1. A brief Note on Production and Producer's Price Indices in Nepal

Introduction

Central Bureau of Statistics (CBS) has been compiling and publishing Manufacturing Production Index (MPI) and Manufacturing Producers' Price Index (MPPI) since 1974/75 with a purpose of measuring changes taking place in the level of manufacturing production and producers' prices on yearly basis. However to meet the demand of the users, CBS initiated Quarterly MPI and Quarterly MPPI since 2001/02. The Manufacturing Production Index is a quantity index that aims at measuring the periodic changes in the level of manufacturing output of Nepal. The Manufacturing Producers' Price Index is a kind of price index, which aims at measuring the periodic change in the producer's price. It is a price of goods produced as output minus any VAT, or similar deductible tax invoiced to the purchaser. Producers' price does not include any kinds of transport charges invoiced separately by the producer. It can be defined as:

A producers' price for a product is the Basic price plus any nondeductible tax on products paid by the producer less any subsidies on products received by the producer

Instead of producing the point to point based MPI and MPPI, an effort is made to produce these indices in time series from this fiscal year 2010/11. The initiation of the indices in series makes it possible to compare between quartiles.

Coverage

The production and price indices include only the domestic manufacturing products at national level. The present manufacturing production index is based on census of manufacturing establishments (CME) 2006/07. This census covers entire domestic manufacturing establishments with 10 or more employees. The both indices cover 23-three-digit NSIC groups and 44 commodities. The selected commodities for the indices are updated at the interval of each five years. The revision is based on the quinquinnial census of manufacturing establishments.

Weighting System

The weights of the MPI and MPPI is based on total census output of CME 2006/07. The census output has been readjusted to assign the weight for index purpose. Weights have been assigned at two stages. At the first stage they have been assigned in three-digit NSIC industry group and at the second stage, the weights of the particular three-digit NSIC industry groups are redistributed among the selected commodities within that particular three-digit NSIC industry group. The redistribution of the weight at the commodity level is based on their share on total value of shipment within that particular three-digit NSIC industry group.

Sample Design

The sample design for the present manufacturing production and price indices are based on the census output provided by the CME 2006/07.

Selection of Three-digit NSIC Industry Group:

All the three-digit NSIC industry groups contributing 0.5 percent or more to the total census value added are included in the frame. Accordingly, 23 three-digit NSIC industry groups are selected.

*Selection of Manufacturing Establishments***:**

Selection of the manufacturing establishments within the each selected four-digit NSIC industry group has been categorized in two ways. In one hand, only five largest establishments are selected with certainty that have concentration ratio 80% or more within the same industry group. On the other hand, for those having concentration ratio less than 80%, the five largest establishments with certainty as well as the other sampled establishments are selected for the sample depending upon share of concentration ratio occupied by them. The selection is based on the probability proportional to size (PPS) sampling technique as following.

If $0.6 <=$ C.R. < 0.8 then select 4 establishments
If $0.4 <=$ C.R. < 0.6 then select 6 establishments
If $0.2 <=$ C.R. < 0.4 then select 8 establishments
If < 0.2 then select 10 establishments

Where Concentration Ratio = Sum of output of largest 5 Ests./Total output of NSIC group .

This method of selection shows that the maximum number of establishment to be selected within an industry group is 15. Applying this method, 333 establishments have been selected for quarterly survey.

Selection of Commodities

The commodities are selected within the each selected four-digit NSIC industry group on the basis of the share to the total value of shipment as provided by manufacturing census 2006/07. The first round selected commodities are verified after four rounds quarterly survey with selected establishments. As per this criterion 44 manufacturing commodities are selected under the 23 three-digit NSIC industry group.

The MPI and MPPI based on the latest CME 2006/07 would be compiled from the fiscal year 2008/09 for which data is being collecting from the current FY 2007/08.

Reference Period

The reference period of assigning weight is fiscal year 2006/07 where as the reference period for producer's price and production is 2007/08.

Data Source

The required data to compile manufacturing indices are collected through the quarterly survey of manufacturing establishments. The first quarter is commenced from the beginning of the fiscal year. The quarterly survey is conducted every third month of the current quarter. While collecting the data in each quarterly survey, final output of the last quarter and first two months' of the current quarter are collected. The expected output of the third month of the current quarter is collected. Similarly, the producers' price is collected for the last quarter and first two months' of the current quarter in each quarterly survey of manufacturing establishments. The field works of the quarterly surveys are conducted by the concerned Branch Statistics Offices (BSOs) as per the guidelines provided by the Price Statistics Section, CBS.

Index Compilation

The production and price indices are compiled at two stages, on the basis of industrial classifications system i.e. 3-digit NSIC industry group. While compiling indices at 3-digit NSIC level, the price relatives of the selected commodities under the particular industry group is calculated as follows:

$$I_{ij} = \frac{\sum\limits_{i=1}^{n}(w_{ij} * PR_{ij})}{\sum\limits_{i=1}^{n} w_{ij}}$$

Where, I_{ij} = **Manufacturing Producers' Price Index for ith commodity at jth 3-digit NSIC**

w_{ij} = **Weight of the ith commodity of jth 3-digit NSIC**

PR_{ij} = **Price Relatives of the ith commodity of the jth 3-digit NSIC**

W_{ij} = **Total weight of the commodities at the jth 3-digit NSIC**

i = **1, 2, 3, ...**

n = **Number of price relatives or, commodities at jth 3-digit NSIC**

In second stage, while compiling the overall index, the weighted average of all the indices at 3-digit level are computed as follows:

$$I_k = \frac{\sum\limits_{j=1}^{n}(w_j * I_j)}{\sum\limits_{j=1}^{n} w_j}$$

Where, I_k = **Producers' Price Index of Manufacturing Sector**

w_j = **Weight of the jth 3-digit NSIC**

I_j = **Manufacturing Producers' Price Index of 3-digit NSIC**

$\sum w_j$ = **Total weight of the 3-digit NSIC**

j = **1, 2, 3, ...**

n = **Number of 3-digit NSIC**

Frequency of Compilation

The Manufacturing Production Index and the Manufacturing Producers' Price Index are compiled and released at quarterly and annual basis within two months after data collection. Preliminary indices for the current quarter and revision of the last quarter are made available.

Limitations of Indices

These indices (MPI and MPPI) only cover the establishments having 10 or more employees. The selected establishments are representatives at national level. Therefore, the indices are available at national level only. However, International practices for producing these Indices could not be applied properly.