



EUROPEAN COMMISSION  
EUROSTAT

Directorate C: Macro-economic statistics

**Unit C-1: National accounts methodology; Standards and indicators**

# **Eurostat's Business Cycle Clock (BCC)**

## **A user's guide**

February 2023

Version 2.2

## 1. THE BCC WEB APPLICATION

### 1.1. What is the BCC web application?

The BCC (Business Cycle Clock) web application is an online tool provided by Eurostat. The tool depicts in a visually appealing and intuitively understandable manner the economic development of the euro area (EA) and its member states.

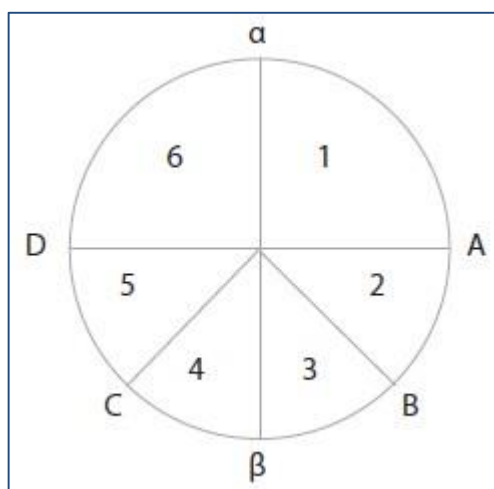
The BCC web application can be accessed using the following link:

<https://ec.europa.eu/eurostat/cache/bcc/bcc.html>

At the center of the tool is the idea that different phases of economic activity can be visualized using a clock-type graph. The clock is intended to provide a user-friendly picture of the cyclical situation based on the outcome of a predefined set of indicators, which are not directly displayed but used as input.

As outlined by *Mazzi (2015)*, the current status of an economy is depicted using a single hand against the background of a clock with different sectors and positions, comparable to the hours of a real clock.

The position of the hand and the different areas of the clock depend on where an economy is located in terms of its growth cycle. The exact position of the hand is derived from an underlying econometric model. The clock is structured according to the co-called  $\alpha AB\beta CD$  approach, as outlined by *Mazzi (2015)*.



**Figure 1 – Business Cycle Clock: turning points and sectors**

The location of the hand in the clock is based on the values of the three cyclical coincident indicators for the acceleration, growth and business cycles, as well as on their positioning with respect to the 0.5 threshold (see *Mazzi et al (2015)* for more details).

The characteristic points in the clock, the so-called "turning points" represent the following information:

- $\alpha$ : maximum of the growth rate,
- A: the growth rate slips below the trend,

- B: the growth rate becomes negative,
- $\beta$ : minimum of the growth rate,
- C: the growth rate becomes positive,
- D: the growth rate overpasses the trend.

A line can be drawn between points A and D: In the sectors of the clock above that line, the economy is growing above trend (sectors 6 and 1), while in the others the economy is growing either below trend or even decreasing.

The key points of the clock delimitate six sectors in the clock, which correspond to various phases of the business cycle. The phases, represented by different sectors, are as follows:

- Sector 1: Expansion, decelerating growth,
- Sector 2: Slowdown,
- Sector 3: Recession, decelerating growth,
- Sector 4: Recession, accelerating growth,
- Sector 5: Recovery,
- Sector 6: Expansion, accelerating growth.

The clock and graph representation are dynamic. The current position in the graph representation is highlighted and the clock hand runs. A play button sets time running.

### **1.2. When is the BCC updated?**

It is updated in the first half of each month.

### **1.3. How can the BCC web application be used?**

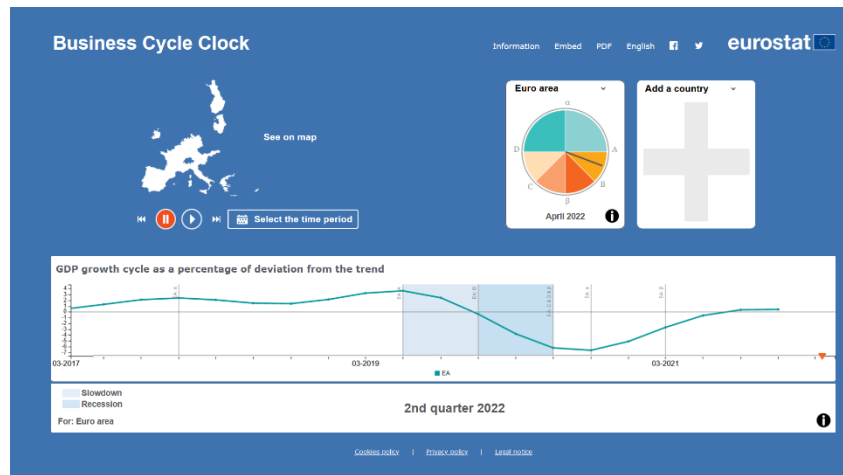
The BCC web application has essentially two views:

- the main view with clocks and graphs,
- the map view.

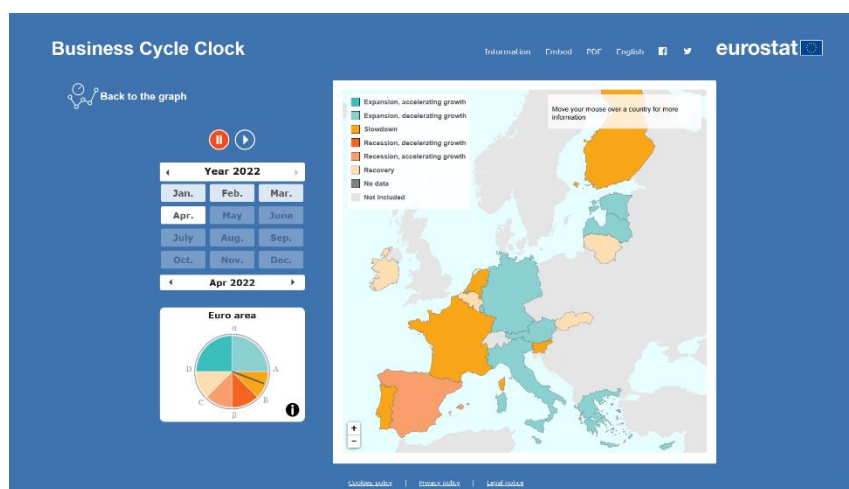
The main view displays the cycle clocks for a selected number of up to six countries as well as a line graph of the GDP growth cycle. It includes an animation to show the development over time. Economic performance is assessed in a comparative manner. In that case, the euro area as a whole is selected as a comparator.

The map view offers a different way to visualize the data by displaying it on a map. This view also includes an animation to visualize the evolution over time.

In both views, different levels of economic activity are highlighted using different colors. Colors in the main view and the map view correspond to the different segments of the clock and hence different phases of economic development.



**Figure 2 – Main view of the BCC web application**

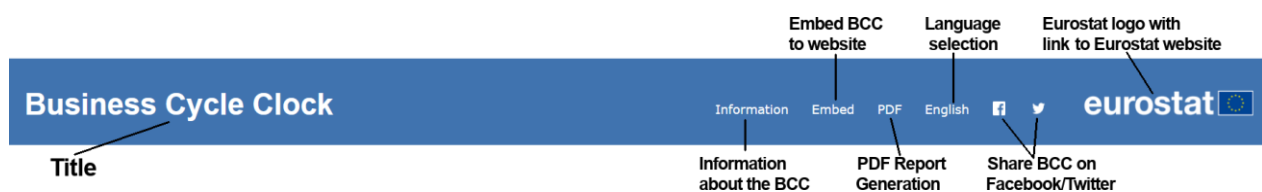


**Figure 3 – Map view of the BCC web application**

Both views can be animated by selecting a start and end date: To start the animation, the user has to push the "Play" button. The animation can be paused using the "Pause" button.

#### 1.4. The header

The header looks the same in both views.



**Figure 4 – Header of the BCC web application**

In addition to the BCC title, the header provides the functionalities, which allows:

- to get more information about the BCC,
- to embed the BCC to any website
- to generate a PDF report,

- to select a language,
- to share the BCC on Facebook or Twitter.

The Eurostat logo is also present with a direct link to the main page of Eurostat website.

### 1.5. Main view

The main view is divided into two main blocks:

- at the top: the cycle clocks with the selection of the countries
- at the bottom: the line graph of the GDP growth cycle.

The user can choose up to six countries at a time. For those countries selected, a clock will be displayed in the top part and a plot line will be added to the line graph in the lower part.

Additionally, a selection mechanism allows the user to select and highlight one single country. In that case, the line of the selected country will be highlighted on the line graph and the turning points and slowdown/recession regions in the graph will be display for that selected country.

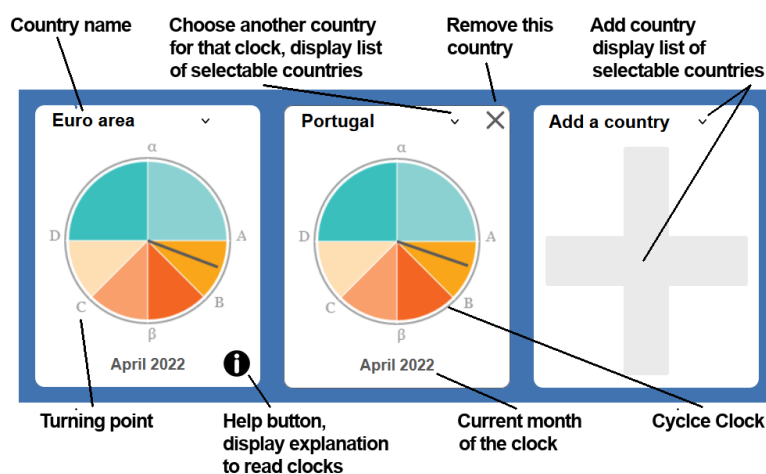
The animation can be started, paused or stopped using the “Play” and "Pause" buttons above the graph on the left hand side. Additional buttons allow jumping backwards or forwards along the time period selected. The animation of clocks is linked to the graph, so the time of the clocks is always a month from the current quarter in the line graph.

Above the graph on the left hand side, there is also a button to choose the time period to display with an arrow underneath it. If selected, the user can chose a customized time period including the respective start and end date to be displayed. Different options for the selection of the time period are available: Standard time periods of 5 years, 10 years, 15 years, or all data, or a custom date to be displayed

### 1.6. Cycle clocks and country selection

The top part has two functions:

- to display the cycle clocks of each country that the user has chosen,
- to let the user add and remove countries.



*Figure 5 – Cycle clocks and country chooser*

The top part initially shows one clock for the euro area and the “Add a country” option. On each panel of a clock there are several elements:

- the name of the country, which also is a dropdown menu used to switch to another country,
- a remove icon, used to remove that country from the clock and the line graph,
- the clock itself,
- the current month, for which the position is displayed in the clock.

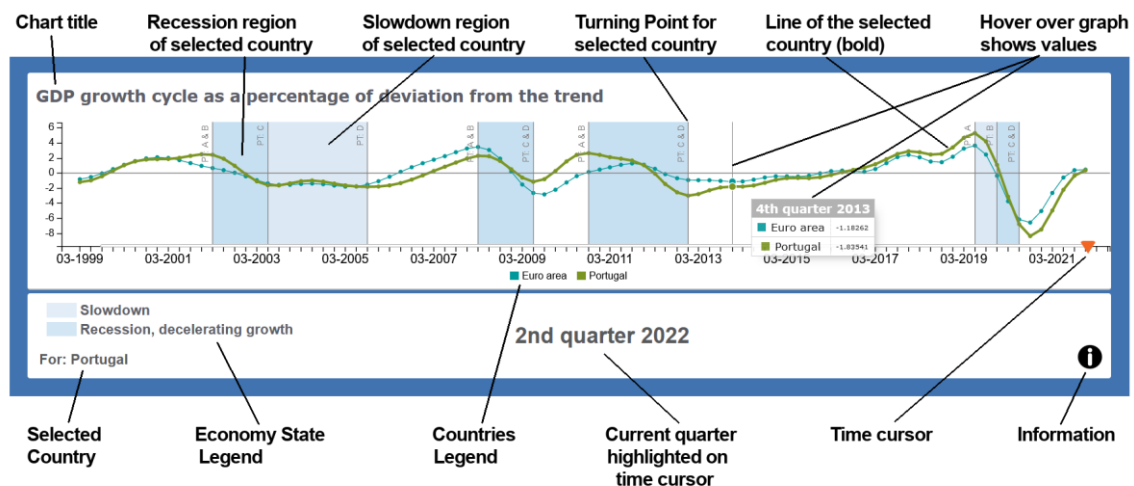
A help icon, that gives access to some explanations about the meaning of the clock.

The user can then add a country by clicking on the “Add a country” label or the + shape. This will display a list of all available countries (except countries already displayed). When the user chooses a new country, a new clock is added for that country. A new line appears on the graph and it is automatically selected and highlighted.

Above the graph on the left hand side, there is a button to choose the time period to display with an arrow underneath it. If selected, the user can choose a customized time period including the respective start and end date to be displayed. Different options for the selection of the time period are available: Standard time periods of 5 years, 10 years, 15 years, or all data, or a custom date to be displayed.

## 1.7. The graph

The graph in the lower part of the screen shows the GDP growth cycle over time, expressed as a percentage of deviation from the trend. One line is displayed for each country chosen by the user. Up to 6 countries can be selected at once. Periods of economic slowdown and recession periods of the currently selected country are shown as shaded elements in the background.



*Figure 6 – Graph of GDP growth cycle over time and control elements*

On the graph, the triangle at the bottom moves on a monthly scale while the circle in the plot line moves on a quarterly scale.

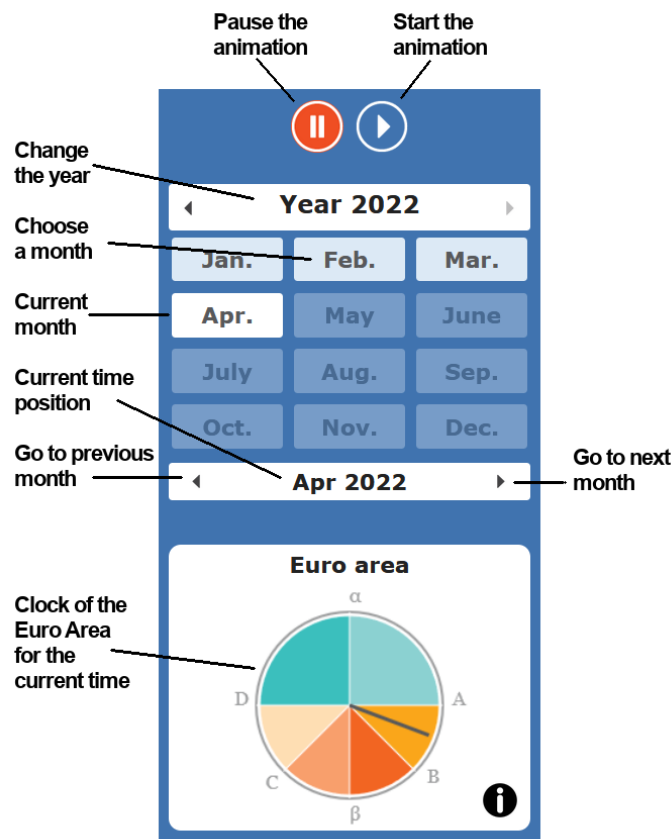
## 1.8. Map view

The map view offers a different way to visualize the cyclic economic situation of the euro area countries. This view is also animated in a similar way as the main view.

The view is divided into two main parts:

- On the left is the user interface. Here, the user can control the animation or jump to a specific position in time. At the bottom is also displayed the clock for the euro area.
- The map is the main part of the view. This view displays a map of Europe where EA countries have a specific color giving information on the cyclic economic situation of each of them.

### 1.9. The user interface



*Figure 7 – Left interface if the map view*

The main element of this interface is the calendar shape that lets the user choose a specific month and year easily. The current month is highlighted in the calendar. Below the calendar shape, is the label of the current month and year, with two buttons that allow jumping directly to the previous or next month.

The second function of the interface is the control of the animation. Two dedicated buttons are there to start or pause the animation. The animation is paused initially when the user arrived on the map view.

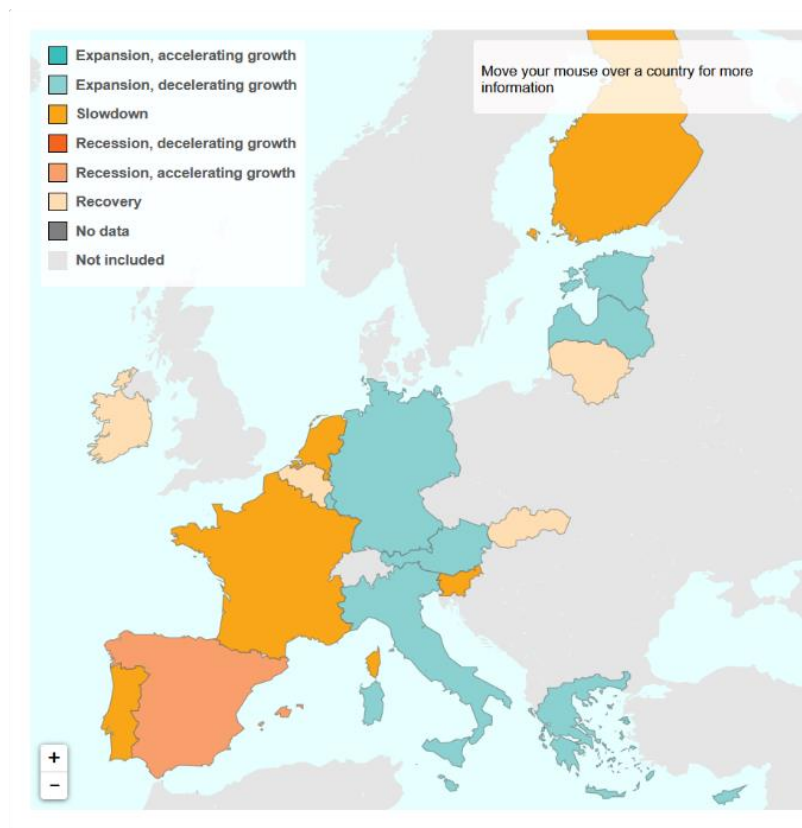
At the bottom is the clock of the euro area.

### 1.10. The map

The map shows EA countries with different colors that represent one of the growth, slowdown and recession situation, or a neutral grey color if no data is available for it.

The map is focused on EA countries, other countries are visible for more readability but only the shape with no border and in a neutral color.

A legend explains the colors chosen. When the user move the mouse over a country, additional information is visible at the top right; it includes the name of the country, his membership in EU, EA or EFTA and the cycle clock.



**Figure 8 – The map on map view**

A zoom functionality is available by a zoom-in button and a zoom-out button at the bottom left.

Colors of countries and the cycle clocks are defined for a precise month and are changing automatically over time when the animation is started.

### 1.11. PDF report generation

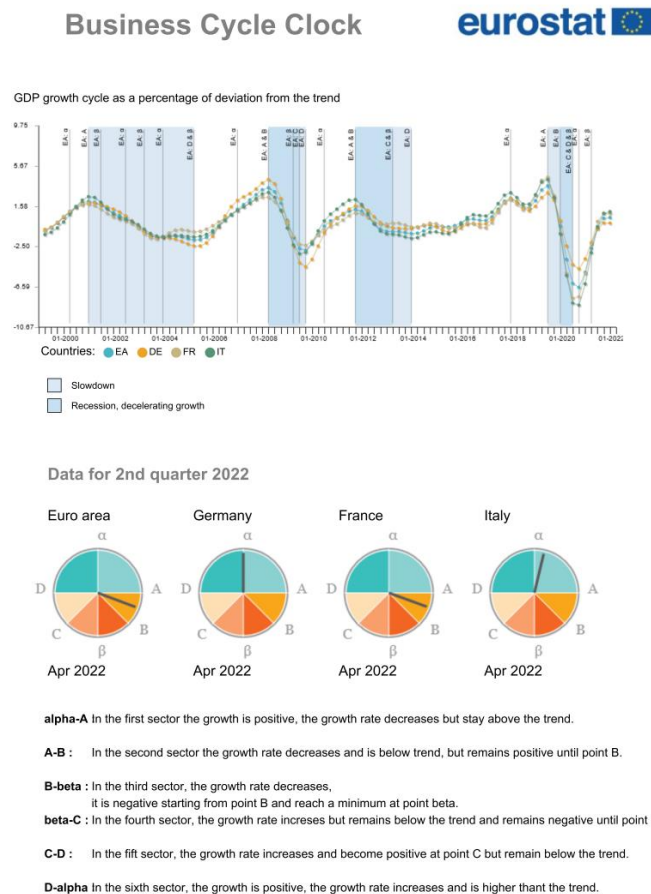
The BCC application includes a feature of PDF report generation that allows users to generate a document with the same graph than in the BCC as well as the clocks, for the chosen countries.

**Figure 9 – PDF report generation form**



The user can choose the countries to include in the PDF report. For that purpose, a form is accessible by a button with a PDF icon at the top right of the BCC web application.

The user can select a number of countries and regions to be included. A further selection has to be made for the country/region and its respective turning points as well as the time period. All of this information will be included in the PDF report.



Page 1

Document generated by <https://ec.europa.eu/eurostat/cache/bcc/bcc.html> on 1 June 2022.

**Figure 10 – Example of generated PDF report**

## 2. REFERENCES

Mazzi, G. L. (2015): *Complementing scoreboards with composite indicators: the new business cycle clock*, EURONA — Eurostat Review on National Accounts and Macroeconomic Indicators, 02/2015, Luxembourg, 2015.