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Individual and public cases of statistics

Paper submitted by Hungarian Central Statistical Office[1]

„Fortunately for the development of theoretical statistics, the philosophical problems have remained in the background, stimulating argument and a penetrating examination of the inferential process but not holding up development. In practice it is possible for two competent statisticians to differ in the interpretation of data, although if they do, the reliability of the inference is often low enough to justify further examination. Such cases are not very frequent, but important instances do occur; a notable one is the interpretation of the undeniable relationship between intensity of smoking and cancer of the lung. Differences in interpretation are particularly liable to occur in economic and social investigations because of the difficulty of performing experiments or of isolating causal influences for separate study.[1]" ***(M. G. Kendall)***

1. Is it justified that the subsistence level indices be named after prime ministers of a given country? Could politicians in general be responsible for worsening or improving living standards, what is the role of the press in revealing the citizens' everyday problems, using statistical indices? Is there any room for meaningful dialogue between statisticians and journalists? If yes, what may be the role of each side in this discourse?

2. Not utterly amazingly, one of the Hungarian quality paper, called „Mag
at the end of 1997 an article containing sharp criticisms on evolution of the country' s subsistence level figures during the nineties. It is noteworthy to explain the significance of these indices in Hungary' s social life, so let me present some preliminary explanations of these in a broader context.

Transition process: social sensitivity in practice

[1] Paper prepared by Laszlo Holka, CSO, Hungary

3. In ex-socialist countries, often mentioned as being in a “transition” period, the greatest problems are those which can be identified with notions like „cost of living”, „consumer price indices” and „subsistence level”. The latter being also called as „poverty line” reveals the importance of these indices in ex-socialist countries, where the transformation of economic system and especially social consequences of this process accrued in their importance. The permanent pursuits of the former political elite in this part of word was to create and execute social egalitarianism. After their fall unsustainable inequalities can be observed among different groups of society.

4. Between 1989 and 1993 the output of the Hungarian economy measured on basis of the GDP fell by 18 per cent. Behind this unfavourable tendency there were such elements as price liberalisation, the inherited ineffective economic structure. These factors caused rocketing inflation. During five years the consumer’ s price level grew over threefold value. The peak year was 1991, when the figure reached 35 per cent (on a year per year basis) - and after three years of relative moderation in 1995 again came higher value of 28,2 per cent (and in 1996 and the following year 23,6, 18,3 per cent, respectively).

5. All this inevitably had its consequences on quality of life. As the GDP-figure shows, there was a drastic change in the level of consumption, and behind this a serious reshuffle of both of relative prices and the structure of consumption. While making unwelcome acquaintance with unemployment (its level rising from official zero to 9,8 per cent in 1992, a year later to 11,9, and moderated to 10,7 in 1994 and 9,9 in 1996 9,9) [2.] Therefore the real income of the Hungarian population has decreased gradually from year to year.

6. Such changes in aggregates clearly indicate a shock in living conditions. Although for the members of society the most of these indexes are mostly evasive, something new among them seemed to be conceivable: the subsistence level indices. A sort of numbers, apparently new for ordinary people - but not for statisticians, sociologists and politicians. The sensitivity of this issue is clear from the fact that HCSO computed subsistence level indices after World War II, but up to 1987 owing to political reasons they were not published. First calculations were made in 1968, simultaneously with renewal of the consumer price indices, and the basket used extended to all needs. Next came the household budget survey in 1982, its results being worked up in 1984 in an indices, which was full only concerning the collection of nutrition items - everything else being expressed in one sum, that was determined as a function of nutrition norms, via regression formulas. The debut-making of the figures was „slightly” restricted: they were published only „for official use” in 50 copies. The real publicity came in 1987, since then the numbers appeared in the Statistical Yearbooks beginning with the year 1984 and adjusted by CPI[3].

7. Democratic changes, the air of openness after 1990, plus worsening living conditions increased the sensitivity of the indices. Public interest became enormous; from September 1990 not only a Parliamentary Special Committee tried to contribute to find consensus in revision of HCSO’s computations (which were naturally once again elaborated together with CPI), but several independent organisations began to produce their own subsistence level indices. Their activity forced HCSO to publish subsistence level indices monthly, after their methodology was agreed. Meantime, some two or three civil associations, based in the capital questioned it also monthly. There was a kind of competition between absolute figures, some of the data-producers thus implicitly blaming the practice of government’ s social policy line. Moreover: a real movement emerged nearby the Hungarian capital, named after people, living under „minimum subsistence line”[4]. Although founded mostly by retired people, this association proved to be more fit for life than other organisations - while these gradually abandoned computing subsistence level figures this one became a charity service. It has nowadays offices in 300 places throughout the country - just the same number of organisations as had the „AC!” movement in France in March 1998, struggling against unemployment and poverty (but the Hungarian one is far from being so militant as its French counterpart)[5]. Although there were several institutions, publishing subsistence-level figures the impact was modest: these numbers had not been used either during the social-partnership’ s negotiations, nor in determining social security aids. The CPI’s carrier was more lucrative, its numbers are used in various indexations (wages, pensions, contractual agreements).

8. Accuracy required another change in methodology, which was revised in 1995. After analysing of former computation it became clear, that instead of the normative basket, which was adjusted by CPI month by month, it is more reliable to use one threshold value on a yearly basis, which originates in the household budget surveys, carried also out every year. As additional advantage, the indices contains opinions about respondents' income expectations[6].

The press-case: a cause for excitement

9. In December of 1997 it was a breath-taking thing for statisticians, how one of the Hungarian quality-papers handled their data. It published an article with tables which columns were entitled: „Antall-style" and „Horn-style" figures for subsistence-level indices. (After elections in 1990 the head of the government became Jozsef Antall; as he died in December 1993, his successor was Peter Boross. Following the next general elections a new socialist cabinet was created, which first man was Gyula Horn.)

10. The text itself accused the HCSO in political manoeuvre when changing the concept and computation of the subsistence-level indices and questioning the renewed methodology, and contained - once again - absolute figures. Entitled „Subsistence level as maid-servant of politics" the paper argued that the old measurement was abandoned only because by adjusting its figures by the CPI, every group of households would show higher sums of income, required to maintain health and efficiency for work - and for politics of the given government it is more advantageous to use lower absolute sums.

11. This approach caused a sort of excitement in the headquarters of the HCSO. Not so much because its absolute figures, or its index naming (suggesting that policy-makers are omnipotent) but for as the pre-history. Nine months before the above mentioned article appeared, the statistical service had carried out a „campaign" to inform Hungarian public about changes in measurement of the phenomenon - with all its requisites: press conference, giving reasons for change, interpretation of methodology both in a special publication and in the Statistical Review.

12. This really negative press-coverage required answer. In order to remain cool in this burning question of our days, it was decided in HCSO to write an article not about methods of measurement, but on freedom of judgement, on liberty of interpretation of the statistical data. The reply was entitled „Opinions on cost of living: an infinite series" and began with a proverb - with a saying, which sounds in Hungarian like „ill-doers are ill-deemers", but in a positive sense: everyone judges as he/she lives. To avoid dispute about details, no absolute figure was mentioned, moreover, no objection was made against using prime ministers' names in identifying indices. Instead, the answer emphasised that in politics whatever could become a case of struggle, and that it is up to politicians to define the notion of poverty, while the task of statisticians is to show alternatives and analysis of results - an idea, declared by Eurostat' s experts in 1990[7].

13. The reply did not involve reaction at all and this indicates that profession' s reasoning was accepted. In the case of the subsistence level indices which in early nineties monthly caused enormous excitement in Hungarian press it meant that the HCSO' s stance was admitted, no further arguing appeared - although a mere half year before general elections the opposite behaviour would be the logical. So „the best news: no news" requirement was fulfilled - by our assumption because the HCSO avoided arguing about statistical methods, about absolute numbers and left the freedom of the judgement to individuals.

Social and professional sensitivity

14. This example was not chosen in order of self-praising but because gives good opportunity to consider links between a profession the public opinion and their intersection: the press. First of all, since statistical inference could not be identical with individual life-experiences and are different from diverse conclusions conveyed by journalists in press, there will be always a gap between working up of

the apparently identical phenomena of life. The scientific processing of information will inevitably differ from their processing by mass media, the former being a strict way, the second being a looser one. Moreover: for statistics deal with a great number of data, their inference after using indexes will reflect something else than so called „real life" or „reality" (as perceived by individuals). This does not enhance achieving relevance of statistical data.

15. How to explain conclusions resulting from calculations without presenting formulas? Would the press, the TV, the broadcasting able to show mathematical functions? What kind of their consumers would be interested in presenting different averages or in frequency analysis?

16. The numbers must be interpreted by words. A great problem arises from this fact: while statistical methods are professional cases, their inference is a social phenomenon, for is of a public interest. And no sense to argue over methods: index formulas are destined to appear in professional publication, not in newspaper articles.

17. So there is a need of a „notional boundary": statistical notions could and should not be necessarily the same as perceived by public opinion. One could perhaps make a „requirement" for statisticians: while disseminating their data they must be conscious that users not always speak the same language. (To resolve this dilemma, Statistics Canada for instance chose the way: to learn the language of mass media). It is up to individual statistical services to decide, what kind of dealing with interpretations and misinterpretation they will use, for this area is highly dependent of the given economic trends, social conditions, etc.

18. If timeliness, accuracy and relevance are the underlying challenges of statistics, one can remark: in order to produce accurate numbers, HCSO had cut out the frequency of its publication of the subsistence-level indices - and as a charge, was „paid" by accusation of manipulation.

19. Is the press „ungrateful" towards statistics, towards other professions? Not necessarily. As historical experience shows, sometimes impulses for further observations came just from the press. As the gradual extension of the notion of what could be called „measurement of consumers' needs and wants" in statistics resulted in separation of one indices into minimum two (that of consumer price indices and that of subsistence level calculations, all that in efforts to increase the reliability of statistics)[8], some analogy may be drawn concerning the perception of various statistical inferences among wider public.

20. In Hungary it was exactly the case of subsistence level. After the disaster of the World War I rocketing inflation, soaring prices of the consumer' s goods focused the public attention on the cost of living. As a result, in 1921 almost simultaneously three periodic began to deal with the retail prices: „Pester Lloyd" from beginning of that year monthly published indices of retail prices, „Szakszervezeti Ertesito" (Trade Union Observer) those of cost of living, and the same index was printed in „Kozgazdasagi Figyelo" (Economic Review) but by another method. Hungarian Central Statistical Office offered its own, „professional" method three years later, providing monthly data from beginning of the year 1925.

21. So the impulse came from press, professionals reacted somewhat later - and their common achievement was a set of comparable data, disposable up to 1944.

22. In this context negative coverage does mean that there possibly always is a great controversy between statistical data, their production and the real processes of social and economic life. But negative coverage could transform into positive yield for the science (or profession). As Schumpeter noted it, writing about Tinberger: „This involves the fundamental principle that construction of the theoretical set-up should *precede* the statistical work: the relations themselves are not suggested by statistical observations; they are postulates and not results. Statistical figures are to „explain" the numerical values of some variables by given numerical values of others by the method of multiple correlation - a process which also eliminates those „explanatory" variables whose partial regression coefficients *indicate* the insignificance of their influence. The system is then, by process of successive substitutions, reduced to „final" equations that are held to depict the economic mechanism. In itself, every step in this procedure

is open to serious criticism, about which no more can be said than that they should not blind us to the greatness of this pioneer effort.[9]"

23. In this sense various users of statistical data are consumers of the statistical service. And if through mediation of mass media they do signal a new need of the public, sooner or later the profession will be forced to satisfy them by elaborating its methods, which would be more useful than the strict defence of existing methods, which threaten to become rigid, and so damaging requirement of the statistical relevance. This should be the sensitivity of statistics - while the sensitivity of press is to make a boundary between a profession and general politics.

N o t e s

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