



# The IMF Data Quality Assessment Framework (DQAF) and its Application

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## Outline

- Background
- The IMF DQAF
- DQAF Architecture
- Applications of the DQAF
- Conclusion



## A. Background



## Work on Standards and Codes Initiative: Origin

- Financial crises of the 1990s: call for stronger architecture of the international financial system.
- The standards and codes initiative developed: encouraged adoption of sound policies and practices.
- International standards were defined more clearly for a range of areas including data transparency.
- Assessments to identify and overcome weaknesses in policies, governance, and institutions.



## The Standards and Codes Initiative: Main Standards

- Data Transparency.
- Fiscal Policy Transparency.
- Monetary and Financial Policy Transparency, and financial market oversight (banking, securities, insurance, including money laundering).
- Market governance (corporate governance, accounting, auditing, insolvency, and creditor rights).

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## Data Transparency: IMF Data Standard Initiatives

- Special Data Dissemination Standard (SDDS)—for countries that might seek access to international capital markets (1996).
- General Data Dissemination System—to encourage statistical development (GDDS) (1997).
- SDDS Plus—to reinforce and supplement the Fund's Data Standard Initiatives (2012).
- Enhanced General Data Dissemination System (e-GDDS)—to guide countries in data dissemination by supporting transparency and encouraging statistical development (2015).

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## B. The IMF DQAF

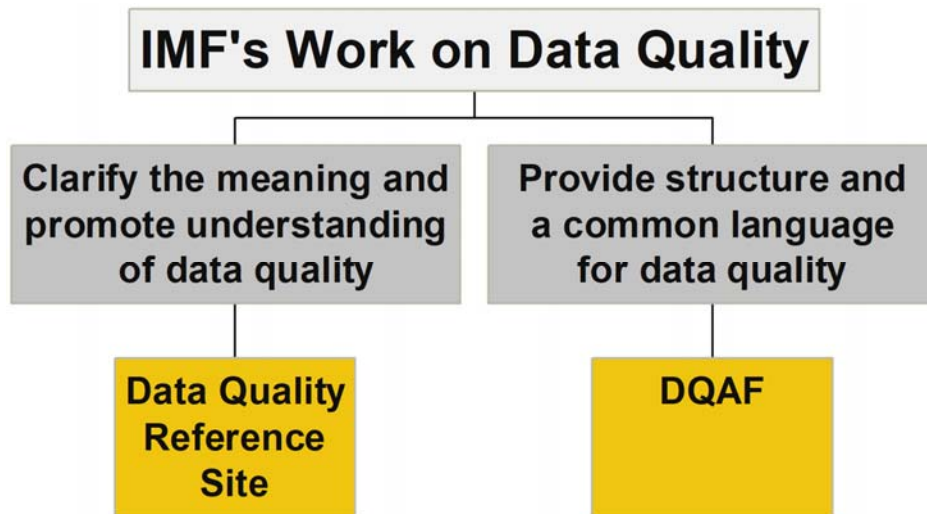


### DQAF links to IMF work

- SDDS, SDDS Plus and e-GDDS: broadening the scope of data standards to strengthen the link with data quality.
- Provision of data by members to the IMF: a need to be clearer about what is called for.
- Report on Standards and Codes (ROSC data module): a need for an even-handed approach to assessing data quality.



## Approach



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## What the DQAF looks like?

Given the many potential uses of DQAF it should be:

- ✓ Comprehensive;
- ✓ Balanced between experts' rigor and generalists' bird's-eye view;
- ✓ Applicable across various stages of statistical development;
- ✓ Applicable to the major macroeconomic datasets;
- ✓ Designed to give transparent results; and
- ✓ Arrived at by drawing on national statisticians' best practices.

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## What is assessed?

The DQAF is structured to look at the:

- Quality of statistical institution;
- Quality of the statistical product; and
- Quality of statistical processes.

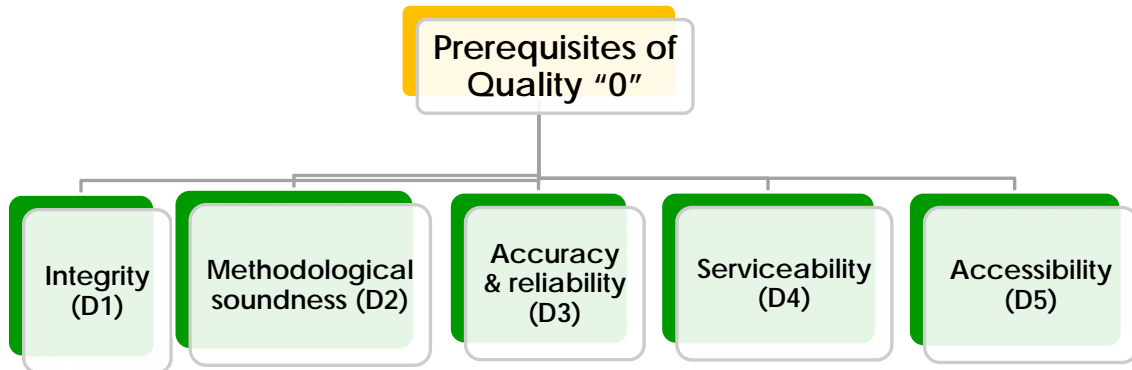
7DQAFs available: NA, PPI, CPI, GFS, MFS, BOP, and EDS.



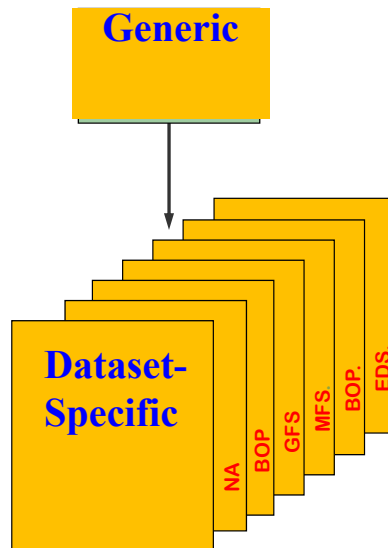
## C. The DQAF Architecture



# DQAF architecture



# DQAF two-tier approach





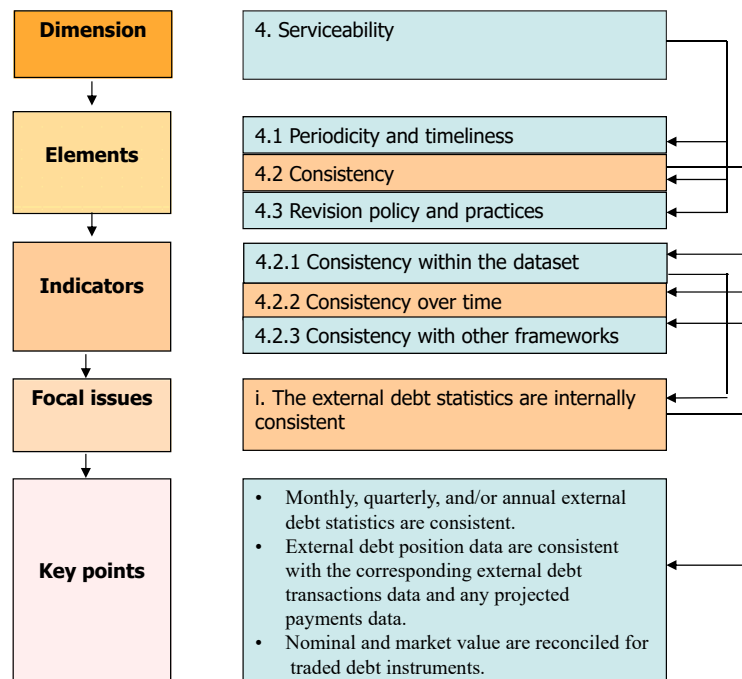
## DQAF—cascading structure

- The DQAF has a cascading structure:
  - Each **dimension (one digit)** has elements,
    - Each **element (two digits)** has indicators,
      - Each **indicator (three digits)** has focal issues,
        - Each **focal issue** has key points.
- Let's see an example...

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### External debt Statistics DQAF Cascading Structure: An example



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## DQAF—Prerequisites of quality

	Description
Prerequisites of quality	This category identifies conditions within the agency in charge of producing statistics that have an impact on data quality (legal and institutional environment, available resources, relevance, and quality awareness).
	<ul style="list-style-type: none"> <li>✦ The primary responsibility for collecting, processing, and disseminating EDS is clearly specified.</li> <li>✦ Confidentiality of individual reporters' data is guaranteed.</li> <li>✦ A law or other formal provision provides for the reporting of information needed to compile EDS.</li> <li>✦ Staff / computing resources / physical facilities / funding for compiling EDS are adequate to perform required tasks.</li> </ul>

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## DQAF—dimension 1

	Description
Assurances of integrity	It identifies features that support firm adherence to objectivity in the collection, processing, and dissemination of statistics so as to maintain users' confidence. Elements refer to professionalism, transparency, ethical standards.
	<ul style="list-style-type: none"> <li>✦ Recruitment and promotion are based on relevant aptitude and/or expertise.</li> <li>✦ Choices of data sources and statistical techniques are based solely on statistical considerations.</li> <li>✦ Terms and conditions under which statistics are collected, processed, and disseminated are available to the public.</li> <li>✦ Clear set of ethical standards are available and staff are made aware.</li> </ul>

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## DQAF—dimension 2

	Description
Methodological soundness	It refers to the application of international standards, guidelines, and accepted practices. Application of such standards, which are specific to each dataset, is indicative of the soundness of the data and fosters international comparability. Elements refer to the basic building blocks of concepts and definitions, scope, classification and sectorization, and basis for recording.
<ul style="list-style-type: none"> <li>✦ Concepts and definitions / scope / classification and sectorization/ basis for recording used to compile EDS are in broad conformity with the EDS Guide.</li> </ul>	



## DQAF—dimension 3

	Description
Accuracy and reliability	It identifies features that contribute to the goal that data portray reality. Elements refer to features of the source data, statistical techniques, and data validation.
<ul style="list-style-type: none"> <li>✦ The data collection programs employed to compile EDS are adequate.</li> <li>✦ Source data are consistent with the definitions, scope, classifications, and time of recording adopted by the data producing agency.</li> <li>✦ Statistical techniques employed conform to sound statistical procedures.</li> <li>✦ Appropriate measures are taken to adjust source data.</li> <li>✦ Bilateral comparisons/ reconciliations are conducted with data of other countries and international organizations.</li> </ul>	



## DQAF—dimension 4

	Description
Serviceability	<p>It focuses on practical aspects of how well a data set meets user’s need. Elements refer to the extent to which data are disseminated with an appropriate periodicity and timeliness, are consistent internally and with other datasets, and follow a known revision policy.</p> <ul style="list-style-type: none"> <li>✦ Periodicity and timeliness follows dissemination standards (Fund’s SDDS / GDDS).</li> <li>✦ EDS are consistent over time</li> <li>✦ EDS are consistent / reconcilable with the national accounts, balance of payments, IIP, monetary and financial, and government finance statistics.</li> <li>✦ Revisions follow a regular an transparent schedule.</li> </ul>



## DQAF—dimension 5

	Description
Accessibility	<p>It deals with the need for data and metadata to be presented in a clear manner, are easily available, that metadata are up-to-date and pertinent, and that knowledgeable support service is available to users.</p> <ul style="list-style-type: none"> <li>✦ Supplementary EDS encouraged by the SDDS/GDDS are provided to users.</li> <li>✦ EDS are released on the preannounced schedule.</li> <li>✦ Statistics are made available to all users at the same time.</li> <li>✦ EDS metadata give adequate information about the meaning of the data and about the methodology used to collect and process them.</li> <li>✦ Prompt and knowledgeable support service to users of EDS is available.</li> </ul>



## D. Applications of the DQAF



## Applications of DQAF

1. Reports on the Observance of Standards and Codes (ROSC Data Module).
2. Guide for data users—complements the IMF Data Standard Initiatives(SDDS, SDDS Plus, and e-GDDS).
3. Guide assessment of data adequacy for surveillance.
4. Guide provision of technical assistance and training.
5. Guide country efforts on self-assessment.



## D.1.ROSC Data Module

- IMF surveillance includes missions to prepare ROSC Data Module.
- The ROSC Data Module includes assessments of data quality.
- The structure of the ROSC Data Module:
  - Part I: Main Report
    - Data dissemination practices
    - Summary assessment of data quality
    - Staff’s recommendations
  - Part II: Response from the authorities
  - Part III: Detailed assessments (DQAFs)

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## D.1. ROSC Data Module (cont'd)

### Ratings<sup>1/</sup>

O	Fully observed
LO	Largely observed
LNO	Largely non-observed
NO	Non-observed

1/ Ratings used in data ROSC missions. ROSC for 83 countries including 32 updates have been prepared. Available at:  
<http://dsbb.imf.org/Applications/web/dqrs/dqrsroscs/>.

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**Table 1. Erehwon: Data Quality Assessment Framework 2012—Summary Results**

Key to symbols: O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; NA = Not Applicable; ▲ = Improvement on 2004 ROSC Rating; and ▼ = Deterioration on 2004 ROSC Rating.

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

**Practice observed:** Current practices generally 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 the country's circumstances.



## D.1. ROSC Data Module (cont'd)

### Ratings

- Let see some examples...
- <http://dsbb.imf.org/Applications/web/dqrs/dqrsroscs/>
- <http://www.imf.org/external/np/rosc/rosc.asp>



## D.2. Guide for data users: Links to SDDS/SDDS Plus/e-GDDS

- DQAF compliments the SDDS/ SDDS Plus/e-GDDS.
- All of the elements of the SDDS/ SDDS Plus/e-GDDS are also found within DQAF.

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## D.2. Guide for data users: Links to SDDS/e-GDDS (cont'd)

- The purpose and scope of the SDDS/e-GDDS and DQAF differ:
  - In SDDS/SDDS Plus/GDDS, **as dissemination standards**, quality is a dimension.
    - That dimension takes an indirect approach to dealing with, e.g., accuracy--it calls for dissemination of relevant information.
  - In DQAF, **as an assessment tool**, quality is the umbrella concept.
    - That concept covers collection, processing, and dissemination of data.

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## D.2. Guide for data users: Links to SDDS/SDDS Plus/e-GDDS (cont'd)

- DQAF is “more active” in dealing with, e.g., conformity with international guidelines, accuracy, and reliability.
  - SDDS, SDDS Plus, and e-GDDS do not prescribe quality: users make their own judgments on quality of data based on metadata.
  - DQAF guides users in making such judgments by providing three structured dimensions:
    - Methodological soundness
    - Accuracy and reliability; and
    - Serviceability (e.g.; revision policy and consistency over time)

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## D.4. Guide the provision of technical assistance

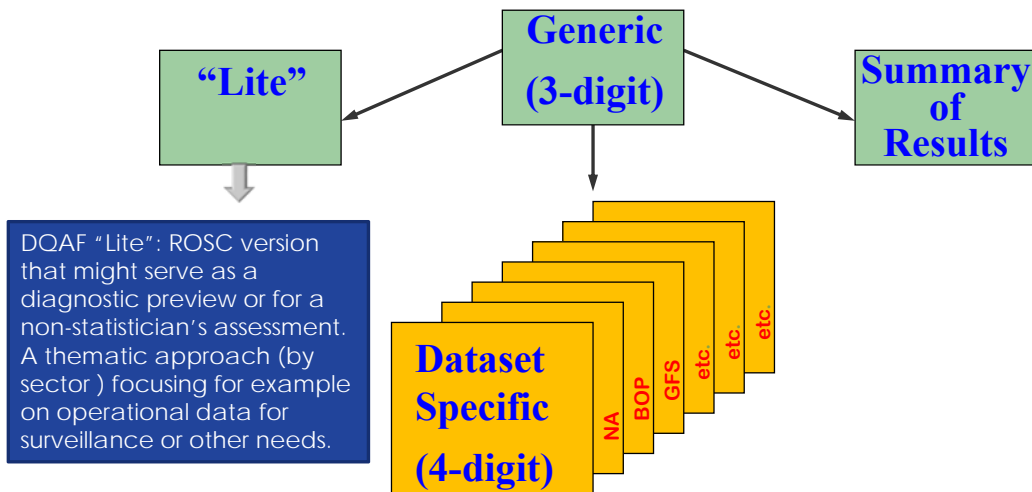
- Shift data ROSC to thematic approach (e.g., by focusing on specific sector or data set)
  - A new DQAF version (DQAF “Lite”) that might serve as a diagnostic preview or for a non-statistician’s assessment of data adequacy.
  - It could cover a limited number of indicators based on operational data.
  - It could apply to specific data such as SDGs.

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## D.4. Guide the provision of technical assistance



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## Experiences working with the DQAF

- What do we see from the experiences?
  - **Advantages**
    - Provides more structure to technical assistance
    - Promotes consistency across staff/experts
    - Potentially provides input for useful database
    - Places data standards in the center of work on the international financial architecture
    - Provides countries an objective tool for self-assessment
  - **Challenges**
    - Puts premium on consistency
    - Calls for explicit judgments
    - ROSCs are costly—call for DQAF “Lite”

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## Conclusion

- Continue to improve tools to assess data quality and adequacy;
- Encourage of quality and timely data;
- Aligned with the UN-NQAF and based on UN Fundamental principles
- Continue coordination with other organizations working on data quality and provision of technical assistance; and
- Continue working in a consultative manner.