ADJUSTMENT ISSUES IN PRICE STATISTICS

MD. Shahabuddin Sarker
Deputy Director
National Accounting Wing
Bangladesh Bureau of Statistics

StatCaB Training Programme of SESRIC on Price Statistics
Brunei, July 18-20, 2017

Quality adjustment

When a commodity is missing in a month for reasons other than being off season or off-cycle, the replacement may be of a different quality- the price basis may have changed, and like may be no longer compared with like. A number of approaches exist for dealing with such situation, These are;

Implicit method:

- Imputation: used when no information is available, (overall mean and class mean)
- Overlap: used when no information available but replacement commodity exists in the same period as the old commodity (quality change).
- Comparable replacement: used if another commodity is directly comparable (not quality change)
- Linked to show no price change
- Carry forward

Quality adjustment-contd.

Explicit Method: used when there is substantial difference in the quality between old and replacement commodity

- Expert judgment
- Quantity adjustment
- Differences in production/option cost
- **Hedonic approach**: a regression model in which market prices of different products are expressed as function of their characteristics. The resulting estimates may be used to predict the price of a new product for which the mix of characteristics differs from those of any product already on the market, and can thus be used to estimate the effects of quality change on prices

Chaining /Chain linking

The construction of a continuous price series by multiplying together price indices that have been constructed using different weight reference periods. The resulting index is referred to as a "Chain index"

In chain index base period is preceding period

Laspeyres Price chain index formula:

$$LP_{ch} = \frac{\sum p_{i,t} q_{i,t-1}}{\sum p_{i,t-1} q_{i,t-1}}$$

Chain index

Example

Year/		index
2004	A=	10
2005	B=	15
2006	C=	25
2007	D=	30
$P_{05/04}$	B/A=15/10	1.5 (link relatives)
$P_{06/05}$	C/B=25/15	1.67
$P_{07/06}$	D/C=30/25	1.20

$P_{07/04} = P_{07/06} * P_{06/05} * P_{5/04} = 1.20*1.67*1.5 = 3.0$

$P_{07/04} = 30/10 = 3.0$

$P_{07/04} = P_{06/04} * P_{07/06} = 3.0$