Index Number

Theory Notes

Important points to remember

1. Theoretically the best average in the construction of index numbers is Geometric mean.
2. Fisher's index is known as an ideal index because it satisfies Time Reversal Test and Factor Reversal Test.
3. Fisher's index is the geometric mean of Laspeyre's index and Paasche's index
4. Dorbish Bowley index number is the Arithmetic mean of Laspeyre's and Paasche's index.
5. Index number based on arithmetic mean is higher than the index number based on geometric mean.
6. Time reversal test is satisfied when $P_{01} \times P_{10} = 1$.
7. Factor reversal test is satisfied when $P_{01} \times Q_{01} = \frac{\sum p_1 q_1}{\sum p_0 q_0}$.
8. Circular test is satisfied when $P_{01} \times P_{12} \times P_{20} = 1$.
9. Circular test is not met by any of weighed aggregative with changing weights.
10. Circular test is met by simple geometric mean of price relatives and weighted aggregative with fixed weights.
11. Time reversal test is the test which requires that the product of price index for year 1 on the base year 0 and price index for 0 on the base year 1 should be equal to 1.
12. Factor reversal test is the test which requires that the product of a price index and the quantity index should be equal to the corresponding value index
13. Chain base index is the index method which permits the introduction of new item and deletion of old items without necessitating the recalculation of entire series and in which the base changes from year to year

14. Base shifting is the technique of changing the old base period to new base period

15. Splicing is the technique of linking two or more index number series

16. Deflating is the technique to eliminate effect of changing price levels

17. Consumer price index is the index which measures how much the consumers of a particular class have to pay more or less for a certain basket of goods and services in a given period

Extract of important Index Numbers which satisfy the test of Adequacy

Particulars	Unit Test	Time Reversal	Factor Reversal	Circular
Laspeyere's	✓	×	×	×
Paasche's	✓	×	×	×
Fisher's	✓	✓	✓	×
Marshall Edgeworth	✓	✓	×	×
Simple GM of Price Relatives	×	✓	×	✓