Business & Consumer Tendency Surveys

OECD Glossary

March 2021

A

AMPLITUDE ADJUSTMENT

The amplitude adjustment is the unit of measure used for the CLI to ensure that its cyclical amplitude on average agrees with that of de-trended reference series. For further enquiries, please refer to the OECD System of Composite Leading Indicators.

B

BALANCE (also called NET BALANCE)

Balances (notation: B or NB for Net Balances) are commonly used unit of measure in *Business Tendency Surveys (*BTS*)* and *Consumer Opinion Surveys (*COS*)*. They are used to summarise answers to multiple-choice questions (three + reply options) in both BTS and COS.

In most business tendency surveys, respondents can choose between three possible reply options: up, same, down, or above normal, normal, below normal. For convenience we denote *up/above normal* by a (+), *same/normal* by a (=) and *down/ below normal* by a (-). The first step is to convert the numbers of answers to each of the three reply options into percentages. For example, if there are 200 respondents and 40 have replied (+), 60 (=) and 100 (-), in percentage terms these become 20, 30 and 50 respectively. The net balance is then calculated by subtracting the (-) percentage from the (+) percentage, i.e. 20 - 50 = -30. If respondents are offered more than three choices – five reply options such as *much better*, *better*, *same*, *worse*, *much worse* – balances are calculated in the same way as in the three options case although weights are assigned to each option such as 1, 0.5, 0, -0.5, -1 going from *much better* to *much worse*. Five reply options are common among consumer tendency surveys. Balances range from −100, when all respondents choose the negative option (or the most negative one, in the case of five-option questions) to +100, when all respondents choose the positive (or the most positive) option. Balances can take values from -100 to +100, with a midpoint of 0.

BUSINESS CONFIDENCE INDICATOR

The Business Confidence Indicator (BCI), also called *Industrial* Confidence Indicator, corresponds to the arithmetic average of seasonally adjusted net balances of the following three questions in the manufacturing sector:

- Production future tendency
- Order books levels
- Stocks of finished goods (inverted sign)

The definition complies with the EC and OECD guidelines.

Coverage

The OECD publishes BCIs for all OECD countries apart from Iceland for which no survey is conducted. Full coverage is also available for BRIICS countries.

Frequency

Most of time series are available at a monthly frequency apart from the following countries for which data are quarterly:

- OECD: Australia, Canada, Japan, New Zealand, Norway
- Non-OECD: Costa Rica, India, Indonesia, South Africa

Departures from the target definition

For Canada, Chile, Israel, Japan and New Zealand - the business situation indicator (current for CAN, ISR and JPN; future for CHL and NZL) has been used as a proxy for the BCI.

For Australia, Korea, Turkey and Switzerland and India, Indonesia and the Russian Federation the BCI is computed in-house following the EC guidelines. In the case of Korea, orders inflows tendency are used to replace order books levels.

For China and USA , the indicators used correspond to the PMI, which are normally expressed as diffusion indices. The OECD converts the indices into balances to allow cross-country comparability. All indicators are expressed as seasonally adjusted balances except for Mexico, which figures correspond to an index (base 2005).

BUSINESS CONFIDENCE INDICATOR standardised

The OECD standardised Business Confidence Indicators (standardised BCI) are confidence indicators comparable across countries and across business cycle indicators.

Across countries

The OECD Standardised Business Confidence Indicators provide a comparable dataset across countries based upon common definitions of confidence indicators computed at country level, in line with the Joint Harmonised EU programme of Business & Consumer Surveys. In case of missing BCIs at national level, suitable proxy are used (see under the "Departures from the target definition" section of BUSINESS CONFIDENCE INDICATOR).

Across business cycles

Across business cycles, the standardisation process allows, per each country, to compare the BCI standardised with the OECD Composite Leading Indicators and the de-trended indices of GDP.

Interpretability

The OECD fixed to 100 the mean of the OECD Standardised BCIs. Therefore, 100 represents the long-term average, or *normal situation*, not attached to a specific base year. In general, a standardised BCI over 100 signals an increase in confidence, marked i.e., by an increase in performance on the expected production of the company or on the level of order books. Conversely, a BCI below 100 indicates a pessimistic feeling, i.e. a drop in production or orders or an increase of finished goods, signalling a decrease in confidence. For more information on the standardisation methodology of the BCI, click here.

BUSINESS CYCLE

Business cycles are recurrent sequences of alternating phases of expansion and contraction in economic activity. The name *'business cycle'* has some ambiguity, since it can refer to conceptually different economic fluctuations. Whenever the context does not eliminate ambiguity, the following qualifiers are used to distinguish the different concepts:

- The *'classical cycle'* refers to fluctuations in the level of the economic activity (i.e. measured by GDP);
- The *'growth cycle'*, also known as the 'deviation cycle', refers to fluctuations in the economic activity around the long-run potential level, or fluctuations in the output-gap (i.e. measured by the de-trended GDP); and
- The *'growth rate cycle'* refers to fluctuations of the growth rate of economic activity (i.e. GDP growth rate).

The OECD CLI is focusing on the 'growth cycle' concept with the amplitude adjusted CLI, but offers translations for the two other concepts with the trend restored CLI for classical cycles and the CLI 12-month rate of change (alternatively year-on-year growth rate) for the growth rate cycle. For further enquiries, please refer to the OECD System of Composite Leading Indicators.

BUSINESS SITUATION/ ACTIVITY: CURRENT

In the OECD harmonised questionnaire the question is asked in the manufacturing sector only and formulated as follows – *"Excluding normal seasonal changes, do you consider that the present business situation/ activity of your company is: [(1) good, (2) satisfactory, (3) bad]"*. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

BUSINESS SITUATION/ ACTIVITY: FUTURE TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, what changes do you expect during the next 3 months with regards to your business situation/ activity: [It will (1) increase, (2) remain the same, (3) decrease]"*. This question is asked in the manufacturing and retail trade sectors (for the latter, business activity corresponds to sales). For some countries, the time horizon may differ (i.e.1 or 6 months); see country metadata for departures. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

BUSINESS SITUATION/ ACTIVITY: TENDENCY

In the OECD harmonised questionnaire the question asked "*Excluding normal seasonal changes, has your company's production over the past 3-4 months with regards to the volume of production: [(1) increased, (2) unchanged, (3) decreased]".* This question is asked in the construction, retail trade and services sectors. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

BUSINESS TENDENCY SURVEYS

Business tendency surveys – also called *business opinion* or *business climate surveys* – are surveys used to monitor and forecast business cycles. They ask company managers about the current situation of their business and about their plans and expectations for the near future. Experience in OECD Member countries has shown that surveys of this type provide information that is valuable to the respondents themselves and to economic policy makers and analysts. Although they do not provide precise information on levels of output, sales, investment or employment, they can be used to predict changes in these aggregates and, therefore they are particularly useful for analysing the business cycle.

Scope

Business tendency surveys are carried out to obtain qualitative information for use in monitoring the current business situation and forecasting short-term developments. In times of financial crisis, they have proved a cost-effective means of generating timely information on short-term economic developments. The basic purpose of business tendency surveys at their origin was to collect information on business conditions for the benefit of respondents and hence surveys were carried out by trade associations. Today, business tendency surveys have become a valuable tool for economic analysis for all types of users, hence a wider range of agencies, from private research institutes to official statistical agencies, are involved in the collection of BTS data. Compared to traditional statistical surveys, which usually cover only variables on one aspect of an enterprise's activity, business tendency surveys contain a variety of variables which are purposely selected for their ability to provide a comprehensive picture of the economy.

In terms of subject coverage, the range of information covered by BTS goes beyond the information normally captured in conventional statistics. In this sense, qualitative information may be collected for variables that are difficult or impossible to measure otherwise. Examples include:

- Capacity utilisation
- Production bottlenecks
- Plans and expectations for the immediate future

- Managers' views on the overall economic situation

Detailed guidelines for the development of questionnaires used for the collection of data from businesses using harmonised questions and recommended survey design practices are outlined in the OECD Business Tendency Surveys: A Handbook (2003). More recently, the UN has coordinated the publication of a manual with the contribution of several international experts (UN Handbook on Economic Tendency surveys, 2015) describing in detail the design of economic tendency surveys in an international context.

C

CAPACITY UTILISATION: CURRENT

In the OECD harmonised questionnaire the question is asked in the manufacturing sector and is formulated as follows - "*What is your current level of capacity utilisation? [please provide %]".* The measure used for this indicator is a seasonally adjusted percentage of the full capacity, and the question is usually asked in quarterly questionnaires.

CLI

The OECD Composite Leading Indicator (CLI) is an aggregate time series displaying a reasonably consistent leading relationship with the reference series for the business cycle of a country (GDP). The CLI is constructed by aggregating together component series selected according to multiple criteria, such as their economic significance, the cyclical correspondence and their data quality. As a result of the multi-criteria selection process, the OECD CLI can be used to give an early indication of turning points in the reference series although it may not be suitable for quantitative forecasts (see OECD System of CLIs). To learn more about the interpretation please refer to this document: https://www.oecd.org/sdd/leading-indicators/Interpreting_OECD_Composite_Leading_Indicators.pdf.

CLI COMPONENT SERIES

CLI component series are economic time series which exhibit leading relationship with the reference series (GDP) at turning points. The component series are selected from a wide range of economic sectors. The number of series used for the compilation of the OECD CLI varies from one country to another, typically ranging from five to ten series. Selection of the appropriate series for each country is made according to the following three criteria:

1. **Economic significance,** an *a priori* economic reason for a leading relationship with the reference series must exists;
2. **Cyclical behaviour,** component series cycles should lead those of the reference series, with no missing or, if possible, extra cycles, and
3. **Lead at turning points,** which should be homogeneous over the whole period.

On the data quality aspect, the component series should have:

- A broad statistical coverage;
- Series should be compiled on a monthly rather than a quarterly basis;
- Series should be timely and easily available;
- There should be no break in the time series, and
- Series should not be revised frequently.

The list of component series for each OECD country and BRIICS, together with their turning points can be found here.

CONSTRUCTION CONFIDENCE INDICATOR

The Construction Confidence Indicator corresponds to the arithmetic average of seasonally adjusted net balances of the following two questions in the construction sector:

- Total orders books level
- Employment future tendency

The definition complies with the EC and OECD guidelines.

Coverage

The OECD publishes Construction CIs for all OECD countries apart from the following countries: Australia, Canada, Iceland, Israel, Japan, Korea, Mexico, New Zealand, Norway and United States. For the BRIICS, the indicator is available for Brazil, Indonesia, Russian Federation and South Africa.

Frequency

Most of time series are available at a monthly frequency apart from Colombia, Costa Rica, Indonesia, Russian Federation, and South Africa for which they are quarterly.

Departures from the target definition

All confidence indicators are computed by source apart from Colombia, which is calculated in-house following the EC guidelines.

CONSUMER BAROMETER

The OECD Consumer Barometer was developed by the OECD in 2021 in order to facilitate a close monitoring of countries' consumer confidence movements as well as a quick assessment of the impact of new policy measures, restrictive or otherwise, introduced by countries in the aftermath of COVID-19.

Frequency

Frequency is typically monthly, but for a few exceptions, only quarterly figures are available: Colombia, Costa Rica, New Zealand, Switzerland, India, Russia and South Africa. For those countries, quarterly data are converted to monthly frequencies by means of interpolation.

Calculation

The indicator corresponds to the monthly growth rate of the normalised consumer confidence indicator (CCI) in its seasonally adjusted form. These data are then normalised by subtracting from CCI its mean and dividing by its standard deviation. A value of 100 is added for rescaling purposes. For each country *c*, the OECD Consumer Barometer (CB) is therefore computed as follows:

$$CB_{c,t} = \left(\frac{CCI_t - \overline{CCI}}{S_{CCI}}\right) + 100 \qquad (1)$$

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

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

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

Interpretation

Like the standardised Consumer confidence indicator, an OECD Consumer Barometer reading greater than 100 signals a boost in consumer confidence towards the future, indicating an attitude to spend more on major purchases in the coming year, complemented by a modest propensity to save. Conversely, values below 100 indicate a pessimistic approach towards future developments in the economy, valuing saving over consumption.

Timeliness

Data are compiled at the end of the reference period. Updates to the data and to the map will be accessible at the beginning of each month via the OECD Leading indicators & Tendency survey website.

CONSUMER CONFIDENCE INDICATOR

The Consumer Confidence Indicator (CCI) corresponds to the arithmetic average of seasonally adjusted net balances of the following four questions collected in the Consumer Opinion Surveys:

- Assessment of financial situation over the last 12 months
- Expected financial position over the next 12 months
- Expected general economic situation over the next 12 months
- Expected major purchases over the next 12 months

As of January 2019, the definition has been modified by the European Commission in order to better reflect significant structural and geographical changes that took place in the EU economy. Please consult the EC documentation to learn more about it (see A revised Consumer Confidence Indicator).

Each question has five possible answers: a lot better, a little better, the same, a little worse and a lot worse. The net balance is constructed with weights assigned on the extremes ["a lot better" and "a lot worse" with a weight of 1, "a little better" and "a little worse" with a weight of 0.5, and "the same" with a weight of 0]. Please refer to the EC guidelines for further information.

Coverage

The OECD currently publishes CCIs for all OECD countries apart from Iceland and Norway for which data are not available.

Frequency

Frequency is normally monthly apart from Costa Rica, New Zealand, and Switzerland and for the Russian Federation and South Africa for which data are quarterly.

Departures from the target definition

The measure for all series is the seasonally adjusted balance, with the exception of Canada, Mexico and USA[1] for which only indices are provided. For New Zealand and China the index corresponds to a 100 = normal. All confidence indicators are computed by source and are in line with the EC guidelines.

CONSUMER CONFIDENCE INDICATOR Standardised

The OECD standardised Consumer Confidence Indicators (standardised CCI) are confidence indicators comparable across countries and across business cycle indicators.

Across countries

The OECD Standardised Consumer Confidence Indicators provide a comparable dataset across countries as they are based upon common definitions of confidence indicators computed at country level, in line with the Joint Harmonised EU programme of Business & Consumer Surveys.

Across business cycle indicators

Across business cycles, the standardisation process allows, per each country, to compare the CCI standardised with the OECD Composite Leading Indicators and the de-trended indices of GDP.

Interpretability

The OECD fixed to 100 the mean of the OECD Standardised BCIs. Therefore, 100 represents the long-term average, or *normal situation*, not attached to a specific base year. In general, a standardised CCI over 100 signals a boost in the consumers' confidence towards the economy suggesting an healthier economy (i.e., positive changes to the general economic situation, decrease of the unemployment rate) combined with an improvement on the financial households conditions of the next 12 months (i.e., less likelihood to save, propensity to spend money on major purchases). Conversely, a value below 100 may signal a more pessimistic attitude towards the economy, expressing a tendency of saving more, which may translate into a contraction in the confidence. For more information on the standardisation methodology of the CCI, click here.

[1] The index corresponds to the Index of Consumer Sentiment. Detailed information on its calculation can be found here http://www.sca.isr.umich.edu/fetchdoc.php?docid=24770.

CONSUMER OPINION SURVEYS

Consumer Opinion Surveys (COS) are tendency surveys carried out to obtain qualitative information useful in monitoring the current economic situation and the role of sentiment in explaining consumption patterns. The information collected in COS is described as qualitative because respondents are asked to assign qualities (opinions), rather than quantities, to the variables of interest. Qualitative questions usually ask for an assessment of the economic situation of the household and that of the country, saving and buying intentions, with particular emphasis on durable goods. The typical time-horizon of consumer surveys questions is 12 months.

COS are based on a sample of households (the sampling unit is usually an individual selected directly or within a given household depending on the available frame list) and respondents are asked about their intentions regarding major purchases, their economic situation now compared with the recent past and their expectations for the immediate future. The qualitative questions are usually complemented by a section aimed at gathering structural information on the respondent, including demographic characteristics of the respondent and his/her household, together with socioeconomic characteristics such as income, occupation, education and work time regime. The OECD target list (see OECD harmonised questionnaire) includes the following three harmonised European indicators:

1. Consumer confidence indicator
2. Consumer prices: future tendency
3. General economic situation: future tendency

(Unit of measure) CONVERSION

Can a D.I. be converted into N.B. and vice versa?

It is possible to convert a diffusion index into a net balance by multiplying the DI by 2 and subtracting 100

as follows: NB = 2 * (DI -50) or DI = (100+NB)/2

D

DEMAND: FUTURE TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, what changes do you expect over the next 3-4 months with regards to the volume of demand: {It will (1) increase, (2) remain the same, (3) decrease]*". The question is asked in the services and in the retail trade sectors (orders placed with suppliers). The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

DEMAND: TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, what has been your company's experience over the past 3-4 months with regards to the volume of demand: [It has (1) increased, (2) unchanged, (3) decreased]".* The question is asked in the service sector. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

DETRENDING

De-trending is a procedure in which the long-term trend, that may obscure cyclical variations in the component or the reference series, is removed. Up to December 2008 component series were de-trended using the Phase Average Trend (PAT) method. Starting from December 2008, the OECD has decided to replace the combined PAT/ MCD approach with the Hodrick-Prescott (HP) filter to perform the de-trending *and* the smoothing procedure in a single operation. The HP-filter operates as a band-pass filter with frequency cut-off at 12 months for high frequency components (smoothing) and with frequency cut-off at

120 months for low frequency components (de-trending). See Annex A of the OECD System of CLIs to learn more about the procedure.

DIFFUSION INDEX

A diffusion index (DI) provides a summary of answers to multiple-choice questions in the BTS. It represents an alternative unit of measure to (Net) Balances as a way of summarising answers to multiple-choice questions. Some countries may present their indicators in the form of Diffusion Indices (D.I.), which is just another way of presenting the same information contained in net balances, using a different scale. A Diffusion Index in fact indicates the degree to which the indicated change is dispersed -or *diffused*- throughout the sample. Diffusion indices are calculated by taking the percentage of respondents reporting an increased activity ("+") and adding it to one-half of the percentage of unchanged activities ("=") such as:

D.I. = 100*(P+E/2) where E stands for neutral replies (no change)

Diffusion indices can take values from 0 to +100, with a midpoint of 50. They move in the same fashion as balances, although they are flatter than balances when represented in graphs because they have a narrower range. In general, there is no major difference in using balances versus diffusion indices, although compilers should pay special care in handling distribution of non-responses as DI or NB values can vary considerably.

Other types of unit of measure

For standardised Confidence Indicators (both Business and Consumer) we use normal=100 amplitude adjusted, meaning that a reading above (below) 100 indicates that the confidence is generally positive (negative).

E

EMPLOYMENT: FUTURE TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, what changes do you expect during the next 3-4 months with regards to the number of people employed in your company: [It will (1) increase, (2) remain the same, (3) decrease]*". This question is asked in the manufacturing, construction, services and retail trade sectors. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

EMPLOYMENT: TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, what has been your company's experience over the past 3-4 months with regards to the number of people employed in your company: [It has (1) increased, (2) unchanged, (3) decreased]*". This question is asked in the manufacturing, construction, services and retail trade sectors although it is an OECD target series only for the service sector. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

EXPORT ORDER BOOKS: LEVEL

In the OECD harmonised questionnaire the question is asked is "*Excluding normal seasonal changes, do you consider that the present level of your export order books in volume terms is: [(1) Above normal, (2) normal, (3) below normal]*". This question is asked in the manufacturing sector only. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire.

F

FREQUENCY CONVERSION

Because of their timeliness, monthly frequencies are to be preferred over quarterly when using BTCS data. When monthly figures are not available, quarterly indicators can be converted into monthly by mean of linear interpolation. Such a conversion is achieved through linear interpolation of quarterly series followed by an alignment to the most appropriate month of the quarter. Within a quarter, the month of data release is normally taken as the reference for alignment, so for instance for quarterly data released at the end of the quarter (i.e. 3rd month of the quarter), the value of the quarter is assigned to the last month, and the remaining two months are interpolated. In BTCS, 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.

M

MCD

MCD stands for Months for Cyclical Dominance. Percentage changes of the irregular and cyclical factors are computed for consecutive months (January-February-March, etc.) over two-month spans (January-March, February-April, etc.), three-month spans (January-April, February-May, etc.), and so on. MCD is the first interval of months for which the average percentage change (without regard to sign) of the irregular factor (I) is constantly less than that of the cyclical factor (C). The I/C ratio is a measure of the relative smoothness (or irregularity) of the seasonally adjusted series. Please refer to the NBER chapter on "*Measures of the cyclical behaviour of selected business cycle series*" (Appendix B) to learn more about this.

N

NET BALANCE

See definition for *Balance*.

NORMALISATION

Normalisation is a process that allows expressing time series in a comparable form, on a common scale across countries. The method subtracts the mean from the observed values and then divides the resulting difference by the standard deviation (note that the mean absolute deviation is used for the CLI). Finally, the time series is relocated to have a mean equal to 100 for rescaling purposes.

O

OECD TARGET INDICATORS

The OECD has selected a range of BTCS target indicators which would allow analysts to readily conduct short-term forecasts. The target list assumes also a relevant role in new countries' data collection willing to meet international benchmarking requirements as it is used in the review process for new OECD accession countries. The consensus upon which key indicator to include in the data collection has been reached by keeping the following three criteria in mind:

1. They must add valuable information for economic analysis;
2. They must have a satisfying and internationally relevant cross-country coverage, and
3. They must be internationally comparable.

For each sector, questions may differ in the form (level or change) and in the time horizon as different outlooks may apply. Exceptions apply to questions about capacity utilisation as answers are expressed in per cent of the rate of (full) utilisation and on questions on factors limiting production, which normally require only a yes/ no answer.

In the **change form**, the time horizon of questions is typically of 3-4 months (or one quarter, depending on the periodicity of the survey), and can refer to past versus present changes (evaluation) or to present versus future changes (expectation). Exceptions apply for Australia, Chile, Mexico, Switzerland, Brazil and Indonesia for which questions on future business situation cover the next 6 months, instead of the usual 3-month horizon.

For questions in the **level form** the time horizon normally refers to the present although some departures apply for Australia and Norway (past three months), Israel and United States (past month) and New Zealand (next three months).

Depending on the form, the measurement scale can be expressed on a three-option ordinal scale such as:

- Up/same/down (for questions in change form)
- Above normal/normal/below normal (for questions in level form)

The list of OECD target indicators can be found at this link.

ORDER BOOKS: LEVEL

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, do you consider your current overall order books to be...? [(1) Above normal, (2) normal, (3) below normal]*". This question is asked in the manufacturing and the construction sectors. The measure used for this indicator is a seasonally adjusted balance (difference between positive and negative answers in % points of total answers) and the question is usually asked monthly.

ORDERS INFLOWS TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, how has your company's new orders changed over the past 3- 4 months? [It has (1) increased, (2) unchanged, (3) decreased]*". This question is asked in the manufacturing sector. The measure used for this indicator is a seasonally adjusted balance (difference between positive and negative answers in % points of total answers) and the question is usually asked quarterly.

P

PERIODICITY & TIMING

Surveys should be carried out monthly with the possibility to include a few additional questions every quarter or half-year. On a quarterly frequency, questionnaires are administrated in January, April, July and October. Regardless of their periodicity, all surveys should follow this timing:

- Questionnaires should reach respondents no later than the 25th of the month *t* (where *t* is the month of reference for which information is detected);
- Respondents should send back completed questionnaires no later than the 10th of the month *t+1,* and
- Results should be published no later than the end of month *t+1.*

PRODUCTION: FUTURE TENDENCY

In the OECD harmonised questionnaire the question is asked in the manufacturing sector and is formulated as follows "*Excluding normal seasonal changes, how do you expect your company's production to change over the next 3 months? [It will (1) increase, (2) unchange, (3) decrease]*". The measure used for this indicator is a seasonally adjusted balance (difference between positive and negative answers in % points of total answers) and the question is usually asked monthly.

PRODUCTION: TENDENCY

In the OECD harmonised questionnaire the question is asked in the manufacturing sector and is formulated as follows, "*Excluding normal seasonal changes, how has the production for your company changed over the past 3-4 months? [It has (1) increased, (2) unchanged, (3) decreased]*". The measure used for this indicator is a seasonally adjusted balance (difference between positive and negative answers in % points of total answers) and the question is usually asked monthly.

Q

QUALITATIVE DATA

The data collected in BTS and COS are defined as *qualitative* since respondents are required to assign *qualities* to the items of interest instead of *quantities*. For example, they may be asked to say whether the order books for their company are "higher", "lower" or "same" compared with the previous period. Qualitative data obtained in business tendency and consumer opinion surveys are also described as "categorical" because respondents are required to choose between two or more response categories, such as "better", "same", "worse". For example, in a business tendency survey, respondents might be asked to assign qualities to the value of their order books such as "higher than normal", "normal" or "below normal". In a conventional industry survey on the other hand, respondents may be asked to give quantitative information about their order books, such as the actual value of outstanding orders. The advantage is that it is generally much easier for respondents to give qualitative information because it does not require the consultation of accounting records. As a consequence, the questionnaires can be completed quickly and survey results can be published much sooner than results of traditional statistical surveys.

R

REFERENCE SERIES

Cyclical indicators are constructed around a reference series. The reference series is the economic variable for which the CLI is anticipating the cyclical movements. Up until April 2012, the Index of total Industrial Production was used as the reference series. Starting from April 2012, the OECD switched to the Gross Domestic Product (GDP) with the exception of China for which we use the value added of industry at 1995 constant prices expressed in 100 million Yuan.

RETAIL CONFIDENCE INDICATOR

The Retail Confidence Indicator corresponds to the arithmetic average of seasonally adjusted net balances of the following two questions for the Retail Trade sector:

- Business situation future tendency
- Stocks (inverted sign)

The definition complies with the EC and OECD guidelines.

Coverage

Among the OECD countries, data are missing for: Australia, Canada, Iceland, Israel, Korea, Luxembourg, Mexico, New Zealand, Norway and United States. For the BRIICS, data are missing for China and India.

Frequency

Most of time series are available at a monthly frequency apart from Costa Rica, Indonesia, Japan, Russian Federation, South Africa and Switzerland for which data are quarterly.

Departures from the target definition

CIs are provided directly by the country apart for Japan, South Africa and Switzerland for which are computed in-house following the EC guidelines.

S

SEASONAL ADJUSTMENT

In time series, the seasonal component corresponds to the regular movements observed in quarterly and monthly time series during a twelve-month period. Examples of these include increases in retail sales data during the Christmas period or the fall in industrial activity during vacation periods. In addition to the effect of seasonal influences, a second type of variation which is also linked to the calendar can be observed. This is the trading day effect. For "flow" data (i.e. data calculated by adding daily figures) the trading day effect arises because of the varying number of such days in a month. For example, a monthly time series of retail sales would be affected by the number of Saturdays in each month. In the case of "stock" data referring to a particular period in the month (for instance the last working day of the month) the calendar effect corresponds to the relevance of that specific day of the week the event is measured. Presenting a time series from which the seasonal movements have been eliminated, allows the comparison of data between two months or quarters for which the seasonal pattern is different. In many industries, managers are aware of the seasonal patterns affecting their business production, sales, stock levels, etc. It is therefore important to inform respondents whether or not they should take it into account in their answers. This information can be given as part of the general instructions that will accompany the questionnaire, but common practice is to repeat the instruction in all questions where seasonality is likely to be important. As a good practice, questions will then start with a phrase such as "*Ignoring seasonal factors, are stocks of finished goods…?*" or "*Excluding seasonal variations, are sales…?*". However, experience in handling BTS data shows that this tends to reduce seasonality but does not eliminate it entirely. See Guidetti et al for a study on the need of correcting BTS series for seasonality.

As a general rule, the OECD runs seasonality tests on time series that are not treated by the country, and, where a seasonal variation is found, it removes it by using a filter-based approach method (X-13 ARIMA). The procedure is carried out using JDemetra+, a software officially recommended by Eurostat to members of the ESS and the European System of Central Banks as the reference software for seasonal and calendar adjustment of official statistics. At European level, all time series are treated for seasonality by the European Commission using the DAINTIES methodology. Please consult the EC guidelines section "Adjustment by DAINTIES" for further information.

SELLING PRICES: FUTURE TENDENCY

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, what changes do you expect during the next 3-4 months with regards to average selling prices: [It will (1) increase, (2) remain the same, (3) decrease]*". The question is included in both the manufacturing and the construction sector. The indicator is expressed in seasonally adjusted net balance (difference between positive and negative answers in % points of total answers) and the question is usually asked in the monthly questionnaire apart for Australia, Canada, India, Japan, New Zealand, Norway, South Africa, Switzerland (in the manufacturing sector) and Russian Federation (in the construction sector) for which frequency is quarterly.

SERVICES CONFIDENCE INDICATOR

The Service Confidence Indicator corresponds to the arithmetic average of seasonally adjusted net balances of the following three questions of the service sector:

- Business situation tendency
- Demand tendency
- Demand future tendency

The definition complies with the EC and OECD guidelines.

Coverage
Among the OECD countries, data are missing for: Australia, Canada, Chile, Iceland, Israel, Japan, Korea, Luxembourg, Mexico, New Zealand, Norway, Switzerland and United States. For the BRIICS, data are missing for China and India.

Frequency
All time series are monthly apart from Costa Rica, Indonesia, Russian Federation and South Africa for which data are quarterly.

Departures from the target definition

All CIs are directly compiled by source.

SMOOTHING

Smoothing is a procedure employed to eliminate the noise from a time series, by helping making the cyclical signal clearer. Up to December 2008, component series were smoothed according to their MCD (Months for Cyclical Dominance) values to reduce irregularity. Starting from December 2008, the OECD has decided to replace the combined PAT/ MCD approach with the Hodrick-Prescott (HP) filter to perform the de-trending and smoothing step in a single operation. The HP-filter is employed as a band-pass filter with frequency cut-off at 12 months for high frequency components (smoothing) and with frequency cut-off at 120 months for low frequency components (de-trending).

STOCK OF FINISHED GOODS: LEVELS

In the OECD harmonised questionnaire the question asked is "*Excluding normal seasonal changes, do you consider your current firm's stock of finished products to be...? [(1) Above normal, (2) normal, (3) below normal]*". The question is included in both the manufacturing and the retail trade sector (as volume of stocks). The measure used for this indicator is a seasonally adjusted balance (difference between positive and negative answers in % points of total answers). The frequency is normally monthly apart for Australia, India, Indonesia and Norway (in the manufacturing sector) and Japan, Russian Federation, South Africa and Switzerland (in retail trade) for which it is quarterly.

T

TREND

In time series analysis, a time series can be decomposed into:

- A cyclical component C
- A trend component T
- A seasonal component S, and
- An irregular component I

Starting from December 2008, the OECD switched to the Hodrick-Prescott (HP) filter to estimate the trend. Up to December 2008 the method of trend estimation adopted by the OECD was a modified version of the phase-average trend (PAT) method developed by the United States NBER. For a comparison of Cycle Extraction methods, please refer to OECD Cycle Extraction (Nilsson, Gyomai).

TREND-RESTORED CLI

The CLI trend restored is composed by the trend of the reference series and the amplitude adjusted CLI. It is comparable with the original reference series.

TURNING POINTS

A turning point occurs in a series when the deviation-from-trend series reach a local maximum (Peak) or a local minimum (Trough). Growth cycle *peaks* (end of expansion/ recovery) occur when activity is furthest above its trend level. Growth cycle *troughs* (end of contraction/recession) occur when activity is furthest below its trend level. In addition, turning points should respect various censoring rules. In the simplified Bry-Boschan procedure, used in the OECD CLI System for turning points identification, these censor rules guarantee the alternation of peaks and troughs while ensuring that phases last not less than 9 months and cycles not less than 2 years. An up-to-date list of turning points of reference series for the OECD CLI can be consulted here: CLI-components-and-turning-points.pdf (oecd.org).

W

WEIGHTING

GDP share on a Purchasing Power Parity basis (GDP-PPP) weights are used to estimate both the CLIs and Confidence Indicators' zones. Zone aggregates are computed as annually chain-linked *Laspeyres* indices with country weights, $\{w_{i,a-1}\}$, corresponding to the previous year's gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP, in billions of current international dollars:

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

- $Z_{a,t}$ is the value of the final 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 composite indicator from country i from period t
- $\bar{C}_{a-1,i}$ is the average value of the composite indicator from country i from 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 $Z_B = \Sigma_i w_{i,B} C_{i,B}$ 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. A minimum of 60% of the overall weight for available components must be reached in order to compute each zone aggregate.

Y

YEAR-ON-YEAR (YoY) GROWTH RATES

Alternatively called '12-month rate of change', this rate is calculated by dividing the figure for a given period t (a month or a quarter in relation to the frequency of the data) by the value of the corresponding period in the previous year.

Z

ZONES

The OECD computes zone aggregates for the confidence indicators (both business and consumer) and for the CLI. Information on the zone aggregation methodology is available here. The following main country groupings are covered:

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

For the CLI only, the following aggregates are also computed:

- Euro area
- 4 big European (France, Germany, Italy and United Kingdom)
- NAFTA (Canada, Mexico and United States)

Please note that, for the confidence indicators, the European Commission compiles the euro area (see Section 3.4 of the EC guidelines).

More information on zone composition can be found at the methodology for compiling area totals.

Related documents

Data sources:

- Business Tendency and Consumer Opinion Indicators
- Composite Leading Indicators
- OECD Consumer Barometer data

Relevant documentation:

- Composite Leading Indicators (CLI) Frequently Asked Questions (FAQs)
- OECD Cycle Extraction (Nilsson, Gyomai)
- EC: A revised Consumer Confidence Indicator (2019)
- Guidetti et al. , "Is it necessary to seasonally adjust business and consumer confidence series?"
- Hodrick-Prescott (HP) filter
- Main Economic Indicators, Sources and Definitions
- OECD Business Tendency surveys- A Handbook (2003)
- OECD CLI component series and turning points
- OECD CLI zone aggregation methodology
- OECD harmonised questionnaire
- OECD methodology for compiling area totals
- OECD System of Composite Leading Indicators
- The OECD standardised business and consumer confidence indicators
- The Joint Harmonised EU Programme of Business and Consumer Surveys (EC Guidelines)