



STATISTICS DIRECTORATE

STD/STESEG(2003)32
For Official Use

OECD Short-Term Economic Statistics Expert Group

STESEG TASK FORCE ON DATA PRESENTATION AND SEASONAL ADJUSTMENT

SOME PROPOSALS FOR STANDARD TERMINOLOGIES RELATING TO DATA PRESENTATION

Paris, 26 - 27 June 2003

*Prepared by: Brian Finn
Statistics Directorate
OECD*

Submitted to the Expert Group under item 4 of the draft agenda

Contact: Brian.Finn@oecd.org

JT00146308

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

SOME PROPOSALS FOR STANDARD TERMINOLOGIES RELATING TO DATA PRESENTATION

1. Introduction

Clients of statistical institutions often complain about different terminologies being used to describe the same thing in different publications. Sometimes, the one publication even contains different terms describing the same phenomenon. There are two ways of looking at this: the first is to say that because so many institutions use slightly different terms to describe the same phenomenon, it is acceptable to use different terms interchangeably. The second way is to say that terminology should be consistent across the institutions so that the question of ambiguous terms does not arise. It is this second view that forms the basis of this paper.

Moreover, assuming that users of statistical information can be grouped into the three broad categories of *general public*, *informed users* and *analytic users*, we need to consider how the needs of these different categories are affected by terminology that is unclear. While the general public may not understand what is meant by say, sampling error, the informed user and the analytic user will probably have a reasonable understanding of the term. Even if they do not have such an understanding, glossaries such as the OECD Glossary of Statistical Terms (<http://cs3-hq.oecd.org/scripts/stats/glossary/index.htm>) contain definitions that can explain terms which are of interest only to the more informed user of statistical data. Therefore this paper is only concerned with terms that give rise to presentational misunderstandings on the part of all users.

There are two main parts. Part 2 deals with terminologies that may require some recommendations, whereas Part 3 deals with terminologies that probably do not.

There is also a background reference paper containing terminology defined in the OECD Glossary of Statistical Terms, probably of interest only to informed and analytic users. This paper is included in case any member of the task force considers that the definitions are unclear or in need of amendment.

The proposals are preliminary at this stage and subject to change following comments from other members of the task force.

2. Problematical Terms

2.1 Annual Growth Rate

The OECD Glossary of Statistical Terms states:

- Annual growth rates are rates expressed over the corresponding period of the previous year. May be expressed as annual growth rates (i.e. $Y_t/Y_{t-1}-1$) or through the year growth rate (i.e. $Q_t/Q_{t-4}-1$ or $M_t/M_{t-12}-1$).
- Are referred to in the OECD Main Economic Indicators publication as the “12-month (4-quarter) rate of change” in explanatory notes but as “12-month variation” in the actual tables.

Thus the OECD is using four terminologies to describe the annual growth rate. To these we could also add the term year-on-year change, giving a fifth. Moreover, past discussions with a few OECD clients who have expressed some confusion suggest that annual growth rate may sometimes be taken to mean $Y_t/Y_{t-1}-1$ rather than, say, $Q_t/Q_{t-4}-1$ or $M_t/M_{t-12}-1$.

2.1.1 Proposal

To avoid the confusion that may arise over the use of the word “annual”, it is proposed that statistical institutions should use one of the following options

- Use “year-on-year growth rate” (“year-on-year change”) when describing $Q_t/Q_{t-4}-1$ or $M_t/M_{t-12}-1$ (Q_t-Q_{t-4} or M_t-M_{t-12}) and use “annual growth rate” (“annual change”) only when describing $Y_t/Y_{t-1}-1$ (Y_t-Y_{t-1})

This allows us to use the term “quarterly growth rate” for $Q_t/Q_{t-1}-1$ and “monthly growth rate” for $M_t/M_{t-1}-1$.

2.2 Annualised Growth rate

The OECD Glossary of Statistical Terms states:

- Annualised growth rates show the value that would be registered if the rate of activity measured for a month or quarter were maintained for a full year, i.e. $[(Q_t/Q_{t-1})^4]-1$, $[(M_t/M_{t-1})^{12}]-1$. This facilitates comparison of data for different time periods (e.g. years and quarters).

This definition is fairly clear. However, the term “annualised growth rate” is sometimes used to describe the quarterly growth rate multiplied by four as opposed to compounding the quarterly growth rate. On the other hand, “annual rate” or “annual levels”¹ are also used to describe the situation whereby quarterly data are expressed on an annual basis.

In addition, the definition refers to annualising from monthly rates of activity, which is something that some people may feel to be inappropriate.

2.2.1 Proposal

To avoid confusion over the use of annualised and annual, it is proposed that

- The term “annualised growth rate, compounded form” should be used when data derives from compounding and “annualised growth rate, linear form” should be used when data derives from multiplying by four.
- If it is generally agreed that annualising for monthly series is not particularly appropriate, we should propose that a reference to its non-suitability be inserted in the OECD Glossary.

2.3 Calendar or Working Day Adjustment

The OECD Glossary of Statistical Terms states:

¹ See for instance, the OECD publications, *Main Economic Indicators* and *Quarterly National Accounts*.

- Seasonal adjustment is a statistical technique to remove the effects of seasonal calendar influences operating on a series. Seasonal effects usually reflect the influence of the seasons themselves either directly or through production series related to them, or social conventions.
- Other types of calendar variation occur as a result of influences such as number of days in the calendar period, the accounting or recording practices adopted or the incidence of moving holidays (such as Easter).

There is no problem with seasonal adjustment, even if it includes calendar effects, again as long as the general public are given a brief explanation as to what it means.

Calendar adjustment is not defined in the OECD Glossary of Statistical Terms but might be defined as

- The correction for calendar variations other than seasonal factors, e.g. number of days in the calendar period, the accounting or recording practices adopted or the incidence of moving holidays (such as Easter).

The terms “calendar adjustment” and “working day adjustment” appear to be used interchangeably. This seems particularly so when it comes to translating different languages into English. However, there is a subtle difference between the two terms as defined above since working day adjustment is merely *one type* of calendar adjustment, along with an adjustment for say new recording practices. Although the difference may be subtle, at least it should be considered whether this difference should be stated explicitly.

2.3.1 Proposal No. 1

To avoid the possibility of users mistakenly thinking that “calendar adjustment” means “working day adjustment”, when it actually means working day plus other adjustments, it is proposed that

- Only the term “calendar adjustments” should be used but with an explanation as to what adjustments are included

OR

- “Working day” should refer to adjustments for number of work days only and “calendar” should refer to other calendar adjustments and/or number of work days and other calendar adjustments

2.3.2 Proposal No. 2

The definition of “calendar adjustment” as drafted above should be included in the OECD Glossary of Terms.

2.4 Moving Average

This is not defined in the OECD Glossary of Statistical Terms but might be defined as

- A moving average is a method of smoothing by averaging n terms of a time series. It is the average of a series of observations over a specified time period, such as a quarter, used to identify trends by flattening or smoothing out large fluctuations. Each new period’s data are added to the average and the oldest are dropped so that the average “moves” over time. In general, the greater the value of n , the smoother the series.

- A moving average may be centred in which case it is plotted at the middle of the time interval of which it is the average, or lagged in which case it is plotted at the last term included.

OR

- A Moving Average applied to a time series replaces each observed value by a weighted average of p preceding values, the given value, and f following values of the series.
- If $p=f$, the moving average is said to be centred.
- The moving average is symmetric if it is centred and in addition, for each $k=1,2,\dots,p=f$, the weight of the k -th preceding value is equal to the weight of the k -th following one.
- The moving average is lagged, if $f=0$.
- The moving average is not defined for the first p and the last f observed values. In order to compute the moving average for those values, the series must be backcasted and forecasted.

There is no ambiguity in the term moving average but there is no definition in the OECD Glossary of Statistical Terms.

2.4.1 Proposal

The definition of “moving average” as drafted above should be included in the OECD Glossary of Terms.

2.5 Preliminary/Provisional

It is possible that these words are used interchangeably for the most timely data subject to revision.

The OECD Glossary of Statistical Terms does not contain a definition for either ‘preliminary’ or ‘provisional’. However, in the definition for “most timely data”, the Glossary refers to preliminary data being subject to revision.² There is no reference to provisional data in the Glossary. However, the words can be taken as interchangeable if one uses the Oxford English Dictionary definition for both (although provisional has a wider number of meanings than preliminary).

If some statistical institutions use the term “preliminary” to describe the first released version of a series and “provisional” to describe subsequent versions prior to final amendment, there is obviously a difference between the two meanings. On the other hand, users in general should have no great problem in understanding that data labelled “preliminary” or “provisional” are subject to revision. So it is suggested that there is no need for a recommendation on this issue.

2.5.1 Proposal

There is no need for a recommendation on the terms “preliminary” and “provisional”.

² The Glossary states: *Most timely data refers to the direct investment statistics disseminated at the earliest opportunity; that is with the shortest lapse of time between the end of the reference period (or reference date) and dissemination of the data. Although disseminated, such data may be preliminary and subject to revision.*

3. Non-problematical terms

For the terms referred to hereunder, it is suggested that an acceptable definition already exists and so no recommendation is required.

3.1 Monthly average

The OECD Glossary of Statistical Terms states:

- By analogy with annual averages and moving averages generally this term ought to refer to the average values of a time series occurring within a month, the resulting figure being representative of that particular month.

As long as data that are presented as monthly (or quarterly) averages are specified as such, there is no problem with the term which is not ambiguous in any sense.

3.2 Tendency

The OECD Glossary of Statistical Terms states:

- The term tendency is used in business tendency surveys where the respondent is asked for a judgment on the direction of changes (e.g. up/down/same).

It is suggested that this definition is satisfactory. Sometimes the word “trend” is used interchangeably with “tendency” but this does not appear to give rise to difficulty in understanding.

3.3 Trend

The OECD Glossary of Statistical Terms defines trend as:

- A long term movement in an ordered series, say a time series, which may be regarded, together with the oscillation and random component, as generating the observed values.

It is suggested that this definition meets the needs of those users who are most concerned with trends, i.e. informed and analytic users.

3.4 Trend Estimates

The OECD Glossary of Statistical Terms states:

- Trend estimates are derived from seasonally adjusted estimates via an averaging process which attempts to remove the irregular component of the time series. This allows the underlying direction of a time series to be identified.

It is suggested that this definition meets the needs of those users who are most concerned with trends, i.e. informed and analytic users.

3.5 Trend Fitting

The OECD Glossary of Statistical Terms defines trend fitting as:

- The general process of representing the trend component of a time series. A trend may be represented by a particular curve form, e.g. the logistic, or by a particular form of the general class of polynomial in time, or by a moving average.

It is suggested that this definition meets the needs of those users who are most concerned with trends, i.e. informed and analytic users.