TECHNICAL NOTES
2018-based Construction Materials Wholesale Price Index

I. Introduction

The Philippine Statistics Authority (PSA), as mandated by the Republic Act No. 10625, is primarily responsible for planning, developing, prescribing, disseminating and enforcing policies, rules and regulations, and coordinates government-wide programs governing the production of official statistics, general-purpose statistics, and civil registration. The Survey of Wholesale Prices of Selected Construction Materials for the Generation of the Construction Materials Wholesale Price Index (CMWPI) is a continuing activity of the PSA conducted monthly. The results of the survey is used to generate the CMWPI, which covers the National Capital Region (NCR).

1.1. Historical Background

The CMWPI is a variant of General Wholesale Price Index (GWPI).

The 1985-based CMWPI, which covered NCR only, was developed by the then National Statistics Office (NSO) (now part of the PSA), in collaboration with the Department of Public Works and Highways (DPWH), Construction Industry Authority of the Philippines (CIAP) of the Department of Trade and Industry (DTI), and Philippine Contractors Association (PCA).

In the CMWPI 2000-based series, a technical working group (TWG) composed of representative from the DPWH, National Housing Authority (NHA), Subdivision and Housing Developers Association, Inc. (SHDA), National Statistical Coordination Board (NSCB), CIAP, Bangko Sentral ng Pilipinas (BSP), National Economic Development Authority (NEDA), and NSO was created by the then Technical Committee on Price Statistics (reorganized to Interagency Committee on Price Statistics or IACPS) to rebase the CMWPI to 2000. Resource persons from Housing and Land Use Regulatory Board (HLURB) and PCA were also invited during the TWG meetings to seek their comments on the market basket and in the index series. The rebasing of the CMWPI to year 2000 and its adoption by all concerned agencies was approved through the NSCB Resolution No. 12, series of 2010 dated 09 November 2010.

The next rebasing started in 2013 with 2012 as the base year. The methodology in the rebasing of the series was approved through PSA Board Resolution No. 13, series of 2018 dated 13 December 2018. The methodology used in the computation of the 2012-based CMWPI follows the methodology used in the 2012-based Consumer Price Index, that is, the short-term relative update method in computing the price relative item and geometric mean for the aggregation of the price relatives at the commodity group level. Meanwhile, the 2012-based CMWPI still adopted the old method for the computation of the monthly average price of the item and aggregation of all commodity groups index, which is the straightforward computation of monthly average price of the item, and weighted arithmetic mean of the indexes of the major commodity groups.

On 16 February 2024, through PSA Board Resolution No. 11, series of 2024, the PSA Board approved the methodology for the rebasing of the CMWPI to 2018. The proposed commodity groupings recommended by the DPWH and Key Informants for construction materials for lateral and vertical construction projects in 2018 were adopted. The index computation uses the same methodology as that of the 2012-based CMWPI.

1.2. Objectives

The CMWPI is one of the most important economic indicators, which is designed to measure changes in the average wholesale prices of selected construction materials. It is also used for the computation of price escalation of construction materials for various government projects as indicated in the Presidential Decree (PD) No. 1594. This is also used as deflator in the estimation of Gross Domestic Product (GDP).

1.3. Scope and Coverage

The survey covers wholesale trade intermediaries of construction materials in the NCR. The materials were grouped according to the different categories following the 2012-based CMWPI commodity groupings, with changes as recommended by DPWH and Key Informants. The commodity groups are as follows:

1. Sand and Gravel
2. Concrete Products
3. Cement
4. Hardware
5. Plywood
6. Lumber
7. G.I. Sheets
8. Reinforcing Steel
9. Structural Steel
10. Metal Products
11. Tileworks
12. Glass and Glass Products
13. Doors, Jambs and Steel Casement
14. Electrical Works
15. Plumbing Fixtures and Accessories/Waterworks
16. Painting Works
17. PVC Pipes
18. Fuels and Lubricants
19. Asphalt

II. Data Collection

2.1 Data Collection Procedure

Collection of price data for the CMWPI is done solely by the district offices of the PSA in NCR. Prices are collected through email inquiry, telephone inquiry, and personal interview/observations. It involves personal visit to the stores/outlets, test purchase, which means buying an item for the purpose of checking the price, quality, weight/volume for its contents, or through direct inquiry from the buyers of the commodity.

Data are collected from the sample outlets (stores or establishments where prices of construction materials are collected or quoted). Prices of selected construction materials are monitored on a monthly basis, that is, from the first week to third week of the reference month.

2.2 Instruments

Currently, the survey forms are provided in spreadsheet printable format, which are being used to record the prices collected from the sample outlets.

2.3 Variables/Data Items

Data items collected are the price data of the selected construction materials at the time of visit/survey period. Each sample area has different number of sample construction materials.

III. Methodology

3.1. Unit of Enumeration

The unit of enumeration are the sample outlets where the prices of selected construction materials are collected. These outlets are selected based on predetermined criteria.

3.2. Sample Selection Procedure

Sample outlets are selected using the following criteria:

3.2.1. Popularity of an outlets along the line of goods to be priced;
3.2.2. Consistency and completeness of stock;
3.2.3. Permanency of outlet; and
3.2.4. Geographical location.

The list of construction materials to be priced is known as the market basket. The CMWPI market basket includes selected construction materials identified from the different lateral and vertical construction projects in 2018 with accompanying bills of materials provided by the DPWH, NHA, and SHDA. Items with high cost of the

submitted bills of materials were included under each commodity group. Materials were grouped according to the different categories based on the 2012-based CMWPI market basket and as recommended by the DPWH and Key Informants. The number of items, which differs for each commodity group, was based on the recommendation of DPWH. Complete specifications of the new items selected for the market basket were then identified based on the available specifications in the markets.

3.3. Estimation Procedure

Statistical weights are applied to the commodity group level of the selected construction materials. The weights are derived from the total bills of materials included in the computation of the cost of construction projects by the DPWH, NHA, and SHDA.

The weight of a commodity group is the percent share of the total cost of materials for the commodity group to the total cost of materials for all commodity groups. The total weight of the commodity groups is equivalent to 100 percent.

Computation of the CMWPI involves a number of steps as follows:

Step 1: Compute the monthly average price for each commodity

$$\text{Monthly Average Price of Commodity} = \frac{\text{Price for Outlet 1 + Price for Outlet 2 + ... + Price for Outlet k}}{k}$$

where:

k = number of outlets for each commodity

Step 2: Compute the price relative (PR) for each commodity

At the Base Year

$$PR = \frac{\text{Current Month's Average Price}}{\text{Annual Average Price in 2018}} \times 100$$

After the Base Year

$$PR = \frac{\text{Current Month's Average Price}}{\text{Previous Month's Average Price}} \times 100$$

Step 3: Compute the index for each commodity group

Step 3.1: Compute the geometric mean of price relatives of the commodity under each commodity group

$$\text{Geometric Mean of PR} = \left(\prod_{i=1}^{n} PR_i\right)^{\frac{1}{n}}$$

where:

PR_i = Price Relative of commodity i under Commodity Group g

n = number of commodity under Commodity Group g

Step 3.2: Compute the index for the Commodity Group

$$I_{gt} = \text{Geometric Mean of PR} \times I_{gt\text{-}1}$$

where:

I_g = Commodity Group Index at month t

$I_{gt\text{-}1}$ = Commodity Group Index for the previous month t-1

Step 4: Compute the index for all commodity groups

$$I_t = \frac{\sum_{g=1}^{G} W_g I_{gt}}{\sum_{g=1}^{G} W_g}$$

where:

I_t = All Commodity Groups Index at month t

I_{gt} = Index of Commodity Group g at month t

W_g = Weight of Commodity Group g

G = total number of Commodity Groups

3.4. Imputation Technique

3.4.1. **Temporary disappearance (e.g., out of stock) – commodities temporarily not available in the sample outlets**

For construction material with the same description as the available commodity in the sample outlet, except for weight or size, impute the price using the price of the available specification of the same commodity in the sample outlet.

3.4.2. **Permanent Disappearance** - The method for the computation of CMWPI, which is the chain or the short-term relative method, allows inclusion of commodities in the market basket that are available. Likewise, it allows immediate exclusion of obsolescent commodities.

Case 1: Permanent Disappearance for a Specific Sample Area

a) If a certain specified item disappeared for three (3) months in the sample area, an appropriate substitute/equivalent specification for that commodity is priced on the fourth month only in that sample area.

b) If a certain commodity specification completely disappeared from the sample area and appropriate substitute/equivalent specification for that commodity could not be found after three months, but new specifications are currently available for the same commodity, the *overlap/linking method* is used in pricing the commodity. Prices for this commodity having new specifications are collected during the current survey period/month as well as their prices in the immediate past month. The price change (growth rate) of the commodity with the new specifications is then applied in the previous month's prices of the commodity whose specifications are not already available, that is, the growth in prices of the commodity with new specifications is taken as the growth in prices of that commodity with the old specifications.

Case 2: Permanent Disappearance for the Whole NCR District

a) If a certain commodity specification completely disappeared in the whole NCR district and appropriate substitute/equivalent specification for that commodity could not be found after three months, but new specifications are currently available for the same commodity, this new available specification will serve as replacement to the obsolete commodity specifications in the market basket. Prices for this commodity having new specifications are collected during the current survey period/month as well as their prices in the immediate past month. In the second month, the price for the commodity with new specifications will be used in the computation of the CMWPI.

3.5. Substitution of Outlets

Sample outlets are abandoned and substituted due to the following reasons:

3.5.1. Complete abandonment for the outlet that has closed - it will be substituted by the nearest outlet or another outlet chosen following the criteria for outlet selection.

3.5.2. Partial abandonment of an outlet (i.e., for specific commodities only) if one or more sample commodities disappeared for three months or permanently in a particular outlet.

IV. Concepts and Definitions of Terms

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

Commodity Specifications
Refers to the detailed description of the commodity such as brand, packaging, size and unit of measure, or other characteristics that will best describe the commodity and are important in the determination of prices.

Construction Materials Wholesale Price Index
It is an indicator designed to measure the changes in the average wholesale prices of selected construction materials. It shows how much on the average, prices of commodities have increased or decreased from a particular reference period known as base year.

Index Method
This is the formula used in computing the index number.

Index Number
This is a device used to compare relative movement in the magnitude of a variable or group of distinct but related variables between two or more points in time. An index number also shows the relative differences in the magnitude of a variable obtained at the same period of time in different areas. It is expressed in percentage form and its unit of measure is percentage point. The base of comparison is taken as 100, facilitating measure of change or difference relative to the base.

Market Basket
For CMWPI purposes, market basket is a term used to refer to a sample of construction materials that represent a large variety of construction materials used in construction industry relative to base year.

Price
Is the amount or value paid in exchange for the commodity bought.

Sample Outlets
These are stores or establishments where prices of sample commodities are quoted.

Unit of Measure
Refers to which a commodity is customarily traded in the market. The unit of measure is used as the basis for pricing for consistency and to prevent misunderstanding between the price collector and the respondent.

Weight
A value attached to a commodity or group of commodities to indicate the relative importance of that commodity or group of commodities in the market basket.

Wholesale Price
Refers to the price of a commodity transacted in bulk for further resale or processing. It is the actual "spot" transaction price received usually by the wholesalers, distributors, or marketing agents for large lots but net of discounts, allowances, and rebates. It is the sum of the producer price, wholesale trade margin, tax mark-up, and distribution cost of the wholesaler.

V. Dissemination of Results and Revision

A special release on CMWPI containing a brief write-up and summary statistical tables containing year-on-year percent changes by commodity group is disseminated 15 days after the reference month through a special release posted in the PSA website. Data series is also posted in the OpenSTAT portal of the PSA website.

Revisions of previously released data are reflected during the next special release. Revisions are done to include the price data that are submitted beyond the reference period.

VI. Citation

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VII. Contact Information

For additional inquiries regarding the CMWPI, you may send your queries through the following:

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