data, methodology, techniques, or series breaks. There are no recent examples of unusual changes in economic trends that could be explained in a 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

Fiscal data, a direct source of national accounts data, are largely consistent with reports of national accounts data, even though fiscal data are on a cash basis rather than an accrual basis. The same finding was observed in connection with balance of payments data. There is only mixed evidence that government records on its changes of cash balances with the banking sector are consistent with the monetary and financial statistics. For example, not all of the difference of the 14 billion denars in 2001 fiscal and monetary reports on the use of cash balances by the budgetary central government during the mission could be explained by differences in government unit and account coverages. In short, fiscal and monetary reports on government deposits are not always consistent.

The reasons for observed differences have not been fully ascertained, and there is no adequate documentation provided on the reasons for discrepancies. The mission urged MOF and NBRM authorities to exchange documented information on the institutional definition of government units and accounts and take steps to ensure the documentation of progress on reconciliation issues. Consistent with the Law on the National Bank of the Republic of Macedonia, the NBRM has records on foreign debt of the central government, including that in the form of direct loans from foreign governments and international institutions. These records, available from the NBRM Foreign Credit Relations Department, are not available from main GFS data sources of the Treasury.

4.3 Revision policy and practice

4.3.1 Revisions follow a regular and transparent schedule

Monthly and annual fiscal data, as released, are considered to be only on a final basis even though these data can be revised on those occasions where justified. Such occasions are due to changes in data sources, such as the release of inconsistent annual data following the release of corresponding monthly data (or rarely on the release of audited annual data). Revision cycles, such as those corresponding to the release of annual data, are not made known to the public. Reasons underlying revisions (e.g., the availability of revised source data) are not explained. Adequate documentation of revisions needs to be included in the publication of the statistical series and in the database accessible to users. When revisions, inside or outside any revision cycle, are called for, they need to be made known to the public (e.g., through the publication of data in bold print).

4.3.2 Preliminary and/or revised data are clearly identified

Monthly and annual fiscal data are considered to be on a final basis even though these data can be revised occasionally. No data are identified as preliminary. Revised data are not usually identified as such.

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

Data revisions are not measured, assessed, or explained in the MOF publication and are not placed in MOF websites accessible by users. Thus, no analysis of differences between the preliminary and revised data is published for major aggregates to allow an assessment of the reliability of preliminary data.

Recommendation: Identify data revisions, explain revisions, and disseminate information summaries of studies on revisions, in a manner easily accessible by users.

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)

Fiscal data for major aggregates are disseminated mainly according to the standard components of the *GFSM 1986* (e.g., in the *Bulletin* and on MOF websites). The MOF also publishes an *Annual Economic Report,* which has more information. For example, it has tables with consolidated data on general government as well as the budgetary central government, but the precise coverage of these tables is not identified. It usefully has more detail than one observes in the *Bulletin* or on the MOF websites. For example, it has data on arrears and on net domestic financing by category of domestic borrower.

The mission discussed a need for the dissemination of these limited but more comprehensive series through the *Bulletin* and the MOF websites. Comprehensive fiscal data are not disseminated to meet a range of users' needs with various levels of detail (disaggregation). Descriptions of fiscal data are provided occasionally with charts and tables to facilitate analysis. There are no fiscal time series subject to seasonality, and thus fiscal data series are not disseminated in a seasonally adjusted form.

Recommendation: Routinely disseminate more comprehensive stock and flow data that conform to international statistical conventions.

5.1.2   Dissemination media and format are adequate

The mission found it commendable that the MOF published a *Bulletin* with fiscal data and that fiscal data are disseminated at no cost to the public through the *Bulletin,* sometimes with press releases, and through websites that facilitate redissemination in the media. The MOF also publishes an *Annual Economic Report,* but the report is in fact published only every other year (the most recent report, published in early 2002 covers the 1999–2001 period). Comprehensive and/or detailed statistics, such as those observed in the *GFS Yearbook,* are not disseminated in publications or electronic formats. Longer time series that are reported cannot be accessed through an electronic database maintained by or on behalf of the data-compiling agency.

5.1.3   Statistics are released on a preannounced schedule

No schedule announces in advance the dates on which fiscal data, in publications or websites, are to be released. Users of statistics have called for the convenient availability of such advance calendars (possibly on the MOF website). The timing of data and publication releases varies significantly.

Recommendation: Disseminate an advance calendar with a schedule identifying the dates on which fiscal data, in publications and websites, are to be released.

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

While the public is not typically informed when fiscal data are released, the procedures to access the data through the Internet are made available in the *Bulletin*. Fiscal data are made available simultaneously to all interested users. The press is not briefed in advance of release of fiscal data.

5.1.5   Statistics not routinely disseminated are made available upon request

Aside from those data on fiscal aggregates that are routinely disseminated, additional fiscal data are not made available upon request. Customized tabulations are not provided to meet specific requests.

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 internationally accepted standards, guidelines, or good practices are annotated

A comprehensive practices and procedures document is not published. Only limited metadata are accessible in the MOF *Bulletin* and websites. The *Annual Economic Report* also has only limited metadata, making it also difficult for the reader to understand precisely what the data cover. The availability of fiscal data is not cross-referenced in data releases, or otherwise well publicized (e.g., in catalogs). Statistics users have called for the release of detailed descriptions of data explanations and of methodology.

Recommendation: Publish a comprehensive practices and procedures document for GFS, and precisely and completely identify metadata describing all disseminated fiscal data.

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

General use information (e.g., a brochure) about government finance and other public sector statistics (e.g., how to locate the data) is not available or made public. More specialized use information (e.g., background papers, working documents) also is not available or made public.

5.3   Assistance to users

5.3.1   Contact points for each subject field are publicized

The MOF *Bulletin* clearly identifies contact points for enquiries by mail, telephone, facsimile, or by e-mail. Knowledgeable service and support from the MOF Treasury are

available to users of statistics only if requested in writing and if data are not confidential. Material to raise awareness on the use of fiscal data is not typically made available. Access points for clients to obtain fiscal information are identified in the *Bulletin* and on the websites. Assistance to fiscal data users is available only upon approval of the Head of the Treasury.

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

No catalogs of publications, documents, and other services to users are available. The *Bulletin* is made available to the public without cost, and MOF websites are clearly disclosed in the *Bulletin*. The MOF Cabinet provides assistance in placing orders for the *Bulletin*.

Recommendation: Publish a catalog or brochure of publications, documents, websites, and other services to users of fiscal data.

Table 4. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Government Finance Statistics
(Compiling Agency: Ministry of Finance Treasury)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; SDDS = Complies with SDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Time Frames
		O	LO	LNO	NO		
0. Prerequisites of quality							
0.1 Legal and institutional environment			X			MOF has an insufficient focus on GFS.	
0.2 Resources			X			MOF lacks resources to adequately compile GFS according to *GFSM 2001*.	Computer software will permit automatic compilation of GFS.
0.3 Relevance			X			Public users' needs for fiscal data are not monitored for relevance.	
0.4 Other quality management			X			Routine feedback from public users on data quality and data needs is not sought.	
1. Assurances of integrity							
1.1 Professionalism		X					
1.2 Transparency			X			Practices and procedures for compiling and disseminating data are not reported.	
1.3 Ethical standards		X					
2. Methodological soundness							
2.1 Concepts and definitions			X			No migration path for *GFSM 2001* has been established.	
2.2 Scope				X		Consolidated GFS are not compiled for central or general governments. Domestic debt data are not reported.	Establish debt management unit in the MOF, propose a law for disseminating domestic and external debt, and report the data.
2.3 Classification/sectorization			X			Most but not all transaction categories are classified according to *GFSM 1986*.	A new classification system consistent with GFS will be implemented.
2.4 Basis for recording		X					
3. Accuracy and reliability							
3.1 Source data			X			National charts of accounts are not close enough to GFS.	
3.2 Assessment of source data			X			Not all source data for central or general government are adequately assessed.	
3.3 Statistical techniques			X			Tables linking accounting and GFS classifications do not exist.	
3.4 Assessment and validation of inter-mediate data and statistical outputs			X			Fiscal and other macroeconomic data typically are not compared.	
3.5 Revision studies				X		No recent evidence exists that studies or analysis of data revisions are conducted.	

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Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Time Frames
		O	LO	LNO	NO		
4. Serviceability							
4.1 Periodicity and timeliness		X					
4.2 Consistency			X			Fiscal and monetary reports on deposits and their changes are not always consistent.	
4.3 Revision policy and practice				X		Revised data are not typically identified.	
5. Accessibility							
5.1 Data accessibility				X		No schedule announces in advance the dates that fiscal data are to be released.	
5.2 Metadata accessibility			X			A sources and methods document is not published.	
5.3 Assistance to users			X			No catalogs of publications, documents, and other services to users are available.	

V. MONETARY STATISTICS

0.   Prerequisites of quality

0.1   *Legal and institutional environment*

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

The National Bank of the Republic of Macedonia (NBRM) is the sole official agency responsible for collecting, compiling, and disseminating monetary statistics. The authority of the NBRM to request data and information from banks is granted by the *NBRM Law* (Article 40) and the *Banking Law* (Article 69). Article 40 of the NBRM Law also indicates that the NBRM's work of collecting, processing, and publishing information should be in accordance with other relevant laws, such as the *Act on State Statistics* (Article 5), which governs the Statistical Research Program in all areas in the FYR Macedonia.

The responsibility for compiling monetary statistics resides with the NBRM's Research Department. In early 2004, the NBRM was undergoing a reorganization, which would result in the establishment of a Statistics Department with a view to enhancing the NBRM's statistics functions by centralizing them in one department. This reflects the increased importance attached by NBRM management to the statistics work.

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

There are well-established arrangements within NBRM for ensuring the efficient and timely flow of source data to the Research Department for use in compiling monetary statistics. The Accounting Department produces monthly balance sheet data of the NBRM and provides them to the Research Department 20 days after the end of the reference month. The monthly balance sheet data of banks and savings houses are transmitted to the NBRM's database eight days after the end of the reference month. The Research Department also coordinates with the Accounting and Supervision Departments to ensure that new data requirements are appropriately incorporated into the existing data reporting system to meet emerging needs for the compilation of monetary statistics.

When the need arises, the NBRM Council forms ad hoc working groups. The NBRM Council is the governing body of the NBRM, consisting of the NBRM Governor, two vice governor, an d members from outside the NBRM. The working group consists of concerned NBRM departments and other government agencies to address data reporting coordination issues and to ensure the maximum utilization of the existing reporting system.
For instance, in December 2003, the NBRM formed a working group for addressing issues related to classification of foreign assets and foreign liabilities of the banking sector in accordance with the IMF methodology.

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

Monetary statistics do not disclose data on individual units. The *Act on State Statistics* (Article 35) and the *NBRM Law* (Article 95) state that individual data collected for statistical purposes shall be utilized only for statistical purposes. Disclosure of confidential data is prohibited unless a written request of the Court is presented.

The reporting banks and other financial institutions are well aware of their rights and obligation with regard to the provision of information as stated in the *NBRM Law* and the *Banking Law*, which are posted in NBRM's internet website (http://www.nbrm.gov.mk).

The *NBRM Law* (Article 97) also stipulates that fines can be imposed on anyone violating confidentiality, ranging from 40,000 to 50,000 denars. All NBRM staff are required to abide by the appropriate rules and regulations to prevent disclosure of confidential information.

The NBRM takes several measures for preventing disclosure of individual data, including (i) introduction of a security device in the electronic data transmission system, (ii) password protection of the computer center to allow access to authorized staff only, and (iii) restricting access to the database containing individual data to authorized staff only.

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

The *NBRM Law* (Article 40) and *Banking Law* (Article 69) state that all banks and savings houses must provide the NBRM with reports on their financial statements and other financial data in the format and by the date prescribed by NBRM. Currently banks and savings houses are required to report monthly balance sheet data to the NBRM within eight days after the end of the reference month. The *NBRM Law* (Article 98) also specifies that the penalty for failure to meet such data reporting requirement is a fine of 10,000–50,000 denars.

The NBRM's database was designed in such a way that all data reported to the NBRM for various purposes can be accessed by all relevant departments with a view to ensuring the maximum utilization of the available data by various NBRM departments. The NBRM monetary data compilers can use other reported data as supplementary information for more detailed information or for cross-checking accuracy of relevant data. In addition, the working group reviews reporting requirements when issues are raised regarding adding new data requirements and eliminating items no longer in need.

The NBRM provides reporting banks with written instructions for completing their monthly report. The monetary data compilers maintain regular contact with reporting banks via email or telephone to discuss or clarify identified data issues.

0.2 Resources

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

The number and qualification of staff working on monetary statistics are adequate. The five staff in the Financial Statistics Section under the Research Department have primary responsibility for monetary statistics. The majority of them have college degrees in economics. In addition to on-the-job training, four staff have participated in the Monetary and Financial Statistics Course conducted by the IMF in the Joint Vienna Institute. A core staff with adequate experience and training is maintained.

Computing resources provided for compiling monetary statistics are adequate to perform required tasks. All staff in the Financial Statistics Section are equipped with computers. The whole process of data transmission, compiling, and tabulation is computerized. In addition, the Information Technology Department has systems in place to protect the NBRM's computer resources and maintain operation in the events of an emergency.

Adequate financial resources are allocated to the Research Department for the work on monetary statistics. There are well-established processes for budgeting for the coming year's work program. Proposals for departments' needs for ongoing programs and developmental work are submitted via the Accounting Department to the NBRM Council for approval.

0.2.2 Measures to ensure efficient use of resources are implemented.

The Research Department promotes the efficient use of existing resources through (i) annual performance review for staff, (ii) staff training in relevant areas to enhance their technical knowledge and skills, (iii) periodic review of work processes when needs arise and adjustments to improve work processes, and (iv) extensive computerization of the monetary statistics production process.

0.3 Relevance

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

The NBRM undertakes several specific actions to ensure that monetary statistics address issues of concern to users. Internally, consultation with the management and other relevant departments of the NBRM is in place to periodically address issues of concern related to data usefulness for monetary policy purposes. Externally, an established process of consultation takes place periodically with other government agencies, the media, and other data users. When the need arises, a working group is formed to help identify new and emerging data requirements and coordinate with relevant departments to incorporate these new requirements in the existing data reporting and compilation procedures. Also, NBRM staff participate in international and regional statistical meetings and seminars.

Although no formal monitoring of user needs (such as a survey) has been undertaken, the NBRM publications of monetary statistics and its internet website (http://www.nbrm.gov.mk) provide detailed contact information to data users for sending comments, queries, and requests, which are usually addressed promptly.

0.4   Other quality management

0.4.1   Processes are in place to focus on quality.

The NBRM management attaches importance to its work on statistics, is sensitive to data quality issues, and takes initiatives to improve data flows between the NBRM and other agencies by emphasizing the issue at various meetings they attend. The recent establishment of the Research Department highlights the increased importance of statistics at the NBRM.

The Research Department, in collaboration with the Supervision Department, verifies that data reporting practices followed by banks are consistent with the guidelines and regulations established by the NBRM and reviews the reported data for accuracy. Validation procedures for assessing the plausibility or reasonability of reported data are undertaken by checking accounting relationships and development trends. Should unusual movements in data be identified, in-depth investigations are carried out for possible misclassifications or other errors.

The reliability and accuracy of the NBRM's and banks' balance sheets—the primary source data for monetary statistics—are enhanced by an external auditing process required by the *NBRM Law* and the *Banking Law*. The *NBRM Law* (Article 93) stipulates that the NBRM's annual financial statement shall be examined by an authorized external auditor in compliance with international auditing standards, and the auditing report be published. For banks, the *Banking Law* (Articles 71–72) contains specific rules and regulations that banks have to follow in conducting their external auditing.

The *NBRM Statute*, publicly available, contains information on the NBRM's commitment to transparency in its operations and information. In addition, the NBRM's plans for improvement of monetary statistics are described in the FYR Macedonia's GDDS metadata, which are posted on IMF's Data Standards Bulletin Board (DSBB) and linked from the NBRM website.

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

The Research Department has internal processes to identify and resolve issues at various stages of the collection, compilation, and dissemination of monetary statistics. The data compilers also monitor new regulations and developments in the area of monetary and financial statistics.

Detailed contact information is provided for sending comments or requests to the NBRM. Comments or requests from data users are important feedback for monitoring the quality of monetary statistics.

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

The *Program for Statistical Research 2003–07* is a four-year program for all official statistics work. The program is developed by the statistical compilers in conjunction with the Statistical Council and with data users. It takes into account user needs, data priorities, and trade-offs.

NBRM management and staff recognize the trade-offs among the dimensions of data quality. Increased attention has been given to improving timeliness and quality. The NBRM has formulated plans for improving monetary statistics as described in FRY Macedonia's GDDS metadata.

Although no user surveys obtain feedback on data quality issues, new data requests from the NBRM Council for monetary policy purposes have guided the planning for meeting emerging data needs. In addition, comments that the NBRM has received from outside data users have provided useful guidance for improving the data compilation and dissemination. Implementation of some of these comments in recent years has resulted in significant improvements in the comprehensiveness of monetary data and metadata published in the NBRM's *Bulletin*.

1. Assurances of integrity

1.1 Professionalism

1.1.1 Statistics are compiled on an impartial basis.

The independence of the NBRM is established in the *NBRM Law* (Articles 4, 70, and 71) and the *NBRM Statute* (Articles 1–6), which grant the NBRM the powers to carry out the duties under its own responsibility. In the NBRM Council, the governor is appointed for a seven-year term, proposed by the President and confirmed by Parliament. The governor is responsible to Parliament and can only be removed by the Parliament. The governor and other council members are not permitted to be members of a political party.

The terms and conditions under which the monetary statistics are produced promote the professional independence of the NBRM.

Professional competence plays a key role in recruitment and promotion policies. Recruitment and promotion are based on relevant aptitude and/or expertise. Minimum requirements for potential recruits include education background and written tests. At a later stage, relevant

department heads and vice governors in charge conduct interviews before finalizing a recruitment decision.

New staff receive on-the-job training during their first six months on the job. NBRM staff participate in regional and international conferences. In addition, the NBRM encourages staff to pursue advanced studies in work-related fields by providing funds for part-time college courses. The NBRM also encourages research and analysis by publishing working papers on the NBRM's internet website (http://www.nbrm.gov.mk).

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

The choice of sources and statistical techniques for the compilation of monetary statistics is based solely on statistical considerations made by the NBRM staff. Staff are encouraged to present their reasoning for the choice of methodologies in documents that are made public.

Decisions about dissemination are informed solely by statistical considerations. NBRM publishes a wide range of monetary statistics and detailed metadata to aid users in understanding the published data.

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

If there is erroneous interpretation or misuse of the monetary statistics in the media or other fora, the NBRM Governor's Office comments and provides clarification in the media and publishes statements on its website. If needed, the NBRM contacts the reporters and other interested parties to have the erroneous interpretation corrected.

1.2   Transparency

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

The laws and regulations under which statistics are collected, processed, and disseminated by the NBRM are available to the public. The *NBRM Law*, the *Banking Law,* and the *NBRM Statute* are available on the NBRM's website. The *NBRM Statute* clearly states NBRM's policies on (i) treatment of confidential data and (ii) transparency of its operations and information.

The NBRM's publications always indicate the address of the NBRM's internet website, where more information about the NBRM, other data series for monetary statistics as well as other macroeconomic statistics, and related working papers are disseminated.

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

There is no internal government access to NBRM data before their release to the public. Data are confidential until the issuance of the press release, which is made solely by the NBRM. The NBRM's exclusive responsibility in this matter is also indicated in FYR Macedonia's GDDS metadata for the financial sector.

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

Monetary statistics are clearly identified as NBRM products, with its name and logo. When data produced by other agencies are published, the source is indicated in the footnotes. The NBRM requests attribution when its statistics are used for reproduction or re-dissemination.

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

Advance notice is given when major changes are introduced. Usually major changes in methodology, source data, and statistical techniques are announced in the *Official Gazette of the Republic of Macedonia* (*The Gazette*). For instance, the introduction of new charts of accounts for NBRM and for banks in 1995 was announced in *The Gazette* to inform the public that accounting data of the banking sector for use in monetary statistics would begin to be collected from the new charts of accounts.

1.3   Ethical standards

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

The Code of Conduct for Employees of the NBRM (*Code of Conduct*) provides comprehensive ethical guidelines for the staff of the NBRM. These guidelines, well known to NBRM staff, establish the main principles and rules for staff integrity, objectivity, professional competence, efficiency, professional independence, maintaining confidentiality of data, and avoiding conflict of interest, among others. In particular, NBRM staff have access to the *Code of Conduct* on the NBRM intranet website and are reminded periodically to review these guidelines when amendments are made to the *Code of Conduct*.

2.   Methodological soundness

2.1   Concepts and definitions

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

The analytical framework used by the NBRM in compiling monetary statistics reflects concepts and principles from the IMF's *Draft Guide to Money and Banking Statistics in International Financial Statistics* (1984). With implementation of major recommendations of

the STA mission in 1996, NBRM's monetary statistics are moving towards adopting the guidelines outlined in the *Monetary and Financial Statistics Manual* (*MFSM*). The data compilers derive the monetary survey by consolidating the analytical accounts of the NBRM and all registered domestic and foreign banks in FYR Macedonia. The NBRM's analytical accounts—*NBRM Survey*—is equivalent to the central bank survey as recommended in the *MFSM*. Analytical accounts of banks—*Survey of Deposit Money Banks*—cover banks but exclude savings houses, which should be classified as other depository corporations (ODCs) subsector, according to the *MFSM* guidelines.

Key aggregates identified in the banking survey are net foreign assets, net claims on central government, claims on noncentral government and nonbanking sectors, currency in circulation outside banking system, demand deposits of residents, short-term deposits in foreign currency and short-term deposit in denars, long-term deposits in foreign currency and long-term deposits in denars, and other items (net).

The monetary survey provides one liquidity-based measure of money: money supply (M1). M1 is defined as currency in circulation plus demand deposits of residents other than central government. In addition, the NBRM compiles and publishes separately a wide range of monthly data on monetary aggregates—M2, M3, and M4—of which M2 is most closely observed for monetary policy purposes and is defined as M1 plus quasi-deposits consisting of short-term sight deposits, time deposits up to one year, short securities liabilities, and short-term credits from nonbanking institutions. Although the *MFSM* does not provide prescriptions for national definitions of money, it discusses the various considerations that should be taken into account in formulating the national definition of money, including selection of financial instruments. In the case of FYR Macedonia, short-term credit from nonbanking institutions is earmarked as funds placed with banks for lending to specified projects or customers. Financial instruments of such a nature are typically not included in the broad money definition.

Recommendation: Review closely the short-term credit from nonbanking institutions to ensure the appropriateness of its inclusion in FYR Macedonia's broad money definition.

2.2 Scope

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

The depository sector in FYR Macedonia consists of the NBRM, 21 banks, and 16 savings houses. However, the current monetary survey compiled by the NBRM covers the NBRM and 21 banks only.

Savings houses intermediate financially by accepting deposits from and extending credits to households. Although savings houses report monthly data to the NBRM, these data are for internal use only, and no analytical accounts for savings houses in accordance with *MFSM* guidelines are compiled. This practice has been in place owing to the relatively small scale of

the savings houses' operations. The NBRM is aware of this issue and has established plans for implementing such improvements as described in FYR Macedonia's GDDS metadata.

Recommendation: Begin compiling analytical accounts of savings houses in accordance with the MFSM guidelines for inclusion in the depository corporations survey, leading to a complete institutional coverage of the monetary statistics.

2.3   Classification/sectorization

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

The sectorization adopted for monetary statistics is broadly in line with the *MFSM*. However, distinction between nonresident and resident sectors is generally based on the residency criterion as described in *BPM5*.

The resident sector is divided into five subsectors: (i) nonfinancial legal entities, covering public and private nonfinancial corporations; (ii) government, which can be disaggregated to general central government covering government ministries and institutions such as the Court, the Public Prosecutor, various government funds, and public sector institutions such as schools, hospitals, libraries and local government covering all municipalities, (iii) banks and other financial institutions, consisting of the NBRM, banks, savings houses and other financial institutions such as insurance companies, stock exchange, clearing houses, etc.; (iv) other clients including nonprofit and nonfinancial organizations such as humanitarian organizations, citizen associations, religious associations, political parties, etc. and (v) households. The monetary survey compiled by the NBRM does not separately show all five sectors, but supplementary tables of analytical accounts of the NBRM and banks, published along with the monetary survey, present detailed data by economic sector.

The classification of financial instruments used for monetary statistics broadly conforms with *MFSM* guidelines. The monetary data separately identify monetary gold and SDRs, currency and deposits, securities other than shares, and loans. Shares and other equities, insurance technical reserves, financial derivatives, and other accounts receivable/payable are not separately shown as recommended in *MFSM,* but included in other items (net). However, these categories can be identified separately in the source data. Currently, banks in FYR Macedonia do not transact in financial derivatives.

The banking sector in FYR Macedonia does not transact in securities repurchase agreements.

Recommendation: Present separately financial asset categories on shares and other equities, insurance technical reserves, and other accounts receivable/payments as recommended by the MFSM to further improve the analytical usefulness of monetary data.

2.4   *Basis for recording*

2.4.1   *Market prices are used to value flows and stocks.*

The general recommendation of the *MFSM* is to evaluate financial assets and liabilities on the basis of market prices or market price equivalents. The only exception to this rule is the valuation of loans at their book value without adjustment for expected losses. These principles are broadly followed in FYR Macedonia's monetary statistics.

Monetary gold is valued monthly using the market price quoted at the London Stock Exchange; traded financial instruments are valued monthly using market prices; and loans are valued at the book value without adjustment for provisions. The only nontradable long-term securities issued by the Bank Rehabilitation Agency, small in magnitude, are recorded at book value.

Recommendation: Revalue nontraded securities held by the banking sector, using estimated fair value.

Conversion of foreign-currency-denominated assets and liabilities into local currency is carried out using official exchange rates in effect at the balance sheet date. For this purpose, the NBRM and all banks use the end-period midpoint of buying and selling rates quoted by the NBRM. The official exchange rate is a weighted average rate determined by the interbank foreign exchange market conditions.

Likewise, SDR-denominated accounts are also converted into local currency using the end-of-period market exchange rate.

Valuation adjustments are presented in the valuation accounts in the balance sheets of the NBRM and banks, but not separately identified in their analytical accounts.

2.4.2   *Recording is done on an accrual basis.*

In FYR Macedonia's monetary statistics, financial transactions are recorded on an accrual basis. Interest on financial assets or liabilities is accrued at the end of each month, and accrued interest is recorded under the underlying financial instruments consistent with *MFSM* recommendations.

The *MFSM* also recommends that interest arrears be included with the underlying instruments. The current practice of the NBRM, governed by the *Laws and Regulations* (Clauses 6 and 12 of Part V), is consistent with the *MFSM*.

Financial transactions are recorded simultaneously between transactors in conformity with *MFSM* guidelines.

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

A general principle in macroeconomic statistics is that data should be collected and compiled on a gross basis. For data presented on a net basis, the underlying gross data should also be shown.

In FYR Macedonia's monetary statistics, assets and liabilities are presented on a gross or net basis in conformity with the *MFSM* guidelines. In particular, claims on a particular transactor or group of transactors are not netted against liabilities to that transactor or group. Also, provisions against loans are shown on a gross basis on the liability side, and loans are included in domestic credit on a gross basis on the asset side. The monetary survey shows underlying gross data for net foreign assets and net claims on central government.

In the monetary survey, appropriate claims and liabilities between depository corporations are appropriately canceled out, while preserving the presentation of data on claims on or liabilities to other domestic sectors and nonresidents.

3.   Accuracy and reliability

3.1   Source data

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

The source data for compiling the central bank survey are the balance sheet data prepared by the NBRM's Accounting Department on a monthly basis. These balance sheet data are generated by an electronic general ledger system based on complete accounting records.

The source data for banks are the individual returns reported to the NBRM on a monthly basis. The source data, generated from banks' accounting records, are presented in the report form as designed by the NBRM and transmitted electronically to NBRM's database.

With the implementation in 1995 of the new charts of accounts for the NBRM and banks consistent with the International Accounting Standards, the reporting format, by and large, provides sufficient detail to compile monetary statistics in conformity with the *MFSM* guidelines.

The source data are kept under continuous review to ensure that the data collection system remains comprehensive, reflects recent developments, and meets new data demands. These reviews take into account (i) ongoing revisions to the charts of accounts, (ii) concerns arising from the NBRM's weekly liquidity planning meeting, and (iii) issues raised by other government agencies and other data users.

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

The source data, reported in accordance with NBRM requirements, reasonably approximate the definitions, scope, classification, valuation, and timing of reporting needed for monetary statistics. One deviation in accounting practice is that securities held to maturity are recorded at book value.

The NBRM provides banks with guidance in the form of reporting instructions and ad-hoc consultation in completing the report forms. The NBRM's monetary data compilers maintain regular contact with reporting banks to resolve data issues that have important implications for the accuracy of the classification of accounting data for use in monetary statistics.

3.1.3   Source data are timely.

The balance sheet data of the NBRM are required to become available 20 days after the end of the reference month, and the reporting date for balance sheet data of banks is the 8th day of each month after the end of the reference month. These source data are provided sufficiently timely to allow for timely compilation of monetary statistics.

3.2   Assessment of source data

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.

The NBRM monetary data compilers, in collaboration with other NBRM units involved in source data collection, review the reporting system for its adequacy for providing reliable source data. Automated data validation procedures are employed to check the internal consistency of reported data. In addition, source data are also reviewed against those of previous periods to identify out-of-trend items. The identified data inconsistencies are investigated with the reporting units. However, questions about the adequacy of the processes in place for assessing the source data arose from data inconsistency and misclassification identified by users on several occasions.

Recommendation: Review the current processes for assessing source data to ensure that these processes function adequately in identifying deficiencies with source data.

3.3   Statistical techniques

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

The forms for reporting source data are designed to encourage use of computer programs, which enable prompt data processing. The potential for processing errors is minimized by the use of electronic reporting and processing procedures.

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

The procedure for delayed reporting of data by banks is to carry forward the balance sheet of the last month of the late reporting bank into the current month's statistics. So far, no reporting delays have occurred.

3.4   Assessment and validation of intermediate data and statistical outputs

3.4.1   Intermediate data are validated against other information where applicable.

The accuracy and reliability of the reported source data for the NBRM and banks are checked against other sources or information; for instance, data on NBRM's government bond holdings are checked against records of the Central Banking Operation Department.

3.4.2   Statistical discrepancies in intermediate data are assessed and investigated.

The NBRM monetary data compilers identify statistical discrepancies (e.g. discrepancies in interbank positions) and, in collaboration with the Accounting and Supervision Departments, investigate their causes.

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

Procedures are in place to investigate large and unexplained movements in monetary and credit aggregates to detect possible classification and sectorization errors.

3.5   Revision studies

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

The NBRM studies and analyzes revisions as part of its data quality control process. The NBRM data compilers cross-check preliminary data with final data and investigate any significant discrepancies. The results of investigations and adjustments made in the data compiling process are taken into account in subsequent periods. In general, revisions tend to be small in magnitude.

4.   Serviceability

4.1   Periodicity and timeliness

4.1.1   Periodicity follows dissemination standards.

The periodicity for both the NBRM and the banking sector is monthly, thus meeting the monthly periodicity recommendation of the GDDS.

4.1.2   Timeliness follows dissemination standards.

The NBRM publishes monthly data on main monetary and credit aggregates in its *Monthly Report* six weeks after the end of the reference month and monthly data on the full central bank survey and banking sector survey in its internet website (http://www.nbrm.gov.mk) four weeks after the end of the reference month, thus meeting the timeliness recommendation of the GDDS.

4.2   Consistency

4.2.1   Statistics are consistent within the dataset.

The NBRM's monetary statistics are internally consistent. No significant discrepancy exists between the central bank's and banks' data on interbank positions as recorded in monetary statistics. If a discrepancy on banks' reserve deposits at the NBRM between NBRM data and banks' data is identified, an investigation on the causes of the discrepancy will be undertaken. Automated error-checking systems are in place to check the consistency of the reported data. Other internal consistency checks also ensure accuracy of the information used in the compilation of monetary statistics. In particular, compilers analyze flows to explain changes in stocks over time.

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

Consistent time series data are available for at least five years. This reflects the practice that whenever major changes in source data, methodology, and statistical techniques are introduced, historical data are reconstructed as far back as possible. For minor changes, break signs are shown and brief notes are introduced to the published data describing the main breaks in the time series. Unusual changes in economic trends are also explained in the analytical text included in the publication.

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

The monetary data compilers communicate with the NBRM Balance of Payments Department and the MOF to check the consistency of the monetary statistics with flow data

from the balance of payments and government finance statistics. The net foreign assets in monetary statistics are generally consistent with foreign assets and foreign liabilities of the banking sector in the corresponding measure of the BOP. Central government deposits with the NBRM in monetary statistics are usually consistent with the MOF records on use of cash balances, but discrepancies that may emerge are not routinely investigated and not fully reconciled.

Recommendation: The NBRM, in coordination with the MOF, should establish formal procedures for reviewing regularly the consistency of monetary data with corresponding measures in the GFS dataset and for investigating sources of any discrepancies, leading to full reconciliation of the two datasets.

4.3   Revision policy and practice

4.3.1   Revisions follow a regular and transparent schedule.

The monthly monetary data are final after release. Preliminary annual data are disseminated before final data are available. This practice is in place because annual accounting data take longer to become available. This revision practice follows a predictable pattern, which data users are informed of. Key revisions are explained in the text or footnotes to the published data.

4.3.2   Preliminary and/or revised data are clearly identified.

Preliminary data are identified in all NBRM publications. Users are alerted that the initially published data are preliminary and subject to revision.

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

Studies and analysis of revisions are undertaken ad hoc to measure, assess, and explain the source of revisions made to the data. These studies are internally documented and not made available to the public.

Recommendation: Establish procedures for systematic documentation of revision studies and analyses and publish the results.

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 NBRM publishes monetary data clearly in its *Monthly Report*, (quarterly) *Bulletin, Semi-annual Report*, and *Annual Report*. The *Monthly Report* contains accompanying charts and

tables as well as reviews of current-period developments to facilitate the analysis. The *Bulletin* publishes datasets with various levels of details and annual data series for seven years, and monthly data series for the latest two years.

5.1.2   Dissemination media and formats are adequate.

The NBRM releases monetary data through various publications as indicated in *5.1.1*. Data included in these publications are also available on NBRM's Internet website (http://www.nbrm.gov.mk).

5.1.3   Statistics are released on a preannounced schedule.

An advance release calendar for monetary statistics is published on the NBRM's Internet website (http://www.nrbm.gov.mk). Release of monetary statistics follows the dates announced.

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

The data are released simultaneously to all users through dissemination on NBRM's internet website (http://www.nbrm.gov.mk) and through various NBRM publications. The press is not briefed in advance.

5.1.5   Statistics not routinely disseminated are made available upon request.

Statistics not regularly published are made available to interested users upon their request and approval by the Governor's Office.

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 internationally accepted standards, guidelines, or good practices are annotated.

All NBRM publications in which monetary statistics are published contain explanatory notes and/or footnotes on the data. In particular, the NBRM *Bulletin* contains comprehensive information to aide users in meaningful interpretation of the data in terms of scope, concept, definitions, classification, and sectorization used in the compilation of the data. Such information, as described in the GDDS metadata, is also posted on the NBRM's internet website (http://www.nbrm.gov.mk) and regularly reviewed and updated.

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

The NBRM's publications and website provide datasets for the central bank survey, the other depository corporations survey, and the depository corporations survey. Although these surveys do not show separately all economic sectors as recommended in the *MFSM,* more

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detailed data classified by economic sector and financial instrument are published in a number of supplementary analytical tables for the NBRM and banks. Metadata on monetary statistics disseminated through the NBRM Internet website (http://www.nbrm.gov.mk) provide various levels of detail for the intended audience.

5.3 Assistance to users

5.3.1 Contact points for each subject field are publicized.

Information on specific contact persons is posted on the NBRM internet website (http://www.nbrm.gov.mk) for users to send comments, queries, and requests concerning any category of monetary data published by the NBRM. Users frequently request assistance in the form of clarification and explanation of data through email, telephone, facsimile, or mail, and the assistance is in general promptly provided. Although no monitoring of assistance to users has been carried out through comprehensive user surveys, the NBRM reviews closely comments, queries, and requests from general data users as well as from the NBRM Council to obtain users' feedback. In particular, all user queries sent to the Governor's Office are distributed to concerned NBRM departments. Actions that are taken to address these issues are reported to the Governor's Office to ensure that users' requests are addressed.

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

The NBRM publishes a list of publications on its internet website (http://www.nbrm.gov.mk). The NBRM maintains and updates a list of regular recipients of its publications, and publications are sent to them regularly. NBRM publications are also provided to users upon request free of charge.

Table 5. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Monetary Statistics
(Compiling Agency: National Bank of the Republic of Macedonia)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; GDDS = Complies with GDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
0. Prerequisites of quality							
0.1 Legal and institutional environment		X					
0.2 Resources		X					
0.3 Relevance		X					
0.4 Other quality management		X					
1. Assurances of integrity							
1.1 Professionalism		X					
1.2 Transparency		X					
1.3 Ethical standards		X					
2. Methodological soundness							
2.1 Concepts and definitions		X					
2.2 Scope			X			Savings houses are not covered in monetary statistics.	Compile analytical accounts of savings houses for inclusion in monetary statistics. (Medium term)
2.3 Classification/sectorization			X			Some *MFSM*-recommended categories of financial assets are not shown separately.	.
2.4 Basis for recording		X					
3. Accuracy and reliability							
3.1 Source data		X					
3.2 Assessment of source data			X			Data-accessing processes failed to identify problems occasionally.	
3.3 Statistical techniques		X					
3.4 Assessment and validation of inter-mediate data and statistical outputs		X					
3.5 Revision studies		X					

Table 5. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Monetary Statistics
(*Compiling Agency*: National Bank of the Republic of Macedonia)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; GDDS = Complies with GDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement and Timeframe
		O	LO	LNO	NO		
4. Serviceability							
4.1 Periodicity and timeliness		X					
4.2 Consistency			X			Discrepancies with GFS data are not routinely investigated and fully reconciled.	
4.3 Revision policy and practice			X			Revision studies and analyses are not published.	
5. Accessibility							
5.1 Data accessibility		X					
5.2 Metadata accessibility		X					
5.3 Assistance to users		X					

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 the statistics is clearly specified

Several laws authorize the National Bank of the Republic of Macedonia (NBRM) to be responsible for undertaking the compilation of balance of payments statistics:

- The *Act on State Statistics* sets out a framework for statistics, including the program for statistical work, the Statistics Council, and confidentiality. (The act is available in Macedonian and English on the internet at www.stat.gov.mk.)

- The *Law on the National Bank of the Republic of Macedonia* Article 18 authorizes the NBRM to monitor the performance of the balance of payments. Article 40 authorizes it to collect, process, and disseminate data in performance of its activities. (The law is available in Macedonian and English on the internet at www.nbrm.gov.mk.)

- The *Law on Foreign Exchange Operations* establishes the NBRM's role in regulating and measuring foreign exchange. Article 26 authorizes the NBRM to prescribe the methods for carrying out international payment operations. Article 40 authorizes the NBRM to require direct reporting by legal entities and indirect reporting by banks, participants in the securities markets, customs authorities, and clearing and depository houses on behalf of their customers. (The law is available in Macedonian and English on the internet at www.nbrm.gov.mk.)

NBRM staff consider the legislative framework adequate to carry out their duties for the preparation of balance of payments statistics.

Within the NBRM, the responsibility for compiling balance of payments statistics is with the Balance of Payments Department. In addition, data are supplied from other departments of the NBRM: reserves from the Accounting Department; interest and transactions in longer term external debt from the Debt Department; and other debt transactions from the Short-Term Credit Department.

The authorities have planned to create a new Financial Statistics Department in 2004, with an objective of enhancing the NBRM's statistics functions by centralizing them in one department. This reflects the increased importance attached by the NBRM to statistical work.

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

The *Program for Statistical Research 2003–07* covers the statistical work of government agencies. Under the *Act on State Statistics*, the program is required to be prepared every five years and submitted to Parliament for its approval.

Well-established arrangements ensure efficient and timely flow of source data to the balance of payments compilation staff from the Customs Office and the other divisions of the NBRM that supply data on foreign exchange reserves, external debt, and short-term credit. Trade statistics are a major input to the balance of payments, and the Customs Office supplies data to the State Statistical Office and the NBRM simultaneously. A protocol agreed between the agencies covers data-sharing arrangements, and the agencies also meet to discuss their cooperation. The data sharing works effectively, with speedy transfer of data on a monthly basis and good communication.

Two potential sources of data not being properly utilized because of cost issues are the Central Depository and the Central Registry. By law, the Central Depository acts as the depository for all debt and equity securities issued in the FYR Macedonia. The Central Registry holds the annual financial statements of all corporations in the country. Each of these data sources would be useful in compiling balance of payments data. However, each agency wishes to charge the NBRM for any information provided. The issue is being discussed by high-level staff of the agencies involved.

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

Section VII of the *Act on State Statistics* deals with data protection. The data may only be used for statistical purposes (Article 35) and are subject to confidentiality provisions (Article 38).

The *Law on the National Bank of the Republic of Macedonia* Articles 80 and 95 also provide for confidentiality of data, and Article 97 provides for a penalty of 40,000–50,000 denars for an employee who discloses confidential data to unauthorized persons.

This obligation is reinforced in Section 10 of the *Code of Conduct of the Employees of the National Bank of the Republic of Macedonia*, which is available on the NBRM internal website and is distributed to new staff.

The NBRM takes several measures to prevent disclosure of individual data, including (i) password protection to allow access to authorized staff only; (ii) restricted access to the database containing individual data to authorized staff; and (iii) restricted access to parts of the NBRM building where questionnaires are stored.

The NBRM interprets confidentiality to mean the data should not be attributed to a particular respondent. Accordingly, a figure can be published even though it contains data from only

one or two enterprises. In these cases, it may be possible for a person with some background knowledge to infer which enterprises are involved. When a figure is known to stem from only two enterprises, individual data relating to the other enterprise could be inferred by each of the companies.

In a small economy such as the FYR Macedonia, many items in the balance of payments statistics may contain data from only one or two enterprises in particular months. Stopping the publication of such data would imply that many items could not be published, particularly for detailed components such as splits by type of economic activity. This situation and the understanding of respondents have led to the adoption of the current interpretation of confidentiality.

It would possibly benefit all parties to spell out this interpretation of confidentiality specifically in the relevant legislation, so as to avoid any potential misunderstandings or disputes concerning data that may be able to be attributed to a particular enterprise by inference in the future.

Recommendation: Include specific guidelines in relevant legislation or procedures on the interpretation of confidentiality, so as to clarify that the release of data relating to only one or two enterprises is permitted, provided that it is not specifically identified, and to provide that businesses may authorize the release of individual data.

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

Article 56 of the *Law on Foreign Exchange Operations* establishes the responsibility of entities to supply data as part of the foreign exchange regulation. There is a fine of 250,000–300,000 denars for noncompliance. For the international transactions reporting system (ITRS), the data reporters are financial intermediaries, who are sophisticated and well aware of their obligations; thus, complete compliance is achieved.

Under Article 27 of the *Act on State Statistics*, data collection agencies are required to cite the legal authority for the collection, the body responsible for collecting the data, the provisions for the protection of the confidentiality of data, and the respondent's obligation to supply data. From examination of forms, it is clear that these provisions are implemented.

Surveys have been initiated to fill some gaps (noted under 3.1 Source Data), but the results have not yet been incorporated in the balance of payments statistics. For surveys, the data suppliers are enterprises of a wide range of types of activities and sizes, and the initial evidence from some of the surveys suggests that compliance will not be as good as for the ITRS. The prosecution of nonrespondents is unwieldy, involving legal procedures that may take about two years, and the prosecutorial authorities do not attach a high priority to statistical issues.

Rather than rely on prosecution, the NBRM has developed good statistical practices to encourage cooperation from data suppliers for both the ITRS and surveys. These practices include circulating draft forms to data suppliers in advance for comments, making frequent contact with data suppliers, revising forms to be more convenient for users, holding seminars for data suppliers, supplying and updating an explanatory manual to support the questionnaires, inviting data suppliers to visit the NBRM to guide them through completion of the forms, and being available to provide advice by telephone on a continuing basis.

Recommendation: Modify legislation or procedures to facilitate the prosecution of those who refuse to cooperate in supplying data for surveys.

0.2   Resources

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

The balance of payments compilation staff of the NBRM is 17 people, comprising 8 professional staff and 9 involved in data input. In addition, some other departments prepare data on debt and foreign exchange reserves that are important inputs to the balance of payments. Staff have been gradually increased in response to the economic changes and increasing demands for statistics. For instance, the 1998 Fund statistics technical assistance mission reported that there were only five professional staff. New functions have been added in response to changes in the foreign exchange laws that have increasingly opened the economy.

A rearrangement of the organization of balance of payments compilation was being planned for 2004. Forecasting of balance of payments will be separated from balance of payments compilation, while some of the other statistical functions have been joined with the balance of payments in a new Financial Statistics Department.

Staff turnover is considered to be manageable and was improved by a program of raising NBRM salaries to more competitive levels.

The staffing numbers are considered to be adequate for continuing the balance of payments system in the existing way, but there is only limited capacity to undertake development work. For example, the changes to the new foreign exchange law in 2002 caused a heavy burden that caused temporary data processing delays. As the economy becomes increasingly integrated with the outside world, both the volume and variety of balance of payments transactions are expected to increase, providing continuing challenges to the balance of payments staff.

The computing facilities are appropriate. All staff have computer terminals. An information technology unit provides support on technical matters. Data are backed up, including off-site copies.

Physical facilities are adequate. Because of the small size of the country and because almost all entities undertake business in Skopje, transport is not a major issue.

An annual budget determines funding, which is broadly adequate.

0.2.2 Measures to ensure efficient use of resources are implemented

Promotion and staff selection are based on merit. Staff receive training on the job and at courses.

A new system of direct electronic supply of data is being developed, which will reduce the NBRM workload of transferring data from paper forms to electronic format, and shows the concern for efficient use of resources.

0.3 Relevance

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

The *Act on State Statistics* Articles 10–13 established the Statistical Council of the Republic of Macedonia as an expert advisory committee that covers all official statistics. It gives general advice on statistics and proposes the five-year *Program for Statistical Research*.

There is no specific survey or committee for users of balance of payments statistics. In view of the small number of balance of payments statistics users in FYR Macedonia, the authorities consider that there would be limited benefit in having a formal committee, but NBRM staff make frequent informal contact with users, provide staff contact addresses in the NBRM *Bulletin* and on the NBRM website, and encourage user feedback. The NBRM responds to user requests for additional information. For example, NBRM staff provided extensive data and background information requested by the recent IMF European Department mission. The balance of payments also follow European Union and IMF standards, so as to satisfy current and future user needs.

The user survey undertaken for the ROSC indicated that almost all users were satisfied with the coverage and detail in balance of payments statistics.

NBRM staff help to maintain the relevance of statistics by monitoring new economic developments from media reports and economic research and making sure that statistics cover new events and emerging issues.

0.4 Other quality management

0.4.1 Processes are in place to focus on quality

Management at all levels of the NBRM focuses on quality. Internal seminars and on-the-job training in the Balance of Payments Department also focus on quality improvement. Concern for quality is evident in the changes and extensions of data coverage made in recent years.

The NBRM has used technical assistance and adoption of international standards as a framework for quality improvement. It has a very good record of implementing the recommendations of previous IMF balance of payments statistics technical assistance missions, which were conducted in 1995, 1998, 2000, and 2002. The NBRM also closely follows developments in balance of payments statistics in the European Union and in other countries in the region.

The NBRM Statute, publicly available, contains information on the NBRM's commitment to transparency in its operations and information. In addition, the NBRM's plans for improvement of balance of payments and other external sector statistics are described in FYR Macedonia's GDDS metadata, which are posted on the IMF's Dissemination Standards Bulletin Board and linked from the NBRM website.

Articles 3 and 4 of the *Code of Conduct of the Employees of the National Bank of the Republic of Macedonia* specify professional competence and efficiency, respectively, as important objectives for NBRM staff.

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

To monitor statistical processes, information is generated, for example, data on processing time, response rates, and adjustments to data. There is frequent contact between the compilation staff and internal experts, as well as less frequent contact with experts from international agencies and balance of payments compilation staff from other countries.

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

The *Program for Statistical Research 2003–07* is the five-year program for all official statistics. The program is developed by the Statistical Council and statistical compilers in consultation with data users. It takes into account user needs, data priorities, and trade-offs.

The procedures for compiling balance of payments statistics show awareness of trade-offs in the collection in the ITRS of abbreviated information for smallest transactions and more intense checking for the largest transactions. A pilot program for electronic supply of ITRS data will be implemented later this year, showing continuing interest in improving efficiency and timeliness.

The NBRM has extensive informal contact with users, which assists in identifying priorities for future improvement.

The recent introduction of several new surveys is evidence of how the NBRM has responded to the identification of problems in the data.

1. Assurances of integrity

1.1 Professionalism

1.1.1 Statistics are produced on an impartial basis

The independence of the NBRM in all its functions is established in Articles 4 and 5 of the *Law on the National Bank of the Republic of Macedonia.*

The NBRM is governed by the NBRM Council, consisting of the governor, vice governors, and outside council members. The Governor of the NBRM is appointed for a seven-year term, proposed by the President, and confirmed by Parliament (Article 70). Other council members are also independent. The governor is responsible to Parliament and can only be removed by Parliament (Article 71). The governor and Board members are not permitted to belong to a political party.

The *Code of Conduct of the Employees of the National Bank of the Republic of Macedonia* includes the "Principle of Integrity" (Article 1), "Principle of Objectivity" (Article 2), and "Principle of Independence" (Article 15). Article 15 states that "The employees shall be obliged to preserve the independence of the Bank from the activities of the political parties."

There is no political interference in the production of balance of payments statistics.

Professional competence plays a key role in recruitment and promotion policies. The NBRM Personnel Department establishes minimum requirements for potential recruits including education background and written tests. At a later stage, relevant department heads and vice governors in charge conduct interviews before finalizing recruitment decisions.

Balance of payments staff other than those involved in data entry have professional qualifications in relevant fields such as economics, banking, and accounting. The balance of payments staff have also received training from the IMF as well as attended seminars and training with central banks in Austria and the Netherlands.

On-the-job training is provided for all staff. Data and reports are carefully reviewed for maintenance of professional standards.

Staff prepared a working paper that reported on research concerning real effective exchange rates, which was published on the NBRM website in Macedonian.

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

The balance of payments source data are derived from sources selected solely on the basis of statistical considerations. The data sources are similar to those used in other countries in the region.

The dissemination of monthly balance of payments data is made according to a regular schedule without any interference. The modes of dissemination are determined by the balance of payments staff without political interference.

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

The NBRM is able to comment on misinterpretation of data, although there is very limited media coverage of balance of payments data. An example of a comment on public misinterpretation of external debt statistics was in a December 2000 press release, which appears on the NBRM website, in Macedonian and English.

1.2   Transparency

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

The relevant laws are available in Macedonian and English on the NBRM and State Statistical Office websites (as noted under 0.1 Legal and Institutional Environment above).

Questionnaires for data suppliers are required to cite the legal authority, confidentiality, and obligation, as well as a contact address and phone number. The balance of payments staff maintains personal contact with the main data suppliers. Manuals, report forms, and circulars giving detailed instructions and background on the balance of payments data collection systems are available on the NBRM website in Macedonian.

Information about statistical collections on the NBRM website and the information on the Fund's General Data Dissemination System website also enhance transparency by provision of information to the public about statistical collection, processing, and dissemination.

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

The procedures for data release are not published, although the procedures are well established. There is no early access for internal government use. There are procedures for release on the NBRM website, followed by simultaneous e-mails to users who request the data. The NBRM's exclusive responsibility for release procedures is identified in FYR Macedonia's GDDS metadata.

Recommendation: Consider publicly stating the NBRM release policy; in particular, the policy should state that there is no advance internal government access.

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

The paper and electronic publication of balance of payments data are clearly identified as NBRM products with its name and logo. The data have been specifically attributed to the NBRM Balance of Payments Department. (This will be changed as a result of the foreshadowed rearrangement of the statistical functions in NBRM noted in 0.1 Legal and Institutional Environment above.) All balance of payments statistical publications contain a contact address and phone number.

The monthly balance of payments release and the quarterly NBRM *Bulletin* contain only data and metadata, and do not feature analysis or research by departments of the NBRM other than those preparing statistics. Tables, charts, and commentary on balance of payments statistics are included in the *Annual Report of the NBRM* and *Semi-Annual Report of the NBRM*.

The NBRM requests attribution for balance of payments data when it discusses data with users. NBRM is cited as a data source of balance of payments data in several publications by other agencies. As an example of seeking attribution, the Ministry of Finance has added a citation as a result of a request by the NBRM when it republishes NBRM debt data.

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

There have been no major changes in the balance of payments compilation system since it was introduced. While some methodological changes have been made, the effects have not been large. For this reason, there have been no cases where advance notice was considered necessary. However, the NBRM states it would do so if the situation arose, and this was confirmed by its practice for monetary statistics. The future incorporation of survey data is a case where such advance notice would be desirable.

A number of more detailed methodological changes have been made in recent years, and these changes are advertised in footnotes in the data tables. For example, the current quarterly table notes changes in the c.i.f./f.o.b. ratio for imports and the treatment of the distribution of some successor assets of the former Socialist Federal Republic of Yugoslavia.

Recommendation: Develop a policy to give advance notice of major changes in methodology. Apply this policy when the results of the new surveys are incorporated in the balance of payments statistics.

1.3   *Ethical standards*

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

The *Code of Conduct for Employees of the National Bank*, established by the NBRM Council, provides comprehensive ethical guidelines for the staff of the NBRM. The *Code* is available on the NBRM internal website and distributed to new staff. It covers a range of issues including professionalism, conflicts of interest, outside jobs, employment after leaving the NBRM, and receipt of gifts. The maintenance of the *Code* is included as a provision of the collective agreement between the NBRM and the staff union, the Syndicate Organization of the NBRM.

2.   **Methodological soundness**

2.1   *Concepts and definitions*

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

The framework for balance of payments statistics follows the fifth edition of the *Balance of Payments Manual* (*BPM5*). The results are produced according to the IMF's standard presentation. A national presentation is also produced and is used in NBRM publications. It has some differences from the standard presentation in level of detail (for example, multilateral creditors are each shown individually, and net cash transactions of exchange bureaus are shown as a separate item) but has the same basic structure.

The concepts and definitions used are in broad conformity with those used in *BPM5*. The definition of residence of individuals uses six months presence, as provided for in the definition in the foreign exchange law, rather than one year as in *BPM5*. Investigation by NBRM staff suggests that the effect of the difference is insignificant. There are very few individuals whose presence is in the range of six months to a year, insofar as most employment contracts are for longer periods.

All enterprises undertaking business other than as representative offices need to set up a legal entity in the FYR Macedonia. Although unincorporated branches are not recognized for balance of payments statistics, they are generally not permitted in FYR Macedonia. Thus, the definition for residence of enterprises in the foreign exchange regulations is effectively very similar to *BPM5* concepts.

A free economic zone is included in the data. Refugees from Kosovo during the conflict were not treated as residents because they were present in FYR Macedonia for less than a year. International organizations are not included as residents.

2.2   Scope

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

In principle, the scope of the balance of payments statistics follows international standards in covering all transactions between residents and nonresidents. Some specific components included are goods for processing, repairs on goods, nonmonetary gold, computer software, e-commerce, leases, intercompany lending, trade credit, and debt arrears. (There are a number of variations from the ideal scope in practice, due to limitations of the data sources, which are discussed under 3.1 Source Data below. Among the items largely not covered in the data sources are shuttle trade, smuggling, and other illegal activity, as well as bank accounts held abroad.)

Reinvested earnings are not currently included in the Macedonian balance of payments. Data have been collected in an annual survey of enterprises, but the results have not yet been incorporated in the balance of payments. It is planned to introduce the data after the survey becomes fully established, time series are developed, and methodological issues on monthly interpolation and extrapolation are resolved. As well as being a part of the conceptual framework, reinvested earnings are important to help users understand more about the performance and decisions of direct investment enterprises, so a priority should be to develop and include data.

Recommendation: Incorporate estimates of reinvested earnings in the balance of payments, based on interpolation and extrapolation of data from the direct investment survey.

2.3   Classification/sectorization

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

The sectorization follows *BPM5*. Additional detail of international organizations is provided, given their importance as source of funding for FYR Macedonia.

Transactions are generally classified according to the standard components of *BPM5*. There is currently no separate item for financial derivatives, but these instruments have not been reported in the ITRS by Macedonian financial institutions so far. As the economy develops, the possible use of derivatives by Macedonian enterprises such as banks and oil companies should be monitored by balance of payments staff so that they are not omitted.

Transactions and income for loans and trade credit between affiliated enterprises are currently included under other investment. According to *BPM5*, these items should be recorded under direct investment (except if both parties are financial intermediaries). The current source does not identify them separately. Positions data from the direct investment

survey show that these items constitute approximately 10 percent of direct investment flows. It would be desirable to classify such items as direct investment.

Recommendation: Contacting enterprises directly to investigate whether they have used financial derivatives. Continue to monitor possible emergence of widespread use in the future.

Recommendation: Classify loans and trade credit between affiliated enterprises as direct investment in accord with international definitions.

2.4 Basis for recording

2.4.1 Market prices are used to value flows and stocks

Valuation principles follow *BPM5* methodology.

Market valuations are used in general. Market price equivalents are used for barter goods, aid goods, trade between affiliated enterprises, and goods subject to transfer pricing. A Customs Office unit monitors market prices to assess market-equivalent prices for goods transactions reported at arm's length market prices. However, there is no mechanism for making adjustments in the case of services.

Exports and imports are valued f.o.b. Import data are collected on a c.i.f. basis and converted using a ratio derived from information on customs documents and revised each year. The adjustment factor for freight and insurance is currently 3.8 percent.[5]

The data are currently published in U.S. dollars. The NBRM is in the process of amending its compilation programs to allow the data to be generated in euros and denars as well. The conversions will be made at the individual transaction level using the average daily exchange rate or, in a few cases, a ten-day average exchange rate. Many international transactions are conducted in euros and/or are conducted with euro zone countries, so the euro is a more relevant currency for assessing international performance. In addition, the decline in the U.S. dollar in recent years has caused large and somewhat misleading increases in items in U.S. dollar terms. Denar values are also useful because they can be related to data for the domestic economy such as national accounts. Also, the value of the denar has become fairly stable in recent years.

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[5] Transport costs between departure from the customs frontier in the country of origin and arrival in FYR Macedonia tend to be low for goods from neighboring countries transported by road. However the ratio was much higher in some earlier years when turmoil increased costs and closed some of the most direct routes.

2.4.2   Recording is done on an accrual basis

Under *BPM5* goods should be recorded at the time of change of ownership. For goods, the data source reflects the time of customs clearance. Adjustments are made for some large, identified transactions, such as acquisition of airplanes, to make the timing of the goods flow and the corresponding financial flows more consistent and on an accrual basis.

For interest on debt, *BPM5* adopts an accrual basis. The Macedonian data are based on the NBRM survey of external debt, which uses a due-for-payment basis. Because of the bunching of interest payments, the monthly series for interest has a high degree of fluctuation. While interest on loans is relatively straightforward to identify, the issues can be more complex for interest on debt securities because of complexities such as zero-coupon bonds. While there are little or no holdings of debt securities as either assets or liabilities at present, in the future, as the economy develops, it will be necessary to deal with the particular issues of identifying interest on deep-discount bonds and for other bonds with discounts and premiums on issue.

The remaining items of the balance of payments are largely based on the ITRS, which uses the time of payment for its basis. According to *BPM5*, the time of recording should be on accrual basis, which is only approximated by the time of payment.

Recommendation 1: Monitor large transactions for significant divergences between the time of payment and time of accrual.

Recommendation 2: Consider deriving interest on an accrual basis, based on information collected in the external debt and short-term credit surveys.

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

The grossing and netting procedures are broadly consistent with international guidelines. Data are published in gross terms in the current account and net terms in the capital and financial accounts. Since data are reported at the transaction level, gross data can also be compiled and are supplied on request because they are of interest to financial intermediaries.

3.   Accuracy and reliability

3.1   Source data

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

The main data sources for the Macedonian balance of payments are:

- goods—customs statistics;

- reserves—NBRM Accounting Department;
- debt—surveys by the NBRM; and
- authorized accounts held abroad—all other transactions—ITRS.

In addition, surveys have been initiated for direct investment, authorized accounts abroad, selected items for which respondents engage in two-way transactions (transport, insurance, communication, credit cards), and short-term credit. The expansion of the coverage of surveys for balance of payments statistics and incorporations of the results are included as short- and medium-term plans for improvement in FYR Macedonia's GDDS metadata.

The trade data from customs use the special trade system. No adjustments account for omitted trade due to smuggling, illegal activity or shuttle trade. Anecdotal evidence suggests that shuttle trade is not a significant issue. The porous and lengthy borders raise the possibility of smuggling of imports to avoid value added and import taxes, and similarly, the possibility of smuggling of exports to neighboring countries. However, no feasible estimation method appears to be available.

Customs data includes aid and direct investment supplied in the form of goods. These items are covered in the balance of payments and are valued at market-equivalent prices. However, no data source is available for aid in the form of technical assistance, that is, in the form of services.

The adoption of the ITRS as the main data source is considered to be appropriate to FYR Macedonia's circumstances. The experience of private sector cooperation in surveys in FYR Macedonia is patchy. In contrast, a small number of banks (20 commercial plus the NBRM) are good data reporters and have integrated their own recording systems with balance of payments statistics requirements.

Numerous foreign exchange bureaus exist in Macedonia. Their operations are outside the scope of the ITRS, except to the extent that they have foreign currency transactions with the banks. The possible resident-to-nonresident transactions handled through the bureaus include the exchange of cash for both inward and outward travelers and inward remittances from relatives abroad. Also, there could be resident-to-resident transactions of individuals who wish to either hold or dispose of cash foreign currency holdings. In the absence of any information, the NBRM has adopted the convention of recording the net value of the exchange bureau transactions with the banks in the balance of payments. In practice, this value has always been a significant net sale of denars by the banks to the bureaus in exchange for foreign currency.

In the national presentation, this item is shown as "foreign exchange, net" and included under current transfers. It is classified as private current transfer when the IMF standard presentation is used. While this is a helpful convention for dealing with a gap in data availability, it would be desirable to investigate its appropriateness from other sources. In particular, a substantial portion of both inward and outward travel services is paid for with

cash obtained through the bureaus. National accounts estimates of travel service exports adds an adjustment based on survey data from five years ago extrapolated by visitor numbers. These estimates are considerably higher than the equivalent balance of payments item.[6] Household budget survey data for income from abroad suggest that the balance of payments estimate of private transfers may be too high, possibly because the data source includes some travel expenditure.[7]

To the extent that the foreign exchange bureau transactions finance current account flows, such as travel, remittances, and informal trade, the current account balance is unaffected. However, to the extent that the exchange bureaus are used for financial account purposes, the current inclusion of the net transactions in the current account would be misplaced. From conversions of cash made at the time of the introduction of the euro, it appears that private nonbank cash holdings of euros are quite large—approximately $1 billion or $500 per capita. If residents use foreign exchange bureaus to achieve a net build-up or run-down of these holdings, such net flows are financial account items and should not be included in the current account. Unfortunately, there are no sources to assess whether such possibilities are occurring.

The ITRS instructions and forms state that when a single transaction represents a net of credits and debits (e.g., when a dealer both pays to and receives money from another business abroad), the gross amounts should be recorded. In the cases of credit card operators, the data are reported in gross terms in the ITRS. However, for transport, insurance, and telecommunications, where operators often have inward and outward transactions and may have net settlements, it is unlikely that the banks can identify the gross values when they complete the ITRS forms. Accordingly, the NBRM has recently introduced a survey to

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[6] In 2001, the national accounts upward adjustment to exports of services was $67 million, compared with $26 million for travel credits in the balance of payments, and would raise travel to about half of service credits in many years, seemingly high. The balance of payments figure represents an average expenditure of only $13 per international visitor (based on approximately two million international visitors, obtained from data from border posts, as supplied by SSO). Many of the visitors are in transit and spend little time or money in the country.

A particular issue that arose in FYR Macedonia's data was the treatment of refugees, who were nonresidents because they stayed less than a year. Accordingly, their expenditure in FYR Macedonia is included in travel credits, but the expenditure patterns and lengths of stay are very different from those of other nonresident visitors to FYR Macedonia.

[7] For 2002, workers' remittance credits were $92 million in the balance of payments; the household budget survey results suggest $54 million (1,717 denars per person, a population of 2,022,547, from the *2003 Statistical Yearbook*; converted at 64.7 denars to the U.S. dollar).

collect gross flow data directly from the enterprises. It is planned that the results will be incorporated in the balance of payments later this year.

Under the recent revisions to the foreign exchange regulations, legal entities having business abroad may now request permission from NBRM to open accounts abroad. (Previously such accounts were not permitted.) So far, ten enterprises have been authorized to have such accounts, each usually having several accounts across several countries. The NBRM has instituted a new survey for these accounts (beginning for the fourth quarter of 2003). The results are not yet available, and they are not expected to be incorporated in the balance of payments for several more quarters until the reporting and processing have settled down and a time series has been established. The incorporation of these revised data in the balance of payments is included as a short-term plan for improvement in FYR Macedonia's GDDS metadata.

Unauthorized bank accounts held abroad are also omitted from the ITRS. There is no information on whether transactions in these accounts are significant, but the liberalization of domestic foreign currency accounts reduces the incentive to have unauthorized accounts.

There are no reporting thresholds for the ITRS.

Data on transactions of foreign embassies in Macedonia and international organizations are obtained from the ITRS, rather than surveys.

Recommendation 1: Discuss possible indications of the scale of smuggling and shuttle trade with customs staff, for example based on their compliance investigations.

Recommendation 2: Incorporate results of the new surveys already under way into the balance of payments statistics as soon as possible.

Recommendation 3: Investigate possible sources for understanding the nature of and making estimates of cash transactions through foreign exchange bureaus on remittances, travel, and other flows.

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

The source data used for the Macedonian balance of payments generally adopt definitions, scope, classifications, valuation, and time of recording that are acceptably close to *BPM5* standards. The ITRS and surveys are set up to provide data that follow *BPM5* concepts on definitions, scope, and classifications; some exceptions relating to legislative and practical limitations were noted under indicators 2.1.1, 2.2.1, and 3.1.1 above.

As noted for indicator 2.4.2 above, the timing bases for source data for the Macedonian balance of payments differ from *BPM5*. The timing of goods is according to customs clearance, which is only an approximation for the time of change of ownership. Interest data

are shown on a due-for-payment basis, not on an accrual basis as adopted in *BPM5*. Other transactions measured through the ITRS are based on the time of payment, which is adopted as an acceptable approximation to an accrual basis, but may differ.

Some adjustments are made to data to bring them closer to *BPM5* standards, such as deduction of freight and insurance on imports of goods and timing adjustments for large individual transactions.

3.1.3   Source data are timely

Customs data are available on computer tape within one month of the end of the reference month.

ITRS records are provided punctually on paper forms within eight days of the end of the reference period. The NBRM is working with banks to introduce electronic ITRS reporting, which will give scope for reducing the processing time within NBRM.

Data on debt transactions and interest are based on a survey, and the results are provided in sufficient time for balance of payments purposes.

These deadlines facilitate release of monthly balance of payments data 75 days after the end of the reference month.

The initial experience of surveys indicates that slow response of enterprises could be a potential problem to be monitored.

3.2   Assessment of source data

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

Customs, ITRS, and NBRM surveys all use enterprise identification numbers that allow related data to be cross-checked. There is extensive cross-checking of data, for example:

- Goods transactions recorded in the ITRS are reconciled with equivalent customs data;
- Direct investment relationships and transactions identified in the ITRS and direct investment survey are compared. Direct investment data are compared with corporate annual reports supplied from the Central Registry (subject to the current dispute over charging for this information);
- Banks opening and closing positions are reconciled with transactions (including balance of payments neutral transactions, which must also be reported); and
- Large and unusual ITRS transactions are identified and checked.

As noted in the discussion of 3.1.1 above, there seems to be scope for assessing some source data by comparing them to related non-ITRS indicators—travel data with visitor arrivals and departures; private transfers with household budget survey results. While these other sources may not be suitable for making alternative estimates, they may indicate whether the ITRS may have any serious gaps that need to be addressed.

3.3   Statistical techniques

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

The ITRS data entry procedures include checks to avoid miscoding and misreporting. The opening and closing values of accounts of the banks are fully reconciled with transactions and other changes.

Data sources are checked with any available related indicators, for example, customs data are checked with the relevant financing transactions for goods, and debt transactions in the ITRS are checked against the debt survey. Data are checked for temporal consistency.

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

The c.i.f./f.o.b. factor is updated annually based on import values shown on customs declarations where the contract is expressed in f.o.b. terms. The developments in the ratio are shown in a footnote to the relevant tables.

No adjustments are made for cash transactions or smuggling. As noted under data sources above, travel and remittance data have gaps due to cash transactions through exchange bureaus. Travel data models and household survey data on remittances received from abroad have not been used to augment or verify data from the ITRS.

Investigations are undertaken when inequality between debit and credit entries for nonbalance of payments transactions arise in the closed ITRS. While there is some remaining inequality, equality is indicated in the fairly low values of net errors and omissions in recent years (see data under 4.2 Consistency, below).

To date, coverage adjustments have not been needed because data from the ITRS have been complete or nearly complete. However, as the economy becomes increasingly open, new surveys have been introduced to fill some of the gaps noted in 3.1 Source Data. A potential problem with the future use of these surveys could come from incomplete response in some of the surveys, in initial data (due to reporting delay) or in all cases (due to nonresponse). Without adjustments, incomplete response can cause understatement of items, changes in response rates over time will cause distortions in trends, and data that are received late will cause upward revisions. Because of the availability of other information about the missing enterprises from the ITRS, Central Registry, and Central Depository, it appears practical to

derive adjustment factors. However, such adjustments would be new to the balance of payments compilers.

Recommendation: When survey results are incorporated in the future, make estimates for the missing enterprises if coverage in the surveys by value is significantly incomplete. Use blow-up factors based on ratios obtained from the most closely related indicators that are available from other sources.

3.4   Assessment and validation of intermediate data and statistical outputs

3.4.1   Intermediate results are validated against other information where applicable

Intermediate data are validated using other sources whenever possible. Newspapers and information agencies are monitored for information about large international transactions, and it is confirmed that the corresponding flows are covered in the balance of payments. Survey data are checked against ITRS records and fully reconciled. Customs data are checked with the corresponding goods transactions reported under the ITRS. Output data are examined for plausibility.

3.4.2   Statistical discrepancies in intermediate data are assessed and investigated

Flow data are reconciled with the relevant stock data (e.g., banks' transactions with opening and closing positions, debt transactions and levels, direct investment transactions and levels).

Merchandise trade and associated financial flows are reviewed. The calculations are made as part of the estimation of trade credit, but fluctuations are investigated for possible data problems.

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

The net errors and omissions item is monitored. For example, the high values in some earlier years have been investigated and are believed to be related to unrecorded transactions associated with the situation in Kosovo and cases of financial outflows.

Bilateral goods trade data reconciliations have been made with the European Union. However, the landlocked nature of the country means that many goods are transshipped through other countries, so identification of countries of origin and final destination makes reconciliation more difficult.

3.5 Revision studies

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

The NBRM carefully monitors revisions of individual records. They are documented as to the cause, identified by the staff member making the amendment, and signed off by a supervisor. It is checked that the revisions flow through to aggregate results.

The aggregates are also compared with data for the same month as reported in the previous month's publication. Changes are checked, to ensure that they can be explained. Significant revisions are noted in the e-mail to users who request the monthly tables.

Studies of long-term patterns in revisions have not been undertaken. These would take the focus from the causes of month-to-month revisions to the issue of whether the revisions indicate any systematic bias and the range of uncertainty in the preliminary data. For example, if changes from the first preliminary value published to final value were, on average, consistently upward, there would be an apparent downward bias in preliminary data that may need to be addressed.

Revision patterns are studied with a view to improving methods, for example, the estimation of trade credit was subject to review because of the large revisions in this item.

Recommendation: Consider undertaking a study on longer term revision patterns as a research project if an additional staff member with statistical analysis skills can be made available.

4. Serviceability

4.1 Periodicity and timeliness

4.1.1 Periodicity follows dissemination standards

Balance of payments data are produced monthly, which is better than both the GDDS standard of annual data and the SDDS requirement of quarterly data.

4.1.2 Timeliness follows dissemination standards

Balance of payments data are released 75 days after the end of the reference month. This performance is better than both GDDS and SDDS requirements.

Data are delayed only in exceptional cases. For example, delays in data released in early 2003 followed changes in the foreign exchange laws that necessitated new codes and procedures.

There may be improvements in timeliness in the future as banks gradually implement electronic supply of ITRS data. At the moment, there is a lag of about six weeks between the receipt of forms on paper at the NBRM and the beginning of manual data input by NBRM staff, which provides scope for improving timeliness if banks supply data in a format that does not need manual input by the NBRM.

4.2 Consistency

4.2.1 Statistics are consistent within the dataset

Balance of payments statistics are fully internally consistent. Checks ensure that sub-items are consistent with aggregate data. Quarterly and annual data are derived as totals of monthly data.

The item net errors and omissions is shown. In recent years, the annual values have been small and have had varying signs. The following table shows recent values of net errors and omissions, as well as exports, to give an idea of relative magnitude. (The larger values of net errors and omissions in 1999 and 2000 appear to be associated with the Kosovo crisis.)

Relative Size of Net Errors and Omissions

U.S. dollar (million)	1999	2000	2001	2002
Net errors and omissions	160	62	2	−12
Exports f.o.b.	1,190	1,321	1,155	1,110

Source: Balance of payments data published on the NBRM website.

Some larger and more volatile values of net errors and omissions occur in monthly and quarterly estimates, but they cancel out over longer periods, suggesting that they are caused by small variations in the time of recording.

At present, a comprehensive international investment position statement is not produced, but as part of internal validation procedures, transactions are reconciled with position data that are available for particular components, such as external debt and reserve assets. The development of methods to be used in compiling international investment position data is included as a short-term plan for improvement in FYR Macedonia's GDDS metadata.

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

Time series data are available back to 1993 (annually) and 1994 (monthly and quarterly). When new methods are introduced, the data are revised back as far as possible. For example, the changes to the methods for calculating trade credit implemented in response to the recommendations of the 2002 STA mission were recalculated back to 1998 to provide more consistency in time series.

Footnotes point to methodological changes and unusual items. For instance, the footnotes currently show changes in the freight and insurance adjustment for imports and explain the treatment of distribution of reserve assets to the successor states of the former Socialist Federal Republic of Yugoslavia.

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

Balance of payments data on trade in goods are reconciled with international merchandise trade data. Table 2 of the NBRM's balance of payments publication shows the derivation of the balance of payments items. The merchandise trade statistics values are shown as a starting point, followed by the adjustments made for each coverage, classification, valuation, and timing.

National accounts data are produced by the State Statistical Office; the international transactions components are based on the balance of payments data supplied by the NBRM. They are consistent, except for an upward adjustment to travel service exports in national accounts, as noted under 3.1.1 above. The adjustment is shown as a separate item in the national accounts publication, so the size and cause of the inconsistency are readily apparent to users.

Banking sector transactions are reconciled with the balance sheet data used for compilation of monetary and financial statistics. The ITRS manual for banks instructs them that the positions must be the same as reported for financial data (para. 171) and are checked with data from the NBRM's Banking Supervision Department.

The balance of payments components for debt are fully consistent with the corresponding external debt data as the data collection processes are coordinated.

Recommendation: To improve estimates and ensure consistency between datasets, the NBRM and State Statistical Office should meet and agree on a consistent method of estimating both exports and imports of travel services, including possibly taking into account surveys of travelers and immigration sources as well as ITRS data.

4.3 Revision policy and practice

4.3.1 Revisions follow a regular and transparent schedule

The revisions policy for the balance of payments statistics is that revisions are made to data for the current year. Errors detected are passed through when they are found. Changes in methods are implemented infrequently.

While the policy is well established internally, it is not publicly stated or documented. It has been discussed with users on request.

Recommendation: Document and publicly state the existing revisions policy.

4.3.2   Preliminary and/or revised data are clearly identified

A footnote in the monthly tables identifies the most recent year's data as preliminary.

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

A brief statement of causes of a few important revisions is shown as a footnote to the tables. For example, the tables currently have a footnote stating:

> "Revision of the time series data 1997–2002 is made in August 2003 due to better coverage of services, income, and direct investment; and processing of final trade data for 2001 for goods and trade credits."

More detailed comments on the magnitude and causes of revisions are prepared monthly and provided to those users who have requested e-mail delivery of the data.

Recommendation: Make the more detailed quantification and explanations of revisions publicly available on the NBRM website.

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)

Tables are prepared in a national format, based on the *BPM5* standard presentation. There are seven tables, including an overview and more detailed tables. Data in the standard presentation can also be made available on request. The tables show several years in time series format.

Commentaries are not provided. Data are not disseminated in seasonally adjusted form.

Recommendation: On an experimental basis, consider identifying some highlights of each monthly release and providing a chart of some major items such as the current account deficit or direct investment flows so as to make balance of payments presentation more oriented to less sophisticated users. (See also the proposal for a press release under 5.1.2 below.)

Recommendation: Do experimental seasonal adjustment of some of the major items, perhaps initially for use within the NBRM.

5.1.2   Dissemination media and format are adequate

Data are available on the NBRM website, on paper, by e-mail, and in the quarterly NBRM *Bulletin*. The user survey undertaken for this ROSC indicated that users were satisfied with the dissemination formats.

Press releases for balance of payments statistics have not been issued. The media have shown little interest in the balance of payments publications so far. As the NBRM makes more use of surveys, a higher profile for balance of payments statistics with the media and public would be beneficial in encouraging higher response rates.

Recommendation: Experiment with the issue of an NBRM balance of payments press release for a few months, to see if greater publicity can be generated in the financial pages of the newspapers. Consider producing a very simplified release, for example, a single page with just a few highlights and one or two charts, so as to be more oriented to the needs of the media.

5.1.3   Statistics are released on a preannounced schedule

The *Program for Statistical Research 2003–07* (as discussed in indicator 0.1.2 above) includes the timeliness requirement for monthly balance of payments statistics of release 75 days after the end of the reference month.

The user survey showed that many users were not aware of the release schedule.

An advance release calendar for monthly balance of payments statistics was added to the NBRM website during the visit of the ROSC mission.

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

Balance of payments data are first released on the NBRM website, so they are available simultaneously to all users.

Recommendation 1: Consider releasing data at a fixed, preannounced time so as to enhance the assurance that all users are treated equally.

Recommendation 2: Document the policy on release of data to all users at the same time on the NBRM website.

5.1.5   Statistics not routinely disseminated are made available upon request

The NBRM meets requests for additional information without a fee. For example, additional data were supplied to financial intermediaries who want to calculate their market share for particular categories.

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 internationally accepted standards, guidelines, or good practices are annotated*

Metadata are provided in the NBRM *Bulletin* and on the NBRM website in both Macedonian and English. Further metadata are available from the IMF GDDS website and *Balance of Payments Statistics Yearbook.* The manual for data suppliers is available in Macedonian on the website (very detailed, with over 100 pages). The balance of payments staff consider that the level of information available is quite high in relation to the limited interest of users in the details of statistical methodology.

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

Brief summaries are provided in an appendix to the NBRM *Bulletin* (about two pages) and the IMF sources. The complete manual of instructions for data reporters is available in Macedonian on the NBRM website. Questionnaires and manuals for surveys on direct investment, external debt, short-term credit, etc. are all available in Macedonian on the NBRM website.

5.3   *Assistance to users*

5.3.1   *Contact points for each subject field are publicized*

Contact points are provided in all publication formats. Phone numbers, fax numbers, mail addresses, and e-mail addresses are provided.

Prompt and knowledgeable assistance is provided. Requests are kept in a file, and timeliness is monitored (usually within two days for existing data). The NBRM has provided lectures on balance of payments at the Economic University. Students are informed about balance of payments along with other aspects of NBRM operations during field trips to the NBRM.

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

A complete list of the limited number of publications produced on the NBRM website and information available on the internet is included on the NBRM website in Macedonian and English. All publications are available free of charge in hard copy or on the Internet.

Table 6. FYR Macedonia: Data Quality Assessment Framework (July 2003): Summary of Results for Balance of Payments
(Compiling Agency: National Bank of the Republic of Macedonia)

Key to symbols: NA = Not Applicable; O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; SDDS = Complies with SDDS Criteria

Element	NA	Assessment				Comments on Assessment	GDDS Plans for Improvement
		O	LO	LNO	NO		
0. Prerequisites of quality							
0.1 Legal and institutional environment		X					
0.2 Resources		X					
0.3 Relevance		X					
0.4 Other quality management		X					
1. Assurances of integrity							
1.1 Professionalism		X					
1.2 Transparency		X					
1.3 Ethical standards		X					
2. Methodological soundness							
2.1 Concepts and definitions		X					
2.2 Scope			X			Reinvested earnings not yet included.	
2.3 Classification/sectorization		X					
2.4 Basis for recording			X			Interest payments basis; goods clearance basis, otherwise payment basis.	
3. Accuracy and reliability							
3.1 Source data			X			Incomplete data on cash transactions, authorized accounts held abroad, inward and outward transactions netted by enterprises.	Plan to incorporate results of new surveys on authorized accounts abroad and netted transactions. (Short- and medium-term.)
3.2 Assessment of source data		X					
3.3 Statistical techniques			X			Adjustments not made for incomplete source data.	As for 3.1 Source data.
3.4 Assessment and validation of intermediate data and statistical outputs		X					
3.5 Revision studies			X			No long-term studies.	
4. Serviceability							
4.1 Periodicity and timeliness		X					
4.2 Consistency		X					
4.3 Revision policy and practice			X			Policy not public. Limited information published.	
5. Accessibility							
5.1 Data accessibility		X					
5.2 Metadata accessibility		X					
5.3 Assistance to users		X					

Summary of the General Data Dissemination System (GDDS)

Data coverage, periodicity, and timeliness

Dissemination of reliable, comprehensive, and timely economic, financial, and sociodemographic data is essential to the transparency of macroeconomic performance and policy. The GDDS contains specific recommendations concerning coverage, periodicity, and timeliness for comprehensive frameworks as well as for data categories and indicators.

Quality

Data quality must have a high priority. Data users must be provided with information to assess quality and quality improvements. The GDDS recommends:

- dissemination of documentation on methodology and sources used in preparing statistics; and

- dissemination of component detail, reconciliations with related data, and statistical frameworks that support statistical cross-checks and provide assurance of reasonableness.

Integrity

To fulfill the purpose of providing the public with information, official statistics must have the confidence of their users. In turn, confidence in the statistics ultimately becomes a matter of confidence in the objectivity and professionalism of the agency producing the statistics. Transparency of practices and procedures is a key factor in creating this confidence. The GDDS, therefore, recommends:

- dissemination of the terms and conditions under which official statistics are produced, including those relating to the confidentiality of individually identifiable information;

- identification of internal government access to data before release;

- identification of ministerial commentary on the occasion of statistical releases; and

- provision of information about revision and advance notice of major changes in methodology.

Access to the public

Dissemination of official statistics is an essential feature of statistics as a public good. Ready and equal access by the public are principal requirements. The GDDS recommends:

- dissemination of advance release calendars; and

- simultaneous release to all interested parties.

Plans for improvement

The GDDS recommends that plans for improvement be developed for all areas in which shortcomings exist and that these plans be disseminated.

The GDDS also recommends that any needs for assistance be identified in the metadata. This may also be helpful for donors and technical assistance providers to prioritize their activities.

For each participating member country, the GDDS metadata provide descriptions of the dimensions listed above, together with plans for improvement and needs for assistance. This information is posted on the DSBB; participating countries are encouraged to also post the metadata on their national websites.

Source: Guide to the GDDS, March 2002: http://dsbb.imf.org

DATA QUALITY ASSESSMENT FRAMEWORK—GENERIC FRAMEWORK
(JULY 2003 FRAMEWORK)

Quality Dimensions	Elements	Indicators
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. 0.1.2 Data sharing and coordination among data-producing agencies are adequate. 0.1.3 Individual reporters' data are to be kept confidential and used for statistical purposes only. 0.1.4 Statistical reporting is ensured through legal mandate and/or measures to encourage response.
	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. 0.2.2 Measures to ensure efficient use of resources are implemented.
	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.
	0.4 Other quality management—*Quality is a cornerstone of statistical work.*	0.4.1 Processes are in place to focus on quality. 0.4.2 Processes are in place to monitor the quality of the statistical program. 0.4.3 Processes are in place to deal with quality considerations in planning the statistical program.
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. 1.1.2 Choices of sources and statistical techniques as well as decisions about dissemination are informed solely by statistical considerations. 1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.
	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. 1.2.2 Internal governmental access to statistics prior to their release is publicly identified. 1.2.3 Products of statistical agencies/units are clearly identified as such. 1.2.4 Advance notice is given of major changes in methodology, source data, 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.

Quality Dimensions	Elements	Indicators
2. Methodological soundness *The methodological basis for the statistics follows internationally accepted standards, guidelines, or good practices.*	**2.1 Concepts and definitions**—*Concepts and definitions used are in accord with internationally accepted statistical frameworks.* **2.2 Scope**—*The scope is in accord with internationally accepted standards, guidelines, or good practices.* **2.3 Classification/ sectorization**—*Classification and sectorization systems are in accord with internationally accepted standards, guidelines, or good practices.* **2.4 Basis for recording**—*Flows and stocks are valued and recorded according to internationally accepted standards, guidelines, or good practices*	2.1.1 The overall structure in terms of concepts and definitions follows internationally accepted standards, guidelines, or good practices. 2.2.1 The scope is broadly consistent 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. 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 internationally accepted standards, guidelines, or good practices.
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.* **3.2 Assessment of source data**—*Source data are regularly assessed.* **3.3 Statistical techniques**—*Statistical techniques employed conform to sound statistical procedures* **3.4 Assessment and validation of intermediate data and statistical outputs**—*Intermediate results and statistical outputs are regularly assessed and validated.* **3.5 Revision studies**—*Revisions, as a gauge of reliability, are tracked and mined for the information they may provide.*	3.1.1 Source data are obtained from comprehensive data collection programs that take into account country-specific conditions. 3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required. 3.1.3 Source data are timely. 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. 3.3.1 Data compilation employs sound statistical techniques to deal with data sources. 3.3.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques. 3.4.1 Intermediate results are validated against other information where applicable. 3.4.2 Statistical discrepancies in intermediate data are assessed and investigated. 3.4.3 Statistical discrepancies and other potential indicators or problems in statistical outputs are investigated. 3.5.1 Studies and analyses of revisions are carried out routinely and used internally to inform statistical processes (see also 4.3.3).

Quality Dimensions	Elements	Indicators
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. 4.1.2 Timeliness follows dissemination standards.
	4.2 Consistency— *Statistics are consistent within the dataset, over time, and with major datasets.*	4.2.1 Statistics are consistent within the dataset. 4.2.2 Statistics are consistent or reconcilable over a reasonable period of time. 4.2.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.
	4.3 Revision policy and practice—*Data revisions follow a regular and publicized procedure.*	4.3.1 Revisions follow a regular and transparent schedule. 4.3.2 Preliminary and/or revised data are clearly identified. 4.3.3 Studies and analyses of revisions are made public (see also 3.5.1).
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). 5.1.2 Dissemination media and format are adequate. 5.1.3 Statistics are released on a preannounced schedule. 5.1.4 Statistics are made available to all users at the same time. 5.1.5 Statistics not routinely disseminated are made available upon request.
	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. 5.2.2 Levels of detail are adapted to the needs of the intended audience.
	5.3 Assistance to users— *Prompt and knowledgeable support service is available.*	5.3.1 Contact points for each subject field are publicized. 5.3.2 Catalogs of publications, documents, and other services, including information on any changes, are widely available.

Users' Survey

With the assistance of the authorities and the IMF's Resident Representative in Skopje, and as a complement to the mission's own assessment of the quality of FYR Macedonia's statistics, a survey was conducted among users of macroeconomic statistics. The survey asked users to evaluate a range of aspects of national accounts, prices (consumer price and producer price indices), fiscal, monetary, and balance of payments statistics. Out of 56 questionnaires sent, the mission received 25 responses, that is, a response rate of 45 percent. A follow-up meeting was also held with users who participated in the survey.

The results of the survey and the follow-up discussion with users indicated that, in general, most users were satisfied with the coverage, periodicity, and underlying methodology of the official statistics. In particular, there was a wide acknowledgement by users of the recent improvements in FYR Macedonia's official statistics as a result of the efforts by the data compiling agencies to adopt to international standards. The accessibility of data in hard copy and electronic format was well regarded. In the case of the State Statistical Office, the availability of metadata and advance release calendars were recognized. Most users believed that official macroeconomic statistics of FYR Macedonia were at about the same level compared to those of countries in the same region.

The major deficiency in FYR Macedonia's data practices in most users' view is lack of timeliness of data dissemination. In particular, publication of some monthly data series in quarterly publications significantly delayed the timeliness of data dissemination.

Some users provided comments and suggestions for improvements in the following areas: (i) publication of additional details, e.g., CPI by subgroup of products, bank deposits broken down by enterprise and household and by major currencies; (ii) provision of more comprehensive information on methods used for compiling data; (iii) more user-friendly websites, which was considered very important as the majority of users access official statistics via data compiling agencies' internet sites; (iv) greater transparency of revision policies and practices; (v) expansion of data coverage of government finance statistics, and (vi) provision of comparable data series for longer time periods.

In response, at end-February 2004, the National Bank of the Republic of Macedonia began publishing monetary data on a monthly basis on its internet site, resulting in a significant improvement in the timeliness of their dissemination. It also posted an advance calendar for data releases.