

# Analysis of GDP, CPI, and unemployment rates

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## 1. Case description, objectives, and expected impact

The World Economic Outlook (WEO) is a study published by the IMF, that presents analyses and projections of the world economy in the near and medium term, which are integral elements of the IMF's surveillance of economic developments and policies in its member countries and of the global economic system. They consider issues affecting advanced, emerging and developing economies, and address topics of pressing current interest.

While the WEO provides official analysis and forecasts up to 2030 for most indicators, country governments and policymakers often require alternative analyses and projections to those provided by the IMF, in order to develop detailed studies of each country and inform future long-term strategies.

The aim of this project is to provide a detailed temporal analysis of the last 30 years and to build a forecast of key economic indicators such as GDP (gross domestic product), CPI (consumer price index) and unemployment rates for different economic country groups and for each country. This will be based on the dataset used in the last WEO (link to the file and the executive summary) and will enable local governments, policymakers and IMF analysts to compare the insights obtained by the IMF.

To carry out the project, we will ask the following questions about the dataset:

- How have trends in each indicator evolved over the last years in advanced economies versus emerging and developing economies, and what cyclical or structural patterns emerge?
- Do structural breaks (e.g., financial crises or policy regime shifts) appear in the time series for these indicators across groups—and how do the indicators respond before, during, and after such breaks?
- How do short-term projections differ between advanced and emerging economies—what can divergence tell us about growth outlooks?

## 2. Technologies and tools

The project is divided into different phases, for which different tools will be used:

- **ETL process:** the extraction of the dataset is made through the API of the WEO, the transformation of the data is made with polars and the upload to the database is made with Psycopg2.
- **EDA process:** SQL and Python tools such as polars, matplotlib, seaborn, or plotly express will be used to obtain relevant insights.
- **Predictive system:** Prediction tools will be used through Python.
- **Dashboard:** the dashboard will be created using visualization tools such as Power-BI.

## 3. Data sources

The data sources used in the project are listed below:

- **WEO** ([WEO database](#)): the dataset used is obtained through the World Economic Outlook API.
- **Dashboard example** ([IMF WEO Dashboard](#)): example of the dashboard to be developed in the project generated by the IMF using data from the WEO.
- **Information about the API:** [IMF Data Support – API information](#)

## 4. Next steps

Once the main points of the project have been carried out, we will seek to generate a workflow that allows us to create recurrent updates of the dataset, and so of the dashboard and insights obtained.