GDP & GDPPCPPP from IMF World Economic Outlook & WDI

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DataDict

Variable	Table	Group	SubGroup	Series	CoVaTrA	Cohort	Definition	Extended Source Defn	Units	CURRENCY	Years	Source
GDP2011	SeriesGDP2011	Economy	Aggregate	Yes	No	No	GDP (MER) at constant 2011 US$, IMF 2024 Apr Release, last year of data is 2026	IMF 2024 Apr Release, projection to 2026; WDI 2024 Mar version, values up to 2022	Bil 2011$		1960-2026	WDI, IMF
GDP2011PCPPP	SeriesGDP2011PCPPP	Economic, Favorites	GDP per Capita	Yes	No	No	GDP per capita (constant 2011 PPP International $)	WDI 2024 Mar version, values up to 2022	2011 PPP$		1960-2022	WDI
GDP2017	SeriesGDP2017	Economy	Aggregate	Yes	No	No	GDP (MER) at constant 2017 US$, IMF 2024 Apr Release, last year of data is 2026	IMF 2024 Apr Release, projection to 2026; WDI 2024 Mar version, values up to 2022	Bil 2017$		1960-2026	WDI, IMF
GDP2017PCPPP	SeriesGDP2017PCPPP	Economic, Favorites	GDP per Capita	Yes	No	No	GDP per capita (constant 2017 PPP International $)	WDI 2024 Mar version, values up to 2022	2017 PPP$		1960-2022	WDI

Note: The most recent update date was in May, 2024.

Instructions on updating GDP & GDPPCPPP

GDP

1. Download data

- GDP (current US$): https://data.worldbank.org/indicator/NY.GDP.MKTP.CD
- GDP growth (annual %): https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG
- IMF: entire dataset https://www.imf.org/en/Publications/WEO/weo-database/2024/April/download-entire-database
  - We will only use WEO Subject Code in (NGDP_RPCH, NGDPD). NGDP_RPCH is the percent change of GDP, and NGDPD is GDP in current US$ in Billions).
- IFsHistSeries: SeriesGDP2011 and SeriesGDP2017, in current US$ in Billions. We will use **2011** as the example in this instruction.

2. Calculate Growth_Rate from SeriesGDP2011. (The growth_rate need to *100 as percent value.)

3. Change all the data we downloaded and calculated to the format of [Country, Year, VAL]

- GDP (current US$): Country, Year, wb_curr
- GDP growth (annual %): Country, Year, wb_growth
- IMF_ NGDP_RPCH: Country, Year, imf_growth
- IMF_ NGDPD: Country, Year, imf_curr (***Note1***)
- SeriesGDP2011: Country, Year, ifs_gdp (***Note1***)
- Growth_Rate: Country, Year, ifs_growth

Note1: imf_curr and ifs_gdp need to be * 1000000000 due to the Billions Unit.

4. Create a new value, **GDP_curr,** primarily using wb_curr.

- If there is a null in wb_curr, then use imf_curr to fill the null.
- If there is a null in both wb_curr and imf_curr, then use ifs_gdp to fill the null.

5. Create a new value, **Growth,** primarily using wb_growth

- If there is a null in wb_growth, then use imf_growth to fill the null.
- If there is a null in both wb_growth and imf_growth, then use ifs_growth to fill the null.
- After filling nulls, use forward fill to fill the rest of nulls.

6. Create a new value, **GDP_new,**

- The base year is 2011 since we use GDP2011 from the IFsHist. It will change to 2017 when we use GDP2017.

- Fill the base year value in GDP_curr to GDP_new for each country.
- After this step, every country will only have 1 value in GDP_new for the base year, e.g. 2011.

7. Fill the rest of the years for **GDP_new** using **Growth** and **GDP_curr**:

- For the years before the base year, 2011, we will calculate the value from 2010 to 1960. E.g. GDP_new in 2010 = GDP_new in 2011*100 / (Growth in 2011 + 100). The year will be rolling for the rest of the calculation.
- For the years from the base year to year_end(***Note2***), 2011, we will calculate the value from 2012 to 2026. E.g. GDP_new in 2012 = GDP_new in 2011*(100 + Growth in 2012) / 100. The year will be rolling for the rest of the calculation.

Note2: year_end is 2 years from now.

8. GDP_new is the new value for GDP2011. Need to be /1000000000 and be rounded to 5 decimals.

GDPPCPPP

1. Download Data

- GDP per capita (current LCU): https://data.worldbank.org/indicator/NY.GDP.PCAP.CN
- GDP deflator (base year varies by country): https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS
- PPP conversion factor, GDP (LCU per international $): https://data.worldbank.org/indicator/PA.NUS.PPP
- GDP per capita growth (annual %): https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG
- IFsHistSeries: SeriesGDP2011PCPPP and SeriesGDP2017PCPPP. We will use **2011** as the example in this instruction.

2. Calculate PCPPP_Growth_Rate from SeriesGDP2011PCPPP. (The growth_rate need to *100 as percent value.)

3. Change all the data we downloaded and calculated to the format of [Country, Year, VAL]

- GDP per capita (current LCU): Country, Year, wb_curr
- GDP deflator (base year varies by country): Country, Year, wb_deflat
- PPP conversion factor, GDP (LCU per international $): Country, Year, wb_ppp_cov
- GDP per capita growth (annual %): Country, Year, wb_growth
- SeriesGDP2011PCPPP: Country, Year, ifs_pcppp
- PCPPP_Growth_Rate: Country, Year, ifs_pcppp_growth

4. Create a new value, **pc_growth,** primarily using wb_growth.

- If there is a null in wb_growth, then use ifs_pcppp_growth to fill the null.

5. Create a new value, **2011_deflat** (if use SeriesGDP2017PCPPP, then the new value is 2017_deflat)

- The base year is 2011 since we use GDP2011PCPPP from the IFsHist. It will change to 2017 when we use GDP2017PCPPP.
- Fill the base year value in wb_deflat in 2011_deflat for each country.
- After this step, every country will only have 1 value in 2011_deflat for the base year, e.g. 2011.
- If there is null value for wb_deflat in the base year, then you can leave the 2011_deflat null.

6. Create a new value, **2011_ppp_cov** (if use SeriesGDP2017PCPPP, then the new value is 2017_ppp_cov)

- Fill the base year value in wb_ppp_cov in 2011_ppp_cov for each country.
- After this step, every country will only have 1 value in 2011_ppp_cov for the base year, e.g. 2011.

7. Create a **new table** using [Country, Year, wb_curr] and [Country, Year, wb_deflat]

- Find the most recent year for each country as well as the wb_curr and wb_deflat in that most recent year.

8. Merge the new table with 2011_deflat and 2011_ppp_cov only using Country.

- The output table would be
  - Country
  - Year (the most recent year for the country)
  - wb_curr (the wb_curr in the most recent year for the country)
  - wb_deflat (the wb_deflat in the most recent year for the country)
  - 2011_deflat (the deflator in the base year, 2011)
  - 2011_ppp_cov (the ppp_cov in the base year, 2011)
- Calculate a new value, **2011_const_pcppp** (if use SeriesGDP2017PCPPP, then the new value is 2017_const_pcppp) using the formula below.
  - **2011_const_pcppp = (wb_curr * (2011_deflat/wb_deflat))/2011_ppp_cov**

9. There will be countries having 0 or null values for **2011_const_pcppp**. We will use the value in ifs_pcppp in the most recent year for these missing countries to fill 2011_const_pcppp. (In this case, the most recent year will change to the most recent year for ifs_pcppp.) Thus, all 188 countries should have a 2011_const_pcppp for its most recent year.

10. Now we have 2011_const_pcppp in the most recent year for each country. We will calculate the 2011_const_pcppp for the rest of the year.

- year_end = 2022 (The most recent year in GDP per capita (current LCU) from WDI).
- Starting from the most recent year to the earliest year. E.g. The most recent year in Afghanistan is 2021, 2021 – 1960, for 2020
  - 2011_const_pcppp in 2020 = 100* 2011_const_pcppp in 2021 / (100 + pc_growth in 2021)
- Starting from the most recent year to the year_end. E.g. The most recent year in Afghanistan is 2021, 2021 – 2022, for 2022
  - 2011_const_pcppp in 2022 = 2011_const_pcppp in 2021 * (100 + pc_growth in 2022)/100

11. The 2011_const_pcppp is the new value for GDP2011PCPPP. Need to be rounded to 5 decimals.
