

ELEMENTARY INDEX NUMBER THEORY AS A SAFE FOUNDATION OF A SYSTEM OF NATIONAL ACCOUNTS

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SUMMARY *The author benefits from the fact that at the time when Laspeyres, Paasche and their forerunners shaped the Index Number Theory a fundamental notion like that of set was not known to them. Now, the author benefits also from some approaches used by contemporary statistical agencies (though not fully consistently by the latter) and manages to transform the Index Number Theory into a uniform system based entirely on the notion of set.*

1. INTRODUCTION The Index Number Theory presented here is a genuine theory in the sense of being developed by using a **uniform** rule for generating index number formulae and equations. So, in contrast to the situation in the Common Index Number Theory, the generated index number formulae and equations here always refer to aggregative characteristics of existent frequency distributions of units, despite, as we shall see, the multi-commodity character of the market considered. In the following, the bearer of the distributions, a **collective** of units, is defined as a set whose properties and relations with other relevant collectives only depend on the distributions of the units contained (Tzonev, 1985, 1986, 1996). More specifically, the generating algorithm considered is set up as a three-step procedure:

Step 1: Draw a fraction line;

Step 2: Put above the fraction line the algebraic expression of the current value of the considered distribution's aggregative characteristic;

Step 3: Put below the fraction line the algebraic expression of the base value of the same aggregative characteristic.

This procedure should be followed irrespective of the kind of aggregative characteristic to be indexed, even when the latter is, say, a median value, the highest value, a correlation, etc. That is why the term "formula" in the description of the procedure is used in the plural. Note that particular index number formula, generated in that way, is called a "well-formed" formula. Note also that this qualification is in no way a trivial one, since a consultation with the literature on index numbers will reveal few well-formed formulae. Even the standard price index formulae of Laspeyres and Paasche are not well-formed index number formulae. In fact, they do not show explicitly in their numerator (denominator) the current (basic) average price in the collective observed.

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