

THE UPDATED CONSUMER PRICE INDEX

(Base: July 1991 - June 1992 = 100)

1. Introduction

The monthly Consumer Price Index compiled by the Central Statistical Office measures the average change in the level of prices paid by private households for a fixed market basket of goods and services. This basket which is an actual reflection of the pattern of consumption expenditure of households, does not only cover commodities of basic necessity but includes all the goods and services consumed by private households. Thus, commodities like alcoholic drinks, tobacco, entertainment, transport, education and medical care also form part of the basket.

Each item in the basket has a different degree of importance and the relative importance of an item is technically referred to as its "weight". This is determined as a proportion of expenditure on that item of the total consumption expenditure of households as revealed by household budget surveys. It is usually expressed as a figure per thousand.

The index is computed by working out the costs of the basket in the reference base period and in the month under review. A ratio of the latter cost to the former one, expressed as a percentage, is the Consumer Price Index for the month.

It is important to note that the Consumer Price Index does not measure the absolute level of aggregate prices, but only the relative change in prices. It can give in no way any indication of shift, substitution and change in quantity or quality in the pattern of expenditure and in the standard of living of private households.

2. Updating of the Consumer Price Index

The Consumer Price Index is among the most important economic indicators and is widely used in many sectors of the economy such as in wage negotiations, in escalation clauses for business and industrial contracts, in current cost accounting and in national accounting as deflators. Great care and caution have therefore to be taken in its computation. It is particularly important to ensure that any change in the consumption pattern of the population be reflected in the computation of the index.

The change in the consumption pattern of a population is a slow process, the change being sometimes imperceptible from year to year. However, after a lapse of time the change may become sufficiently significant as to no longer reflect the true picture of the consumption pattern. According to our experience this lapse of time is about a five year interval. For this reason, every five years a Household Budget Survey (HBS) is carried out so as to update the basket and the weights of the different items used in the computation of the Consumer Price Index. A Household Budget Survey was therefore due in 1991/92 since the present index is based on the results of a survey conducted in 1986/87.

3. The 1991/92 Household Budget Survey

This Survey is the fifth to be conducted by the Central Statistical Office (CSO). The first one was carried out in 1961, followed by another one in 1975. Both of these were planned and executed with the assistance of foreign experts. However, the third and succeeding ones were carried out by CSO's own personnel resources at intervals of about five years, namely in 1980/81, 1986/87 and 1991/92.

The Survey was conducted on a sample basis. A sample of 5,712 private households, taken so as to be representative of all private households, were interviewed during the period of July 1991 to June 1992 at the rate of 476 every month. Each month, a team of about 60 field staff was employed to collect the required information from the selected households. Personal interviews and diary methods were used for data collection. Only five of the 5,712 selected households were not able to cooperate for reasons of migration or death in the households. The total cost of the survey is estimated to about Rs 4 million.

The reliability of the data collected was evaluated against data from other independent statistical sources, whenever this was possible. Demographic data obtained from the survey were verified with those of the 1990 Housing and Population Census. A close concordance between the two sets of data was observed. Expenditure figures from the survey were compared with sales, production and import data for the reference period. There again differences were not significant except for alcoholic drinks and tobacco which were grossly under-reported by households.

The results of the survey can therefore be safely used for establishing the weights of the Consumer Price Index after some adjustments have been made for the under-reporting observed in connection with expenditure by households on alcoholic drinks and tobacco.

4. The Consumer Price Index Advisory Committee

As for previous surveys, a Consumer Price Index Advisory Committee was set up to bring together representatives of workers, employers, consumers and government officials for consultation and advice in the revision and updating of the Consumer Price Index.

The Committee, under the chairmanship of the Director of Statistics, first met in May 1991 before the start of the 1991-92 Household Budget Survey to take note of the methodology to be used for the survey and to see what could be done to obtain the best possible response from selected households. The same committee met a second time on 23rd September 1992 to take note of the results of the survey, and to consider any recommendations in connection with the revision and updating of the Consumer Price Index.

At the third and last meeting held on the 30th September 1992, the Committee unanimously recommended that:

(i) a new Consumer Price Index be calculated as from July 1992 using the weights obtained from the 1991-92 Household Budget Survey after making the necessary adjustments for the under-reporting of consumption expenditure for alcoholic drinks and tobacco

- (ii) the same methodology be used as for the previous index, namely
- a) using a base-period of one complete year coinciding with the survey period
 - b) computing the index for all categories of households
 - c) using Laspeyres' Formula for the computation of the index
 - d) maintaining the timing of price collection
 - e) expanding the number of outlets, indicators and price quotations
 - f) maintaining the publication programme of the monthly index

5. The updated weighting system

As recommended by the Consumer Price Index Advisory Committee the results of the 1991 - 1992 Household Budget Survey, adjusted for under-reporting of expenditure on alcoholic drinks and tobacco, have been used to calculate the weights for updating the Consumer Price Index. As explained before the weight to be attached to each item or group of items is the relative expenditure of private households on that item or group. The weights, expressed per 1,000 are given in *Table 1* for major commodity groups and in the Annex for detailed commodity item classes. It must be mentioned here that the classification of commodities has been done according to the System of National Accounts with the following structure:

9 Major Commodity Groups disaggregated into
37 Groups broken down into
102 Subgroups leading to
230 Item classes

Table 1:- Comparison of weights by major commodity group, 80-81, 86-87, 91-92.

Major Commodity Group	1980-81	1986-87	1991-92
1. Food and non-alcoholic beverages	444	419	392
2. Alcoholic beverages and tobacco	59	72	82
3. Clothing and footwear	83	84	88
4. Fuel and light	61	57	52
5. Housing and household operations	138	135	131
6. Medical care and health expenses	29	30	36
7. Transport and communication	100	93	97
8. Recreation, entertainment, education and cultural services	44	60	66
9. Miscellaneous goods and services	42	50	56
T O T A L	1000	1000	1000

The major group "*Food and non-alcoholic beverages*" remains still the most important, accounting for 39.2% of total monthly household consumption expenditure. Its share in 1991/92, however, has declined by 2 percentage points when compared with 1986/87. On the other hand, the share of major group "*Alcoholic beverages and tobacco*" has increased by 1 percentage point while those of "*Recreation, entertainment, education and cultural services*" and "*Miscellaneous goods and services*" have each increased by 0.5 percentage point.

Although no major change was noted at that overall level, yet there have been quite a few internal shifts. Herebelow are given some important downward shifts in the weights of certain item classes.

	1986/87	1991/92
<u>Commodity</u>	<u>From</u>	<u>To</u>
Rice	35	21
of which		
<i>ration rice</i>	31	13
<i>other rice</i>	4	8
Flour	9	4
Cooking oil	21	13
Water charges	18	13
Electricity	34	27
Kerosene	14	4
Rent	24	19
Laundry soap	12	7
T.V. & similar equipment	19	6

It should however be remembered that a downward shift in the weight of an item class does not necessarily mean that absolute expenditure on that item has decreased. In fact, in most cases the absolute expenditure has increased. The decreased weights only mean a decrease as a relative proportion of the total consumption expenditure. In addition, the total weight must add to 1,000. The above declines therefore must partly be attributable to relative increases in other item classes, some of which are given herebelow.

<u>Commodity</u>	1986/87 <u>From</u>	1991/92 <u>To</u>
Meat	64	67
of which		
<i>poultry</i>	21	29
Fresh fish	12	15
Frozen fish	10	11
Fresh fruits	10	16
Alcoholic beverages	43	54
of which		
<i>Whisky</i>	3	7
<i>Beer & Stout</i>	15	22
Cooking gas	6	20
Electrical appliances	7	12
of which		
<i>washing machines</i>	0	2
Domestic services	7	9
Medical care	30	36
Transport & Communication	93	97
with major internal changes e.g. <i>personal</i>		
<i>transport</i>	31	46
<i>bus fare</i>	48	25
<i>taxi fare</i>	7	10
<i>air fare</i>	0	7
Entertainment	9	16
Education	18	24
Personal care	21	26

6. Selection of items to be priced

Since the Consumer Price Index measures the general movement of prices over time, it is not necessary to collect prices of all commodities in order to follow that movement. In fact it is sufficient to price regularly a representative sample of commodities to serve as indicators. The basis for selecting this sample of commodities is the Household Budget Survey itself, since it provides information on all items of goods and services bought by households during a twelve month period. A sample of such commodity items, to be used for pricing purposes, has been selected along the following lines.

It has been stated earlier that the commodities have been classified at four levels with 9 major groups, 37 groups, 102 subgroups and 230 item classes. Each item class includes items which are very much alike and it is not necessary to price all items for the purposes of constructing the Consumer Price Index. For each item class a representative sample of commodity items, called indicators, are selected. For instance for the item class "*Powdered milk - full cream*" only four brands are priced and changes in the price of these brands are taken to represent changes in the item class "*powdered milk - full cream*" as a whole. The identity of the indicators selected for pricing are kept confidential in order to ensure that the prices of these items are not manipulated by anyone.

The total numbers of indicators is 687. The number of price quotations collected for each indicator depends on the variability of the price of that item in outlets both within and between localities.

A larger ~~number of~~ quotations are collected for those ~~items~~ for which price variations from one outlet to another are large. A total of 4,586 price quotations are collected for the 687 indicators selected and their distribution is given in Table 2.

It is to be noted that the number of quotations have been increased since in the previous Consumer Price Index there were 3,566 price quotations.

7. Selection of regions and outlets

For the purpose of computing the C.P.I., prices of goods and services ~~other than~~ perishables are collected from outlets in the 10 following regions: *Port-Louis, Rose-Hill, Quatre Bornes, Curepipe, Mahebourg, Chemin Grenier, Flacq, St. Pierre, Goodlands and Bambous.*

As regards perishables, price quotations are obtained from markets in *Port Louis, Rose-Hill, Vacoas, Curepipe, Mahebourg, Flacq and Goodlands.*

The same coverage will be maintained for the new index.

The number of outlets from which prices are collected has been increased from 270 for the previous index to 325 for the new one.

Table 4 - The New Consumer Price Index Commodity Item Structure

Major Commodity Group	No of Commodity Groups	No of Commodity Sub-Groups	No of Item Classes	No of Indicators	No of Price Quotations
1. <i>Food and non-alcoholic beverages</i>	9	31	81	255	2,515
2. <i>Alcoholic beverages and tobacco</i>	2	5	7	25	120
3. <i>Clothing and footwear</i>	2	8	35	70	110
4. <i>Fuel and light</i>	1	1	5	6	34
5. <i>Housing and household operations</i>	9	16	39	106	715
6. <i>Medical care and health expenses</i>	2	9	10	12	242
7. <i>Transport and communication</i>	1	10	11	53	203
8. <i>Recreation, entertainment, education and cultural services</i>	4	7	21	59	211
9. <i>Miscellaneous goods and services</i>	1	9	18	68	303
All Groups	37	102	230	687	4586

8. Timing of price collection

Pricing of goods and services other than perishables is done between the 12th and 18th of each month. Perishables such as fresh fruits and vegetables, fish and meat which show great price fluctuations over time are priced each week of the month.

These same arrangements will continue to be operational with the new index.

9. Special Problems

9.1 Rent

Rent paid by households living in rented accommodation also forms part of private household expenditure and has to be considered in the Consumer Price Index. However since rent does not change so much over time, it is not necessary to collect data on rent every month and this will be done every quarter only. The 1991-92 Household Budget Survey identified 736 rented dwellings and out of these a representative sample of 200 will be surveyed every quarter to obtain data on rent to adjust the rent element in the Consumer Price Index if necessary.

9.2 Public Utilities

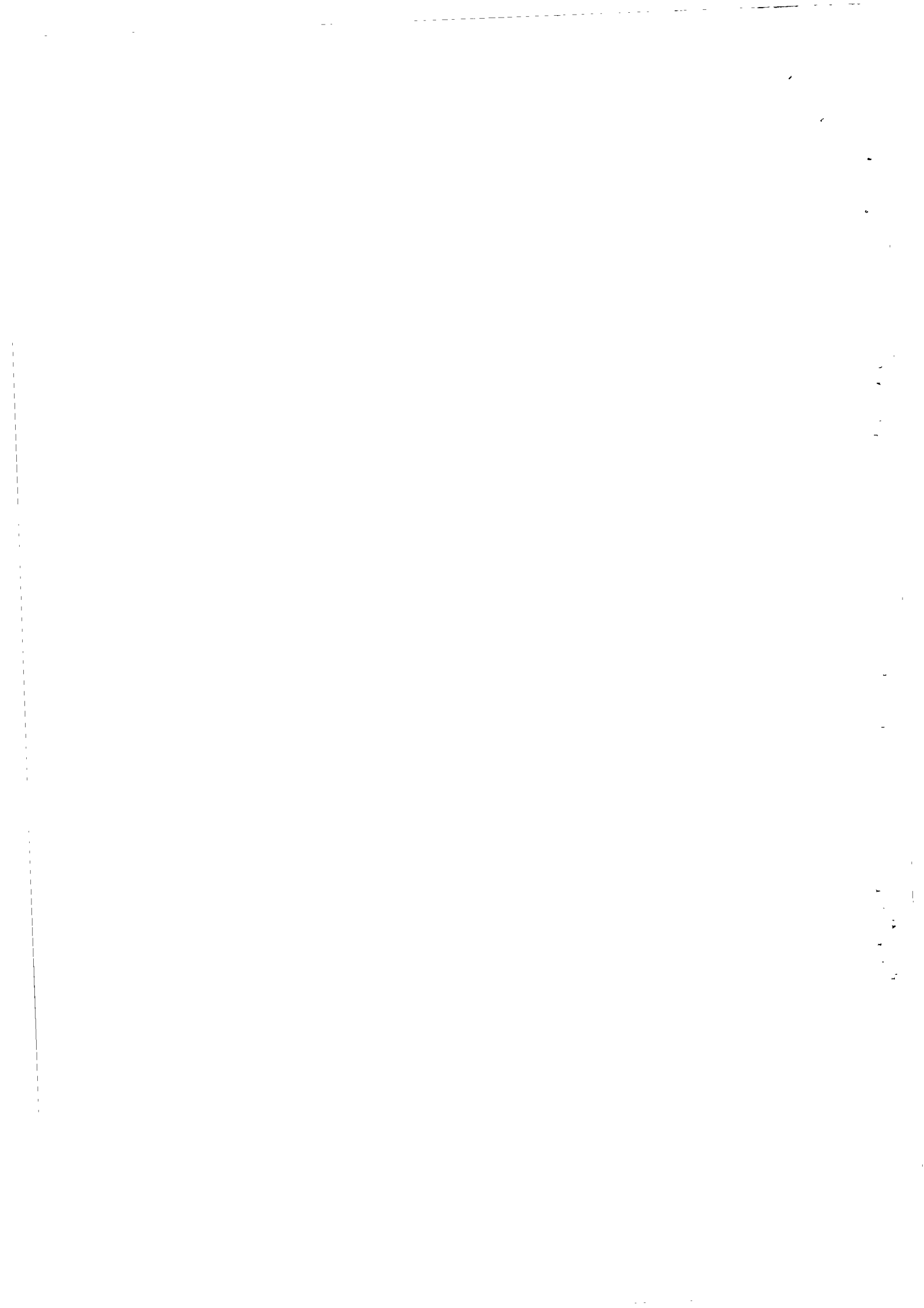
Tariff of electricity and water, bus fares and municipal rates sometimes undergo changes in their structures and it is important to compare the averages of the new and old structures from a representative set of tariffs. Separate indices are constructed for all the public utilities taking into consideration the various structures of their tariffs together with the corresponding expenditures as collected through the Household Budget Survey.

9.3 Seasonal Items

The supply of some commodity items, especially fresh vegetables, varies according to the season and their prices therefore fluctuate considerably from month to month. The effect of such seasonal fluctuations are accounted for by varying the relative weights of individual items within a group, say, of vegetables, but keeping the total weight of the group constant in the Consumer Price Index. The individual item weights for each month are obtained from the monthly expenditure data collected at the Household Budget Survey.

9.4 Disappearance of selected items

A problem arises with the disappearance of a particular variety of a certain item. If the disappearance of a particular variety of a certain item is temporary, that is, only for one or two months, the previous price is kept for these months until the reappearance of that variety. In case that the variety will not be available for much longer periods, it is replaced by the nearest similar product available on the market.



The base price of this substitute is calculated in such a way that the current price relative of the substitute is the same as that of the product being replaced.

9.5 Quality Changes

Quality changes in the selected varieties of the commodity items are often observed during price collection. In such cases, another variety with the same quality as the one to be replaced is used as a substitute. When this is not possible, an evaluation of any difference in quality between the new and the old variety is made from information gathered from suppliers and consumers.

If the change is minor, the quality change is not taken into account and the new variety is used as a substitute for the old one. When the change is substantial, the differences which are relevant to quality have to be distinguished and valued in monetary terms. The new variety is thus chosen but its price is adjusted accordingly.

9.6 Discount, Sales, etc

Discount and sales prices are taken into account but irregular sales such as liquidation sales are ignored.

No account is taken of black market prices, hire purchase on credit terms, or second hand purchases.

10. Calculation of the Consumer Price Index.

The index is computed according to the Laspeyres Formula as a weighted arithmetic average with a fixed base, the weights corresponding to base period expenditures, that is, July 1991 to June 1992. The Laspeyres Index measures the cost of a fixed basket of goods and services at different points in time, compared to the original cost of the same basket at the base reference period.

The simplest formula used for computing the Consumer Price Index at time t is

$$I_t = \frac{\sum_i P_{it} Q_{i0}}{\sum_i P_{i0} Q_{i0}} \times 100$$

I_t - CPI for period t with reference to a base period 0

Q_{i0} - is the fixed quantity of item i at base period 0

P_{i0} - is the price of item i at time 0

P_{it} - is the price of item i at time t

$P_{it} Q_{i0}$ - is the cost of the fixed quantity of item i at time t

$P_{i0} Q_{i0}$ - is the cost of the fixed quantity of item i at base period 0

$\sum_i P_{it} Q_{i0}$ - is the total cost at time t of all items in the fixed market basket of goods and services

$\sum_i P_{i0} Q_{i0}$ - is the total cost at base period 0 of all items in the fixed market basket of goods and services

The base period 0 for the updated index is the same as the survey period, that is, July 1991 to June 1992. The value of the index for this base period has been equated to 100 so that the CPI value at time t will be relative to base period July 1991 to June 1992 = 100.

11. Linking of indices

The new Consumer Price Index is not strictly comparable to the one ending in June 1992 as both indices have different base periods and different weighting systems. So a formal linking is not possible. However, for some particular purposes, a comparison between the old and the new index may be necessary. In these cases a crude method may be obtained by multiplying the new index by 1.512. This conversion factor is obtained by equating the base of the new index (100) for the period July 1991 to June 1992 with the average of the previous index (151.2) for the corresponding period.

12. Publication of Consumer Price Index

As in the past, the Consumer Price Index which is computed each month will be published monthly in the Government Gazette about four weeks after the month to which it relates. Subsequently the data will also be published on a quarterly basis in the Economic Indicators and on an annual basis in the Annual Digest of Statistics.

13. Indices of July and August 1992

CONSUMER PRICE INDEX
(Base: July 1991 - June 1992 = 100)

July 1992	August 1992
104.0	105.6

The new index for the month of July 1992, with base period July 1991 to June 1992 = 100, is 104.0.

For the month of August 1992, the index stood at 105.6. An increase of 1.6 points or 1.5 % over the July 1992 figure has been observed and is accounted for by price changes as follows:

COMMODITY	CHANGE
Fresh fruits	+ 0.1
Sugar	+ 0.1
Other food products	+ 0.2
Electricity	+ 0.4
Water charges	+ 0.7
Other goods and services	+ 0.1
TOTAL	+ 1.6

Central Statistical Office,
Ministry of Economic Planning and Development,
Port-Louis.
October 1992.