Introduction to WDI, Part I

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# Datascience for Macroeconomics using WDI

## Introduction

### Datascience

Datascience is an interdisciplinary academic field to extract or extrapolate knowledge and insights from noisy, structured, and unstructured data.

Why datascience? There are many reasons, but I believe it would promote evidence based, non-biased thinking.

#### Exploratory Data Analysis, EDA

EDA is an iterative cycle that helps you understand what your data says. When you do EDA, you:

1. Generate questions about your data
2. Search for answers by visualising, transforming, and/or modeling your data
3. Use what you learn to refine your questions and/or generate new questions

EDA is an important part of any data analysis. You can use EDA to make discoveries about the world; or you can use EDA to ensure the quality of your data, asking questions about whether the data meets your standards or not. (Posit Primers: [EDA](https://posit.cloud/learn/primers/3.1))

### Macroeconomics

The study of the entire economy of a region, a country, or the entire world

### World Development Indicators

World Development Indicators (WDI) is the World Bank’s premier compilation of international statistics on global development. Drawing from officially recognized sources and including national, regional, and global estimates, the WDI provides access to approximately 1,600 indicators for 217 economies, with some time series extending back more than 50 years. The database helps users find information related to development, both current and historical. The topics covered in the WDI range from poverty, health, and demographics to GDP, trade, and the environment.

The World Development Indicators website provides access to data as well as information about data coverage, curation, and methodologies, and allows users to discover what type of indicators are available, how they are collected, and how they can be visualized to analyze development trends. (Wikipedia: [Link](https://en.wikipedia.org/wiki/World_Development_Indicators))

## Open Data and Public Data

Datascience and Artificial Intelligence

* Computer Resources
* Data
  + Big Data
  + Open and Public Data

**Q. Explain ‘Open Data’ and ‘Public Data’, and their differences.**

**A. AI Poe Assistant**. ([Poe.com](https://poe.com))

“Open data” and “public data” are related concepts that refer to different aspects of data accessibility and usage.

Open Data: Open data refers to the idea that certain data should be freely available to the public, without restrictions on access, usage, or redistribution. Open data is typically released in a machine-readable format, such as CSV, JSON, or XML, and is accompanied by an open license that allows anyone to use, reuse, and distribute the data for any purpose. The goal of open data is to promote transparency, collaboration, and innovation by enabling individuals, organizations, and communities to analyze and build upon the data.

Open data often includes government data, scientific research data, public records, and other datasets that are deemed to be of public interest. Governments, international organizations, and various institutions actively promote the release of open data to foster accountability, drive economic growth, and empower citizens to make informed decisions.

Public Data: Public data, on the other hand, refers to any data that is accessible or available to the public. It is a broader term that encompasses both open data and other types of data that may have certain restrictions on access or usage. Public data can include information that is freely and openly available, as well as data that is accessible through specific channels, such as public libraries, government agencies, or subscription-based services.

Public data can include a wide range of information, such as government reports, census data, legal documents, financial statements, and more. While public data may be accessible to the public, it does not necessarily guarantee the same level of openness, usability, or freedom as open data. Public data may have limitations on its usage, copyright restrictions, or conditions imposed by the data provider.

In summary, open data specifically refers to data that is freely accessible, usable, and redistributable without restrictions, often accompanied by an open license. Public data, on the other hand, is a broader term that includes both open data and other data that may have varying degrees of accessibility and usage restrictions.

#### World Bank on Open Data for Open Government

Visit [Open Government Data Toolkit](https://opendatatoolkit.worldbank.org/en/data/opendatatoolkit/home).

## R on RStudio

### Install R and RStudio

* R: <https://www.r-project.org>
* RStudio: <https://posit.co>

### Posit Cloud

* Posit.cloud: <https://posit.cloud/>
  + [Posit Primers](https://posit.cloud/learn/primers): interactive tutorials
  + [Cheatsheets](https://posit.cloud/learn/cheat-sheets): RStudio IDE, Data Visualization, Data Transformation, Data Import, RMarkdown, etc.
* Shared Project: <https://posit.cloud/content/5539763>
* Create Your Copy and Download it.

## Datascience Workflow



*The image above is from* [*R4DS(2e)*](https://r4ds.hadley.nz) *by Hadley Wickham, Mine Çetinkaya-Rundel and Garrett Grolemund*

## First Datascience

We use two packages, tidyverse and WDI.

R packages are extensions to the R statistical programming language. R packages contain code, data, and documentation in a standardized collection format that can be installed by users of R, typically via a centralized software repository such as CRAN (the Comprehensive R Archive Network). [[CRAN Link](https://cran.r-project.org)]

* **tidyverse**: The tidyverse is a collection of open source packages for the R programming language introduced by Hadley Wickham and his team that “share an underlying design philosophy, grammar, and data structures” of tidy data. Characteristic features of tidyverse packages include extensive use of non-standard evaluation and encouraging piping. [[CRAN Link](https://cran.r-project.org/web/packages/tidyverse/index.html)]
* **WDI**: Search and download data from over 40 databases hosted by the World Bank, including the World Development Indicators (‘WDI’), International Debt Statistics, Doing Business, Human Capital Index, and Sub-national Poverty indicators. [[CRAN Link](https://cran.r-project.org/web/packages/WDI/index.html)]

### Setup

Step 1. Install packages if necessary.

install.packages("tidyverse")  
install.packages("WDI")

Step 2. Load packages.

library(tidyverse)

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ dplyr 1.1.3 ✔ readr 2.1.4  
## ✔ forcats 1.0.0 ✔ stringr 1.5.0  
## ✔ ggplot2 3.4.3 ✔ tibble 3.2.1  
## ✔ lubridate 1.9.2 ✔ tidyr 1.3.0  
## ✔ purrr 1.0.2   
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()  
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(WDI)

Step 3. Create a data directory for the first time.

dir.create("data")

Step 4. Set ‘System Language’ to be English, recommended.

Sys.setenv(LANG = "en")

### Importing GDP Data

The following code chunk is to download GDP data with the following indicator code.

WDI indicator: NY.GDP.MKTP.PP.KD

df\_gdp <- WDI(indicator = "NY.GDP.MKTP.PP.KD")

N.B. There are many GDP related data in WDI, for example, “NY.GDP.MKTP.CD”

To avoid the internet traffic, save the data and reuse it.

CSV: comma separated values, a text format of a data.

write\_csv(df\_gdp, "data/gdp.csv")

Run codes above only once to download and write the data into the data directory.

df\_gdp <- read\_csv("data/gdp.csv")

## Rows: 16758 Columns: 5  
## ── Column specification ────────────────────────────────────────────────────────  
## Delimiter: ","  
## chr (3): country, iso2c, iso3c  
## dbl (2): year, NY.GDP.MKTP.PP.KD  
##   
## ℹ Use `spec()` to retrieve the full column specification for this data.  
## ℹ Specify the column types or set `show\_col\_types = FALSE` to quiet this message.

### Viewing Data

First, look at the data by head, str ucture, and summary.

head: display the first 6 rows by default

head(df\_gdp)

## # A tibble: 6 × 5  
## country iso2c iso3c year NY.GDP.MKTP.PP.KD  
## <chr> <chr> <chr> <dbl> <dbl>  
## 1 Africa Eastern and Southern ZH AFE 2022 2.56e12  
## 2 Africa Eastern and Southern ZH AFE 2021 2.47e12  
## 3 Africa Eastern and Southern ZH AFE 2020 2.37e12  
## 4 Africa Eastern and Southern ZH AFE 2019 2.43e12  
## 5 Africa Eastern and Southern ZH AFE 2018 2.38e12  
## 6 Africa Eastern and Southern ZH AFE 2017 2.32e12

2.561800e+12 is in scientific notation, i.e., .

str: display the structure of an object

str(df\_gdp)

## spc\_tbl\_ [16,758 × 5] (S3: spec\_tbl\_df/tbl\_df/tbl/data.frame)  
## $ country : chr [1:16758] "Africa Eastern and Southern" "Africa Eastern and Southern" "Africa Eastern and Southern" "Africa Eastern and Southern" ...  
## $ iso2c : chr [1:16758] "ZH" "ZH" "ZH" "ZH" ...  
## $ iso3c : chr [1:16758] "AFE" "AFE" "AFE" "AFE" ...  
## $ year : num [1:16758] 2022 2021 2020 2019 2018 ...  
## $ NY.GDP.MKTP.PP.KD: num [1:16758] 2.56e+12 2.47e+12 2.37e+12 2.43e+12 2.38e+12 ...  
## - attr(\*, "spec")=  
## .. cols(  
## .. country = col\_character(),  
## .. iso2c = col\_character(),  
## .. iso3c = col\_character(),  
## .. year = col\_double(),  
## .. NY.GDP.MKTP.PP.KD = col\_double()  
## .. )  
## - attr(\*, "problems")=<externalptr>

summary: display the summary of an object

summary(df\_gdp)

## country iso2c iso3c year   
## Length:16758 Length:16758 Length:16758 Min. :1960   
## Class :character Class :character Class :character 1st Qu.:1975   
## Mode :character Mode :character Mode :character Median :1991   
## Mean :1991   
## 3rd Qu.:2007   
## Max. :2022   
##   
## NY.GDP.MKTP.PP.KD   
## Min. :2.482e+07   
## 1st Qu.:1.824e+10   
## Median :1.055e+11   
## Mean :3.329e+12   
## 3rd Qu.:1.083e+12   
## Max. :1.390e+14   
## NA's :9096

In RNotebook, the following also displays the first 1000 rows of the data in the paged format.

df\_gdp

### Transformation

|> , or %>%, is called a pipe operator and df\_gdp |> filter(country == COUNTRY) is same as

filter(df\_gdp, country == COUNTRY) .

filter : Keep rows that match a condition

COUNTRY <- "Japan"  
df\_gdp |> filter(country == COUNTRY)

## # A tibble: 63 × 5  
## country iso2c iso3c year NY.GDP.MKTP.PP.KD  
## <chr> <chr> <chr> <dbl> <dbl>  
## 1 Japan JP JPN 2022 5.21e12  
## 2 Japan JP JPN 2021 5.16e12  
## 3 Japan JP JPN 2020 5.05e12  
## 4 Japan JP JPN 2019 5.27e12  
## 5 Japan JP JPN 2018 5.30e12  
## 6 Japan JP JPN 2017 5.26e12  
## 7 Japan JP JPN 2016 5.18e12  
## 8 Japan JP JPN 2015 5.14e12  
## 9 Japan JP JPN 2014 5.06e12  
## 10 Japan JP JPN 2013 5.04e12  
## # ℹ 53 more rows

### Visualization

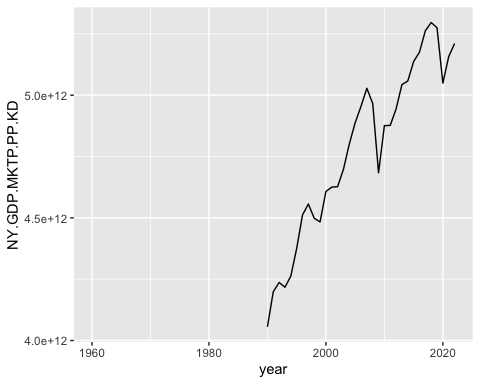
#### GDP of Japan

ggplot() + geom\_line(): A tidyverse function of draw a line graph

aes(year, NY.GDP.MKTP.PP.KD) : aesthetic mapping sending year to x-axis and NY.GDP.MKTP.PP.KD to y-axis

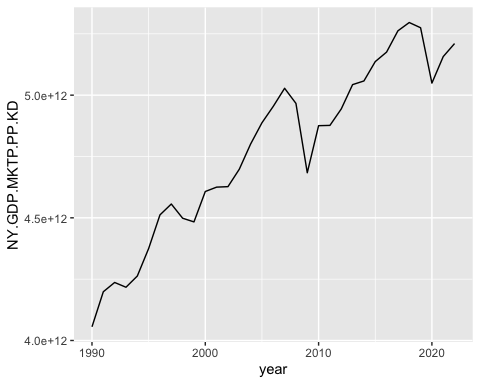
COUNTRY <- "Japan"  
df\_gdp |> filter(country == COUNTRY) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD)) + geom\_line()

## Warning: Removed 30 rows containing missing values (`geom\_line()`).



Let’s delete the rows with missing values using drop\_na(NY.GDP.MKTP.PP.KD), a transformation.

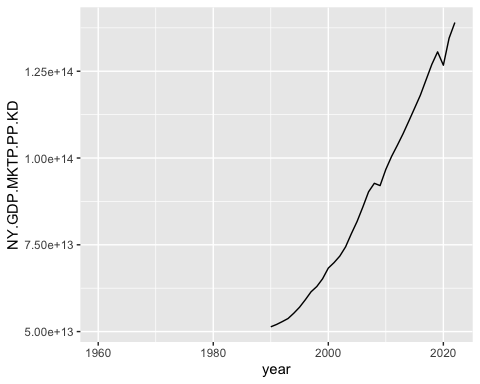
COUNTRY <- "Japan"  
df\_gdp |> filter(country == COUNTRY) |> drop\_na(NY.GDP.MKTP.PP.KD) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD)) + geom\_line()



#### GDP of the World

COUNTRY <- "World"  
df\_gdp |> filter(country == COUNTRY) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD)) + geom\_line()

## Warning: Removed 30 rows containing missing values (`geom\_line()`).



#### Exercise.

1. Delete the missing data of the GDP of the World by mimicking the one of Japan.
2. Write down your observations and questions.

COUNTRY <- "World"  
df\_gdp |> filter(country == COUNTRY) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD)) + geom\_line()

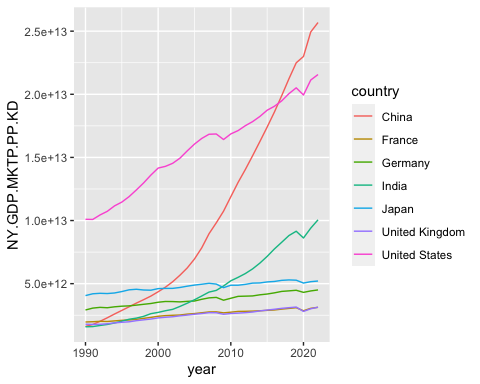
**Observations and Questions**

* e.g. The GDP of the world is continuously increasing since 1990.

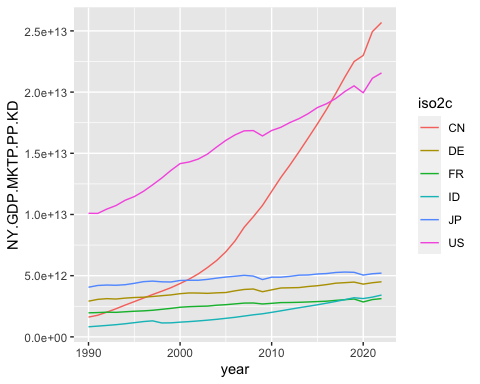
#### GDP of the countries

By country names

COUNTRIES <- c("Japan", "China", "India", "United Kingdom", "United States", "Germany", "France")  
df\_gdp |> filter(country %in% COUNTRIES) |> drop\_na(NY.GDP.MKTP.PP.KD) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD, color = country)) + geom\_line()



ISO2C <- c("JP", "CN", "ID", "UK", "US", "DE", "FR")  
df\_gdp |> filter(iso2c %in% ISO2C) |> drop\_na(NY.GDP.MKTP.PP.KD) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD, color = iso2c)) + geom\_line()



#### Exercise.

What happens if you replace color = iso2c at the bottom of the code above with colour = iso2c , color = country , col = country ?

ISO2C <- c("JP", "CN", "ID", "UK", "US", "DE", "FR")  
df\_gdp |> filter(iso2c %in% ISO2C) |> drop\_na(NY.GDP.MKTP.PP.KD) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD, color = iso2c)) + geom\_line()

#### List of Countries and iso2c

(df\_codes <- df\_gdp |> distinct(country, iso2c))

## # A tibble: 266 × 2  
## country iso2c  
## <chr> <chr>  
## 1 Africa Eastern and Southern ZH   
## 2 Africa Western and Central ZI   
## 3 Arab World 1A   
## 4 Caribbean small states S3   
## 5 Central Europe and the Baltics B8   
## 6 Early-demographic dividend V2   
## 7 East Asia & Pacific Z4   
## 8 East Asia & Pacific (excluding high income) 4E   
## 9 East Asia & Pacific (IDA & IBRD countries) T4   
## 10 Euro area XC   
## # ℹ 256 more rows

#### **Exercise.**

Set COUNTRIES and/or ISO2C to draw line graphs of GDP.

COUNTRIES <- c() # surround the country name with quotation marks, and use a comma as a separator  
df\_gdp |> filter(country %in% COUNTRIES) |> drop\_na(NY.GDP.MKTP.PP.KD) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD, color = country)) + geom\_line()

ISO2C <- c() # surround the iso2c code with quotation marks, and use a comma as a separator  
df\_gdp |> filter(iso2c %in% ISO2C) |> drop\_na(NY.GDP.MKTP.PP.KD) |>  
 ggplot(aes(year, NY.GDP.MKTP.PP.KD, color = iso2c)) + geom\_line()

# World Development Indicators

## Find Indicator Codes

1. World Bank Home Page
   * World Development Indicators: [Link](https://datatopics.worldbank.org/world-development-indicators/)
   * World Bank Open Data: [Link](https://data.worldbank.org)
   * WDI Statistical Tables: [Link](https://wdi.worldbank.org/tables)
2. Excel Files
   * Data Catalogues: [Link](https://datacatalog.worldbank.org/search/dataset/0037712/World-Development-Indicators) Download Excel File
3. API Search

WDIsearch(string = "gdp", field = "name")

## indicator  
## 712 5.51.01.10.gdp  
## 714 6.0.GDP\_current  
## 715 6.0.GDP\_growth  
## 716 6.0.GDP\_usd  
## 717 6.0.GDPpc\_constant  
## 1557 BG.GSR.NFSV.GD.ZS  
## 1558 BG.KAC.FNEI.GD.PP.ZS  
## 1559 BG.KAC.FNEI.GD.ZS  
## 1560 BG.KLT.DINV.GD.PP.ZS  
## 1561 BG.KLT.DINV.GD.ZS  
## 1752 BI.WAG.TOTL.GD.ZS  
## 1772 BM.GSR.MRCH.ZS  
## 1784 BM.KLT.DINV.GD.ZS  
## 1785 BM.KLT.DINV.WD.GD.ZS  
## 1798 BN.CAB.XOKA.GD.ZS  
## 1799 BN.CAB.XOKA.GDP.ZS  
## 1802 BN.CAB.XOTR.ZS  
## 1805 BN.CUR.GDPM.ZS  
## 1811 BN.GSR.FCTY.CD.ZS  
## 1820 BN.KLT.DINV.CD.ZS  
## 1822 BN.KLT.DINV.DRS.GDP.ZS  
## 1828 BN.KLT.PRVT.GD.ZS  
## 1839 BN.TRF.CURR.CD.ZS  
## 1875 BX.GSR.MRCH.ZS  
## 1887 BX.KLT.DINV.DT.GD.ZS  
## 1889 BX.KLT.DINV.WD.GD.ZS  
## 1898 BX.TRF.MGR.DT.GD.ZS  
## 1904 BX.TRF.PWKR.DT.GD.ZS  
## 1905 BX.TRF.PWKR.GD.ZS  
## 2198 CC.ENTX.ENE.ZS  
## 2270 CC.GHG.MEMG.EI  
## 2271 CC.GHG.MEMG.GC  
## 2293 CC.INCP.ALRS  
## 2294 CC.INCP.KRGC  
## 2295 CC.INCP.SPMC  
## 2356 CC.RISK.AST.ZS  
## 2357 CC.RISK.WELL.ZS  
## 2364 CC.SP.EXP.ZS  
## 2401 CM.FIN.INTL.GD.ZS  
## 2404 CM.MKT.LCAP.GD.ZS  
## 2407 CM.MKT.TRAD.GD.ZS  
## 2559 DP.DOD.DECD.CR.BC.Z1  
## 2562 DP.DOD.DECD.CR.CG.Z1  
## 2565 DP.DOD.DECD.CR.FC.Z1  
## 2568 DP.DOD.DECD.CR.GG.Z1  
## 2571 DP.DOD.DECD.CR.NF.Z1  
## 2576 DP.DOD.DECF.CR.BC.Z1  
## 2579 DP.DOD.DECF.CR.CG.Z1  
## 2582 DP.DOD.DECF.CR.FC.Z1  
## 2585 DP.DOD.DECF.CR.GG.Z1  
## 2588 DP.DOD.DECF.CR.NF.Z1  
## 2593 DP.DOD.DECN.CR.BC.Z1  
## 2596 DP.DOD.DECN.CR.CG.Z1  
## 2599 DP.DOD.DECN.CR.FC.Z1  
## 2602 DP.DOD.DECN.CR.GG.Z1  
## 2605 DP.DOD.DECN.CR.NF.Z1  
## 2610 DP.DOD.DECT.CR.BC.Z1  
## 2613 DP.DOD.DECT.CR.CG.Z1  
## 2616 DP.DOD.DECT.CR.FC.Z1  
## 2619 DP.DOD.DECT.CR.GG.Z1  
## 2622 DP.DOD.DECT.CR.NF.Z1  
## 2627 DP.DOD.DECX.CR.BC.Z1  
## 2630 DP.DOD.DECX.CR.CG.Z1  
## 2633 DP.DOD.DECX.CR.FC.Z1  
## 2636 DP.DOD.DECX.CR.GG.Z1  
## 2639 DP.DOD.DECX.CR.NF.Z1  
## 2644 DP.DOD.DLCD.CR.BC.Z1  
## 2647 DP.DOD.DLCD.CR.CG.Z1  
## 2650 DP.DOD.DLCD.CR.FC.Z1  
## 2653 DP.DOD.DLCD.CR.GG.Z1  
## 2656 DP.DOD.DLCD.CR.L1.BC.Z1  
## 2659 DP.DOD.DLCD.CR.L1.CG.Z1  
## 2662 DP.DOD.DLCD.CR.L1.FC.Z1  
## 2665 DP.DOD.DLCD.CR.L1.GG.Z1  
## 2668 DP.DOD.DLCD.CR.L1.NF.Z1  
## 2673 DP.DOD.DLCD.CR.M1.BC.Z1  
## 2676 DP.DOD.DLCD.CR.M1.CG.Z1  
## 2679 DP.DOD.DLCD.CR.M1.FC.Z1  
## 2682 DP.DOD.DLCD.CR.M1.GG.Z1  
## 2685 DP.DOD.DLCD.CR.M1.NF.Z1  
## 2690 DP.DOD.DLCD.CR.NF.Z1  
## 2694 DP.DOD.DLD1.CR.CG.Z1  
## 2696 DP.DOD.DLD1.CR.GG.Z1  
## 2698 DP.DOD.DLD2.CR.CG.Z1  
## 2700 DP.DOD.DLD2.CR.GG.Z1  
## 2702 DP.DOD.DLD2A.CR.CG.Z1  
## 2704 DP.DOD.DLD2A.CR.GG.Z1  
## 2706 DP.DOD.DLD3.CR.CG.Z1  
## 2708 DP.DOD.DLD3.CR.GG.Z1  
## 2710 DP.DOD.DLD4.CR.CG.Z1  
## 2712 DP.DOD.DLD4.CR.GG.Z1  
## 2715 DP.DOD.DLDS.CR.BC.Z1  
## 2718 DP.DOD.DLDS.CR.CG.Z1  
## 2721 DP.DOD.DLDS.CR.FC.Z1  
## 2724 DP.DOD.DLDS.CR.GG.Z1  
## 2727 DP.DOD.DLDS.CR.L1.BC.Z1  
## 2730 DP.DOD.DLDS.CR.L1.CG.Z1  
## 2733 DP.DOD.DLDS.CR.L1.FC.Z1  
## 2736 DP.DOD.DLDS.CR.L1.GG.Z1  
## 2739 DP.DOD.DLDS.CR.L1.NF.Z1  
## 2744 DP.DOD.DLDS.CR.M1.BC.Z1  
## 2747 DP.DOD.DLDS.CR.M1.CG.Z1  
## 2750 DP.DOD.DLDS.CR.M1.FC.Z1  
## 2753 DP.DOD.DLDS.CR.M1.GG.Z1  
## 2756 DP.DOD.DLDS.CR.M1.NF.Z1  
## 2761 DP.DOD.DLDS.CR.MV.BC.Z1  
## 2764 DP.DOD.DLDS.CR.MV.CG.Z1  
## 2767 DP.DOD.DLDS.CR.MV.FC.Z1  
## 2770 DP.DOD.DLDS.CR.MV.GG.Z1  
## 2773 DP.DOD.DLDS.CR.MV.NF.Z1  
## 2778 DP.DOD.DLDS.CR.NF.Z1  
## 2783 DP.DOD.DLIN.CR.BC.Z1  
## 2786 DP.DOD.DLIN.CR.CG.Z1  
## 2789 DP.DOD.DLIN.CR.FC.Z1  
## 2792 DP.DOD.DLIN.CR.GG.Z1  
## 2795 DP.DOD.DLIN.CR.L1.BC.Z1  
## 2798 DP.DOD.DLIN.CR.L1.CG.Z1  
## 2801 DP.DOD.DLIN.CR.L1.FC.Z1  
## 2804 DP.DOD.DLIN.CR.L1.GG.Z1  
## 2807 DP.DOD.DLIN.CR.L1.NF.Z1  
## 2812 DP.DOD.DLIN.CR.M1.BC.Z1  
## 2815 DP.DOD.DLIN.CR.M1.CG.Z1  
## 2818 DP.DOD.DLIN.CR.M1.FC.Z1  
## 2821 DP.DOD.DLIN.CR.M1.GG.Z1  
## 2824 DP.DOD.DLIN.CR.M1.NF.Z1  
## 2829 DP.DOD.DLIN.CR.NF.Z1  
## 2834 DP.DOD.DLLO.CR.BC.Z1  
## 2837 DP.DOD.DLLO.CR.CG.Z1  
## 2840 DP.DOD.DLLO.CR.FC.Z1  
## 2843 DP.DOD.DLLO.CR.GG.Z1  
## 2846 DP.DOD.DLLO.CR.L1.BC.Z1  
## 2849 DP.DOD.DLLO.CR.L1.CG.Z1  
## 2852 DP.DOD.DLLO.CR.L1.FC.Z1  
## 2855 DP.DOD.DLLO.CR.L1.GG.Z1  
## 2858 DP.DOD.DLLO.CR.L1.NF.Z1  
## 2863 DP.DOD.DLLO.CR.M1.BC.Z1  
## 2866 DP.DOD.DLLO.CR.M1.CG.Z1  
## 2869 DP.DOD.DLLO.CR.M1.FC.Z1  
## 2872 DP.DOD.DLLO.CR.M1.GG.Z1  
## 2875 DP.DOD.DLLO.CR.M1.NF.Z1  
## 2880 DP.DOD.DLLO.CR.NF.Z1  
## 2885 DP.DOD.DLOA.CR.BC.Z1  
## 2888 DP.DOD.DLOA.CR.CG.Z1  
## 2891 DP.DOD.DLOA.CR.FC.Z1  
## 2894 DP.DOD.DLOA.CR.GG.Z1  
## 2897 DP.DOD.DLOA.CR.L1.BC.Z1  
## 2900 DP.DOD.DLOA.CR.L1.CG.Z1  
## 2903 DP.DOD.DLOA.CR.L1.FC.Z1  
## 2906 DP.DOD.DLOA.CR.L1.GG.Z1  
## 2909 DP.DOD.DLOA.CR.L1.NF.Z1  
## 2914 DP.DOD.DLOA.CR.M1.BC.Z1  
## 2917 DP.DOD.DLOA.CR.M1.CG.Z1  
## 2920 DP.DOD.DLOA.CR.M1.FC.Z1  
## 2923 DP.DOD.DLOA.CR.M1.GG.Z1  
## 2926 DP.DOD.DLOA.CR.M1.NF.Z1  
## 2931 DP.DOD.DLOA.CR.NF.Z1  
## 2936 DP.DOD.DLSD.CR.BC.Z1  
## 2939 DP.DOD.DLSD.CR.CG.Z1  
## 2942 DP.DOD.DLSD.CR.FC.Z1  
## 2945 DP.DOD.DLSD.CR.GG.Z1  
## 2948 DP.DOD.DLSD.CR.M1.BC.Z1  
## 2951 DP.DOD.DLSD.CR.M1.CG.Z1  
## 2954 DP.DOD.DLSD.CR.M1.FC.Z1  
## 2957 DP.DOD.DLSD.CR.M1.GG.Z1  
## 2960 DP.DOD.DLSD.CR.M1.NF.Z1  
## 2965 DP.DOD.DLSD.CR.NF.Z1  
## 2970 DP.DOD.DLTC.CR.BC.Z1  
## 2973 DP.DOD.DLTC.CR.CG.Z1  
## 2976 DP.DOD.DLTC.CR.FC.Z1  
## 2979 DP.DOD.DLTC.CR.GG.Z1  
## 2982 DP.DOD.DLTC.CR.L1.BC.Z1  
## 2985 DP.DOD.DLTC.CR.L1.CG.Z1  
## 2988 DP.DOD.DLTC.CR.L1.FC.Z1  
## 2991 DP.DOD.DLTC.CR.L1.GG.Z1  
## 2994 DP.DOD.DLTC.CR.L1.NF.Z1  
## 2999 DP.DOD.DLTC.CR.M1.BC.Z1  
## 3002 DP.DOD.DLTC.CR.M1.CG.Z1  
## 3005 DP.DOD.DLTC.CR.M1.FC.Z1  
## 3008 DP.DOD.DLTC.CR.M1.GG.Z1  
## 3011 DP.DOD.DLTC.CR.M1.NF.Z1  
## 3016 DP.DOD.DLTC.CR.NF.Z1  
## 3022 DP.DOD.DSCD.CR.BC.Z1  
## 3025 DP.DOD.DSCD.CR.CG.Z1  
## 3028 DP.DOD.DSCD.CR.FC.Z1  
## 3031 DP.DOD.DSCD.CR.GG.Z1  
## 3034 DP.DOD.DSCD.CR.NF.Z1  
## 3039 DP.DOD.DSDS.CR.BC.Z1  
## 3042 DP.DOD.DSDS.CR.CG.Z1  
## 3045 DP.DOD.DSDS.CR.FC.Z1  
## 3048 DP.DOD.DSDS.CR.GG.Z1  
## 3051 DP.DOD.DSDS.CR.NF.Z1  
## 3056 DP.DOD.DSIN.CR.BC.Z1  
## 3059 DP.DOD.DSIN.CR.CG.Z1  
## 3062 DP.DOD.DSIN.CR.FC.Z1  
## 3065 DP.DOD.DSIN.CR.GG.Z1  
## 3068 DP.DOD.DSIN.CR.NF.Z1  
## 3073 DP.DOD.DSLO.CR.BC.Z1  
## 3076 DP.DOD.DSLO.CR.CG.Z1  
## 3079 DP.DOD.DSLO.CR.FC.Z1  
## 3082 DP.DOD.DSLO.CR.GG.Z1  
## 3085 DP.DOD.DSLO.CR.NF.Z1  
## 3090 DP.DOD.DSOA.CR.BC.Z1  
## 3093 DP.DOD.DSOA.CR.CG.Z1  
## 3096 DP.DOD.DSOA.CR.FC.Z1  
## 3099 DP.DOD.DSOA.CR.GG.Z1  
## 3102 DP.DOD.DSOA.CR.NF.Z1  
## 3107 DP.DOD.DSTC.CR.BC.Z1  
## 3110 DP.DOD.DSTC.CR.CG.Z1  
## 3113 DP.DOD.DSTC.CR.FC.Z1  
## 3116 DP.DOD.DSTC.CR.GG.Z1  
## 3119 DP.DOD.DSTC.CR.NF.Z1  
## 3615 DT.DOD.ALLC.ZSG  
## 3618 DT.DOD.ALLN.ZSG  
## 3773 DT.DOD.DECT.CD.ZSG  
## 5376 DT.ODA.ALLD.GD.ZS  
## 5447 DT.ODA.DACD.ZSG  
## 5452 DT.ODA.MULT.ZSG  
## 5460 DT.ODA.NDAC.ZSG  
## 5466 DT.ODA.ODAT.GD.ZS  
## 5616 DT.TDS.DECT.GD.ZS  
## 5969 EG.EGY.PRIM.PP.KD  
## 5993 EG.GDP.PUSE.KO.87  
## 5994 EG.GDP.PUSE.KO.KD  
## 5995 EG.GDP.PUSE.KO.PP  
## 5996 EG.GDP.PUSE.KO.PP.KD  
## 6004 EG.USE.COMM.GD.PP.KD  
## 6023 EN.ATM.CO2E.GDP  
## 6027 EN.ATM.CO2E.KD.87.GD  
## 6028 EN.ATM.CO2E.KD.GD  
## 6033 EN.ATM.CO2E.PP.GD  
## 6034 EN.ATM.CO2E.PP.GD.KD  
## 6164 ER.GDP.FWTL.M3.KD  
## 6182 EU.EGY.USES.GDP  
## 6236 FB.DPT.INSU.PC.ZS  
## 6589 FD.AST.PRVT.GD.ZS  
## 6595 FI.RES.TOTL.CD.ZS  
## 7389 FM.AST.GOVT.CN.ZS  
## 7398 FM.AST.PRVT.GD.ZS  
## 7407 FM.LBL.BMNY.GD.ZS  
## 7414 FM.LBL.MQMY.GD.ZS  
## 7415 FM.LBL.MQMY.GDP.ZS  
## 7417 FM.LBL.MQMY.XD  
## 7422 FM.LBL.QMNY.GDP.ZS  
## 7423 FM.LBL.SEIG.GDP.ZS  
## 7462 FS.AST.CGOV.GD.ZS  
## 7463 FS.AST.DOMO.GD.ZS  
## 7464 FS.AST.DOMS.GD.ZS  
## 7465 FS.AST.DTOT.ZS  
## 7467 FS.AST.PRVT.GD.ZS  
## 7468 FS.AST.PRVT.GDP.ZS  
## 7469 FS.LBL.LIQU.GD.ZS  
## 7470 FS.LBL.LIQU.GDP.ZS  
## 7471 FS.LBL.QLIQ.GD.ZS  
## 7530 GB.BAL.OVRL.GD.ZS  
## 7531 GB.BAL.OVRL.GDP.ZS  
## 7540 GB.DOD.TOTL.GD.ZS  
## 7541 GB.DOD.TOTL.GDP.ZS  
## 7545 GB.FIN.ABRD.GD.ZS  
## 7546 GB.FIN.ABRD.GDP.ZS  
## 7550 GB.FIN.DOMS.GD.ZS  
## 7551 GB.FIN.DOMS.GDP.ZS  
## 7561 GB.REV.CTOT.GD.ZS  
## 7564 GB.REV.TOTL.GDP.ZS  
## 7566 GB.REV.XAGT.CN.ZS  
## 7569 GB.RVC.TOTL.GD.ZS  
## 7571 GB.SOE.DECT.ZS  
## 7573 GB.SOE.ECON.GD.ZS  
## 7574 GB.SOE.ECON.GDP.ZS  
## 7577 GB.SOE.NFLW.GD.ZS  
## 7578 GB.SOE.NFLW.GDP.ZS  
## 7579 GB.SOE.OVRL.GD.ZS  
## 7605 GB.TAX.TOTL.GD.ZS  
## 7606 GB.TAX.TOTL.GDP.ZS  
## 7624 GB.XPD.DEFN.GDP.ZS  
## 7627 GB.XPD.RSDV.GD.ZS  
## 7630 GB.XPD.TOTL.GD.ZS  
## 7631 GB.XPD.TOTL.GDP.ZS  
## 7638 GC.AST.TOTL.GD.ZS  
## 7641 GC.BAL.CASH.GD.ZS  
## 7646 GC.DOD.TOTL.GD.ZS  
## 7650 GC.FIN.DOMS.GD.ZS  
## 7652 GC.FIN.FRGN.GD.ZS  
## 7654 GC.LBL.TOTL.GD.ZS  
## 7656 GC.NFN.TOTL.GD.ZS  
## 7658 GC.NLD.TOTL.GD.ZS  
## 7669 GC.REV.XGRT.GD.ZS  
## 7684 GC.TAX.TOTL.GD.ZS  
## 7701 GC.XPN.TOTL.GD.ZS  
## 7792 GFDD.DI.01  
## 7793 GFDD.DI.02  
## 7794 GFDD.DI.03  
## 7796 GFDD.DI.05  
## 7797 GFDD.DI.06  
## 7798 GFDD.DI.07  
## 7799 GFDD.DI.08  
## 7800 GFDD.DI.09  
## 7801 GFDD.DI.10  
## 7802 GFDD.DI.11  
## 7803 GFDD.DI.12  
## 7804 GFDD.DI.13  
## 7805 GFDD.DI.14  
## 7806 GFDD.DM.01  
## 7807 GFDD.DM.02  
## 7808 GFDD.DM.03  
## 7809 GFDD.DM.04  
## 7810 GFDD.DM.05  
## 7811 GFDD.DM.06  
## 7812 GFDD.DM.07  
## 7813 GFDD.DM.08  
## 7814 GFDD.DM.09  
## 7815 GFDD.DM.10  
## 7816 GFDD.DM.11  
## 7817 GFDD.DM.12  
## 7818 GFDD.DM.13  
## 7821 GFDD.DM.16  
## 7822 GFDD.DM.16  
## 7830 GFDD.EI.08  
## 7837 GFDD.OI.02  
## 7843 GFDD.OI.08  
## 7844 GFDD.OI.09  
## 7848 GFDD.OI.13  
## 7849 GFDD.OI.14  
## 7854 GFDD.OI.17  
## 7855 GFDD.OI.18  
## 8686 IE.ICT.TOTL.GD.ZS  
## 8959 IS.RRS.GOOD.KM.PP.ZS  
## 8961 IS.RRS.PASG.K2.PP.ZS  
## 9068 IT.TEL.REVN.GD.ZS  
## 10943 MS.MIL.XPND.GD.ZS  
## 10948 NA.GDP.ACC.FB.SNA08.CR  
## 10949 NA.GDP.ACC.FB.SNA08.KR  
## 10950 NA.GDP.AGR.CR  
## 10951 NA.GDP.AGR.KR  
## 10952 NA.GDP.AGR.SNA08.CR  
## 10953 NA.GDP.AGR.SNA08.KR  
## 10954 NA.GDP.BUSS.SNA08.CR  
## 10955 NA.GDP.BUSS.SNA08.KR  
## 10956 NA.GDP.CNST.CR  
## 10957 NA.GDP.CNST.KR  
## 10958 NA.GDP.CNST.SNA08.CR  
## 10959 NA.GDP.CNST.SNA08.KR  
## 10960 NA.GDP.EDUS.SNA08.CR  
## 10961 NA.GDP.EDUS.SNA08.KR  
## 10962 NA.GDP.ELEC.GAS.SNA08.CR  
## 10963 NA.GDP.ELEC.GAS.SNA08.KR  
## 10964 NA.GDP.EXC.OG.CR  
## 10965 NA.GDP.EXC.OG.KR  
## 10966 NA.GDP.FINS.CR  
## 10967 NA.GDP.FINS.KR  
## 10968 NA.GDP.FINS.SNA08.CR  
## 10969 NA.GDP.FINS.SNA08.KR  
## 10970 NA.GDP.HLTH.SOCW.SNA08.CR  
## 10971 NA.GDP.HLTH.SOCW.SNA08.KR  
## 10972 NA.GDP.INC.OG.CR  
## 10973 NA.GDP.INC.OG.KR  
## 10974 NA.GDP.INC.OG.SNA08.CR  
## 10975 NA.GDP.INC.OG.SNA08.KR  
## 10976 NA.GDP.INF.COMM.SNA08.CR  
## 10977 NA.GDP.INF.COMM.SNA08.KR  
## 10978 NA.GDP.MINQ.CR  
## 10979 NA.GDP.MINQ.KR  
## 10980 NA.GDP.MINQ.SNA08.CR  
## 10981 NA.GDP.MINQ.SNA08.KR  
## 10982 NA.GDP.MNF.CR  
## 10983 NA.GDP.MNF.KR  
## 10984 NA.GDP.MNF.SNA08.CR  
## 10985 NA.GDP.MNF.SNA08.KR  
## 10986 NA.GDP.PADM.DEF.SNA08.CR  
## 10987 NA.GDP.PADM.DEF.SNA08.KR  
## 10988 NA.GDP.REST.SNA08.CR  
## 10989 NA.GDP.REST.SNA08.KR  
## 10990 NA.GDP.SRV.OTHR.CR  
## 10991 NA.GDP.SRV.OTHR.KR  
## 10992 NA.GDP.SRV.OTHR.SNA08.CR  
## 10993 NA.GDP.SRV.OTHR.SNA08.KR  
## 10994 NA.GDP.TRAN.COMM.CR  
## 10995 NA.GDP.TRAN.COMM.KR  
## 10996 NA.GDP.TRAN.STOR.SNA08.CR  
## 10997 NA.GDP.TRAN.STOR.SNA08.KR  
## 10998 NA.GDP.TRD.HTL.CR  
## 10999 NA.GDP.TRD.HTL.KR  
## 11000 NA.GDP.TRD.SNA08.CR  
## 11001 NA.GDP.TRD.SNA08.KR  
## 11002 NA.GDP.UTL.CR  
## 11003 NA.GDP.UTL.KR  
## 11004 NA.GDP.WTR.WST.SNA08.CR  
## 11005 NA.GDP.WTR.WST.SNA08.KR  
## 11014 NE.CON.GOVT.ZS  
## 11025 NE.CON.PETC.ZS  
## 11042 NE.CON.PRVT.ZS  
## 11052 NE.CON.TETC.ZS  
## 11060 NE.CON.TOTL.ZG  
## 11061 NE.CON.TOTL.ZS  
## 11071 NE.DAB.TOTL.ZS  
## 11083 NE.EXP.GNFS.ZS  
## 11085 NE.GDI.CON.GOVT.CR  
## 11086 NE.GDI.CON.GOVT.SNA08.CR  
## 11087 NE.GDI.CON.NPI.CR  
## 11088 NE.GDI.CON.NPI.SNA08.CR  
## 11089 NE.GDI.CON.PRVT.CR  
## 11090 NE.GDI.CON.PRVT.SNA08.CR  
## 11091 NE.GDI.EXPT.CR  
## 11092 NE.GDI.EXPT.SNA08.CR  
## 11117 NE.GDI.FPRV.ZS  
## 11122 NE.GDI.FPUB.ZS  
## 11125 NE.GDI.FTOT.CR  
## 11132 NE.GDI.FTOT.SNA08.CR  
## 11133 NE.GDI.FTOT.ZS  
## 11134 NE.GDI.IMPT.CR  
## 11135 NE.GDI.IMPT.SNA08.CR  
## 11136 NE.GDI.INEX.SNA08.CR  
## 11141 NE.GDI.STKB.CR  
## 11145 NE.GDI.STKB.SNA08.CR  
## 11154 NE.GDI.TOTL.CR  
## 11161 NE.GDI.TOTL.SNA08.CR  
## 11162 NE.GDI.TOTL.ZG  
## 11163 NE.GDI.TOTL.ZS  
## 11173 NE.IMP.GNFS.ZS  
## 11174 NE.MRCH.GDP.ZS  
## 11180 NE.RSB.GNFS.ZG  
## 11181 NE.RSB.GNFS.ZS  
## 11184 NE.TRD.GNFS.ZS  
## 11191 NP.AGR.TOTL.ZG  
## 11195 NP.IND.TOTL.ZG  
## 11201 NP.SRV.TOTL.ZG  
## 11209 NV.AGR.PCAP.KD.ZG  
## 11219 NV.AGR.TOTL.ZG  
## 11220 NV.AGR.TOTL.ZS  
## 11240 NV.IND.MANF.ZS  
## 11254 NV.IND.TOTL.ZG  
## 11255 NV.IND.TOTL.ZS  
## 11273 NV.SRV.DISC.CD  
## 11274 NV.SRV.DISC.CN  
## 11275 NV.SRV.DISC.KN  
## 11292 NV.SRV.TETC.ZG  
## 11293 NV.SRV.TETC.ZS  
## 11299 NV.SRV.TOTL.ZS  
## 11388 NY.AGR.SUBS.GD.ZS  
## 11392 NY.GDP.COAL.RT.ZS  
## 11393 NY.GDP.DEFL.87.ZG  
## 11394 NY.GDP.DEFL.KD.ZG  
## 11395 NY.GDP.DEFL.KD.ZG.AD  
## 11396 NY.GDP.DEFL.ZS  
## 11397 NY.GDP.DEFL.ZS.87  
## 11398 NY.GDP.DEFL.ZS.AD  
## 11399 NY.GDP.DISC.CD  
## 11400 NY.GDP.DISC.CN  
## 11401 NY.GDP.DISC.KN  
## 11405 NY.GDP.FCST.KD.87  
## 11407 NY.GDP.FCST.KN.87  
## 11408 NY.GDP.FRST.RT.ZS  
## 11409 NY.GDP.MINR.RT.ZS  
## 11410 NY.GDP.MKTP.CD  
## 11411 NY.GDP.MKTP.CD.XD  
## 11412 NY.GDP.MKTP.CN  
## 11413 NY.GDP.MKTP.CN.AD  
## 11414 NY.GDP.MKTP.CN.XD  
## 11415 NY.GDP.MKTP.IN  
## 11416 NY.GDP.MKTP.KD  
## 11417 NY.GDP.MKTP.KD.87  
## 11418 NY.GDP.MKTP.KD.ZG  
## 11419 NY.GDP.MKTP.KN  
## 11420 NY.GDP.MKTP.KN.87  
## 11421 NY.GDP.MKTP.KN.87.ZG  
## 11422 NY.GDP.MKTP.PP.CD  
## 11423 NY.GDP.MKTP.PP.KD  
## 11424 NY.GDP.MKTP.PP.KD.87  
## 11425 NY.GDP.MKTP.XD  
## 11426 NY.GDP.MKTP.XU.E  
## 11428 NY.GDP.NGAS.RT.ZS  
## 11429 NY.GDP.PCAP.CD  
## 11430 NY.GDP.PCAP.CN  
## 11431 NY.GDP.PCAP.KD  
## 11432 NY.GDP.PCAP.KD.ZG  
## 11433 NY.GDP.PCAP.KN  
## 11434 NY.GDP.PCAP.PP.CD  
## 11435 NY.GDP.PCAP.PP.KD  
## 11436 NY.GDP.PCAP.PP.KD.87  
## 11437 NY.GDP.PCAP.PP.KD.ZG  
## 11438 NY.GDP.PETR.RT.ZS  
## 11439 NY.GDP.TOTL.RT.ZS  
## 11452 NY.GDS.TOTL.ZS  
## 11457 NY.GEN.AEDU.GD.ZS  
## 11458 NY.GEN.DCO2.GD.ZS  
## 11459 NY.GEN.DFOR.GD.ZS  
## 11460 NY.GEN.DKAP.GD.ZS  
## 11461 NY.GEN.DMIN.GD.ZS  
## 11462 NY.GEN.DNGY.GD.ZS  
## 11463 NY.GEN.NDOM.GD.ZS  
## 11464 NY.GEN.SVNG.GD.ZS  
## 11497 NY.GNS.ICTR.ZS  
## 11535 NYGDPMKTPKDZ  
## 11536 NYGDPMKTPSACD  
## 11537 NYGDPMKTPSACN  
## 11538 NYGDPMKTPSAKD  
## 11539 NYGDPMKTPSAKN  
## 11564 PA.NUS.PPP  
## 11565 PA.NUS.PPP.05  
## 11566 PA.NUS.PPPC.RF  
## 15599 SE.PRM.SATT.2  
## 15663 SE.PRM.TATT.1  
## 15890 SE.XPD.EDUC.ZS  
## 15895 SE.XPD.PRIM.GDP.ZS  
## 15896 SE.XPD.PRIM.PC.ZS  
## 15899 SE.XPD.SECO.GDP.ZS  
## 15900 SE.XPD.SECO.PC.ZS  
## 15904 SE.XPD.TERT.GDP.ZS  
## 15905 SE.XPD.TERT.PC.ZS  
## 15908 SE.XPD.TOTL.GD.ZS  
## 15928 SF.TRN.RAIL.KM.ZS  
## 16886 SH.XPD.CHEX.GD.ZS  
## 16895 SH.XPD.GHED.GD.ZS  
## 16899 SH.XPD.HLTH.ZS  
## 16900 SH.XPD.KHEX.GD.ZS  
## 16912 SH.XPD.PRIV.ZS  
## 16915 SH.XPD.PUBL.ZS  
## 16921 SH.XPD.TOTL.ZS  
## 17073 SL.GDP.PCAP.EM.KD  
## 17074 SL.GDP.PCAP.EM.KD.ZG  
## 17075 SL.GDP.PCAP.EM.XD  
## 17833 TG.VAL.TOTL.GD.PP.ZS  
## 17834 TG.VAL.TOTL.GD.ZS  
## 17835 TG.VAL.TOTL.GG.ZS  
## 20066 UIS.XGDP.0.FSGOV  
## 20067 UIS.XGDP.1.FSGOV  
## 20068 UIS.XGDP.2.FSGOV  
## 20069 UIS.XGDP.23.FSGOV  
## 20070 UIS.XGDP.2T4.V.FSGOV  
## 20071 UIS.XGDP.3.FSGOV  
## 20072 UIS.XGDP.4.FSGOV  
## 20073 UIS.XGDP.56.FSGOV  
## 20123 UIS.XUNIT.GDPCAP.02.FSGOV  
## 20124 UIS.XUNIT.GDPCAP.1.FSGOV  
## 20125 UIS.XUNIT.GDPCAP.1.FSHH  
## 20126 UIS.XUNIT.GDPCAP.2.FSGOV  
## 20127 UIS.XUNIT.GDPCAP.23.FSGOV  
## 20128 UIS.XUNIT.GDPCAP.23.FSHH  
## 20129 UIS.XUNIT.GDPCAP.3.FSGOV  
## 20130 UIS.XUNIT.GDPCAP.5T8.FSGOV  
## 20131 UIS.XUNIT.GDPCAP.5T8.FSHH  
## name  
## 712 Per capita GDP growth  
## 714 GDP (current $)  
## 715 GDP growth (annual %)  
## 716 GDP (constant 2005 $)  
## 717 GDP per capita, PPP (constant 2011 international $)   
## 1557 Trade in services (% of GDP)  
## 1558 Gross private capital flows (% of GDP, PPP)  
## 1559 Gross private capital flows (% of GDP)  
## 1560 Gross foreign direct investment (% of GDP, PPP)  
## 1561 Gross foreign direct investment (% of GDP)  
## 1752 Wage bill as a percentage of GDP  
## 1772 Merchandise imports (BOP): percentage of GDP (%)  
## 1784 Foreign direct investment, net outflows (% of GDP)  
## 1785 Foreign direct investment, net outflows (% of GDP)  
## 1798 Current account balance (% of GDP)  
## 1799 Current account balance (% of GDP)  
## 1802 Curr. acc. bal. before official transf. (% of GDP)  
## 1805 Current account balance excluding net official capital grants (% of GDP)  
## 1811 Net income (% of GDP)  
## 1820 Foreign direct investment (% of GDP)  
## 1822 Foreign direct investment, net inflows (% of GDP)  
## 1828 Private capital flows, total (% of GDP)  
## 1839 Net current transfers (% of GDP)  
## 1875 Merchandise exports (BOP): percentage of GDP (%)  
## 1887 Foreign direct investment, net inflows (% of GDP)  
## 1889 Foreign direct investment, net inflows (% of GDP)  
## 1898 Migrant remittance inflows (% of GDP)  
## 1904 Personal remittances, received (% of GDP)  
## 1905 Workers' remittances, receipts (% of GDP)  
## 2198 Total energy tax revenue (% of GDP)  
## 2270 Macro drivers of GHG emissions growth in the period 2012-2018 - Emission Intensity of GDP  
## 2271 Macro drivers of GHG emissions growth in the period 2012-2018 - GDP per capita  
## 2293 Annual investment needs for coastal protection, by risk strategy (% of GDP) - low risk tolerance  
## 2294 Annual investment needs for coastal protection, by risk strategy (% of GDP) - constant relative flood risk  
## 2295 Annual investment needs for coastal protection, by risk strategy (% of GDP) - optimal protection  
## 2356 Risk to asset (average annual losses as % of GDP)  
## 2357 Risk to wellbeing (average annual losses as % of GDP)  
## 2364 Public social protection expenditure (%of GDP)  
## 2401 Financing via international capital markets (gross inflows, % of GDP)  
## 2404 Market capitalization of listed domestic companies (% of GDP)  
## 2407 Stocks traded, total value (% of GDP)  
## 2559 Gross PSD, Budgetary Central Gov., All maturities, All instruments, Domestic creditors, Nominal Value, % of GDP  
## 2562 Gross PSD, Central Gov., All maturities, All instruments, Domestic creditors, Nominal Value, % of GDP  
## 2565 Gross PSD, Financial Public Corp., All maturities, All instruments, Domestic creditors, Nominal Value, % of GDP  
## 2568 Gross PSD, General Gov., All maturities, All instruments, Domestic creditors, Nominal Value, % of GDP  
## 2571 Gross PSD, Nonfinancial Public Corp., All maturities, All instruments, Domestic creditors, Nominal Value, % of GDP  
## 2576 Gross PSD, Budgetary Central Gov., All maturities, All instruments, Foreign currency, Nominal Value, % of GDP  
## 2579 Gross PSD, Central Gov., All maturities, All instruments, Foreign currency, Nominal Value, % of GDP  
## 2582 Gross PSD, Financial Public Corp., All maturities, All instruments, Foreign currency, Nominal Value, % of GDP  
## 2585 Gross PSD, General Gov., All maturities, All instruments, Foreign currency, Nominal Value, % of GDP  
## 2588 Gross PSD, Nonfinancial Public Corp., All maturities, All instruments, Foreign currency, Nominal Value, % of GDP  
## 2593 Gross PSD, Budgetary Central Gov., All maturities, All instruments, Domestic currency, Nominal Value, % of GDP  
## 2596 Gross PSD, Central Gov., All maturities, All instruments, Domestic currency, Nominal Value, % of GDP  
## 2599 Gross PSD, Financial Public Corp., All maturities, All instruments, Domestic currency, Nominal Value, % of GDP  
## 2602 Gross PSD, General Gov., All maturities, All instruments, Domestic currency, Nominal Value, % of GDP  
## 2605 Gross PSD, Nonfinancial Public Corp., All maturities, All instruments, Domestic currency, Nominal Value, % of GDP  
## 2610 Gross PSD, Budgetary Central Gov., All maturities, All instruments, Nominal Value, % of GDP  
## 2613 Gross PSD, Central Gov., All maturities, All instruments, Nominal Value, % of GDP  
## 2616 Gross PSD, Financial Public Corp., All maturities, All instruments, Nominal Value, % of GDP  
## 2619 Gross PSD, General Gov., All maturities, All instruments, Nominal Value, % of GDP  
## 2622 Gross PSD, Nonfinancial Public Corp., All maturities, All instruments, Nominal Value, % of GDP  
## 2627 Gross PSD, Budgetary Central Gov., All maturities, All instruments, External creditors, Nominal Value, % of GDP  
## 2630 Gross PSD, Central Gov., All maturities, All instruments, External creditors, Nominal Value, % of GDP  
## 2633 Gross PSD, Financial Public Corp., All maturities, All instruments, External creditors, Nominal Value, % of GDP  
## 2636 Gross PSD, General Gov., All maturities, All instruments, External creditors, Nominal Value, % of GDP  
## 2639 Gross PSD, Nonfinancial Public Corp., All maturities, All instruments, External creditors, Nominal Value, % of GDP  
## 2644 Gross PSD, Budgetary Central Gov., All maturities, Currency and deposits, Nominal Value, % of GDP  
## 2647 Gross PSD, Central Gov., All maturities, Currency and deposits, Nominal Value, % of GDP  
## 2650 Gross PSD, Financial Public Corp., All maturities, Currency and deposits, Nominal Value, % of GDP  
## 2653 Gross PSD, General Gov., All maturities, Currency and deposits, Nominal Value, % of GDP  
## 2656 Gross PSD, Budgetary Central Gov., Long-term, With payment due in one year or less, Currency and deposits, Nominal Value, % of GDP  
## 2659 Gross PSD, Central Gov., Long-term, With payment due in one year or less, Currency and deposits, Nominal Value, % of GDP  
## 2662 Gross PSD, Financial Public Corp., Long-term, With payment due in one year or less, Currency and deposits, Nominal Value, % of GDP  
## 2665 Gross PSD, General Gov., Long-term, With payment due in one year or less, Currency and deposits, Nominal Value, % of GDP  
## 2668 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in one year or less, Currency and deposits, Nominal Value, % of GDP  
## 2673 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, Currency and deposits, Nominal Value, % of GDP  
## 2676 Gross PSD, Central Gov., Long-term, With payment due in more than one year, Currency and deposits, Nominal Value, % of GDP  
## 2679 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, Currency and deposits, Nominal Value, % of GDP  
## 2682 Gross PSD, General Gov., Long-term, With payment due in more than one year, Currency and deposits, Nominal Value, % of GDP  
## 2685 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, Currency and deposits, Nominal Value, % of GDP  
## 2690 Gross PSD, Nonfinancial Public Corp., All maturities, Currency and deposits, Nominal Value, % of GDP  
## 2694 Gross PSD, Central Gov.-D1, All maturities, Debt securities + loans, Nominal Value, % of GDP  
## 2696 Gross PSD, General Gov.-D1, All maturities, Debt securities + loans, Nominal Value, % of GDP  
## 2698 Gross PSD, Central Gov.-D2, All maturities, D1+ SDRs + currency and deposits, Nominal Value, % of GDP  
## 2700 Gross PSD, General Gov.-D2, All maturities, D1+ SDRs + currency and deposits, Nominal Value, % of GDP  
## 2702 Gross PSD, Central Gov.-D2A, All maturities, D1+ currency and deposits, Maastricht debt, % of GDP  
## 2704 Gross PSD, General Gov.-D2A, All maturities, D1+ currency and deposits, Maastricht debt, % of GDP  
## 2706 Gross PSD, Central Gov.-D3, All maturities, D2+other accounts payable, Nominal Value, % of GDP  
## 2708 Gross PSD, General Gov.-D3, All maturities, D2+other accounts payable, Nominal Value, % of GDP  
## 2710 Gross PSD, Central Gov.-D4, All maturities, D3+insurance, pensions, and standardized guarantees, Nominal Value, % of GDP  
## 2712 Gross PSD, General Gov.-D4, All maturities, D3+insurance, pensions, and standardized guarantees, Nominal Value, % of GDP  
## 2715 Gross PSD, Budgetary Central Gov., All maturities, Debt securities, Nominal Value, % of GDP  
## 2718 Gross PSD, Central Gov., All maturities, Debt securities, Nominal Value, % of GDP  
## 2721 Gross PSD, Financial Public Corp., All maturities, Debt securities, Nominal Value, % of GDP  
## 2724 Gross PSD, General Gov., All maturities, Debt securities, Nominal Value, % of GDP  
## 2727 Gross PSD, Budgetary Central Gov., Long-term, With payment due in one year or less, Debt securities, Nominal Value, % of GDP  
## 2730 Gross PSD, Central Gov., Long-term, With payment due in one year or less, Debt securities, Nominal Value, % of GDP  
## 2733 Gross PSD, Financial Public Corp., Long-term, With payment due in one year or less, Debt securities, Nominal Value, % of GDP  
## 2736 Gross PSD, General Gov., Long-term, With payment due in one year or less, Debt securities, Nominal Value, % of GDP  
## 2739 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in one year or less, Debt securities, Nominal Value, % of GDP  
## 2744 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, Debt securities, Nominal Value, % of GDP  
## 2747 Gross PSD, Central Gov., Long-term, With payment due in more than one year, Debt securities, Nominal Value, % of GDP  
## 2750 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, Debt securities, Nominal Value, % of GDP  
## 2753 Gross PSD, General Gov., Long-term, With payment due in more than one year, Debt securities, Nominal Value, % of GDP  
## 2756 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, Debt securities, Nominal Value, % of GDP  
## 2761 Gross PSD, Budgetary Central Gov., All maturities, Debt Securities, Market value, % of GDP  
## 2764 Gross PSD, Central Gov., All maturities, Debt Securities, Market value, % of GDP  
## 2767 Gross PSD, Financial Public Corp., All maturities, Debt Securities, Market value, % of GDP  
## 2770 Gross PSD, General Gov., All maturities, Debt Securities, Market value, % of GDP  
## 2773 Gross PSD, Nonfinancial Public Corp., All maturities, Debt Securities, Market value, % of GDP  
## 2778 Gross PSD, Nonfinancial Public Corp., All maturities, Debt securities, Nominal Value, % of GDP  
## 2783 Gross PSD, Budgetary Central Gov., All maturities, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2786 Gross PSD, Central Gov., All maturities, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2789 Gross PSD, Financial Public Corp., All maturities, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2792 Gross PSD, General Gov., All maturities, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2795 Gross PSD, Budgetary Central Gov., Long-term, With payment due in one year or less, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2798 Gross PSD, Central Gov., Long-term, With payment due in one year or less, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2801 Gross PSD, Financial Public Corp., Long-term, With payment due in one year or less, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2804 Gross PSD, General Gov., Long-term, With payment due in one year or less, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2807 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in one year or less, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2812 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2815 Gross PSD, Central Gov., Long-term, With payment due in more than one year, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2818 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2821 Gross PSD, General Gov., Long-term, With payment due in more than one year, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2824 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2829 Gross PSD, Nonfinancial Public Corp., All maturities, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 2834 Gross PSD, Budgetary Central Gov., All maturities, Loans, Nominal Value, % of GDP  
## 2837 Gross PSD, Central Gov., All maturities, Loans, Nominal Value, % of GDP  
## 2840 Gross PSD, Financial Public Corp., All maturities, Loans, Nominal Value, % of GDP  
## 2843 Gross PSD, General Gov., All maturities, Loans, Nominal Value, % of GDP  
## 2846 Gross PSD, Budgetary Central Gov., Long-term, With payment due in one year or less, Loans, Nominal Value, % of GDP  
## 2849 Gross PSD, Central Gov., Long-term, With payment due in one year or less, Loans, Nominal Value, % of GDP  
## 2852 Gross PSD, Financial Public Corp., Long-term, With payment due in one year or less, Loans, Nominal Value, % of GDP  
## 2855 Gross PSD, General Gov., Long-term, With payment due in one year or less, Loans, Nominal Value, % of GDP  
## 2858 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in one year or less, Loans, Nominal Value, % of GDP  
## 2863 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, Loans, Nominal Value, % of GDP  
## 2866 Gross PSD, Central Gov., Long-term, With payment due in more than one year, Loans, Nominal Value, % of GDP  
## 2869 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, Loans, Nominal Value, % of GDP  
## 2872 Gross PSD, General Gov., Long-term, With payment due in more than one year, Loans, Nominal Value, % of GDP  
## 2875 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, Loans, Nominal Value, % of GDP  
## 2880 Gross PSD, Nonfinancial Public Corp., All maturities, Loans, Nominal Value, % of GDP  
## 2885 Gross PSD, Budgetary Central Gov., All maturities, Other accounts payable, Nominal Value, % of GDP  
## 2888 Gross PSD, Central Gov., All maturities, Other accounts payable, Nominal Value, % of GDP  
## 2891 Gross PSD, Financial Public Corp., All maturities, Other accounts payable, Nominal Value, % of GDP  
## 2894 Gross PSD, General Gov., All maturities, Other accounts payable, Nominal Value, % of GDP  
## 2897 Gross PSD, Budgetary Central Gov., Long-term, With payment due in one year or less, Other accounts payable, Nominal Value, % of GDP  
## 2900 Gross PSD, Central Gov., Long-term, With payment due in one year or less, Other accounts payable, Nominal Value, % of GDP  
## 2903 Gross PSD, Financial Public Corp., Long-term, With payment due in one year or less, Other accounts payable, Nominal Value, % of GDP  
## 2906 Gross PSD, General Gov., Long-term, With payment due in one year or less, Other accounts payable, Nominal Value, % of GDP  
## 2909 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in one year or less, Other accounts payable, Nominal Value, % of GDP  
## 2914 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, Other accounts payable, Nominal Value, % of GDP  
## 2917 Gross PSD, Central Gov., Long-term, With payment due in more than one year, Other accounts payable, Nominal Value, % of GDP  
## 2920 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, Other accounts payable, Nominal Value, % of GDP  
## 2923 Gross PSD, General Gov., Long-term, With payment due in more than one year, Other accounts payable, Nominal Value, % of GDP  
## 2926 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, Other accounts payable, Nominal Value, % of GDP  
## 2931 Gross PSD, Nonfinancial Public Corp., All maturities, Other accounts payable, Nominal Value, % of GDP  
## 2936 Gross PSD, Budgetary Central Gov., All maturities, Special Drawing Rights, Nominal Value, % of GDP  
## 2939 Gross PSD, Central Gov., All maturities, Special Drawing Rights, Nominal Value, % of GDP  
## 2942 Gross PSD, Financial Public Corp., All maturities, Special Drawing Rights, Nominal Value, % of GDP  
## 2945 Gross PSD, General Gov., All maturities, Special Drawing Rights, Nominal Value, % of GDP  
## 2948 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, Special Drawing Rights, Nominal Value, % of GDP  
## 2951 Gross PSD, Central Gov., Long-term, With payment due in more than one year, Special Drawing Rights, Nominal Value, % of GDP  
## 2954 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, Special Drawing Rights, Nominal Value, % of GDP  
## 2957 Gross PSD, General Gov., Long-term, With payment due in more than one year, Special Drawing Rights, Nominal Value, % of GDP  
## 2960 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, Special Drawing Rights, Nominal Value, % of GDP  
## 2965 Gross PSD, Nonfinancial Public Corp., All maturities, Special Drawing Rights, Nominal Value, % of GDP  
## 2970 Gross PSD, Budgetary Central Gov., Long-term, All instruments, Nominal Value, % of GDP  
## 2973 Gross PSD, Central Gov., Long-term, All instruments, Nominal Value, % of GDP  
## 2976 Gross PSD, Financial Public Corp., Long-term, All instruments, Nominal Value, % of GDP  
## 2979 Gross PSD, General Gov., Long-term, All instruments, Nominal Value, % of GDP  
## 2982 Gross PSD, Budgetary Central Gov., Long-term, With payment due in one year or less, All instruments, Nominal Value, % of GDP  
## 2985 Gross PSD, Central Gov., Long-term, With payment due in one year or less, All instruments, Nominal Value, % of GDP  
## 2988 Gross PSD, Financial Public Corp., Long-term, With payment due in one year or less, All instruments, Nominal Value, % of GDP  
## 2991 Gross PSD, General Gov., Long-term, With payment due in one year or less, All instruments, Nominal Value, % of GDP  
## 2994 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in one year or less, All instruments, Nominal Value, % of GDP  
## 2999 Gross PSD, Budgetary Central Gov., Long-term, With payment due in more than one year, All instruments, Nominal Value, % of GDP  
## 3002 Gross PSD, Central Gov., Long-term, With payment due in more than one year, All instruments, Nominal Value, % of GDP  
## 3005 Gross PSD, Financial Public Corp., Long-term, With payment due in more than one year, All instruments, Nominal Value, % of GDP  
## 3008 Gross PSD, General Gov., Long-term, With payment due in more than one year, All instruments, Nominal Value, % of GDP  
## 3011 Gross PSD, Nonfinancial Public Corp., Long-term, With payment due in more than one year, All instruments, Nominal Value, % of GDP  
## 3016 Gross PSD, Nonfinancial Public Corp., Long-term, All instruments, Nominal Value, % of GDP  
## 3022 Gross PSD, Budgetary Central Gov., Short-term, Currency and deposits, Nominal Value, % of GDP  
## 3025 Gross PSD, Central Gov., Short-term, Currency and deposits, Nominal Value, % of GDP  
## 3028 Gross PSD, Financial Public Corp., Short-term, Currency and deposits, Nominal Value, % of GDP  
## 3031 Gross PSD, General Gov., Short-term, Currency and deposits, Nominal Value, % of GDP  
## 3034 Gross PSD, Nonfinancial Public Corp., Short-term, Currency and deposits, Nominal Value, % of GDP  
## 3039 Gross PSD, Budgetary Central Gov., Short-term, Debt securities, Nominal Value, % of GDP  
## 3042 Gross PSD, Central Gov., Short-term, Debt securities, Nominal Value, % of GDP  
## 3045 Gross PSD, Financial Public Corp., Short-term, Debt securities, Nominal Value, % of GDP  
## 3048 Gross PSD, General Gov., Short-term, Debt securities, Nominal Value, % of GDP  
## 3051 Gross PSD, Nonfinancial Public Corp., Short-term, Debt securities, Nominal Value, % of GDP  
## 3056 Gross PSD, Budgetary Central Gov., Short-term, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 3059 Gross PSD, Central Gov., Short-term, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 3062 Gross PSD, Financial Public Corp., Short-term, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 3065 Gross PSD, General Gov., Short-term, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 3068 Gross PSD, Nonfinancial Public Corp., Short-term, Insurance, pensions, and standardized guarantee schemes, Nominal Value, % of GDP  
## 3073 Gross PSD, Budgetary Central Gov., Short-term, Loans, Nominal Value, % of GDP  
## 3076 Gross PSD, Central Gov., Short-term, Loans, Nominal Value, % of GDP  
## 3079 Gross PSD, Financial Public Corp., Short-term, Loans, Nominal Value, % of GDP  
## 3082 Gross PSD, General Gov., Short-term, Loans, Nominal Value, % of GDP  
## 3085 Gross PSD, Nonfinancial Public Corp., Short-term, Loans, Nominal Value, % of GDP  
## 3090 Gross PSD, Budgetary Central Gov., Short-term, Other accounts payable, Nominal Value, % of GDP  
## 3093 Gross PSD, Central Gov., Short-term, Other accounts payable, Nominal Value, % of GDP  
## 3096 Gross PSD, Financial Public Corp., Short-term, Other accounts payable, Nominal Value, % of GDP  
## 3099 Gross PSD, General Gov., Short-term, Other accounts payable, Nominal Value, % of GDP  
## 3102 Gross PSD, Nonfinancial Public Corp., Short-term, Other accounts payable, Nominal Value, % of GDP  
## 3107 Gross PSD, Budgetary Central Gov., Short-term, All instruments, Nominal Value, % of GDP  
## 3110 Gross PSD, Central Gov., Short-term, All instruments, Nominal Value, % of GDP  
## 3113 Gross PSD, Financial Public Corp., Short-term, All instruments, Nominal Value, % of GDP  
## 3116 Gross PSD, General Gov., Short-term, All instruments, Nominal Value, % of GDP  
## 3119 Gross PSD, Nonfinancial Public Corp., Short-term, All instruments, Nominal Value, % of GDP  
## 3615 Debt on Concessional terms to GDP (% of GDP)  
## 3618 Debt on Non-concessional terms to GDP (% of GDP)  
## 3773 Debt outstanding and disbursed, Total to GDP (% of GDP)  
## 5376 Net ODA received (% of GDP)  
## 5447 Net ODA received from DAC donors (% of recipient's GDP)  
## 5452 Net ODA received from multilateral donors (% of GDP)  
## 5460 Net ODA received from non-DAC bilateral donors (% of GDP)  
## 5466 Net ODA received (% of GDP)  
## 5616 Total debt service (% of GDP)  
## 5969 Energy intensity level of primary energy (MJ/$2017 PPP GDP)  
## 5993 GDP per unit of energy use (1987 US$ per kg of oil equivalent)  
## 5994 GDP per unit of energy use (2000 US$ per kg of oil equivalent)  
## 5995 GDP per unit of energy use (PPP $ per kg of oil equivalent)  
## 5996 GDP per unit of energy use (constant 2017 PPP $ per kg of oil equivalent)  
## 6004 Energy use (kg of oil equivalent) per $1,000 GDP (constant 2017 PPP)  
## 6023 CO2 emissions, industrial (kg per 1987 US$ of GDP)  
## 6027 CO2 emissions, industrial (kg per 1987 US$ of GDP)  
## 6028 CO2 emissions (kg per 2015 US$ of GDP)  
## 6033 CO2 emissions (kg per PPP $ of GDP)  
## 6034 CO2 emissions (kg per 2017 PPP $ of GDP)  
## 6164 Water productivity, total (constant 2015 US$ GDP per cubic meter of total freshwater withdrawal)  
## 6182 GDP per unit of energy use (1987 US$ per kg of oil equivalent)  
## 6236 Deposit insurance coverage (% of GDP per capita)  
## 6589 Domestic credit to private sector by banks (% of GDP)  
## 6595 Total reserves includes gold (% of GDP)  
## 7389 Claims on governments and other public entities (% of GDP)  
## 7398 Monetary Sector credit to private sector (% GDP)  
## 7407 Broad money (% of GDP)  
## 7414 Money and quasi money (M2) as % of GDP  
## 7415 Money and quasi money (M2) as % of GDP  
## 7417 Income velocity of money (GDP/M2)  
## 7422 Quasi-liquid liabilities (% of GDP)  
## 7423 Seignorage (% of GDP)  
## 7462 Claims on central government, etc. (% GDP)  
## 7463 Claims on other sectors of the domestic economy (% of GDP)  
## 7464 Domestic credit provided by financial sector (% of GDP)  
## 7465 Domestic credit provided by banking sector (% of GDP)  
## 7467 Domestic credit to private sector (% of GDP)  
## 7468 Credit to private sector (% of GDP)  
## 7469 Liquid liabilities (M3) as % of GDP  
## 7470 Liquid liabilities (M3) as % of GDP  
## 7471 Quasi-liquid liabilities (% of GDP)  
## 7530 Overall budget balance, including grants (% of GDP)  
## 7531 Overall budget deficit, including grants (% of GDP)  
## 7540 Central government debt, total (% of GDP)  
## 7541 Central government debt, total (% of GDP)  
## 7545 Financing from abroad (% of GDP)  
## 7546 Financing from abroad (% of GDP)  
## 7550 Domestic financing, total (% of GDP)  
## 7551 Domestic finanacing (% of GDP)  
## 7561 Current revenue, excluding grants (% of GDP)  
## 7564 Current revenue (% of GDP)  
## 7566 Central government revenues, excluding all grants (% of GDP)  
## 7569 Current revenue, excluding grants (% of GDP)  
## 7571 SOE external debt (% of GDP)  
## 7573 State-owned enterprises, economic activity (% of GDP)  
## 7574 SOE economic activity (% of GDP)  
## 7577 State-owned enterprises, net financial flows from government (% of GDP)  
## 7578 SOE net financial flows from government (% of GDP)  
## 7579 State-owned enterprises, overall balance before transfers (% of GDP)  
## 7605 Tax revenue (% of GDP)  
## 7606 Tax revenue (% of GDP)  
## 7624 Defense expenditure (% of GDP)  
## 7627 Research and development expenditure (% of GDP)  
## 7630 Expenditure, total (% of GDP)  
## 7631 Total expenditure (% of GDP)  
## 7638 Net acquisition of financial assets (% of GDP)  
## 7641 Cash surplus/deficit (% of GDP)  
## 7646 Central government debt, total (% of GDP)  
## 7650 Net incurrence of liabilities, domestic (% of GDP)  
## 7652 Net incurrence of liabilities, foreign (% of GDP)  
## 7654 Net incurrence of liabilities, total (% of GDP)  
## 7656 Net investment in nonfinancial assets (% of GDP)  
## 7658 Net lending (+) / net borrowing (-) (% of GDP)  
## 7669 Revenue, excluding grants (% of GDP)  
## 7684 Tax revenue (% of GDP)  
## 7701 Expense (% of GDP)  
## 7792 Private credit by deposit money banks to GDP (%)  
## 7793 Deposit money banks'' assets to GDP (%)  
## 7794 Nonbank financial institutions’ assets to GDP (%)  
## 7796 Liquid liabilities to GDP (%)  
## 7797 Central bank assets to GDP (%)  
## 7798 Mutual fund assets to GDP (%)  
## 7799 Financial system deposits to GDP (%)  
## 7800 Life insurance premium volume to GDP (%)  
## 7801 Non-life insurance premium volume to GDP (%)  
## 7802 Insurance company assets to GDP (%)  
## 7803 Private credit by deposit money banks and other financial institutions to GDP (%)  
## 7804 Pension fund assets to GDP (%)  
## 7805 Domestic credit to private sector (% of GDP)  
## 7806 Stock market capitalization to GDP (%)  
## 7807 Stock market total value traded to GDP (%)  
## 7808 Outstanding domestic private debt securities to GDP (%)  
## 7809 Outstanding domestic public debt securities to GDP (%)  
## 7810 Outstanding international private debt securities to GDP (%)  
## 7811 Outstanding international public debt securities to GDP (%)  
## 7812 International debt issues to GDP (%)  
## 7813 Gross portfolio equity liabilities to GDP (%)  
## 7814 Gross portfolio equity assets to GDP (%)  
## 7815 Gross portfolio debt liabilities to GDP (%)  
## 7816 Gross portfolio debt assets to GDP (%)  
## 7817 Syndicated loan issuance volume to GDP (%)  
## 7818 Corporate bond issuance volume to GDP (%)  
## 7821 Credit flows by fintech and bigtech companies to GDP (%)  
## 7822 Credit flows by fintech and bigtech companies to GDP (%)  
## 7830 Credit to government and state-owned enterprises to GDP (%)  
## 7837 Bank deposits to GDP (%)  
## 7843 Loans from nonresident banks (net) to GDP (%)  
## 7844 Loans from nonresident banks (amounts outstanding) to GDP (%)  
## 7848 Remittance inflows to GDP (%)  
## 7849 Consolidated foreign claims of BIS reporting banks to GDP (%)  
## 7854 Global leasing volume to GDP (%)  
## 7855 Total factoring volume to GDP (%)  
## 8686 Information and communication technology expenditure (% of GDP)  
## 8959 Railways, goods transported (ton-km per PPP $ million of GDP)  
## 8961 Railways, passenger-km (per PPP $ million of GDP)  
## 9068 Telecommunications revenue (% GDP)  
## 10943 Military expenditure (% of GDP)  
## 10948 GDP on Accommodation & Food Beverages Activity Sector (in IDR Million), SNA 2008, Current Price  
## 10949 GDP on Accommodation & Food Beverages Activity Sector (in IDR Million), SNA 2008, Constant Price  
## 10950 GDP on Agriculture Sector (in IDR Million), Current Price  
## 10951 GDP on Agriculture Sector (in IDR Million), Constant Price  
## 10952 GDP on Agriculture, Forestry & Fisheries Sector (in IDR Million), SNA 2008, Current Price  
## 10953 GDP on Agriculture, Forestry & Fisheries Sector (in IDR Million), SNA 2008, Constant Price  
## 10954 GDP on Business Services Sector (in IDR Million), SNA 2008, Current Price  
## 10955 GDP on Business Services Sector (in IDR Million), SNA 2008, Constant Price  
## 10956 GDP on Construction Sector (in IDR Million), Current Price  
## 10957 GDP on Construction Sector (in IDR Million), Constant Price  
## 10958 GDP on Construction Sector (in IDR Million), SNA 2008, Current Price  
## 10959 GDP on Construction Sector (in IDR Million), SNA 2008, Constant Price  
## 10960 GDP on Education Services Sector (in IDR Million), SNA 2008, Current Price  
## 10961 GDP on Education Services Sector (in IDR Million), SNA 2008, Constant Price  
## 10962 GDP on Electricity & Gas Supply Sector (in IDR Million), SNA 2008, Current Price  
## 10963 GDP on Electricity & Gas Supply Sector (in IDR Million), SNA 2008, Constant Price  
## 10964 Total GDP excluding Oil and Gas (in IDR Million), Current Price  
## 10965 Total GDP excluding Oil and Gas (in IDR Million), Constant Price  
## 10966 GDP on Financial Service Sector (in IDR Million), Current Price  
## 10967 GDP on Financial Service Sector (in IDR Million), Constant Price  
## 10968 GDP on Financial & Insurance Activity Sector (in IDR Million), SNA 2008, Current Price  
## 10969 GDP on Financial & Insurance Activity Sector (in IDR Million), SNA 2008, Constant Price  
## 10970 GDP on Human Health & Social Work Activity Sector (in IDR Million), SNA 2008, Current Price  
## 10971 GDP on Human Health & Social Work Activity Sector (in IDR Million), SNA 2008, Constant Price  
## 10972 Total GDP including Oil and Gas (in IDR Million), Current Price  
## 10973 Total GDP including Oil and Gas (in IDR Million), Constant Price  
## 10974 Total GDP including Oil and Gas (in IDR Million), SNA 2008, Current Price  
## 10975 Total GDP including Oil and Gas (in IDR Million), SNA 2008, Constant Price  
## 10976 GDP on Information & Communication Sector (in IDR Million), SNA 2008, Current Price  
## 10977 GDP on Information & Communication Sector (in IDR Million), SNA 2008, Constant Price  
## 10978 GDP on Mining and Quarrying Sector (in IDR Million), Current Price  
## 10979 GDP on Mining and Quarrying Sector (in IDR Million), Constant Price  
## 10980 GDP on Mining & Quarrying Sector (in IDR Million), SNA 2008, Current Price  
## 10981 GDP on Mining & Quarrying Sector (in IDR Million), SNA 2008, Constant Price  
## 10982 GDP on Manufacturing Sector (in IDR Million), Current Price  
## 10983 GDP on Manufacturing Sector (in IDR Million), Constant Price  
## 10984 GDP on Manufacturing Industry Sector (in IDR Million), SNA 2008, Current Price  
## 10985 GDP on Manufacturing Industry Sector (in IDR Million), SNA 2008, Constant Price  
## 10986 GDP on Public Administration, Defense & Compulsory Social Security Sector (in IDR Million), SNA 2008, Current Price  
## 10987 GDP on Public Administration, Defense & Compulsory Social Security Sector (in IDR Million), SNA 2008, Constant Price  
## 10988 GDP on Real Estate Sector (in IDR Million), SNA 2008, Current Price  
## 10989 GDP on Real Estate Sector (in IDR Million), SNA 2008, Constant Price  
## 10990 GDP on Other Service Sector (in IDR Million), Current Price  
## 10991 GDP on Other Service Sector (in IDR Million), Constant Price  
## 10992 GDP on Other Services Sector (in IDR Million), SNA 2008, Current Price  
## 10993 GDP on Other Services Sector (in IDR Million), SNA 2008, Constant Price  
## 10994 GDP on Transportation and Telecommunication Sector (in IDR Million), Current Price  
## 10995 GDP on Transportation and Telecommunication Sector (in IDR Million), Constant Price  
## 10996 GDP on Transportation & Storage Sector (in IDR Million), SNA 2008, Current Price  
## 10997 GDP on Transportation & Storage Sector (in IDR Million), SNA 2008, Constant Price  
## 10998 GDP on Trade, Hotel and Restaurant Sector (in IDR Million), Current Price  
## 10999 GDP on Trade, Hotel and Restaurant Sector (in IDR Million), Constant Price  
## 11000 GDP on Wholesales & Retail Trade, Repair of Motor Vehicles & Motorcycles Sector (in IDR Million), SNA 2008, Current Price  
## 11001 GDP on Wholesales & Retail Trade, Repair of Motor Vehicles & Motorcycles Sector (in IDR Million), SNA 2008, Constant Price  
## 11002 GDP on Utilities Sector (in IDR Million), Current Price  
## 11003 GDP on Utilities Sector (in IDR Million), Constant Price  
## 11004 GDP on Water Supply, Sewerage, Waste & Recycling Management Sector (in IDR Million), SNA 2008, Current Price  
## 11005 GDP on Water Supply, Sewerage, Waste & Recycling Management Sector (in IDR Million), SNA 2008, Constant Price  
## 11014 General government final consumption expenditure (% of GDP)  
## 11025 Household final consumption expenditure, etc. (% of GDP)  
## 11042 Households and NPISHs final consumption expenditure (% of GDP)  
## 11052 Final consumption expenditure, etc. (% of GDP)  
## 11060 Total consumption: contribution to growth of GDP (%)  
## 11061 Final consumption expenditure (% of GDP)  
## 11071 Gross national expenditure (% of GDP)  
## 11083 Exports of goods and services (% of GDP)  
## 11085 GDP expenditure on general government consumption (in IDR Million)  
## 11086 GDP expenditure on general government consumption (in IDR Million), SNA 2008, Current Price  
## 11087 GDP expenditure on non profit private institution consumption (in IDR Million)  
## 11088 GDP expenditure on non profit private institution consumption (in IDR Million), SNA 2008, Current Price  
## 11089 GDP expenditure on private consumption (in IDR Million)  
## 11090 GDP expenditure on private consumption (in IDR Million), SNA 2008, Current Price  
## 11091 GDP expenditure on exports (in IDR Million)  
## 11092 GDP expenditure on exports (in IDR Million), SNA 2008, Current Price  
## 11117 Gross fixed capital formation, private sector (% of GDP)  
## 11122 Gross public investment (% of GDP)  
## 11125 GDP expenditure on gross fixed capital formation (in IDR Million)  
## 11132 GDP expenditure on gross fixed capital formation (in IDR Million), SNA 2008, Current Price  
## 11133 Gross fixed capital formation (% of GDP)  
## 11134 GDP expenditure on imports (in IDR Million)  
## 11135 GDP expenditure on imports (in IDR Million), SNA 2008, Current Price  
## 11136 GDP expenditure on inter-region net exports (in IDR Million), SNA 2008, Current Price  
## 11141 GDP expenditure on changes in stock (in IDR Million)  
## 11145 GDP expenditure on changes in stock (in IDR Million), SNA 2008, Current Price  
## 11154 Total GDP based on expenditure (in IDR Million)  
## 11161 Total GDP based on expenditure (in IDR Million), SNA 2008, Current Price  
## 11162 Gross domestic investment: contr. to growth of GDP(%)  
## 11163 Gross capital formation (% of GDP)  
## 11173 Imports of goods and services (% of GDP)  
## 11174 Merchandise trade to GDP ratio (%)  
## 11180 Resource balance: contribution to growth of GDP (%)  
## 11181 External balance on goods and services (% of GDP)  
## 11184 Trade (% of GDP)  
## 11191 Agriculture: contribution to growth of GDP (%)  
## 11195 Industry: contribution to growth of GDP (%)  
## 11201 Services: contribution to growth of GDP (%)  
## 11209 Real agricultural GDP per capita growth rate (%)  
## 11219 Real agricultural GDP growth rates (%)  
## 11220 Agriculture, forestry, and fishing, value added (% of GDP)  
## 11240 Manufacturing, value added (% of GDP)  
## 11254 Industry: contribution to growth of GDP (%)  
## 11255 Industry (including construction), value added (% of GDP)  
## 11273 Discrepancy in GDP, value added (current US$)  
## 11274 Discrepancy in GDP, value added (current LCU)  
## 11275 Discrepancy in GDP, value added (constant LCU)  
## 11292 Services: contribution to growth of GDP (%)  
## 11293 Services, etc., value added (% of GDP)  
## 11299 Services, value added (% of GDP)  
## 11388 Agricultural support estimate (% of GDP)  
## 11392 Coal rents (% of GDP)  
## 11393 Inflation, GDP deflator (annual %)  
## 11394 Inflation, GDP deflator (annual %)  
## 11395 Inflation, GDP deflator: linked series (annual %)  
## 11396 GDP deflator (base year varies by country)  
## 11397 GDP deflator (1987 = 100)  
## 11398 GDP deflator: linked series (base year varies by country)  
## 11399 Discrepancy in expenditure estimate of GDP (current US$)  
## 11400 Discrepancy in expenditure estimate of GDP (current LCU)  
## 11401 Discrepancy in expenditure estimate of GDP (constant LCU)  
## 11405 GDP at factor cost (constant 1987 US$)  
## 11407 GDP at factor cost (constant 1987 LCU)  
## 11408 Forest rents (% of GDP)  
## 11409 Mineral rents (% of GDP)  
## 11410 GDP (current US$)  
## 11411 GDP deflator, index (2000=100; US$ series)  
## 11412 GDP (current LCU)  
## 11413 GDP: linked series (current LCU)  
## 11414 GDP deflator, period average (LCU index 2000=100)  
## 11415 GDP Deflator  
## 11416 GDP (constant 2015 US$)  
## 11417 GDP at market prices (constant 1987 US$)  
## 11418 GDP growth (annual %)  
## 11419 GDP (constant LCU)  
## 11420 GDP at market prices (constant 1987 LCU)  
## 11421 GDP growth (annual %)  
## 11422 GDP, PPP (current international $)  
## 11423 GDP, PPP (constant 2017 international $)  
## 11424 GDP, PPP (constant 1987 international $)  
## 11425 GDP deflator (1987=100,Index)  
## 11426 GDP deflator, end period (base year varies by country)  
## 11428 Natural gas rents (% of GDP)  
## 11429 GDP per capita (current US$)  
## 11430 GDP per capita (current LCU)  
## 11431 GDP per capita (constant 2015 US$)  
## 11432 GDP per capita growth (annual %)  
## 11433 GDP per capita (constant LCU)  
## 11434 GDP per capita, PPP (current international $)  
## 11435 GDP per capita, PPP (constant 2017 international $)  
## 11436 GDP per capita, PPP (constant 1987 international $)  
## 11437 GDP per capita, PPP annual growth (%)  
## 11438 Oil rents (% of GDP)  
## 11439 Total natural resources rents (% of GDP)  
## 11452 Gross domestic savings (% of GDP)  
## 11457 Genuine savings: education expenditure (% of GDP)  
## 11458 Genuine savings: carbon dioxide damage (% of GDP)  
## 11459 Genuine savings: net forest depletion (% of GDP)  
## 11460 Genuine savings: consumption of fixed capital (% of GDP)  
## 11461 Genuine savings: mineral depletion (% of GDP)  
## 11462 Genuine savings: energy depletion (% of GDP)  
## 11463 Genuine savings: net domestic savings (% of GDP)  
## 11464 Genuine domestic savings (% of GDP)  
## 11497 Gross savings (% of GDP)  
## 11535 Annual percentage growth rate of GDP at market prices based on constant 2010 US Dollars.  
## 11536 GDP,current US$,millions,seas. adj.,  
## 11537 GDP,current LCU,millions,seas. adj.,  
## 11538 GDP,constant 2010 US$,millions,seas. adj.,  
## 11539 GDP,constant 2010 LCU,millions,seas. adj.,  
## 11564 PPP conversion factor, GDP (LCU per international $)  
## 11565 2005 PPP conversion factor, GDP (LCU per international $)  
## 11566 Price level ratio of PPP conversion factor (GDP) to market exchange rate  
## 15599 (De Facto) Average principal salary as percent of GDP per capita  
## 15663 (De Jure) Average starting public-school teacher salary as percent of GDP per capita  
## 15890 Public Expenditure on Education (% GDP)  
## 15895 Public spending on education, primary (% of GDP)  
## 15896 Government expenditure per student, primary (% of GDP per capita)  
## 15899 Public spending on education, secondary (% of GDP)  
## 15900 Government expenditure per student, secondary (% of GDP per capita)  
## 15904 Public spending on education, tertiary (% of GDP)  
## 15905 Government expenditure per student, tertiary (% of GDP per capita)  
## 15908 Government expenditure on education, total (% of GDP)  
## 15928 Rail traffic (km per million US$ GDP)  
## 16886 Current health expenditure (% of GDP)  
## 16895 Domestic general government health expenditure (% of GDP)  
## 16899 Public Expenditure on Health (% GDP)  
## 16900 Capital health expenditure (% of GDP)  
## 16912 Health expenditure, private (% of GDP)  
## 16915 Health expenditure, public (% of GDP)  
## 16921 Health expenditure, total (% of GDP)  
## 17073 GDP per person employed (constant 2017 PPP $)  
## 17074 GDP per person employed (annual % growth)  
## 17075 GDP per person employed, index (1980 = 100)  
## 17833 Trade (% of GDP, PPP)  
## 17834 Merchandise trade (% of GDP)  
## 17835 Trade in goods (% of goods GDP)  
## 20066 Government expenditure on pre-primary education as % of GDP (%)  
## 20067 Government expenditure on primary education as % of GDP (%)  
## 20068 Government expenditure on lower secondary education as a percentage of GDP (%)  
## 20069 Government expenditure on secondary education as % of GDP (%)  
## 20070 Government expenditure on secondary and post-secondary non-tertiary vocational education as % of GDP (%)  
## 20071 Government expenditure on upper secondary education as a percentage of GDP (%)  
## 20072 Government expenditure on post-secondary non-tertiary education as % of GDP (%)  
## 20073 Government expenditure on tertiary education as % of GDP (%)  
## 20123 Initial government funding per pre-primary student as a percentage of GDP per capita  
## 20124 Initial government funding per primary student as a percentage of GDP per capita  
## 20125 Initial household funding per primary student as a percentage of GDP per capita  
## 20126 Initial government funding per lower secondary student as a percentage of GDP per capita  
## 20127 Initial government funding per secondary student as a percentage of GDP per capita  
## 20128 Initial household funding per secondary student as a percentage of GDP per capita  
## 20129 Initial government funding per upper secondary student as a percentage of GDP per capita  
## 20130 Initial government funding per tertiary student as a percentage of GDP per capita  
## 20131 Initial household funding per tertiary student as a percentage of GDP per capita

WDIsearch(string = "NY.GDP.MKTP.PP.KD", field = "indicator", short = FALSE)

## indicator name  
## 11423 NY.GDP.MKTP.PP.KD GDP, PPP (constant 2017 international $)  
## 11424 NY.GDP.MKTP.PP.KD.87 GDP, PPP (constant 1987 international $)  
## description  
## 11423 PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the country plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2017 international dollars.  
## 11424   
## sourceDatabase  
## 11423 World Development Indicators  
## 11424 WDI Database Archives  
## sourceOrganization  
## 11423 International Comparison Program, World Bank | World Development Indicators database, World Bank | Eurostat-OECD PPP Programme.  
## 11424

#### Assignment

1. Find at least one WDI indicator with its name and its code.
2. Find at least one pair of WDI indicators with their names and their codes you want to study their relation.

## GDP and GDP per Capita

1. GDP, PPP (constant 2017 international $): NY.GDP.MKTP.PP.KD
2. Population, total: SP.POP.TOTL
3. Calculate GDP per Capita
   * GDP per capita, PPP (constant 2017 international $): NY.GDP.PCAP.PP.KD

* GDP, PPP (constant 2017 international $) PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the country plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2017 international dollars. ID: NY.GDP.MKTP.PP.KD
* Population, total Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are midyear estimates. ID: SP.POP.TOTL

df\_gdppcap <- WDI(indicator = c(gdp = "NY.GDP.MKTP.PP.KD", pop = "SP.POP.TOTL", gdppcap = "NY.GDP.PCAP.PP.KD"), extra = TRUE)

write\_csv(df\_gdppcap, "data/gdppcap.csv")

df\_gdppcap <- read\_csv("data/gdppcap.csv")

## Rows: 16758 Columns: 15  
## ── Column specification ────────────────────────────────────────────────────────  
## Delimiter: ","  
## chr (7): country, iso2c, iso3c, region, capital, income, lending  
## dbl (6): year, gdp, pop, gdppcap, longitude, latitude  
## lgl (1): status  
## date (1): lastupdated  
##   
## ℹ Use `spec()` to retrieve the full column specification for this data.  
## ℹ Specify the column types or set `show\_col\_types = FALSE` to quiet this message.

str(df\_gdppcap)

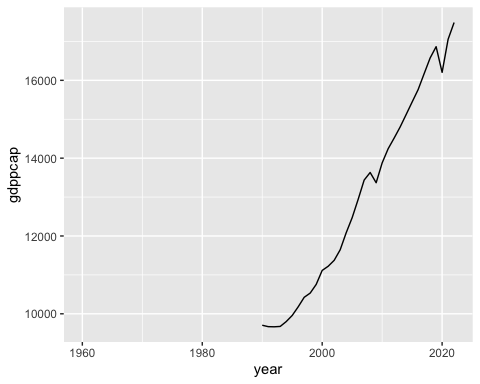
## spc\_tbl\_ [16,758 × 15] (S3: spec\_tbl\_df/tbl\_df/tbl/data.frame)  
## $ country : chr [1:16758] "Afghanistan" "Afghanistan" "Afghanistan" "Afghanistan" ...  
## $ iso2c : chr [1:16758] "AF" "AF" "AF" "AF" ...  
## $ iso3c : chr [1:16758] "AFG" "AFG" "AFG" "AFG" ...  
## $ year : num [1:16758] 2014 2012 2009 2013 1971 ...  
## $ status : logi [1:16758] NA NA NA NA NA NA ...  
## $ lastupdated: Date[1:16758], format: "2023-09-19" "2023-09-19" ...  
## $ gdp : num [1:16758] 7.02e+10 6.47e+10 4.99e+10 6.83e+10 NA ...  
## $ pop : num [1:16758] 32716210 30466479 27385307 31541209 11015857 ...  
## $ gdppcap : num [1:16758] 2144 2123 1824 2165 NA ...  
## $ region : chr [1:16758] "South Asia" "South Asia" "South Asia" "South Asia" ...  
## $ capital : chr [1:16758] "Kabul" "Kabul" "Kabul" "Kabul" ...  
## $ longitude : num [1:16758] 69.2 69.2 69.2 69.2 69.2 ...  
## $ latitude : num [1:16758] 34.5 34.5 34.5 34.5 34.5 ...  
## $ income : chr [1:16758] "Low income" "Low income" "Low income" "Low income" ...  
## $ lending : chr [1:16758] "IDA" "IDA" "IDA" "IDA" ...  
## - attr(\*, "spec")=  
## .. cols(  
## .. country = col\_character(),  
## .. iso2c = col\_character(),  
## .. iso3c = col\_character(),  
## .. year = col\_double(),  
## .. status = col\_logical(),  
## .. lastupdated = col\_date(format = ""),  
## .. gdp = col\_double(),  
## .. pop = col\_double(),  
## .. gdppcap = col\_double(),  
## .. region = col\_character(),  
## .. capital = col\_character(),  
## .. longitude = col\_double(),  
## .. latitude = col\_double(),  
## .. income = col\_character(),  
## .. lending = col\_character()  
## .. )  
## - attr(\*, "problems")=<externalptr>

df\_gdppcap |> select(region, income, lending) |> lapply(unique)

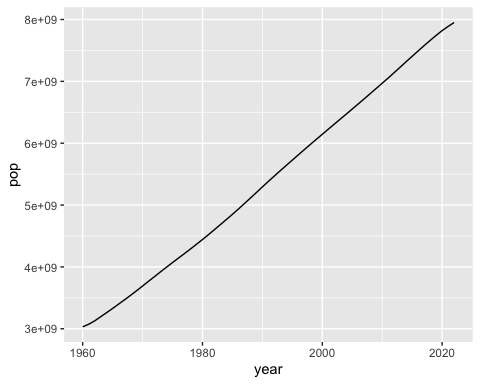
## $region  
## [1] "South Asia" "Aggregates"   
## [3] "Europe & Central Asia" "Middle East & North Africa"  
## [5] "East Asia & Pacific" "Sub-Saharan Africa"   
## [7] "Latin America & Caribbean" "North America"   
## [9] NA   
##   
## $income  
## [1] "Low income" "Aggregates" "Upper middle income"  
## [4] "Lower middle income" "High income" NA   
## [7] "Not classified"   
##   
## $lending  
## [1] "IDA" "Aggregates" "IBRD" "Not classified"  
## [5] "Blend" NA

COUNTRY <- "World"  
df\_gdppcap |> filter(country == COUNTRY) |>  
 ggplot(aes(year, gdppcap)) + geom\_line()

## Warning: Removed 30 rows containing missing values (`geom\_line()`).



COUNTRY <- "World"  
df\_gdppcap |> filter(country == COUNTRY) |>  
 ggplot(aes(year, pop)) + geom\_line()



#### Exercise.

Write your observations and questions.

### GDP Per Capita

df\_gdppcap2 <- df\_gdppcap |> drop\_na(pop) |>   
 mutate(PCAP = gdp/pop, .after = gdppcap)

df\_gdppcap2

## # A tibble: 16,665 × 16  
## country iso2c iso3c year status lastupdated gdp pop gdppcap PCAP  
## <chr> <chr> <chr> <dbl> <lgl> <date> <dbl> <dbl> <dbl> <dbl>  
## 1 Afghanist… AF AFG 2014 NA 2023-09-19 7.02e10 3.27e7 2144. 2144.  
## 2 Afghanist… AF AFG 2012 NA 2023-09-19 6.47e10 3.05e7 2123. 2123.  
## 3 Afghanist… AF AFG 2009 NA 2023-09-19 4.99e10 2.74e7 1824. 1824.  
## 4 Afghanist… AF AFG 2013 NA 2023-09-19 6.83e10 3.15e7 2165. 2165.  
## 5 Afghanist… AF AFG 1971 NA 2023-09-19 NA 1.10e7 NA NA   
## 6 Afghanist… AF AFG 2015 NA 2023-09-19 7.12e10 3.38e7 2109. 2109.  
## 7 Afghanist… AF AFG 1969 NA 2023-09-19 NA 1.05e7 NA NA   
## 8 Afghanist… AF AFG 2010 NA 2023-09-19 5.71e10 2.82e7 2026. 2026.  
## 9 Afghanist… AF AFG 2011 NA 2023-09-19 5.74e10 2.92e7 1961. 1961.  
## 10 Afghanist… AF AFG 2008 NA 2023-09-19 4.11e10 2.64e7 1557. 1557.  
## # ℹ 16,655 more rows  
## # ℹ 6 more variables: region <chr>, capital <chr>, longitude <dbl>,  
## # latitude <dbl>, income <chr>, lending <chr>

#### Check against GDP per capita, PPP

df\_gdppcap2 |> drop\_na(gdppcap, PCAP) |> mutate(near = near(gdppcap, PCAP)) |>   
 summarize(numberofdata = n(), sum(near))

df\_gdppcap2 |> filter(!near(gdppcap, PCAP))

## # A tibble: 198 × 16  
## country iso2c iso3c year status lastupdated gdp pop gdppcap PCAP  
## <chr> <chr> <chr> <dbl> <lgl> <date> <dbl> <dbl> <dbl> <dbl>  
## 1 Cyprus CY CYP 2009 NA 2023-09-19 3.11e10 1.11e6 38536. 28028.  
## 2 Cyprus CY CYP 2010 NA 2023-09-19 3.18e10 1.13e6 38399. 28193.  
## 3 Cyprus CY CYP 2005 NA 2023-09-19 2.79e10 1.04e6 37723. 26865.  
## 4 Cyprus CY CYP 2006 NA 2023-09-19 2.92e10 1.06e6 38848. 27641.  
## 5 Cyprus CY CYP 2007 NA 2023-09-19 3.07e10 1.07e6 39968. 28552.  
## 6 Cyprus CY CYP 2008 NA 2023-09-19 3.18e10 1.09e6 40399. 29091.  
## 7 Cyprus CY CYP 2004 NA 2023-09-19 2.66e10 1.02e6 36499. 26083.  
## 8 Cyprus CY CYP 1991 NA 2023-09-19 1.47e10 7.99e5 24770. 18447.  
## 9 Cyprus CY CYP 1992 NA 2023-09-19 1.61e10 8.10e5 26387. 19898.  
## 10 Cyprus CY CYP 1993 NA 2023-09-19 1.62e10 8.26e5 25937. 19660.  
## # ℹ 188 more rows  
## # ℹ 6 more variables: region <chr>, capital <chr>, longitude <dbl>,  
## # latitude <dbl>, income <chr>, lending <chr>

#### Exercise.

Write your observations and questions.

### Visualization

Two useful questions.

1. What type of **variation** occurs **within** my variables?
2. What type of **covariation** occurs **between** my variables?

See [Link](https://posit.cloud/learn/primers/3.1).

#### Ranks.

arrange(desc(gdp)) is to reorder in descending order of gdp, arrange(gdp) in ascending order.

df\_gdppcap |> filter(year == 2022, region != "Aggregates") |>   
 drop\_na(gdp) |> arrange(desc(gdp))

## # A tibble: 183 × 15  
## country iso2c iso3c year status lastupdated gdp pop gdppcap region  
## <chr> <chr> <chr> <dbl> <lgl> <date> <dbl> <dbl> <dbl> <chr>   
## 1 China CN CHN 2022 NA 2023-09-19 2.57e13 1.41e9 18188. East …  
## 2 United St… US USA 2022 NA 2023-09-19 2.16e13 3.33e8 64703. North…  
## 3 India IN IND 2022 NA 2023-09-19 1.01e13 1.42e9 7096. South…  
## 4 Japan JP JPN 2022 NA 2023-09-19 5.21e12 1.25e8 41641. East …  
## 5 Germany DE DEU 2022 NA 2023-09-19 4.50e12 8.41e7 53560. Europ…  
## 6 Russian F… RU RUS 2022 NA 2023-09-19 4.03e12 1.44e8 27584. Europ…  
## 7 Indonesia ID IDN 2022 NA 2023-09-19 3.42e12 2.76e8 12410. East …  
## 8 Brazil BR BRA 2022 NA 2023-09-19 3.25e12 2.15e8 15093. Latin…  
## 9 United Ki… GB GBR 2022 NA 2023-09-19 3.14e12 6.70e7 46831. Europ…  
## 10 France FR FRA 2022 NA 2023-09-19 3.13e12 6.79e7 46020. Europ…  
## # ℹ 173 more rows  
## # ℹ 5 more variables: capital <chr>, longitude <dbl>, latitude <dbl>,  
## # income <chr>, lending <chr>

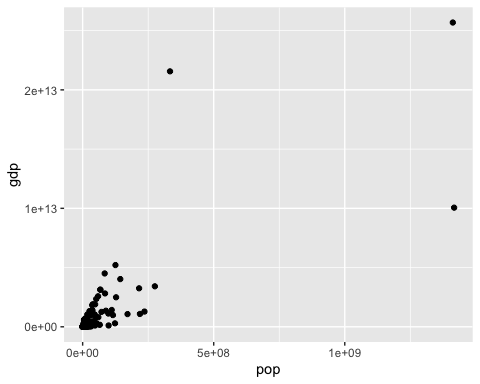
#### Exercises.

1. Find the top 10 of the countries with the highest GDP per capita.
2. Find the top 10 of the countries with the lowest GDP per capita.
3. Find the top 10 of the countries with the largest population.
4. Find the top 10 of the countries with the smallest population.

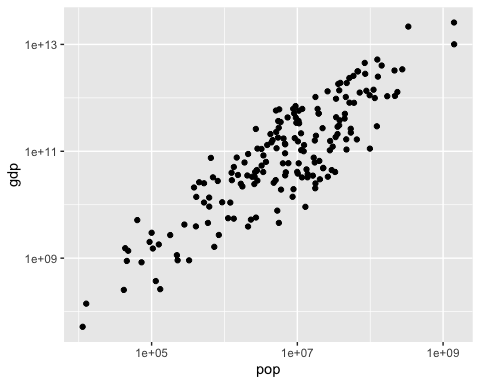
#### Scatter Plot

What type of **covariation** occurs **between** my variables?

df\_gdppcap2 |> filter(year == 2022, region !="Aggregates") |>   
 drop\_na(gdp, pop) |>   
 ggplot(aes(pop, gdp)) + geom\_point()

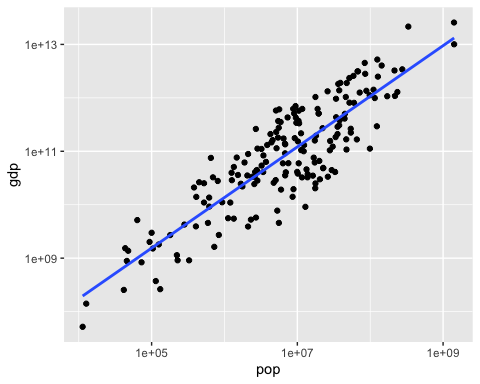


df\_gdppcap2 |> filter(year == 2022, region !="Aggregates") |>   
 drop\_na(gdp, pop) |>   
 ggplot(aes(pop, gdp)) + geom\_point() +   
 scale\_x\_log10() + scale\_y\_log10()

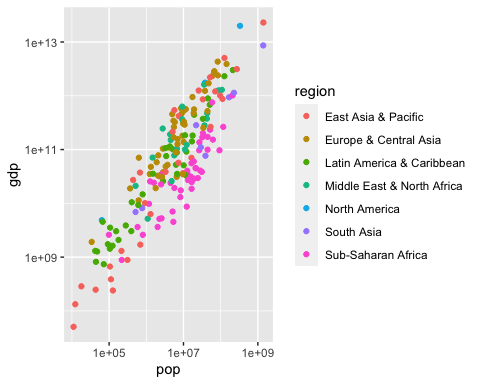


df\_gdppcap2 |> filter(year == 2022, region !="Aggregates") |>   
 drop\_na(gdp, pop) |>   
 ggplot(aes(pop, gdp)) + geom\_point() +   
 geom\_smooth(method = "lm", se = FALSE) +  
 scale\_x\_log10() + scale\_y\_log10()

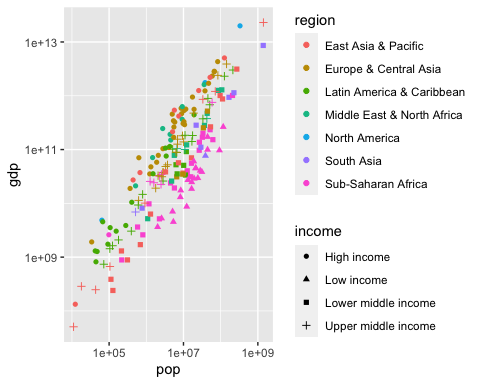
## `geom\_smooth()` using formula = 'y ~ x'



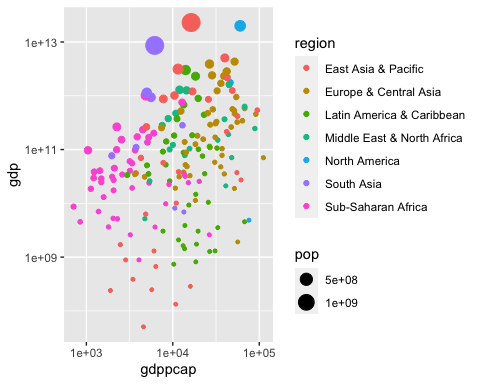
df\_gdppcap2 |> filter(year == 2020, region !="Aggregates") |> drop\_na(gdp, pop) |>   
 ggplot(aes(pop, gdp, color = region)) + geom\_point() +   
 scale\_x\_log10() + scale\_y\_log10()



df\_gdppcap2 |> filter(year == 2020, region !="Aggregates") |>   
 drop\_na(gdp, pop) |>   
 ggplot(aes(pop, gdp, color = region, shape = income)) + geom\_point() +   
 scale\_x\_log10() + scale\_y\_log10()



df\_gdppcap2 |> filter(year == 2020, region !="Aggregates") |>   
 drop\_na(gdp, gdppcap, pop) |>   
 ggplot(aes(gdppcap, gdp, color = region, size = pop)) + geom\_point() +   
 scale\_x\_log10() + scale\_y\_log10()



install.packages("plotly")

library(plotly)  
test <- df\_gdppcap2 |> filter(year == 2020, region !="Aggregates") |> drop\_na(gdp, pop) |>   
 ggplot(aes(color = country, shape = region, pop, gdp)) + geom\_point() +   
 scale\_x\_log10() + scale\_y\_log10() + theme(legend.position = "none")  
test |> ggplotly()