SIMPLE AGGREGATIVE METHOD

In this method of computing a price index, we express the total of commodity prices in a given year as a percentage of total commodity price in the base year.

Simple aggregative price index = $\frac{\sum P_n}{\sum P_o} \times 100$

SIMPLE AVERAGE OF RELATIVES

One way to rectify the drawbacks of a simple aggregative index is to construct a simple average of relatives. Under it we invert the actual price for each variable into percentage of the base period. These percentages are called relatives because they are relative to the value for the base period.

WEIGHTED METHOD

These indices can be classified into broad groups:

(i) Weighted Aggregative Index.

(ii) Weighted Average of Relatives

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- **Weighted Aggregative Index: Under this method we weigh the price of each commodity by a suitable factor often taken as the quantity or value weight sold during the base year or the given year or an average of some years.**

The various alternatives formulae in use are:

- ✓ **Laspeyres' Index:** In this Index base year quantities are used as weights:

$$\text{Laspeyres Index} = \frac{\sum P_n Q_o}{\sum P_o Q_o} \times 100$$

- ✓ **Paasche's Index:** In this Index current year quantities are used as weights:

$$\text{Passche's Index} = \frac{\sum P_n Q_n}{\sum P_o Q_n} \times 100$$

- ✓ **Methods based on some typical Period:**

Index $\frac{\sum P_n Q_t}{\sum P_o Q_t} \times 100$ the subscript t stands for some typical period of years, the quantities of which are used as weight.

The Marshall-Edgeworth index uses this method by taking the average of the base year and the current year.

$$\text{Marshall-Edgeworth Index} = \frac{\sum P_n(Q_o+Q_n)}{\sum P_o(Q_o+Q_n)} \times 100$$

- ✓ **Fisher's ideal Price Index:** This index is the geometric mean of Laspeyres' and Paasche's.

$$\text{Fisher's Index} = \sqrt{\frac{\sum P_n Q_o}{\sum P_o Q_o} \times \frac{\sum P_n Q_n}{\sum P_o Q_n}} \times 100$$

- ✓ **Dorbish Bowley's :** arithmetic mean of lasparey's and Paschey's index no. Dorbish Index no.

$$\frac{L+P}{2}$$

❖ Weighted Average of Relative Method:

To overcome the disadvantage of a simple average of relative method, we can use weighted average of relative method. Generally weighted arithmetic mean is used although the weighted geometric mean can also be used

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Test of Adequacy

Unit Test : The unit test acquires that the formula for construc1ng on index no. should be independent of the units, in which or for which prices and quantities are given. Almost all the formula of index no. satisfies this test.

Exception:

For the simple (unweighted) aggregative index all other formulae satisfy the test.

Time reversible Test : This test is given by prof. Fisher according to Fisher, the test is that the formula for calculating an index no. should be such that it will give the same ratio b/w one point of comparison and the other, no mafer which of the two is taken as base.

Exception:

You will notice the laspeyres method and paasches method do not satisfy this fisher ideal formula does.

Factor reversible Test : This test is also given by prof. Fisher According to Fisher just as each formula shouldpermit the interchange of two times without given inconsistent result, so it ought to permit interchanging the price and quantities without giving inconsistent result

Test of Adequacy

Exception:
Thus, Fishers index satisfies factor reversal test. because fishers index number satisfies both the tests in (ii) and (iii) , it is called ideal index number

Circular Test: This is an extension of time reversible test. This test requires that if an index no. is constructed for the year "I" consider "o" as a base year, then for the year "2" consider "I" as a base year, for the "3" year consider"2" as a base year and for the year "3" consider "0" as a base year than the product of all these index no. should be equal to zero. i.e. P01 x P12 x P23 x P30 = 1 No. index number formula should satisfy this test.

Exception:
The simple geometric mean of price relative and the weighted aggregative with fixed weights meet this test.

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INTRODUCTION

Index numbers are convenient devices for measuring relative changes of differences from time to time or from place to place.

Definition: An index number is a ratio of two or more time periods are involved, one of which is the base time period. The value at the base time period serves as the standard point of comparison.

ISSUES INVOLVED

- **Selection of data:** It is important to understand the purpose for which the index is used. If it is used for purposes of knowing the cost of living, there is no need of including the prices of capital goods which do not directly influence the living.

- **Base Period:** It should be carefully selected because it is a point of reference in comparing various data describing individual behavior. The period should be normal i.e., one of the relative stabilities, not affected by extraordinary events like war, famine, etc.

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- **Selection of Weights:** It is necessary to point out that each variable involved in composite index should have a reasonable influence on the index, i.e., due consideration should be given to the relative importance of each variable which relates to the purpose for which the index is to be used.

- **Use of Averages:** Since we have to arrive at a single index number summarizing a large amount of information, it is easy to realize that average plays an important role in computing index numbers.

- **Choice of Variables:** Index numbers are constructed with regard to price or quantity or any other measure. We have to decide about the unit.

- **Selection of Formula:** The question of selection of an appropriate formula arises, since different types of indices give different values when applied to the same data.