Statistical Standard Series

Data revision

Endorsed by the Inter-Departmental Working Group on Statistics

30 January 2019
This document outlines key recommendations and/or good practices with regard to data revision; set of main approaches and practices for handling revisions of published statistical outputs.

The document was endorsed as FAO standard by the Inter-Departmental Working Group on Statistics on 30 January 2019.
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1. General recommendations

Revisions are broadly defined as changes in the value of a statistic already released to the public by a statistical agency. Revisions can be classified by reasons or timing.

The revision of published statistical outputs may take place for several different reasons:

1. incorporation of better source data (more complete data points, more accurate, etc.) in the production process of statistical outputs;
2. routine updates (e.g. update of the base period);
3. improvements in statistical methods, concepts, definitions or classifications, and
4. correction of errors in source data and computations (e.g. wrong recoding, erroneously imputed values, wrong transcripts of numbers in official report, errors found in generation of tabulations and other dissemination products, etc.).

Revisions due to (1) and (2) may be planned as integral part of the production process of statistical outputs. For instance, an annual revision of disseminated statistical outputs may be implemented when data are collected annually for the reference year and also some previous reference years, as in FAO’s Agricultural Producer Prices questionnaire. In this way countries may provide revised data based on more accurate data sources, or fill possible gaps. On the contrary, revisions due to (4) are not planned and their timing cannot be predicted. Similarly, revision due to factors under (3) are not frequent.

The closeness of the initially released estimates to the subsequent released estimates can provide a rough idea about the accuracy of the initial estimates, since it is reasonable to assume that estimates converge towards the true value as they are based on progressively more reliable sources (Principle 2 of FAO SQAF). Therefore, assessing the reliability of the estimates implies performing an analysis of revisions, i.e. how initial estimates are revised as new and more updated and complete data become available.
2. Technical recommendations

The following practices are recommended when performing planned or “ad hoc” data revisions:

- Systematic analysis of planned revisions should be carried out according to well-established international methods and practices.
- Revision indicators (see Annex 1) should be computed and disseminated to external users jointly with the disseminated data. Users should be informed on the size and on the direction of the planned revisions.
- The analysis of the revisions should be used when improving the overall data production process of statistical outputs as well as just some phases of it.
- If unplanned revisions due to correction of errors occur with a certain regularity, program managers should evaluate the need of setting up a revision policy, establishing the nature, periodicity and timing of expected revisions.
- Time series data should be revised as far back as feasible, considering users’ needs, costs and data sources availability. The revised time series should be released simultaneously with the revised current data or soon thereafter.

3. Governance procedures

- As a general principle, data revisions should follow standard, well-established and transparent procedures.
- All FAO’s statistical programs subject to planned data revisions must have a revision policy documenting the nature of the planned data revisions, their number, their frequency, their general methodology/implementation process and any other details aiming at informing adequately users on these revisions.
- Revision policies and advance notices on major revisions must be made available to all users.
- Revision policy should be designed or revised in consultation with main users in order to identify their needs and priorities and evaluate the impact of planned revisions on their data use.
- Procedures should be in place to manage occasional unplanned revisions of final statistical outputs. These revisions should be justified and documented. Users should be timely informed about them.
- The impact and extent of revisions must be constantly monitored and regularly analysed in order to evaluate and improve the quality of FAO’s statistical products.
Annexes

Annex 1: Revision indicators

Three well-known revision indicators are introduced that help in monitoring and documenting revisions; they are suitable when the revision occurs for the \( n \) reference periods contained in a time series (i.e. in each revision occasion all the \( n \) items in the time series are revised). All these indicators should be computed when dealing with revisions.

**Mean revision (MR):**

\[
MR = \frac{1}{n} \sum_{t=1}^{n} (X_{Lt} - X_{Pt})
\]

\( X_{Pt} \): “earlier” release, an earlier estimate of the given item for time reference \( t \)

\( X_{Lt} \): “later” release, a later (revised) estimate of the given item for time reference \( t \)

\( n \): number of reference periods in the time series

The indicator applies to cases where both \( X_{Pt} \) and \( X_{Lt} \) are available. If one of them or both are missing then the pair of elements is discarded from the computation of the average.

**Mean absolute revision (MAR) and Relative mean absolute revision (RMAR):**

\[
MAR = \frac{1}{n} \sum_{t=1}^{n} |X_{Lt} - X_{Pt}|
\]

\[
RMAR = \frac{\sum_{t=1}^{n} |X_{Lt} - X_{Pt}|}{\sum_{t=1}^{n} X_{Lt}}
\]

The indicator applies to cases where both \( X_{Pt} \) and \( X_{Lt} \) are available. If one of them or both are missing then the pair of elements is discarded from the computation. Both indicators provide information on the stability of revisions.

The **RMAR** is useful for geographical or over time comparisons. In some cases, the relative version of **MAR** is obtained by considering earlier estimates \( X_{Pt} \) at the denominator.
Annex 2: Definitions

Revision policy:
A policy or set of policies, aimed at ensuring the transparency of disseminated data whereby preliminary data are compiled that are later revised when more and better source data become available (OECD, Glossary of statistical terms).

Data revisions:
Data revisions are defined broadly as any change in a value of a statistic released to the public by an official national statistical agency (OECD, Glossary of statistical terms).¹

¹ This definition obviously applies also to statistical outputs produced and disseminated by an international organization.
### Annex 3: Document history

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<th>Revision version</th>
<th>Revision date</th>
<th>Author</th>
<th>Description of changes/status</th>
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<td>06 March 2017</td>
<td>Ayca Donmez Cristina Muschitiello Marcello D’Orazio</td>
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<td>Ayca Donmez Cristina Muschitiello Marcello D’Orazio</td>
<td>Draft 0.1</td>
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<td>Ayca Donmez Cristina Muschitiello Marcello D’Orazio</td>
<td>Draft 0.2 OCS changes</td>
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<td>0.3</td>
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<td>Marcello D’Orazio</td>
<td>Minor OCS changes</td>
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References


