



المركز الإحصائي  
لدول مجلس التعاون دول الخليج العربية  
GCC-STAT



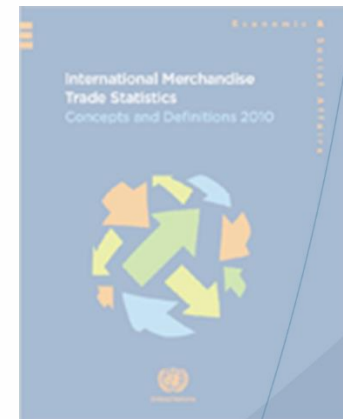
# Regional Workshop on External Trade Indices

GCCStat  
7-8 March 2022

«Main Characteristics of Trade Statistics  
and Index Tool to be Developed»

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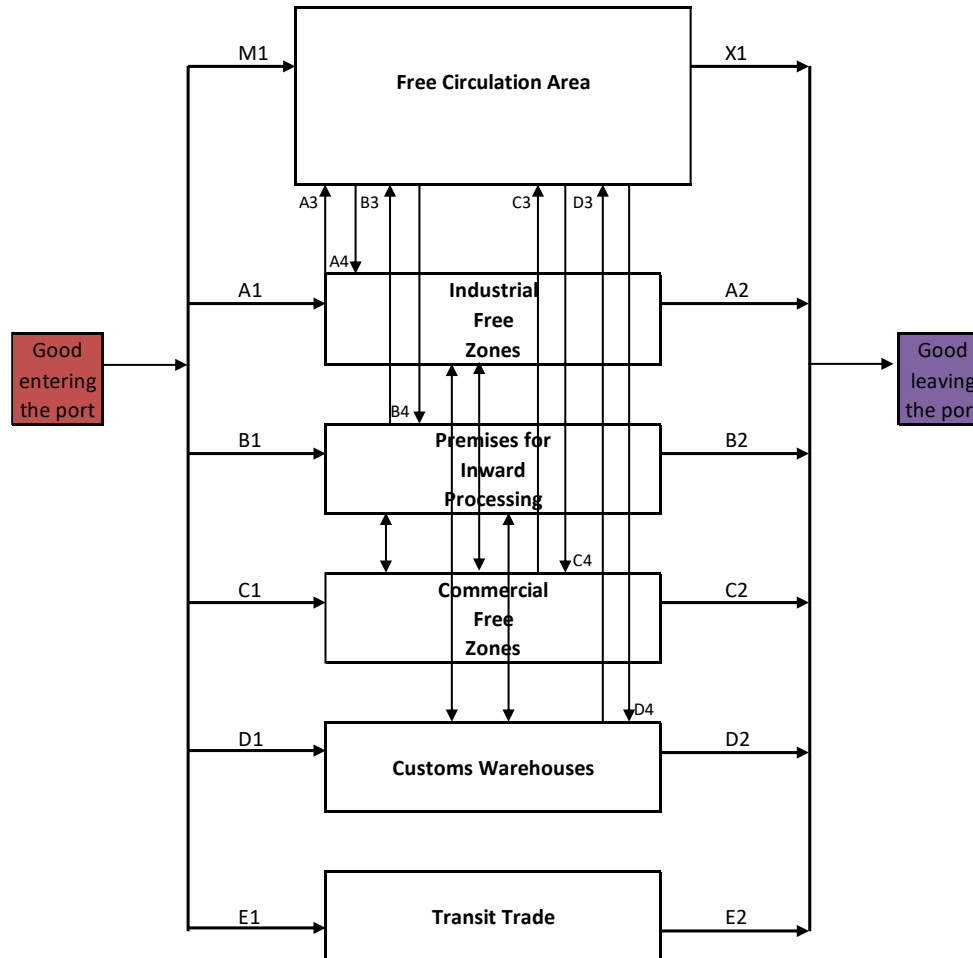
- As a general guideline, it is recommended that international merchandise trade statistics record all goods which add to or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory.
- Specific guidelines clarify the treatment of certain categories of goods that are recommended to be:
  1. Included in IMTS (of which some are recommended to be separately identified)
  2. Excluded from IMTS
  3. Excluded but be separately recorded



# Trade Flows and Trade Systems



## Import and Export Flows



	Imports	Exports
General Trade	$M1 + A1 + B1 + C1 + D1$	$X1 + A2 + B2 + C2 + D2$
Special (Strict)	$M1 + A3 + B3 + C3 + D3$	$X1 + A4 + B4 + C4 + D4$
Special (Relaxed)	$M1 + A1 + B1 + C3 + D3$	$X1 + A2 + B2 + C4 + D4$

## Valuation

- Use a cost, insurance and freight (**CIF-type**) valuation for imports (border of importing country) and a free on board (**FOB-type**) valuation for exports (border of exporting country)

# Commodity Classification

- Use the **Harmonized System** (HS) as the primary commodity classification for the collection, compilation and dissemination of international merchandise trade statistics

## Quantity Measurement

- Use the **standard units of quantity** recommended by WCO; also provide weight in cases where the standard unit is other than weight; the weight figures should be on a net weight basis; where non-standard units are used, provide conversion factors to the standard units

# Most important fields for statistics

- a) Trade number and contact details
- b) **Reference period** (Date, month, year)
- c) **Flow (Import, Export, Re-export);**
- d) **Commodity** (HS, GCC level)
- e) Partner Country
- f) **Statistical Value**
- g) **Quantity (kg)**
- h) **Supplementary quantity**
- i) **Quantity unit**
- j) Delivery terms
- k) Mode of Transport
- l) Customs Procedure Code
- m) Country of consignment (import)
- n) Insurance
- o) Freight
- p) Nationality of transporter

**Unit values are in fact influenced by many factors apart from price, principally the following:**

- Changes in the range of goods within a heterogeneous tariff heading, i.e. including different products;
- Technological products are being manufactured in smaller and lighter versions without the characteristics or the function of the product being improved. The price per kilogram (mean value) of these products tends therefore to gradually rise;
- Packaging modification: since the unit value depends on the weight, it is affected by the packaging (to a greater or lesser extent);
- Quality modification: this factor is a problem in relation not only to the reliability of an unit value index but also to a classical price index.



**Unit value is a ratio, which is calculated as follow:**

Statistical value divided by net weight –  $UV_{netweight}$  (called as Unit value)

- Transaction level
- Monthly
- Quarterly
- Annual

Depending on which periodicity you selected for trade index

$$UV_{netweight} = \frac{\text{Statistical value}}{\text{Net weight (Kg)}}$$



## Unit value per supplementary quantity

Statistical value divided by supplementary quantity –

$UV_{SuppQuantity}$

- Transaction level
- Monthly
- Quarterly
- Annual

$$UV_{SuppQuantity} = \frac{\textit{Statistical value}}{\textit{Supplementantary quantity}}$$

## Examples on computing of unit value in different level

## Work Flow for Developing of Foreign Trade Index Tool

1- Data Analysis for deciding base year

**1- Aggregated Data:** 2018-2021 IMTS data by Flow (EX, IM), Year, Month, Commodity (8-Digit), ValueUSD (orNational Currency), Supplementary Unit, NetWeight (KG), Supplementary Quantity, SITCRev4\_2 Digit, SITCRev4\_1 Digit, BEC

2- Developing Credibility Table for Outlier Detection

**2- Transaction Level Data:** 2018-2021 IMTS data by Flow (EX, IM), Year, Month, Commodity (8-Digit), ValueUSD (orNational Currency), Supplementary Unit, NetWeight (KG), Supplementary Quantity

3- Developing Conversion tables between HS versions (GCC 8 Digit Level)

4- Developing Correspondence tables between HS2022 (GCC 8 Digit Level) and SITC, BEC

Tasks #3, 4 and 5 can be achieved in parallel with Task #7

5- Establishing Database and Creating Tables for Trade Indices

6- Developing Methodological and Technical Note for IT Developers

7- Developing Tool; Designing Screens/Interfaces; Programming based on Methodological Document to be developed by IMTS Expert

8- Testing the Results

9- Fine-tuning/fixing problems

# Main Parts of Tool



**0 - Preparation of Indices:** This step will be used once we rebase the indices. We don't use until next base year

**1 - Calculation of Indices for Current Period:** This step will be used for each month/quarter in order to upload current period data, detect outlier, impute missing values and calculation of indices

**2 - Annual Preparation:** End of year, we need to select new commodities (basket) for following year and preparation of the tables in the database- for Chain approach

**0 - Preparation of Indices:** Following determining base year period, this step will be used once we establish first index numbers or rebase the indices, not used till next base year-  
Need 3-4 years data

- Establish a database for trade index mainly contains the followings:
  - HS Commodity table, Classification(s), and correlation tables between commodity and classification(s), **conversion table specifically between HS2017-HS2022**
  - Basket table for each flow (Export, Import)
  - Outlier table generated from 3-4 years trade data containing both flow (-to be updated every quarter),
  - Exchange rates (conversion of index numbers from national currency to foreign or vice versa)
  - A Table containing all dimensions for XMPI (Po,Qo,Pt,Qt,etc),
  - Index results table

**0 - Preparation of Indices:** Following determining base year period, this step will be used once we establish first index numbers or rebase the indices, not used till next base year-  
Need 3-4 years data

### ➤ Setting criteria for selection of commodities for BASKET

- More detailed (lowest level) commodity description (8-digit)
- Threshold for total value of products
  - $\geq$  XXXXX for Imports,
  - $\geq$  YYYYY for Exports or a given share in commodity groups
- Data available at least X quarters in current year & available in next year, or Y months (for monthly indices)
- Homogeneity test:
- Coverage ratio  $\geq$  XXXX% (representative ratios for the first selection)
- Enough number of items under sectors/sub-sectors (At least Z commodities)

**1 - Calculation of Indices for Current Period:** This step will be used for each month/quarter in order to upload current period data, detect outlier, impute missing values and calculation of indices

- Quarterly data are uploaded,
- Detection of outliers, correction of outliers (Manual/Automatic correction)-Flag outliers
- Inserting data elements requiring calculation of indices into a table,
- Imputing missing values (Manual/Automatic Imputation)-Flag imputed values-to be reported
- Generating analysis tables for unit values



**1 - Calculation of Indices for Current Period:** This step will be used for each month/quarter in order to upload current period data, detect outlier, impute missing values and calculation of indices

- Calculation of trade indices:
  - Calculating unit value indices (Laspeyres, Paasche, Fisher),
  - Chaining the index numbers,
  - Calculating Value indices,
  - Calculating Quantity (Volume) Indices
- Generating Results

## 2 - Annual Preparation:

- End of year, we need to select new commodities (basket) for following year and preparation of the tables in the database- for Chain approach
- Maintenance classification, if necessary

# Kuwait External Trade Index Tool

شاشة حساب الأرقام القياسية | شاشة تجهيز سلة المواد

## نظام إحصاءات التجارة الخارجية

### شاشة تجهيز سلة المواد للواردات

ملاحظة : يتم تجهيز سلة المواد مرة واحدة فقط وتكون بداية السنة قبل أن يتم حساب الأرقام القياسية.

العمليات

<input type="button" value="CALCULATE CUMULATIVE REPRESENTATIVE RATIO"/> -3	<input type="button" value="PREPARE BASKET"/> -1
<input type="button" value="FINISH SELECTING THE ITEMS FOR THE BASKET"/> -4	<input type="button" value="CALCULATE REPRESENTATIVE RATIO"/> -2

الرجاء ادخال السنة الحالية

السنة: ASKET\_Y

تقرير

# Kuwait External Trade Index Tool

ORACLE® ملف ادخال وتدقيق وصيانة البيانات ادخال البيانات صيانة الادلة والتصانيف المخرجات والاستفسار الارقام القياسية خروج نافذة

الأرقام القياسية لإحصاءات التجارة الخارجية

## نظام إحصاءات التجارة الخارجية

شاشة حساب الأرقام القياسية الربع سنوية لتواردات

العمليات

IMPUTE MISSING VALUES	-4	LOAD DATA	-1
REPORT CONTROL TABLE	-5	FLAG AND FIX THE OUTLIERS	-2
CALCULATE THE INDECIES	-6	CALCULATE P0Q0 AND PTQT	-3

الرجاء ادخال القيم التالية لحساب الأرقام القياسية

الربع:  السنة:

CLEAR PREVIOUS DATA

تقارير الأرقام القياسية لتواردات

IMPORT QUANTITY INDEX REPORT

IMPORT UNIT VALUE INDEX REPORT

IMP\_INDEX\_FRM

## GCC Countries to present

- The main challenges/difficulties on external trade indices whether you are compiler of trade indices?
  - Any question/remark/suggestion on methodology?
  - \* Availability of net weight /quantity in GCC countries?
- \* Availability of transaction level data (raw data) as presented structure, agree to share with IMTS expert?

**Please discuss during round table!**



**THANK YOU!**

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