THE OECD STANDARDISED BUSINESS CONFIDENCE INDICATORS (BCIs) AND CONSUMER CONFIDENCE INDICATORS (CCIs)

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This document describes the OECD methodology employed to compute the **Standardised Confidence Indicators** for both Business and Consumer Tendency Surveys. The OECD has implemented a standardisation process for the OECD and BRIICS countries in order to achieve comparability of confidence indicators across countries and business cycles phases.

In this respect, the OECD Standardised Confidence Indicators differ from the original confidence indicators, used as input in the standardisation process, in that while the latter is the result of averaging the underlying components[1], the standardised version is also adjusted to match the fluctuations of other business cycle indicators, namely the CLI and the de-trended GDP, allowing cross-country international comparisons.

The OECD Standardised Confidence Indicators can be used not only to monitor output growth (Business indicators) and the likely development of household consumption and savings (Consumer indicators), but also to assess the evolution of business cycles and to anticipate approaching cyclical turning points in the economic activity.

STANDARDISATION PROCESS

The standardisation process entails four main steps: period conversion, smoothing, normalisation and amplitude-adjustment. A brief description of each step is given below.

1. Period conversion

Most of business and consumer survey data are available at a monthly frequency. When this is not possible, quarterly figures are converted into monthly figures by mean of interpolation. Such conversion is achieved through linear interpolation of quarterly series followed by an alignment to the most appropriate month of

[1] Business Confidence Indicators (BCI) correspond to the average of the following components: expected production, order books levels and stock of finished goods (inverted sign). Consumer Confidence Indicators (CCI) correspond to the average of: assessment of financial situation over the past 12 months, expected financial situation for the next 12 months, expected general economic situation for the next 12 months and expected major purchases for the next 12 months. Suitable proxy are used in case of missing national confidence indicators (i.e. business situation is used as a proxy for business confidence in business surveys). For a complete list of departures from the target definition, please refer to the OECD BTCS Glossary at http://www.oecd.org/std/leading-indicators/glossaryforoecdcompositeleadingindicators.htm.

the quarter. Most series are aligned to the central month of the quarter, though quarterly series based on surveys conducted in a given month of the quarter are aligned to the month itself.

2. Smoothing

In order to remove the irregular roughness of a time series, seasonal adjusted series are smoothed by applying the Hodrick-Prescott (HP) filter[2]. Fluctuations with periodicity below 6 months are cut-off, which corresponds to setting the lambda multiplier to one. This allows smoothing the time series from irregularities while preserving its trend - cycle component.

3. Normalisation

Once smoothed, data are normalised by subtracting from the smoothed confidence indicators their mean and dividing by the standard deviation. A value of 100 is added for rescaling purposes. For each country c, the confidence indicator is therefore computed as follows:

$$CI_{c\_normalised} = \left(\frac{CI_t - \overline{CI}}{S_{CI}}\right) + 100 \qquad (1)$$

where $\overline{CI}$ corresponds to the mean of CI_t and the S_{CI} to its standard deviation:

$$\overline{CI} = \frac{1}{T}\sum_{t=1}^{T} CI_t \qquad (2)$$

$$S_{CI} = \sqrt{\frac{1}{T-1}\sum_{t=1}^{T}(CI_t - \overline{CI})^2} \qquad (3)$$

4. Amplitude-adjustment

Once smoothed, time series are adjusted to match the amplitudes of the de-trended GDP. This is accomplished by multiplying the (1) by the amplitude standard deviation of the reference series (GDP) in its ratio-to-trend form.

ZONE AGGREGATES

Along with countries' standardised confidence indicators, the OECD is also computing zone aggregates for the following main country's groupings[3]:

- OECD total: all OECD countries
- OECD Europe: all European countries that are member of the OECD

[2] For further information on the HP method, please refer to the Cycle Extraction (oecd.org) document.
[3] The euro area aggregate is compiled by the European Commission. See Section 3.4 of the EC guidelines.

- G7, the major seven economies: United States, Canada, Japan, France, Italy, Germany and United Kingdom
- Major five Asian countries: China, India, Indonesia, Japan and Korea
- OECD plus major six non-member countries: OECD plus BRIICS
- OECD excluding Euro Area

Using the standardised confidence indicators, zone aggregates for the business and consumer area are calculated as annually chain-linked Laspeyres indices using annual GDP as weights. A zone aggregate is calculated if the overall weight of the available components is greater than 75%. The following formula applies:

$$Z_{a,t} = Z_{a,t-1} \frac{\sum_{i=1}^{n} w_{a-1,i}\left(\frac{C_{a,t,i}}{\bar{C}_{a-1,i}}\right)}{\sum_{i=1}^{n} w_{a-1,i}\left(\frac{C_{a,t-1,i}}{\bar{C}_{a-1,i}}\right)} \qquad (4)$$

where:

- $Z_{a,t}$ is the value of the zone indicator in year a month t
- $w_{i,a-1}$ is the weight of country i from year $_{a-1}$
- $C_{a,t,i}$ is the indicator for country i in year a month t
- $\bar{C}_{a-1,i}$ is the average value of the indicator for country i in year $_{a-1}$

The chain-linked indicators are then scaled to match the average level of the components in the current OECD base year. Formally, this implies selecting Z_0 such that $Z_B = \Sigma_{i\ wi,B}\ C_{i,B}$ where B corresponds to the OECD base year. Please note that weights between 1955 and 1981 refer to the GDP PPP value in 1980. Countries average values, $\{\bar{C}_{a-1,i}\}$, are calculated as the average of the country's composite indicator from the previous year. The linking point is February of each year. Weights data are sourced from the International Monetary Fund's World Economic Outlook (WEO) database and are updated twice a year, in October and April. The Purchasing Power Parity (PPP) estimates are produced by the International Comparisons Program (ICP). The PPP exchange rate estimates, maintained and published by the World Bank, the OECD, and other international organizations, are used by WEO to calculate its own PPP weight time series.

DATA ACCESSIBILITY

The OECD Standardised Business & Consumer Confidence Indicators are computed once a month following the same release schedule of the OECD CLIs. They are freely available online at the OECD Data warehouse (OECD.Stat) under the *Monthly Economic Indicators* theme, as well as on the OECD Data Portal.