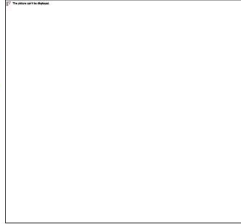


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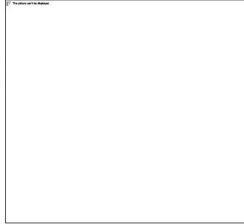
Estimation of Unit Value Index for Exported Goods

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03 October 2022, 1:30 pm – 3:30 pm

Estimation of Unit Value Index for Export



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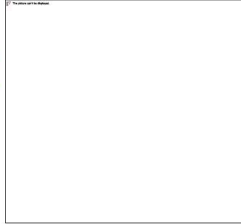
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1. Introduction

What is Unit Value Index for Export?

- **Unit Value Index (UVI) for export** is a measure of the changes over time in the unit value of exported goods.

1. Introduction

Commodity Classification

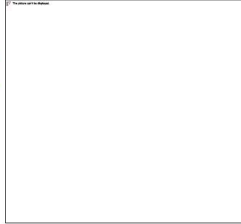
Commodities are classified according to the 2015 PSCC. The 2015 PSCC is a 10-digit coding system aligned with the 2012 ASEAN Harmonized Tariff Nomenclature (AHTN).

Grouping	Number of Classifications	Example	Description
Sections (I-XXI)	21	Section II	Vegetable Products
Chapters 01-98 (2-digit code)	98	Chapter 09	Coffee, tea, maté and spices

1. Introduction

Commodity Classification

Grouping	Number of Classifications	Example	Description
HS Headings (4-digit code)	1,240	0904	Pepper of the genus Piper; dried or crushed or ground fruits of the genus Capsicum or of the genus Pimenta
HS Subheadings (6-digit code)	5,286	0904.11	Neither crushed nor ground :
AHTN codes (8-digit code)	9,643	0904.11.20	Black
PSCC codes (10-digit code)	14, 336	0904.11.20-01	In bulk containers



2. Rationale

- Currently, there is no indicator to measure the changes over time in the unit value of exported goods.
- Previously, the former National Statistics Office computes Foreign Trade Index, but this was discontinued.

3. Methodology

A. Recommended Formula

- Laspeyres

$$I_m = \sum_{i=1}^n w_{im} * I_{im}$$

where:

I_m = Unit Value Index for total export at month m

I_{im} = Unit Value Index of section i at month m

w_{im} = Weight of section i at month m

3. Methodology

B. Alternative Formula

- Paasche

$$I_m = \frac{1}{\sum_{i=1}^n \left(w_i \times \frac{1}{I_{im}} \right)}$$

where:

I_m = Unit Value Index for total export at month m

I_{im} = Unit Value Index of section i at month m

w_{im} = Weight of section i at month m

- Fisher

$$I_m = (I_m^L * I_m^P)^{1/2}$$

where:

I_m = Unit Value Index for total export at month m

I_m^L = Unit Value Index using Laspeyres

I_m^P = Unit Value Index using Paasche

3. Methodology

I. Derivation of Unit Value

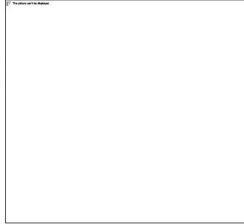
$$U_{ijk} = \frac{V_{ijk}}{Q_{ijk}}$$

where:

U_{ijk} = Unit Value of commodity k in chapter j of section i

V_{ijk} = Total Value of commodity k in chapter j of section i

Q_{ijk} = Total Quantity of commodity k in chapter j of section i

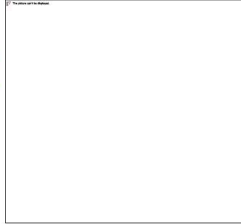


3. Methodology

II. Computation of UVI for Export

Key Elements:

- a. Base year
- b. Market Basket
- c. Weights
- d. Index Computation

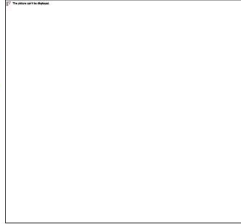


3. Methodology

a. Base year

Base year is the reference point of the index number series. It is usually a year at which the index number is set to 100.

Base Year = 2018



3. Methodology

b. Market Basket

Market basket refers to a sample of commonly exported goods.

3. Methodology

b. Market Basket

Criteria in selecting exported goods:

Criteria	Value of the Criteria	Score
1. Percent share to the total FOB value	Percent FOB to Chapter equals to 0.2 percent or greater in the base year	5
	Otherwise	0
2. Frequency of occurrence (number of months) during the base period	Frequency of occurrence is 7 months or higher in the base year and 12 months in the succeeding years from 2019 - 2020	3
	Otherwise	0

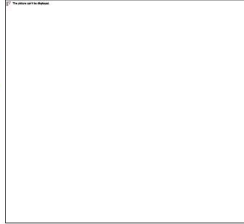
3. Methodology

b. Market Basket

Criteria in selecting exported goods:

Criteria	Value of the Criteria	Score
3. Homogeneity of Unit Value	Homogeneity equals 60 percent and over	1
	Otherwise	0

Note: Those commodities with total scores of 6, 8 or 9 based on the criteria are **included** in the market basket



3. Methodology

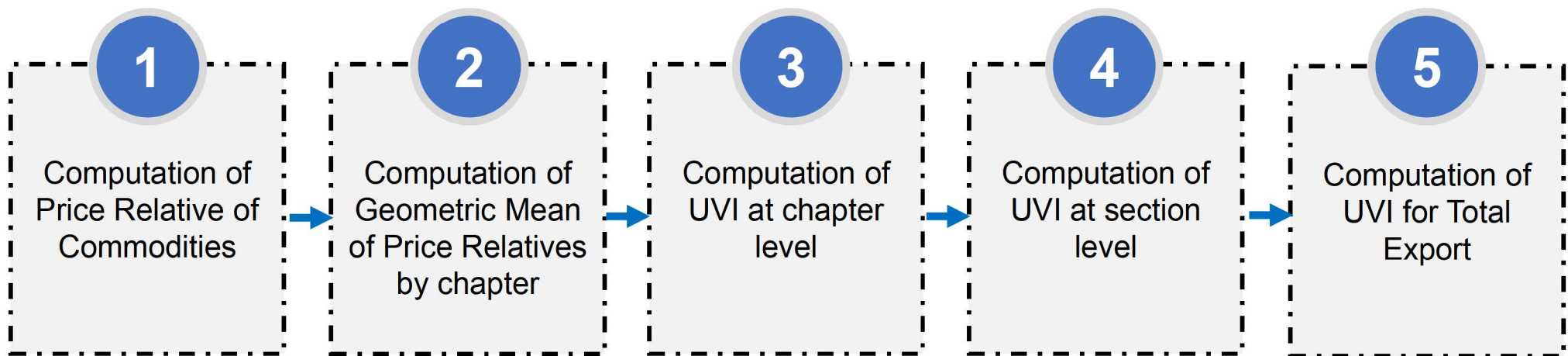
c. Weights

The **weights** refer to the relative importance of the chapter/section to the total value of export.

3. Methodology

d. Index Computation (Laspeyres)

Steps in computing UVI for Export



3. Methodology

d. Index Computation (Laspeyres)

Step 1. Computation of Price Relative (PR)

Computation of PR for each commodity under the chapter (2-digit 2015 PSCC) **in the base year**

$$P_{ijk} = \frac{U_{ijkm}}{U_{ijk0}}$$

where:

P_{ijkm} = Price relative of commodity k in chapter j of section i at current month m

U_{ijkm} = Unit Value of commodity k in chapter j of section i at current month m

U_{ijk0} = Average Unit Value of commodity k in chapter j of section i at the base year (2018)

3. Methodology

d. Index Computation (Laspeyres)

Step 1. Computation of Price Relative (PR)

Computation of Price Relative for each commodity under the chapter (2-digit 2015 PSCC) for **2019 onwards**

$$P_{ijkm} = \frac{U_{ijkm}}{U_{ijk(m-1)}}$$

where:

P_{ijkm} = Price Relative of commodity k in chapter j of section i at month m

U_{ijkm} = Unit Value of commodity k in chapter j of section i at month m

$U_{ijk(m-1)}$ = Unit Value of commodity k in chapter j of section i at previous month (m-1)

3. Methodology

d. Index Computation (Laspeyres)

Steps 2 to 3. Computation of UVI for Export at chapter level

a. Monthly index at the base year

$$I_{ijm} = \left(\prod_{k=1}^{n_{ij}} P_{ijk m} \right)^{\frac{1}{n_{ij}}} \times 100$$

where:

I_{ijm} = Unit Value Index of chapter j in section i at month m

$P_{ijk m}$ = Price relative of commodity k in chapter j of section i at month m

n_{ij} = Number of commodities (10-digit 2015 PSCC) in chapter j of section i

3. Methodology

d. Index Computation (Laspeyres)

Steps 2 to 3. Computation of UVI for Export at chapter level

b. Monthly index after the base year

$$I_{ijm} = I_{ij(m-1)} \times \left(\prod_{k=1}^{n_{ij}} P_{ijkm} \right)^{\frac{1}{n_{ij}}}$$

where:

I_{ijm} = Unit Value Index of chapter j in section i at month m

$I_{ij(m-1)}$ = Unit Value Index of chapter j in section i at previous month (m-1)

P_{ijkm} = Price Relative of commodity k in chapter j of section i at month m

n_{ij} = Number of commodities (10-digit 2015 PSCC) in chapter j of section i

3. Methodology

d. Index Computation (Laspeyres)

Step 4. Computation of UVI for Export at section level

$$I_{im} = \sum_{j=1}^{n_i} w_{ij} * I_{ijm}$$

where:

I_{im} = Unit Value Index for section i at month m

I_{ijm} = Unit Value Index of chapter j in section i at month m

w_{ij} = Weight of chapter j in section i

n_i = Total number of chapters in section i

3. Methodology

d. Index Computation (Laspeyres)

Step 5. Computation of UVI for Total Export

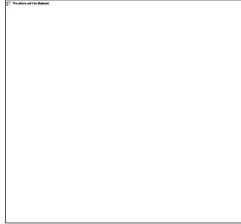
$$I_m = \sum_{i=1}^{21} w_{im} * I_{im}$$

where:

I_m = Unit Value Index for total export at month m

I_{im} = Unit Value Index of section i at month m

w_{im} = Weight of section i



5. Recommendation

- To use Chained Laspeyres formula in the computation of UVI for export.

6. Ways forward

Activity	Timeline
1. Release of the 2018-based UVI for export (January 2018 – December 2022 series)	April 2023
2. Next monthly releases	May 2023

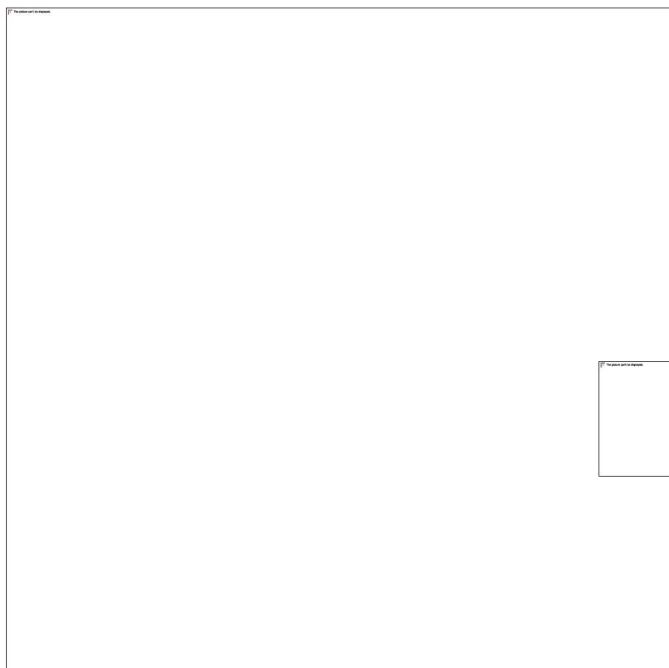
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