Gambia Bureau of Statistics (GBoS)

- PRODUCER PRICE INDEX PRESENTATION

Agenda

- PRODUCER PRICE INDEX (PPI)
- WHAT IT IS
- HOW IT WORKS (EXAMPLE)
- WHY IT MATTERS   Deflators
- FORMULARs
- WEIGHTS
- LINKING OLD TO NEW INDEX
- NEW INDEX BORN
- FREQUENCY OF COMPILATION
- LIMITATION
- Questions and comments welcome!

What is a price index?

- Percentage number that shows the extent to which a price (or a **'basket' of prices)** has changed over a period **(month, quarter, year) as compared with the price(s)** in a certain year **(base year**) taken as a standard.

- It provides a summary of information in a simple form and it is widely used by government bodies, for economic policy and business information.

What it is

- The **Producer Price Index (PPI)** is used to measure the change over time of the average price of goods produced domestically.

- The price collected for each item is the selling price received by producer exclusive of taxes and rebate. Transportation and other incidental charges are not included.

How it works (examples):

- The producer price **index** consists of a **weighted** index of goods prices at wholesale. PPI is divided into three levels. The first is the PPI **commodity Index** which shows the average **price change** over a certain time period (usually a month) for commodities like crude oil and coal.

- The second level is the PPI stage of processing (SOP), which consists of goods that are in a manufacture stage between raw and finished, and **will** be sold to other manufacturers to create the finished goods. Examples include cotton, gasoline and steel.

- The third and final PPI level consists of finished goods. That is, they have undergone their final stage of manufacturing and will be sold to consumers. The finished goods level is the source of the core PPI.

- Core PPI is the primary economic indicator. PPI is a price index for locally produced finished goods bound to demand and supply interaction field.

Why it matters:

- *PPI* of finished goods is a direct indicator of the near-term level of the Consumer Price Index (CPI). This is because changes in prices at the retail level (finished goods) are directly transferred to consumers at the point of sale. Since the **CPI** is the primary indicator used to measure inflation in an economy, the PPI is a preview of changes in the rate of inflation.

Index compilation

- The Producer Price Indices are compiled at two stages of Industrial Classification system by a four-digit level. By a four-digit level grouping , the price relative of selected commodities under the particular industry group is calculated as follows:

- $I_{ij} = \dfrac{\sum (W_{ij} * PR_{ij})}{\sum^{n}_{ji=1} = W_{ij}}$

- **Where, Iij = Manufacturing producer price Index for ith commodity at jth 4-digit ISIC**

- W_{ij} = weight of the ith commodity of jth 4-digit ISIC

- PR_{ij} = Price relative of the ith commodity of the jth 4-digit ISIC

- W_{ij} = Total weight of the commodities at the j$_{th}$ 4-digit ISIC

- i = 1, 2, 3. ………….

- n = Number of price relatives or, commodities at jth 4-digit ISIC

- The second stage, involve compilation of the overall Index the weighted average of the indices at 4-digit level and is computed as :

$$I_k = \frac{\sum_{ij}^{n} (w_j * I_j)}{\sum_{ij}^{n} w_j}$$

Where, I_k = Producer Price Index of manufacturing sector

W_j = weight of the jth 4-digit ISIC

I_j = Manufacturing Producer Price Index of 4-digit ISIC

$\sum w_j$ = Totat weight of the 4-digit ISIC
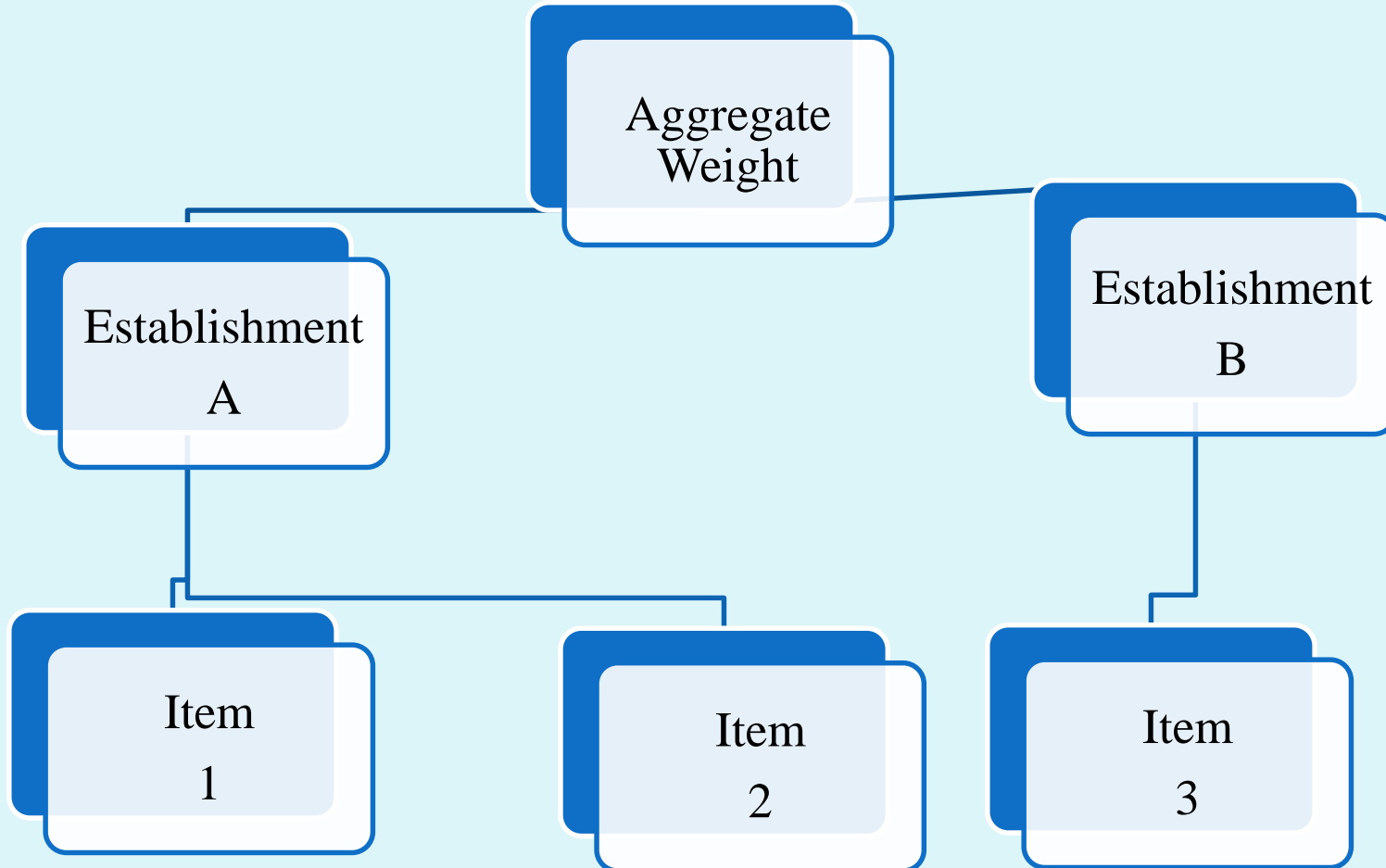
i = 1, 2, 3, …………………..

n = Number of 4-digit ISIC

Calculation of weights

- Essentially for aggregation
- PPI: Output : Economic census
  - For population: preferable isic.rev 4 sectors
  - Establishment level
  - Applied at item level

Calculation Aggregate Weight

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                    ┌─────────────────┐
                    │    Aggregate    │
                    │     Weight      │
                    └─────────────────┘
              ┌───────────┴───────────┐
    ┌─────────────────┐       ┌─────────────────┐
    │ Establishment   │       │ Establishment   │
    │       A         │       │       B         │
    └─────────────────┘       └─────────────────┘
      ┌─────┴─────┐                   │
┌──────────┐ ┌──────────┐      ┌──────────┐
│  Item    │ │  Item    │      │  Item    │
│   1      │ │   2      │      │   3      │
└──────────┘ └──────────┘      └──────────┘
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Updating of Weights

ISIC		New weight %	Old weight %
08	Quarrying of stones and sand	2.1	
10	Food	25.7	54.3
11	Drinking	18.0	35.9
14	Clothing	29.9	
15	Foot wears	0.1	0.0
16	Wood products	0.8	1.5
18	Printing product and service	2.2	2.0
20	Basic chemicals and soaps	3.6	1.9
23	Earth products	0.1	0.3
25	Metal Products & Other metal for household	8.3	0.0
31	Furniture	7.5	3.9
32	Status Item Products	0.8	
33	Repair service	0.9	

Linking Old to New Index

- Linking old to New Index involve base Shifting of base period or reference period of the Index to new reference period known as base shifting . This can be done using the following relations as,

- Shifting price Index = Original Price Index in Jun 2017/ Original Price Index in Sep 2017 * New Price Index in Sep 2017 (100)

Example

The following are two series Index numbers of a commodity taking Jan 2009 = 100 and Sep 2017 = 100

Year	Index Series Jan 2009 =100	Index series Sep 2017 = 100
Jun 2017	193.84	
Jul 2017	193.84	
Aug 2017	190.60	
Sept2017	188.38	100
Oct 2017		100.05
Nov 2017		100.20
Dec 2017		100.31

Splice the Index series of January 2009 = 100 to September 2017 = 100

Splicing the Index series of September 2017 to January 2009 = 100

- Solution (a)

Year	Index series Jan 2009 =100	Index series 2013	Index series 2005 spliced to Index series 2013
Jun 2017	193.83		Index A of current year/Index A of common year *100 = 193.84/188.38*100 = 102.90
Jul 2017	193.84		193.84/188.38*100 = 102.90
Aug 2017	190.60		190.60/188.38* 100 = 101.18
Sep 2017	188.38	100	188.38/188.38* 100 = 100
Oct 2017		100.05	100.05
Nov 2017		100.20	100.20
Dec 2017		100.31	100.31

Solution (b)

Year	Index series Jan = 2009	Index series Sep 2017 =100	Index series Sep 2017 Spliced to Index series Jan 2009 = 100
June2017	193.84		
Jul 2017	193.84		
Aug 2017	190.60		
Sep 2017	188.38	100	Index 2013 of current year * Index 2005 of common year / 100 = 100*188.38 /100 = 188.38
Oct 2017		100.05	100.05*188.38/100 = 188.48
Nov 2017		100.20	100.20*188.38/100 = 188.75
Dec 2017		100.31	100.31*188.38/100 = 188.96

New PPI Index Born

	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	
Old Index	193.84	193.84	190.61	188.38	188.48	188.75	188.96	
New Index	102.90	102.90	101.18	100	100.05	100.20	100.31	

Frequency of Compilation

- The Index of the Producer Price Index are compiled and released at quarterly basis within first 15days of the next

Limitation of the PPI

- 1. This PPI covers only quarrying and manufacturing sector

- 2. PPI covers large ,medium and small establishment.

- 3. The selected establishments are representatives at national and available at national level only.

Questions and comments welcome

THE END

Thank you