

# Data in the spotlight: International Time Series Data

Eve Little (*Research Impact & Engagement Manager*)  
Cameron Hurst (*Data and Platforms Engineer*)

27<sup>th</sup> November 2025



# What we will cover today

1.

**Introduction**

2.

**International macrodata**

3.

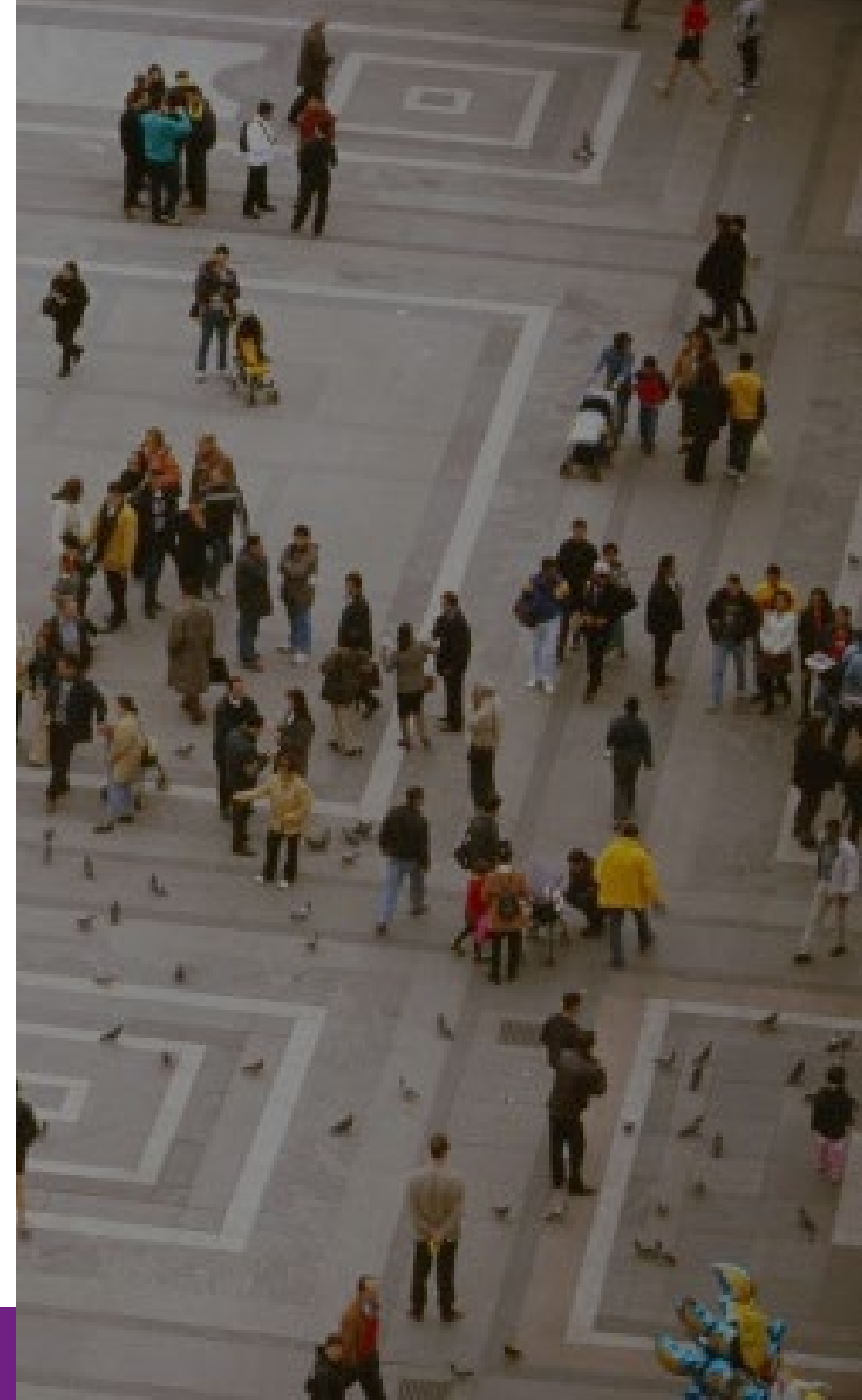
**Demo**

4.

**Documentation and tips**

5.

**Questions**



# What is the UK Data Service?



**A comprehensive  
resource funded  
by the Economic  
and Social  
Research Council  
(ESRC)**

**A single point of  
access to a wide  
range of  
secondary social  
science data**

**Support, training  
and guidance**

# Online resources – Data Catalogue UK Data Service

**Data Catalogue**

**Learning hub**

**Guides**

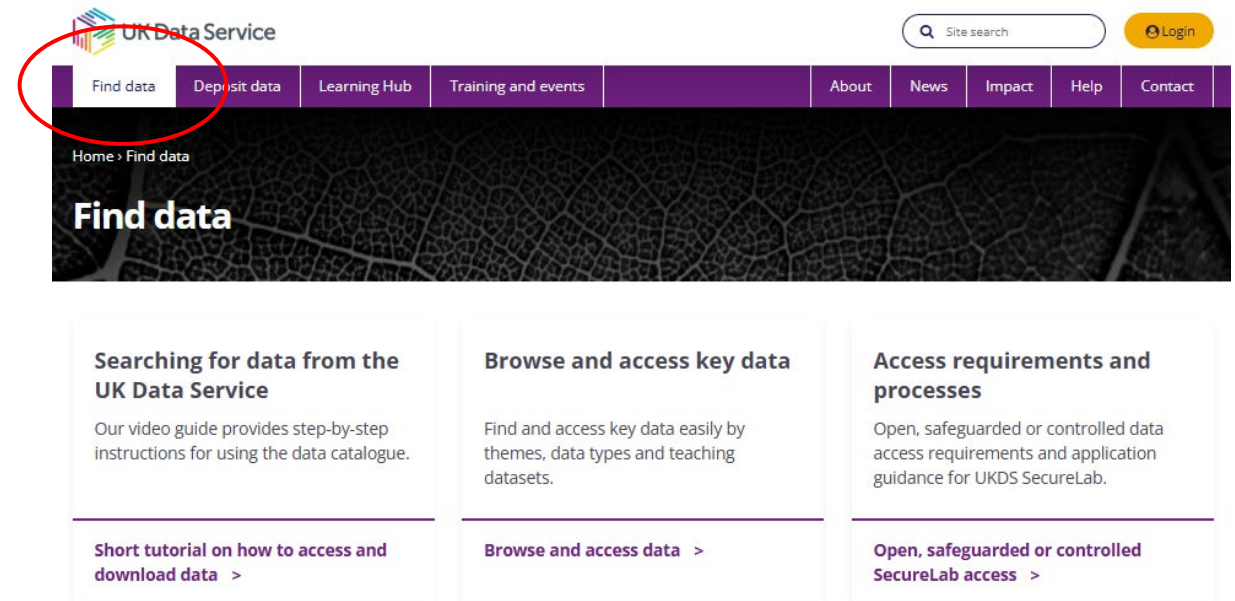
**Videos**

**Webinars**

**Data Skills Modules**

**Data Impact – Blog & Case Study**

**Helpdesk**



# What data do we hold?

Repository for researcher generated datasets



# Online resources – Learning hub

Data Catalogue

Learning hub

Guides

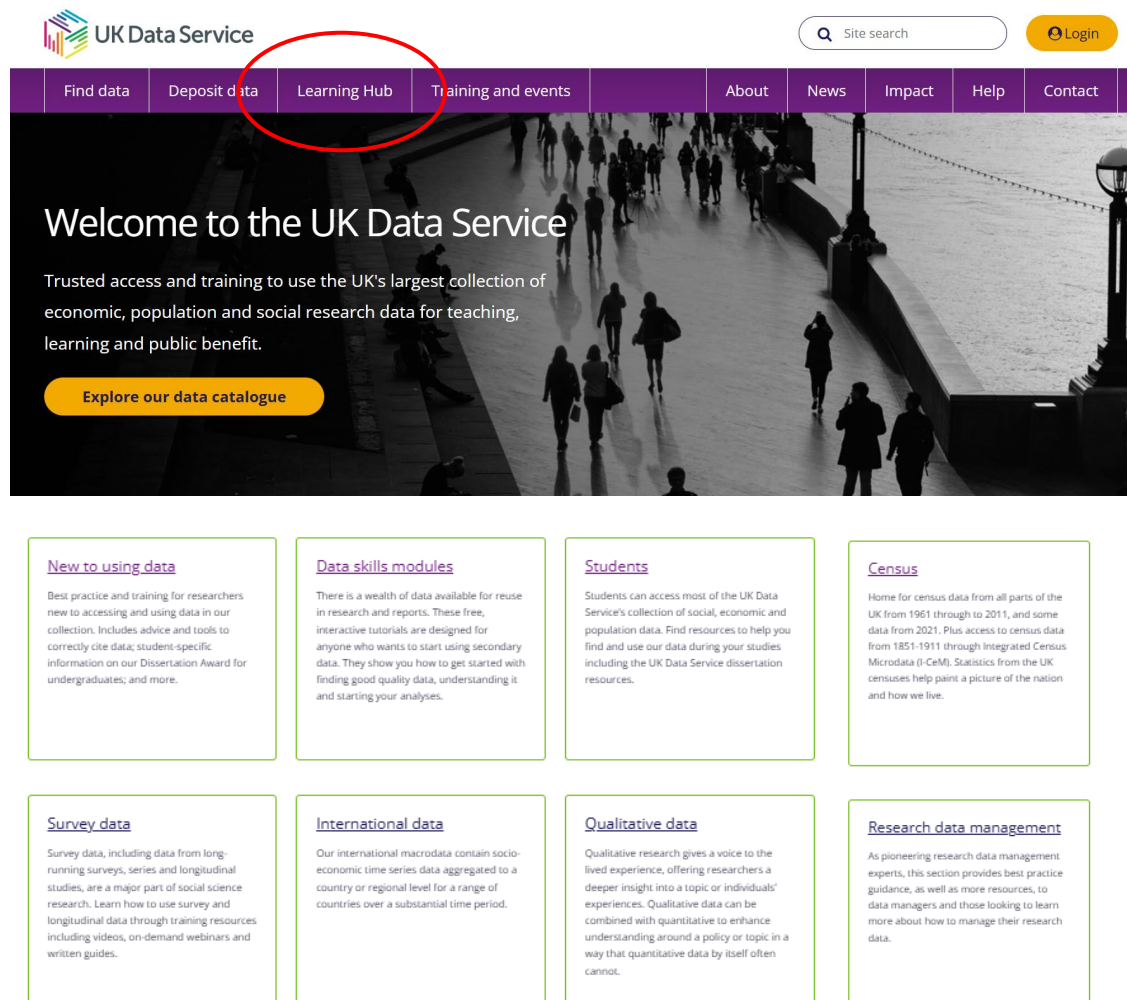
Videos

Webinars

Data Skills Modules

Data Impact – Blog & Case Study

Helpdesk



The screenshot shows the UK Data Service website. The header includes the UK Data Service logo, a search bar, and a 'Login' button. The navigation menu has links for 'Find data', 'Deposit data', 'Learning Hub' (highlighted with a red circle), 'Training and events', 'About', 'News', 'Impact', 'Help', and 'Contact'. The main content area features a large image of people walking on a bridge, with the text 'Welcome to the UK Data Service' and a description of the service. Below this is a yellow button labeled 'Explore our data catalogue'. The footer contains eight boxes, each with a link and a brief description of the resource.

UK Data Service

Find data Deposit data **Learning Hub** Training and events About News Impact Help Contact

Welcome to the UK Data Service

Trusted access and training to use the UK's largest collection of economic, population and social research data for teaching, learning and public benefit.

Explore our data catalogue

[New to using data](#)  
Best practice and training for researchers new to accessing and using data in our collection. Includes advice and tools to correctly cite data; student specific information on our Dissertation Award for undergraduates; and more.

[Data skills modules](#)  
There is a wealth of data available for reuse in research and reports. These free, interactive tutorials are designed for anyone who wants to start using secondary data. They show you how to get started with finding good quality data, understanding it and starting your analyses.

[Students](#)  
Students can access most of the UK Data Service's collection of social, economic and population data. Find resources to help you find and use our data during your studies including the UK Data Service dissertation resources.

[Census](#)  
Home for census data from all parts of the UK from 1961 through to 2011, and some data from 1961 to 2011, and some data from 1851-1911 through Integrated Census Microdata (I-CeM). Statistics from the UK censuses help paint a picture of the nation and how we live.

[Survey data](#)  
Survey data, including data from long-running surveys, series and longitudinal studies, are a major part of social science research. Learn how to use survey and longitudinal data through training resources including videos, on-demand webinars and written guides.

[International data](#)  
Our international macrodata contain socio-economic time series data aggregated to a country or regional level for a range of countries over a substantial time period.

[Qualitative data](#)  
Qualitative research gives a voice to the lived experience, offering researchers a deeper insight into a topic or individuals' experiences. Qualitative data can be combined with quantitative to enhance understanding around a policy or topic in a way that quantitative data by itself often cannot.

[Research data management](#)  
As pioneering research data management experts, this section provides best practice guidance, as well as more resources, to data managers and those looking to learn more about how to manage their research data.



# Online resources - Guides

Data Catalogue

Learning hub

**Guides**

Videos

Webinars

Data Skills Modules

Data Impact – Blog & Case Study

Helpdesk



## Introduction

- 1 What is R ?
- 2 Using R: essential information
- 3 Opening datasets in R
- 4 Essentials of Data Manipulation
- 5 Descriptive statistics
- 6 Producing weighted and survey design-informed estimates
- 7 Graphs and plots
- 8 Significance testing
- 9 Regression analysis
- 10 Further information
- 11 References

## Analysing social survey data using R

### Content

Introduction

### AUTHOR

Pierre Walthéry, Nadia Kennar, Rihab Dahab, UK Data Service

### PUBLISHED

June 2024

## Introduction

This guide provides an introduction to analysing large scale social survey data using R, with examples from the British Social Attitudes Survey 2017. It is aimed at two categories of users:

1. Those inside or outside higher education, or who do not have access to commercial statistical software such as Stata, SPSS or SAS but who would like to conduct their own analysis beyond what is usually published by data producers: for example statistics for specific groups of the population. This guide provides this group of users with a range of procedures that will help them produce straightforward and robust analyses tailored to their needs without spending unnecessary time on

# Online resources - Videos

Data Catalogue

Learning hub

Guides

Videos

Webinars

Data Skills Modules

Data Impact – Blog & Case Study

Helpdesk

---

"Can you show me  
how to do that?"

**YouTube:**

<https://www.youtube.com/user/UKDATASERVICE>



---

SHARE 



# Online resources - Webinars

Data Catalogue

Learning hub

Guides

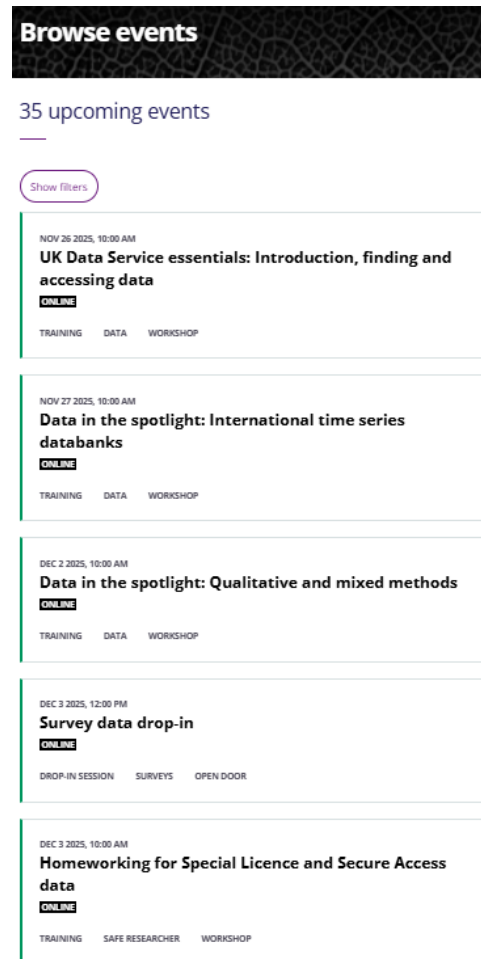
Videos

**Webinars**

Data Skills Modules

Data Impact – Blog & Case Study

Helpdesk



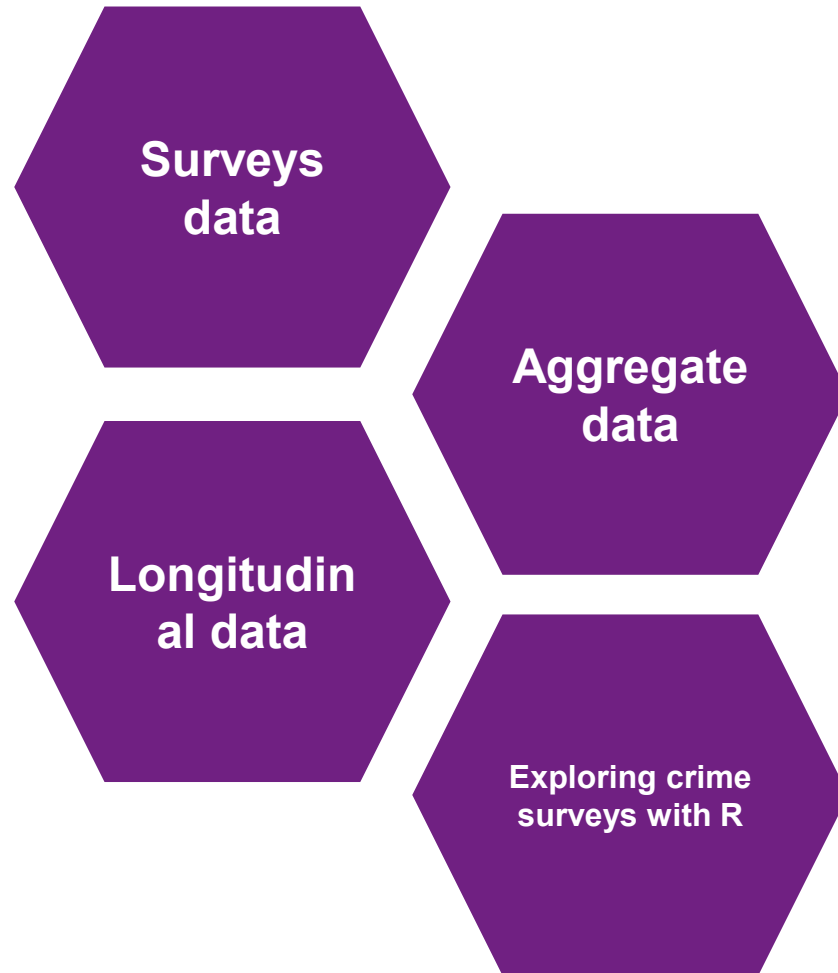
**Browse events**

35 upcoming events

Show filters

- NOV 26 2025, 10:00 AM**  
**UK Data Service essentials: Introduction, finding and accessing data**  
**ONLINE**  
TRAINING DATA WORKSHOP
- NOV 27 2025, 10:00 AM**  
**Data in the spotlight: International time series databanks**  
**ONLINE**  
TRAINING DATA WORKSHOP
- DEC 2 2025, 10:00 AM**  
**Data in the spotlight: Qualitative and mixed methods**  
**ONLINE**  
TRAINING DATA WORKSHOP
- DEC 3 2025, 12:00 PM**  
**Survey data drop-in**  
**ONLINE**  
DROP-IN SESSION SURVEYS OPEN DOOR
- DEC 3 2025, 10:00 AM**  
**Homeworking for Special Licence and Secure Access data**  
**ONLINE**  
TRAINING SAFE RESEARCHER WORKSHOP

# Online resources – Data Skills Modules



Surveys unit 1: What are survey data?  
[View all modules](#)

[Menu](#) | [Glossary](#)


## Surveys

### Unit 1: What are survey data?

This unit will explore survey data.

You will look at what the data are, some key concepts relating to survey data and how to find datasets that you can use.

You can work through this unit in order using the next button, or use the menu to view the list of sections and jump to the part you are most interested in.



[NEXT](#) >

<https://ukdataservice.ac.uk/learning-hub/data-skills-modules/>

# Online resources – Data Impact

Data Catalogue

Learning hub

Guides

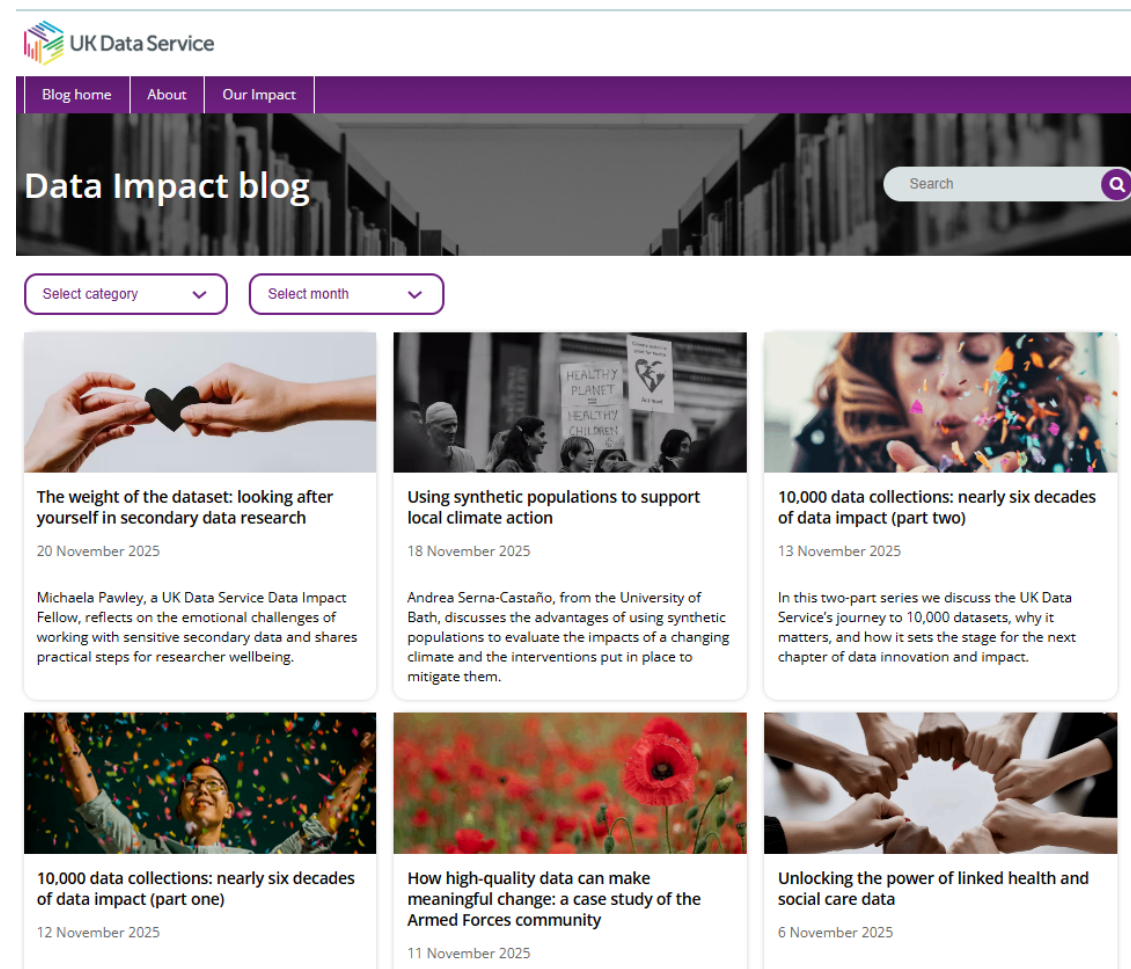
Videos

Webinars

Data Skills Modules

Data Impact – Blog & Case Study

Helpdesk



# Welcome to the UK Data Service

Trusted access and training to use the UK's largest collection of economic, population and social research data for teaching, learning and public benefit.

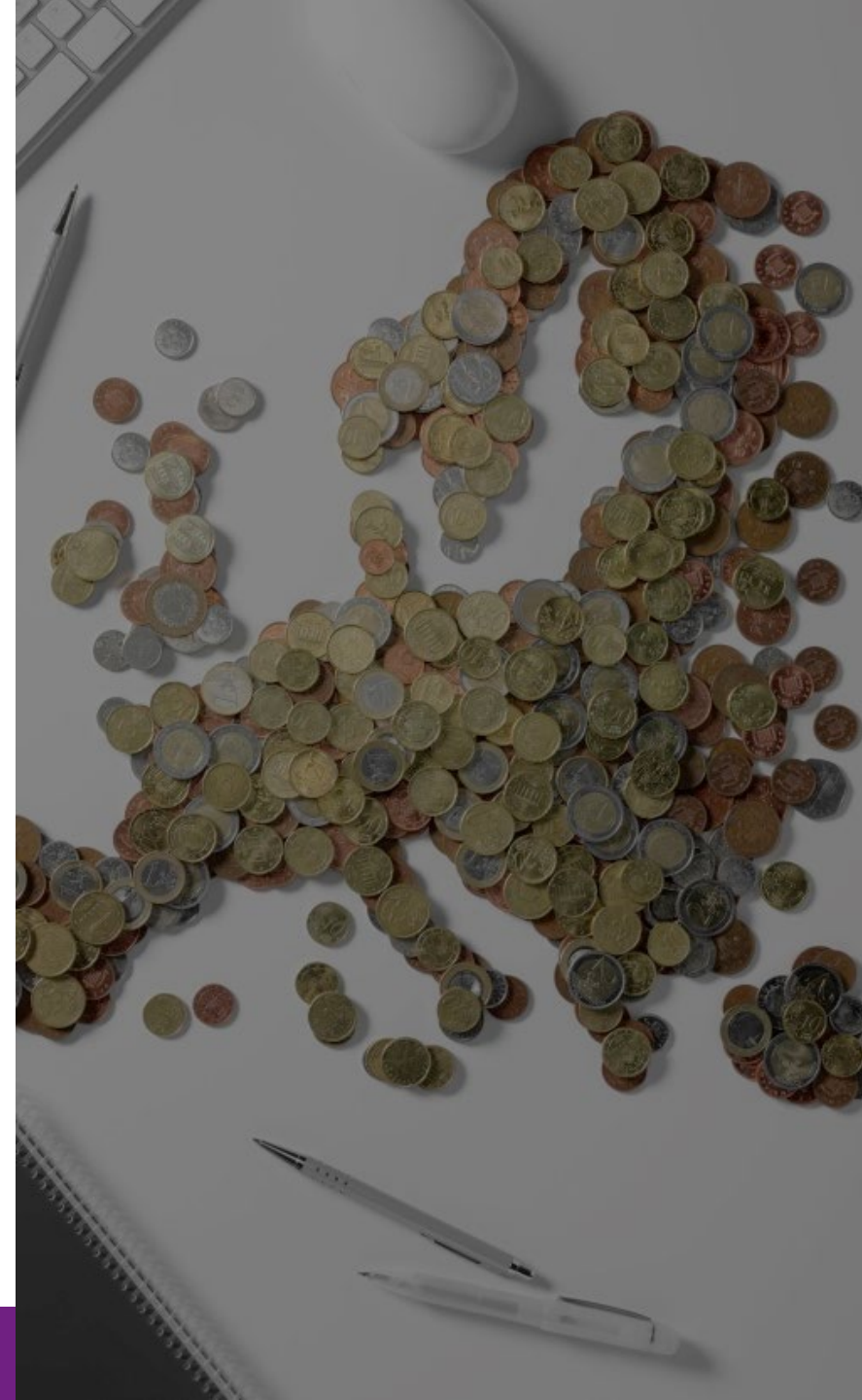
[Explore our data catalogue](#)

## Highlights



# International macrodata: data about countries

- **Time series data aggregated to country / region**
- **International governmental organisations**
- **Wide range of socio-economic topics**
- **Availability**





# Data providers

International Governmental Organisations have the capacity to produce very high-quality databanks



International  
Monetary Fund  
(IMF)

Organisation  
for Economic  
Co-operation  
and  
Development  
(OECD)

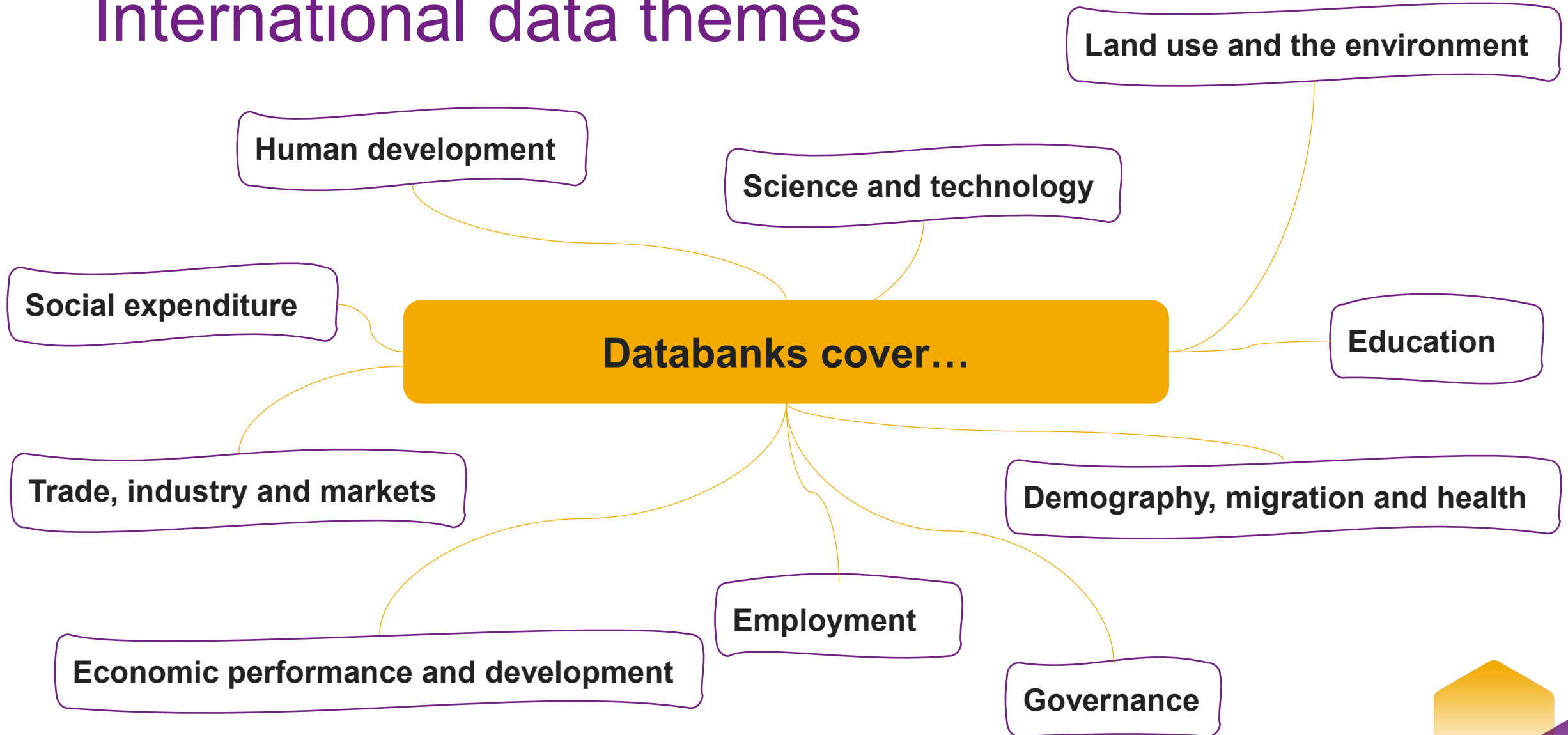


World Bank

United Nations



# International data themes





# Accessing the international macrodata


- **Data are freely available to all users**
- **Data delivered over the web via Data Explorer**
- **Fully searchable**
- **Download formats include \*.xls, \*.csv**
- **Developer API for machine to machine**

# Catalogue record





### Access study data

As a result of the World Bank's Open Data initiative the World Bank datasets hosted by the UK Data Service are freely available to all. Please refer to the [Terms of Use for Datasets](#) in The World Bank's Data Catalog.

Explore these data online using UKDS Stat

 Access online

### Share this study

### Download study metadata

You can download metadata in multiple formats

## World Bank World Development Indicators, 1960-2020

Details

Documentation

DOI change log

Resources

### Details

Title	World Bank World Development Indicators, 1960-2020
Alternative title	WDI
Study number	4814
Access	These data are <a href="#">open</a>
Persistent identifier (DOI)	<a href="https://doi.org/10.5257/wb/wdi/2022Q1">10.5257/wb/wdi/2022Q1</a>
Data creator(s)	World Bank Group

### Citation and copyright

### Abstract

### Main topics

### Terms

# Data Explorer and SIS-CC

## THE MEMBERS

of the Statistical Information System Collaboration Community  
(SIS-CC)



## PARTNERS

of the Statistical Information System Collaboration Community  
(SIS-CC)



<https://dataexplorer.ukdataservice.ac.uk>

# International macrodata

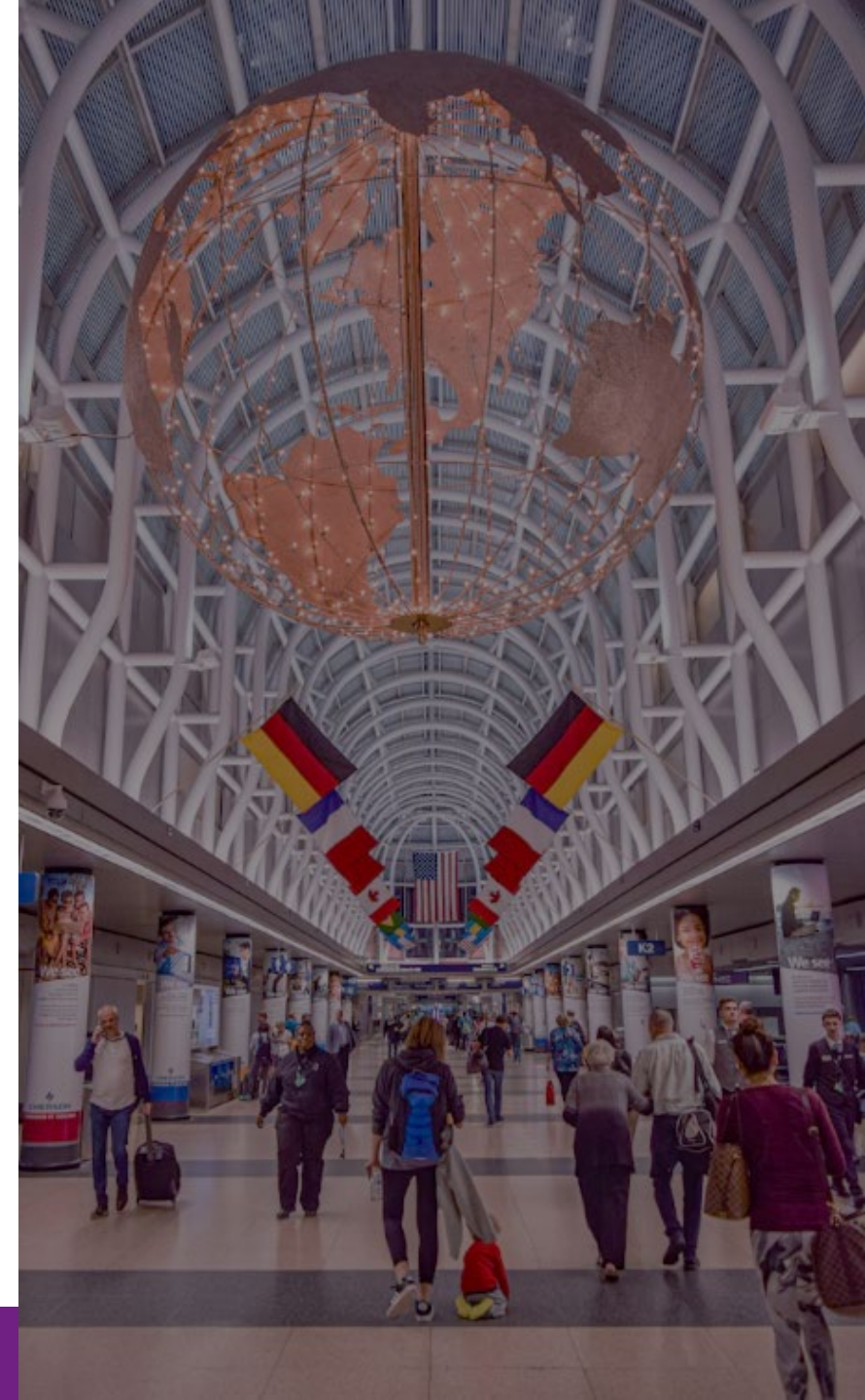
## World Development Indicators (2022Q1 Edition)

Your current selection (1,139,423 data points) is above the defined limit (3,000) resulting in an incomplete table.  
All selected data points can still be downloaded in tabular text (CSV).

Year	2015	2016	2017	2018	2019	2020
<b>Location</b>						
<b>Subject:</b> Gender > Health > Health systems > Physicians (per 1,000 people)						
Sub-Saharan Africa (IDA & IBRD)	..	..	0.2093513	..	..	..
Latin America & Caribbean (IDA & IBRD)	..	..	2.8834738	..	..	..
<b>Subject:</b> External health expenditure per capita (current US\$)						
Moldova	13.5719543	6.3248763	11.4636568	7.5121006	9.6961463	..
Pre-demographic dividend	10.1167358	9.6027503	9.4859574	9.5624154	9.7692521	..
Small states	15.00681	14.0328946	15.5358299	16.187112	15.9366779	..
Suriname	1.6364131	4.8600553	1.965199	6.1001718	3.682471	..
Uganda	16.8997691	15.7799622	13.2366662	13.9478131	13.6179732	..
Afghanistan	9.6874517	11.4044416	12.7601988	13.8544959	8.1676067	..
<b>Subject:</b> Domestic general government health expenditure (% of current health expenditure)						
Africa Eastern and	45.5087421	43.7427946	43.930114	46.7330291	47.6487624	..

<https://dataexplorer.ukdataservice.ac.uk>

## 2. International macrodata



# World Bank Databases



- Collects data on all aspects of human development worldwide
- Annual data, designed for international comparability
- Hosts four databases
- WDI is currently available with plans to add the other databases at a later time.

Subnational Population Database

International Debt Statistics

Africa Development Indicators

World Development indicators

# World Development Indicators



- **Covers over 200 countries**
- **Annual data starting in 1960**
- **Widely cited**
- **Our most popular database**

**Around 1400 indicators per country**





# World Development Indicators: example

## World Development Indicators (2022Q1 Edition)

**Subject:** Individuals using the Internet (% of population)

Year		2015	2016	2017	2018	2019	2020
Location							
Malaysia		71.0640678	78.7883099	80.140479	81.2010486	84.187145	89.5550119
Mali		10.33	11.1121865	15.6	23	26	..
Mexico		57.431043	59.540446	63.8522491	65.7726345	70.0699105	71.97
Monaco		93.363302	95.208178	97.0529768	..	..	..
Morocco		57.0799994	58.2712364	61.762212	64.8038652	74.3763145	84.120363
New Zealand		88.2228888	88.4701864	90.8110931	..	..	..
Norway		96.8103257	97.2982037	96.3576013	96.491658	98.0000044	97.0000012

© World Development Indicators (2022Q1 Edition)  UK Data Service





Which country had the largest proportion of women in parliament during 2020?

Joining code – **1360 7083** | <https://www.menti.com/alwqjf5un6v6>

# Proportion of seats held by women in national parliaments, 2020 (%)

World Development Indicators (2022Q1 Edition)

**Subject:** Proportion of seats held by women in national parliaments (%) ● **Year:** 2020

Location		
Rwanda		61.25
Sweden		46.991404
Bolivia		46.1538462
Cuba		53.2231405
Iceland		38.0952381

© World Development Indicators (2022Q1 Edition)  UK Data Service

# IMF databanks



- The primary purpose is to maintain international financial stability.
- The Fund collects detailed macro-economic data on all its member countries
- Five major databanks produced by the IMF

Open access

International Trade in  
Goods by partner country  
(formerly Direction of trade)

Balance of Payment  
Statistics

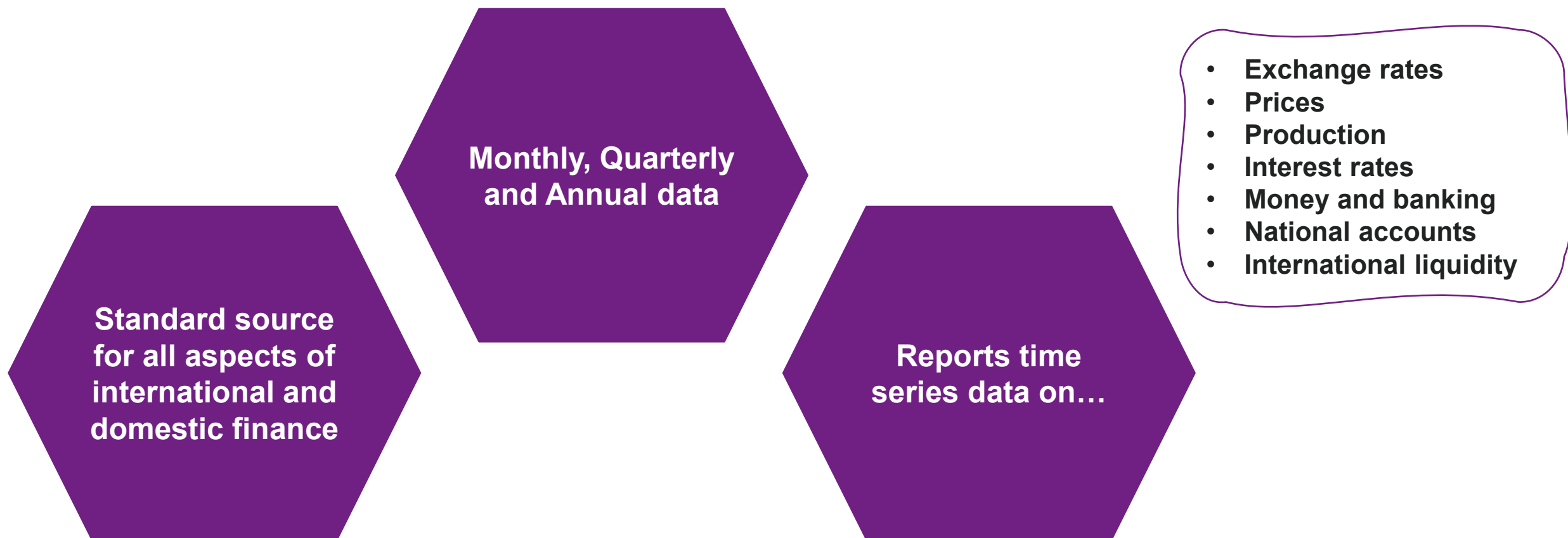
Government Finance  
Statistics

World Economic  
Outlook

International  
Financial Statistics



# IMF International Financial Statistics

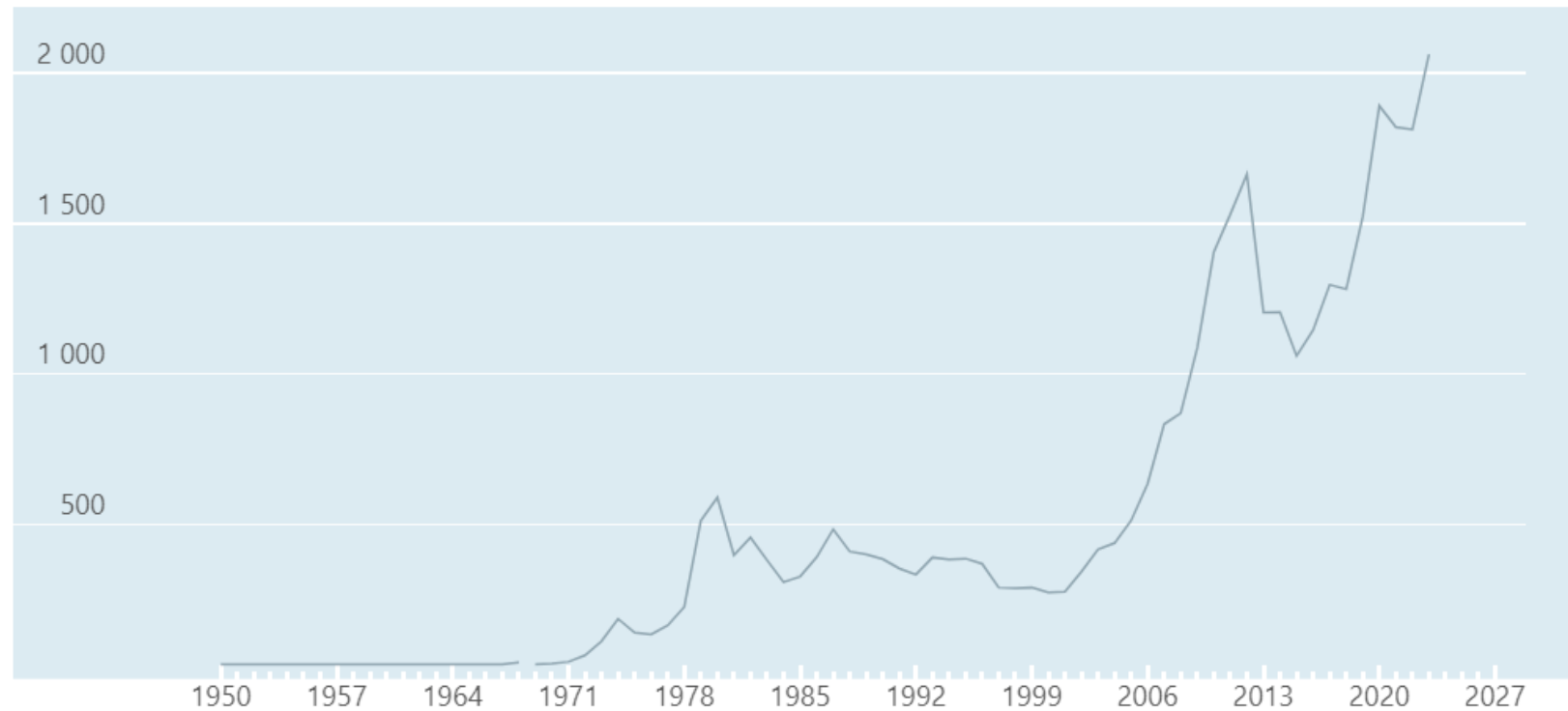


# International Financial Statistics: example

## International Financial Statistics (IFS)

**Frequency:** Annual ● **Reference area:** United Kingdom ●

**Indicator:** Exchange Rates, US Dollars per ounce of gold, End of period, Rate



© International Financial Statistics (IFS) UK Data Service

# IMF International Trade in Goods (by partner country) (formerly Direction of Trade)



- **Export and import data**
- **Bilateral data between over 250 countries**
- **Monthly, quarterly and annual data are presented**
- **1980s – present**

**Great potential  
research for  
economists**

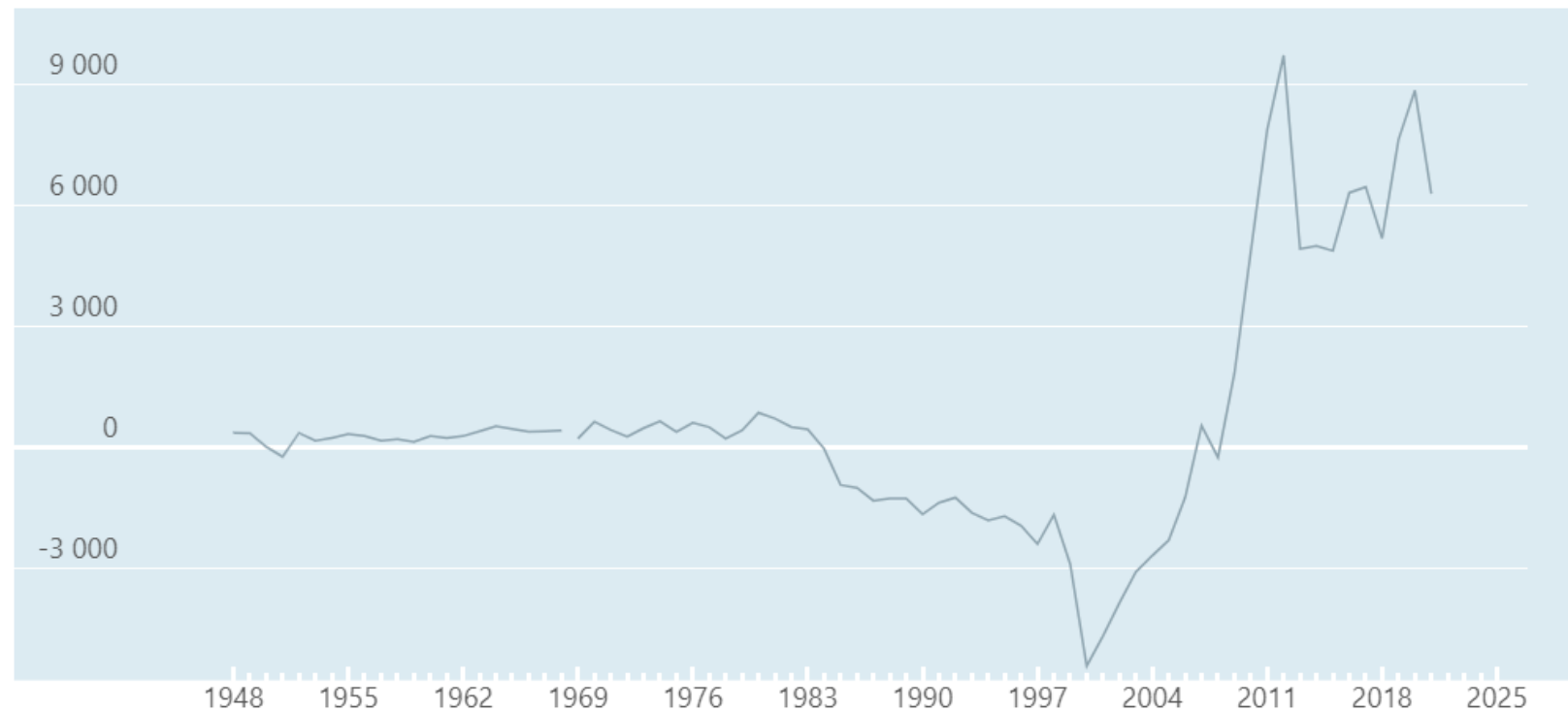
# International Trade in Goods (by partner country): example

## Direction of Trade Statistics (DOTS)

**Frequency:** Annual ● **Reference area:** Canada ● **Indicator:** Goods, Value of Trade Balance, US Dollars ●

**Counterpart reference area:** United Kingdom

**Combined unit of measure:** Millions



© Direction of Trade Statistics (DOTS)  UK Data Service





# IMF Government Finance Statistics (GFS)

- **Data on government income**
- **Expenditure by sector (defence education, health...)**
- **All levels of government (national, state, local)**
- **Annual time series data, running from 1990s onwards**

**170+ countries  
worldwide**

# Government Finance Statistics: Example

## Government Finance Statistics (GFS), Main Aggregates and Balances

*Frequency:* Annual • *Reporting institutional sector:* Social security funds • *Classification:* Expenditure

		Date	2020	2021	2022
Combined unit of measure	Reference area				
Percent of GDP, Units	France	i	28.4868532	27.3325282	26.6807531
Percent of GDP, Units	Germany	i	22.1009011	21.5272913	20.7202571
Percent of GDP, Units	Greece	i	25.7529957	23.6053392	21.1522377
Percent of GDP, Units	Kenya	i	0.8395279	0.8305653	..
Percent of GDP, Units	United States	i	12.3701355	10.6891919	9.1948399

© Government Finance Statistics (GFS), Main Aggregates and Balances  UK Data Service

**Expenditure on social security as a percentage of GDP over the last 3 reported years.**



# World Economic Outlook

- **World Economic Outlook report**
- **Presents IMF staff's analysis and projections of economic developments at the global level**
- **Projections for most indicators run up to 2028**

**National accounts**

**Commodity prices**

**Inflation**

**Balance of payments**

**Unemployment rates**

**Fiscal indicators**

# World Economic Outlook: example

## World Economic Outlook (WEO)

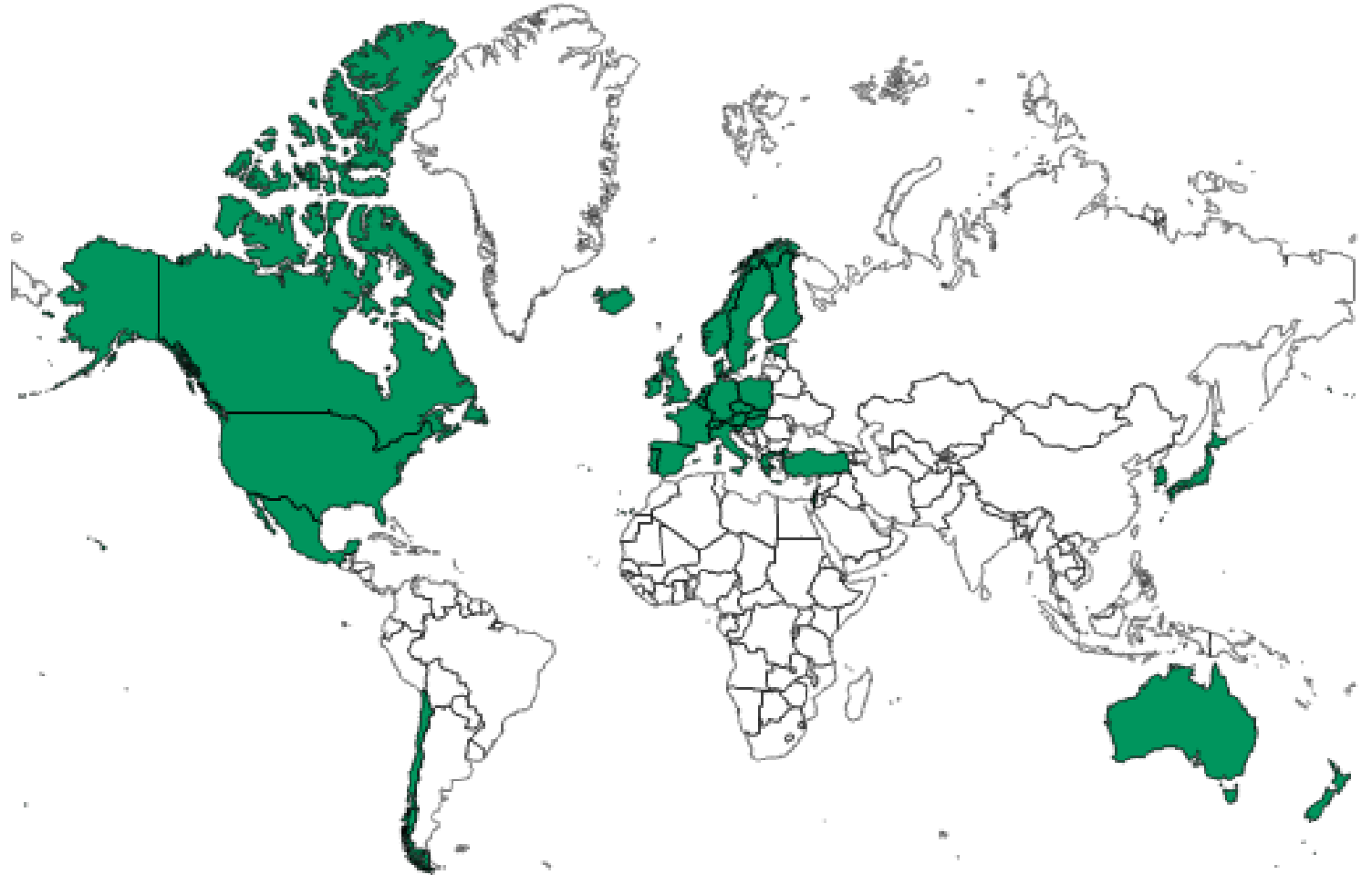
*Reference area:* United Kingdom • *Frequency:* Annual • *Last actual date:* 2022

Time		2025	2026	2027	2028
Unit					
<b>Concept:</b> General government gross debt					
National currency	i	3079.345	3239.909	3356.45	3476.135
<b>Concept:</b> General government gross debt					
Percent of GDP		i 107.274	i 108.473	i 108.198	i 108.229
<b>Concept:</b> General government net debt					
National currency	i	2790.94	2889.579	2992.429	3098.646
<b>Concept:</b> General government net debt					
Percent of GDP		i 97.227	i 96.744	i 96.463	i 96.476

© World Economic Outlook (WEO)  UK Data Service

# Organisation for Economic Cooperation and Development (OECD) Data

- **Open data**
- **Comparable data**
- **Limited number of countries**
- **Wide range of data**



# OECD data



**Education  
and training**

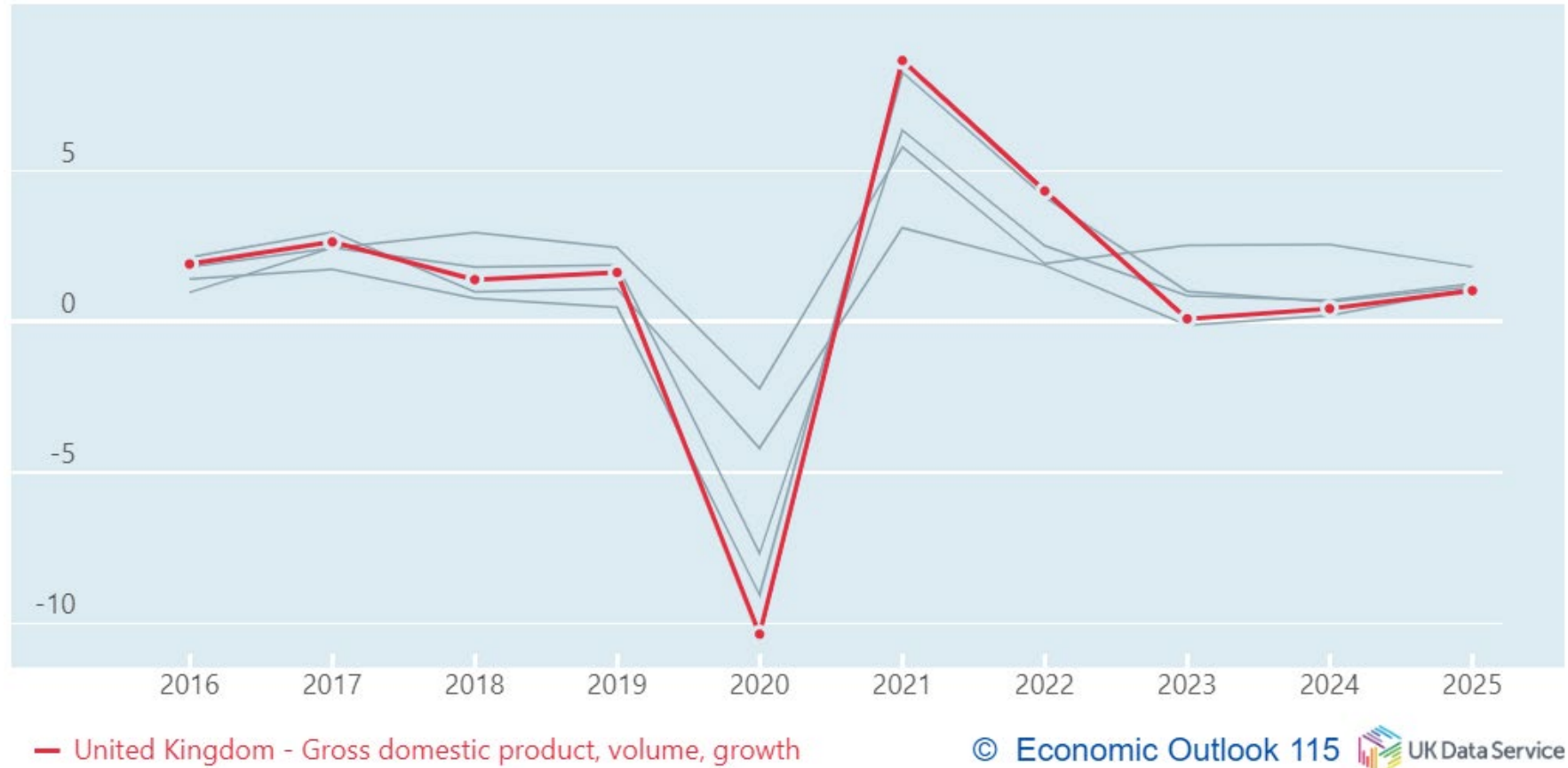
**Economic  
outlook**

**Tele-  
communications  
and Internet  
statistics**

# Economic Outlook: example

## Economic Outlook 115

**Measure:** Gross domestic product, volume, growth





# Follow along demo

Go to: <https://dataexplorer.ukdataservice.ac.uk>

1. How have UK Exports to its key EU partners fared in the last 10 years?
2. IMF Direction of Trade Statistics
3. Goods, Value of Exports, Free on board
4. Denmark, France, Germany, Ireland, Italy, Portugal, Spain

# Follow along demo

## Everything else

- **Searching**
- **Citing**
- **Downloads**
- **Terms of use**
- **Metadata**
- **Layout**
- **SDMX**
- **API**

# What is SDMX?

## Statistical Data and Metadata eXchange



The official site for the SDMX community  
A global initiative to improve Statistical Data and Metadata eXchange

[SDMX Glossary](#)  
[SDMX User Guide](#)  
[SDMX Roadmap 2025](#)  
[SDMX Global Registry](#)  
[Frequently Asked Questions](#)  
[Technical Working Group on GitHub](#)  
[Statistical Working Group on GitHub](#)  
[SDMX User Forum](#)

**Home**

[Standards](#)

[Guidelines](#)

[Implementations](#)

[Tools](#)

[Learning Resources](#)

[Events](#)

[Public Reviews](#)

[About SDMX](#)

**Welcome!**

[A Raw SDMX file for Economic Outlook 115](#)

[UK Data Service Data Explorer • Economic Outlook 115](#)

[Tools | SDMX – Statistical Data and Metadata eXchange](#)

## 2. International macrodata

# Raw SDMX vs the data it produces

```
<!--NSI Web Service v8.19.8.0-->
<message:GenericData>
  <message:Header>
    <message:ID>IREF033548</message:ID>
    <message:Test>true</message:Test>
    <message:Prepared>2025-11-25T14:17:51</message:Prepared>
    <message:Sender id="Open-data-DotStatV8"/>
  <message:Structure structureID="OECD_DSD_EO_at_DF_EO_1_1" dimensionAtObservation="AllDimensions">
    <common:StructureUsage>
      <Ref agencyID="OECD" id="DSD_EO@DF_EO" version="1.1"/>
    </common:StructureUsage>
  </message:Structure>
  <message:DataSetAction>Information</message:DataSetAction>
  <message:DataSetID>DSD_EO</message:DataSetID>
</message:Header>
  <message:DataSet action="Information" structureRef="OECD_DSD_EO_at_DF_EO_1_1">
    <generic:Obs>
      <generic:ObsKey>
        <generic:Value id="TIME_PERIOD" value="2021"/>
        <generic:Value id="REF_AREA" value="LVA"/>
        <generic:Value id="MEASURE" value="GDPV_ANNPCT"/>
        <generic:Value id="FREQ" value="A"/>
      </generic:ObsKey>
      <generic:ObsValue value="6.73173909096486"/>
      <generic:Attributes>
        <generic:Value id="UNIT_MEASURE" value="PA"/>
        <generic:Value id="UNIT_MULT" value="0"/>
        <generic:Value id="BASE_PER" value="2015"/>
        <generic:Value id="DECIMALS" value="2"/>
      </generic:Attributes>
    </generic:Obs>
    <generic:Obs>
      <generic:ObsKey>
        <generic:Value id="TIME_PERIOD" value="2020"/>
        <generic:Value id="REF_AREA" value="LVA"/>
        <generic:Value id="MEASURE" value="GDPV_ANNPCT"/>
        <generic:Value id="FREQ" value="A"/>
      </generic:ObsKey>
      <generic:ObsValue value="-3.51379929249603"/>
      <generic:Attributes>
        <generic:Value id="UNIT_MEASURE" value="PA"/>
        <generic:Value id="UNIT_MULT" value="0"/>
        <generic:Value id="BASE_PER" value="2015"/>
        <generic:Value id="DECIMALS" value="2"/>
      </generic:Attributes>
    </generic:Obs>
  </message:DataSet>
</message:GenericData>
```

392 data points selected in this dataset with:

Measure:  ... > Gross domestic product, volume, growth  | Time period:  Start: 2015  End: 2021

Clear all 

Overview Table Chart

[Labels](#)
[Layout](#)
[Download](#)
[Developer API](#)
[Full screen](#)

## Economic Outlook 115

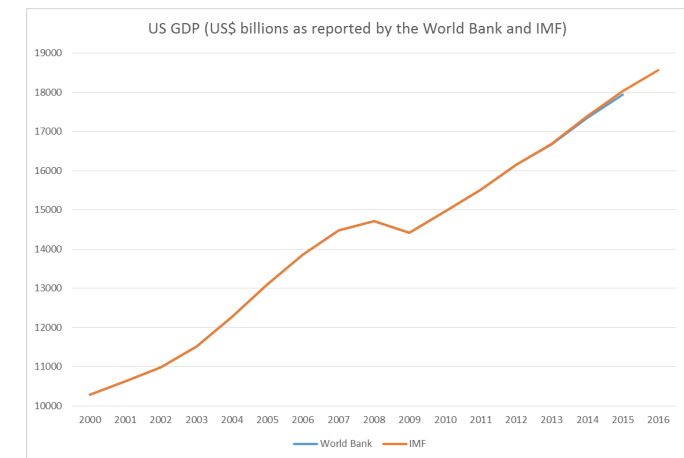
**Measure:** Gross domestic product, volume, growth

Time period			2015	2016	2017	2018	2019	2020	2021
Combined unit of measure	Reference area								
Percent per annum, 2021-2022	Australia		2.33	2.71	2.47	2.88	1.80	-2.16	5.51
Percent per annum, 2015	Austria		0.99	1.97	2.35	2.38	1.45	-6.72	4.36
Percent per annum, 2015	Belgium		2.04	1.27	1.62	1.79	2.24	-5.26	6.85
Percent per annum, 2017	Canada		0.65	1.04	3.03	2.74	1.91	-5.04	5.29
Percent per annum, 2018	Chile		2.16	1.64	1.60	4.04	0.54	-6.37	11.55
Percent per annum, 2015	Colombia		2.96	2.09	1.36	2.56	3.19	-7.19	10.80
Percent per annum, 2017	Costa Rica		3.65	4.20	4.16	2.62	2.42	-4.27	7.94
Percent per annum, 2015	Czechia		5.46	2.45	5.35	3.21	2.97	-5.52	3.50
Percent per annum, 2010	Denmark		2.35	3.25	2.82	1.99	1.49	-2.42	6.85
Percent per annum, 2015	Estonia		2.29	3.08	5.46	3.85	3.94	-0.69	7.37
Percent per annum, 2015	Finland		0.55	2.81	3.19	1.14	1.22	-2.36	2.84
Percent per annum, 2014	France		1.05	0.98	2.46	1.82	1.89	-7.68	6.36

# A tip on using the databanks

**Choose your data from the same databank or family of databanks**

- **comparability issues between data from different databanks, even for series with well-established standards**
- **theoretically identical series can have slightly different values in different databanks**



Time	World Bank	IMF
2000	10284.8	10284.8
2001	10621.8	10621.8
2002	10977.5	10977.5
2003	11510.7	11510.7
2004	12274.9	12274.9
2005	13093.7	13093.7
2006	13855.9	13855.9
2007	14477.6	14477.6
2008	14718.6	14718.6
2009	14418.7	14418.7
2010	14964.4	14964.4
2011	15517.9	15517.9
2012	16155.3	16155.3
2013	16663.2	16691.5
2014	17348.1	17393.1
2015	17947.0	18036.7
2016		18567

# Thank you & Questions

[Help@ukdataservice.ac.uk](mailto:Help@ukdataservice.ac.uk)

27<sup>th</sup> November 2025

