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Shared Prosperity Dignified Life

Sustainability of PPP Production and the Integration of Temporal and Spatial Price Indices in the Arab Region

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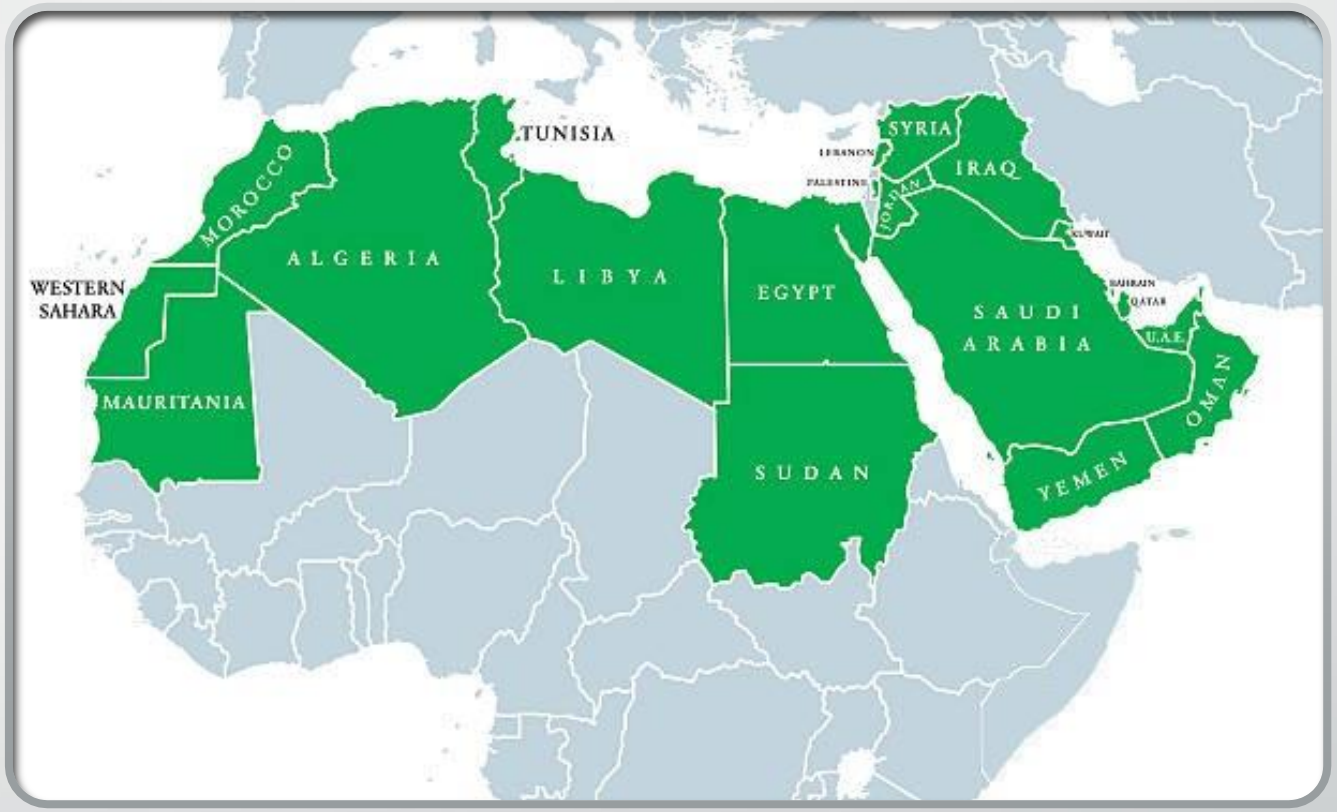
"Regular updates of purchasing power parities are essential to accurately measure and compare the real size of economies, monitor progress toward development goals, and ensure the effectiveness of international policies"

The International Comparison Program

Although the International Comparison Program (ICP) operates on a cyclical basis, it underscores the critical importance of annual data collection and recalibration of purchasing power parities (PPPs). This practice ensures the precision of cross-country comparisons of GDP, living standards, and price levels while accounting for the evolving dynamics of global prices and economic conditions

The remarkable success of the program in the **Arab region**, coupled with the growing relevance of the indicators it generates, has prompted its transformation into an **annual project** incorporated into the regular work programme of the Price Statistics Unit at the United Nations Economic and Social Commission for Western Asia (ESCWA).



Annual PPP Production in the Arab Region

- To compute annual PPPs, annual price and expenditure data are needed for all participating countries.
- Different approaches were explored to obtain the needed data and were tailored according to the availability of data for each country and for every year.
- The annual PPP timeseries covers the years 2011 through 2023.

Benchmark years

- Global ICP cycles were implemented during 2011, 2017 and 2021.
- A regional ICP cycle was implemented in the Arab region during 2016.
- Thus, during these years actual price and expenditure data were collected for all the participating countries.

So, what about the non-benchmark years, where no global or regional cycle took place?

Non-benchmark years

- To obtain data for all countries and for all non-benchmark years, the regional office adopted several approaches.
- These approaches favored the delivery of the most accurate data possible and were selected depending on the data availability for each country and for each year.

Price data – Household Consumption

Annual data collection

- Since the implementation of the regional ICP round in the Arab region in 2016, the regional office urged countries to collect HHC price data on an annual basis.
- Since then, countries such as Qatar and Saudi Arabia delivered HHC price data on an annual basis.
- Other countries proceeded to collect and submit actual data whenever possible such as every other year or submitted actual data subsets on a yearly basis.

Price data – Household Consumption

Use of actual CPI price data

- The CPI lists of countries that were unable to perform annual price collections were scanned for items with descriptions that overlap with those of the ICP HHC list.
- The prices of said items were borrowed from the CPI which is already being collected on a monthly basis.
- This approach was usually complimented by the next approach.

Price data – Household Consumption

Calculation of price estimations using CPI data

- As a last resort, actual prices collected during benchmark years were extrapolated using CPI data.
- The calculation of extrapolated prices was performed using the most detailed level of CPI available.

Price data – Household Consumption

Fast Evolving Technologies (FETs) and other price data

- Since 2016, countries were already collecting and submitting prices for FETs on an annual basis.
- Prices of fuel, electricity, telecommunication and postal services were also compiled and submitted on an annual basis.

Price data – Special Surveys

Actual Data collection

- Since 2016, countries were also urged to incorporate the implementation of the special surveys within their regular work programs.
- The regional office successfully obtained actual data for the special surveys for most countries and years, with only few exceptions.

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Price data – Special Surveys

Calculation of price estimations using GFCF deflators

- For these exceptions, actual price data collected for the most proximal year was extrapolated using GFCG deflators to fill the missing data.

Price data – Collection timetable

Price data collection timetable

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
HHC	Collection of Q1 Data			Collection of Q2 Data			Collection of Q3 Data			Collection of Q4 Data		
Rentals						Col H1						Col H2
Education										Col Annual		
Gov Comp					Col An							
Construction									Col Annual			
Mach & Equip								Col Annual				

Expenditure Data – MORES

Actual expenditure data

- During the regional ICP round of 2016, countries were asked to fill the MORES form for all previous non-benchmark years.
- Moreover, countries were also urged to incorporate the completion of the MORES form within their regular work programs.
- The regional office successfully obtained the completed MORES forms for most countries and years, with only few exceptions.

Expenditure Data – MORES

Calculation of expenditure data estimations

- The calculation method of expenditure data estimations for the missing years/countries was chosen on a case-by-case basis.
- The choice of method took into consideration several factors, such as the economic conditions and the geopolitical environment during the estimated year, and the availability of actual data preceding or following the estimated year.

Expenditure Data – MORES

Calculation of expenditure data estimations

- For example, for countries which have actual expenditure data for 2017 but missing that of 2018, the solution was straightforward, since no noticeable change in economic conditions occurred during this period.
- The GDP expenditure breakdown was borrowed from the 2017 MORES file and applied to that of 2018.

Expenditure Data – MORES

Calculation of expenditure data estimations

- However, for countries which have actual expenditure data for 2019 and 2020 for example, but missing that of 2021, the case was more complicated.
- Due to the COVID-19 pandemic, economic conditions varied greatly during the 2020-2022 period, and noticeable differences were observed in the expenditure patterns of all the countries.
- Thus, since 2021 marked a slight recovery from the year 2020, but was not yet back to the trend of 2019, the calculation method for the missing 2021 expenditure data was an average of that of 2019 and 2020.

Expenditure Data – MORES

Calculation of expenditure data estimations

- Conversely, estimations for countries missing expenditure data in the post-Covid period had to be tackled from another angle.
- The post-Covid period saw significant changes in both the economic conditions and the geopolitical environment, namely due to the global economic rebound and the Russia-Ukraine war, which had a dramatic effect on the expenditure trends of countries.
- Thus, countries missing data for the year 2022 for example could not borrow the expenditure breakdown from earlier years. In this case, the expenditure breakdown was borrowed from another country in the region that shares cultural and economic similarities as well as geographic proximity.

Expenditure Data – MORES

MORES submission schedule

- The MORES file should be submitted to the Regional Office during the last quarter of every year, for the year before. For example, the 2022 MORES should be submitted in the last quarter of 2023, and sometimes the first quarter of 2024.
- Thus, the annual computation of PPPs always relies on MORES estimations as a first step, to produce timely data.
- Once the actual MORES is received, the Regional Office runs the calculations again and publishes the **revised PPPs**.

PPP Computation

PPP Computation

- The Computation of annual PPPs is performed by the Regional Office, using an excel tool developed the World Bank.
- From 2017 onwards, regional annual PPPs were linked to the US Dollar.

Linking Regional PPPs to the US Dollar

Linking results on the GDP level

- The linking is first made between Oman, the base country for the Arab Region, and the US. Then the results of Oman are linked to those of the rest of the Arab countries.
- To link PPP data of the year "n" to the US Dollar, we need:

  - PPPs in Dollars for Oman for the year n-1,
  - GDP deflators for Oman and the US for the years n-1 and the year n,
  - CPI for Oman and the US for the years n-1 and the year n.

Linking Regional PPPs to the US Dollar

Linking results on the GDP level

- $Change\ Oman_{(n-1,n)} = \frac{GDP\ Deflator\ Oman_{n}}{GDP\ Deflator\ Oman_{n-1}}$
- $Change\ US_{(n-1,n)} = \frac{GDP\ Deflator\ US_{n}}{GDP\ Deflator\ US_{n-1}}$
- Thus, $PPPs\ Oman_{n} = PPPs\ Oman_{n-1}\ x\ \frac{Change\ Oman_{(n-1,n)}}{Change\ US_{(n-1,n)}}$

Linking Regional PPPs to the US Dollar

Linking results on the HHC level

- $Change\ Oman_{(n-1,n)} = \frac{CPI\ Oman_{n}}{CPI\ Oman_{n-1}}$
- $Change\ US_{(n-1,n)} = \frac{CPI\ US_{n}}{CPI\ US_{n-1}}$
- Thus, $PPPs\ Oman_{n} = PPPs\ Oman_{n-1}\ x\ \frac{Change\ Oman_{(n-1,n)}}{Change\ US_{(n-1,n)}}$

Linking Regional PPPs to the US Dollar

Linking the rest of the Arab Countries to the US Dollar

- The Regional PPPs are already based in Omani Riyals,
- Since we now have the PPPs of Oman in the US Dollar,
- The rest of the countries can be based in US Dollar using a simple conversion.

Thank You

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