

Sources and Methods Not Clear

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Estimates of National Income, 1948-49—1957-58. Central Statistical Organisation. Manager of Publications, Government of India, New Delhi. April, 1959. Pp 24. Price not mentioned.

THE presentation of the annual white paper on national income provides an opportunity for assessing the progress of the economy during the relevant period and re-examining the methodological issues involved in the preparation and presentation of estimates. The latest white paper gives the provisional estimates for 1957-58 together with the revised estimates for 1956-57, the provisional estimates for which had been presented in last year's report. In reviewing last year's white paper in these columns, it was pointed out that the provisional estimates were calculated by a short-cut method based on partial material and that this generally led to some under-estimation, so that the final revision was generally in the upward direction. "It is to be presumed", it was stated last year, "that the preliminary estimates for 1956-57, released in the present document, will also undergo an upward revision when they are finalised." ("The Economic Weekly" May 10, 1958)

In fact, however, the revision as far as the current price estimate of the net national income is concerned has been in the downward directions—from Rs 114.1 abja to Rs 113.1 abja. This reduction is due mainly to the lower agricultural prices that have since been worked out on the basis of fuller data. No details are, however, given of the prices that have now been taken into account in making the calculations and their statistical basis. This is really the basic complaint against the white paper. It gives very little information about the sources and methods actually used in making the estimates and about the basis for changes in these sources and methods. As might be expected from the fact that the main reason for the downward revision in the current price estimate is the fact of lower agricultural prices, the fixed price estimate does not show much change.

'Average Earning per Head

With regard to the revised estimates, it is pointed out in the notes at the end of the white paper

that the preliminary estimates for 1956-57 published last year are replaced in this issue by the detailed methods of estimation followed by the National Income Committee. While it is probably true that the estimates for most of the main sectors are made by the detailed methods of estimation followed by the National Income Committee, there is reason to suspect that in respect of some of the sectors, the methods used by the National Income Committee are not applied directly to the raw data, ad hoc measures of change being applied to the results obtained by the National Income Committee for the years covered by it. This suspicion is strengthened by the statement that 'the average earning per head of the working population has been raised by 1.5 per cent' in the small enterprises sector and again in the other commerce and transport, professions and liberal arts and domestic service sectors, in the light of trends of wages of rural skilled workers and those of factory workers'.

While this is not indicated clearly, the change seems to have been effected in respect of the year 1957-58 for which provisional estimates have been published for the first time in the current white paper. It appears from the statement quoted above that the method used for estimating the incomes of these sectors is to apply a figure of average earnings per head in the sector to an estimate of the working population in that sector. There are two possible sources of error in the use of this method. First, the average earnings per head of the working population in each sector are subject to change. Unless, such average earnings are independently estimated for each year, the results become to that extent arbitrary. The current white paper indicates that the average earnings have been raised by 1.5 per cent in each of the two sectors mentioned. Presumably, therefore, until now, the estimates of the average earnings made by the National Income Committee have been used by the

Central Statistical Organisation in subsequent years without any change. As these estimates were probably amongst the weakest of those made by the National Income Committee, the results obtained could hardly possess any utility in indicating year-to-year changes.

Working Population

A second source of error lies in the estimates of working population in the sectors concerned. Our population figures for the years subsequent to the 1951 census are highly uncertain. It is well known that the rate of growth of population has been increasing rapidly in recent years, and the Planning Commission is itself working on the assumption that it is not less than 1.8 per cent per annum. There is little or no information about changes in the size of the working force or of the employment available to those who are willing and able to work. When it comes to obtaining figures of the growth of the working force in particular sectors, there seems to be no basis whatsoever in available information.

Presumably, therefore, the Central Statistical Organisation applies some standard rate of growth of the working force in these sectors to the estimate of the working force in those sectors used by the National Income Committee. The results obtained are, therefore, likely to be not only arbitrary, but misleading. The use of standard rates of growth and fixed average earnings estimates tends to give the impression of an unchanging pattern in the industrial origin of the national income, which may not be at all true to reality.

Preparation of Revised Series

The weakness of the population figures tends to vitiate the figures of the per capita national income also. Yet the white paper does not even mention this problem in presenting the estimates. The current white paper does, however, make a statement of the utmost importance. 'On account of the availability of new source materials and certain improvements in methodology,' it says, "it is considered pos-

sible to improve the estimates. Although a part of the work in this direction has already been done by the National Income Unit, it is proposed that all such changes should be incorporated at one time into a revised series which should be brought out with detailed explanations. When this revised series is likely to be brought out, has not been indicated in the report.

From one point of view, it would appear to be desirable to press for the early preparation of such a revised series. On the other hand, it may also be argued that since the figures presented may have little validity until more information is available about the population of the country, such a revised series should be brought out only after the new census data become available. Perhaps that might be the time for the appointment of a new National Income Committee, which could then take upon itself the finalisation of the new series for past years as well.

No Estimate of Capital Formation

One defect of the white paper which must annoy all students of national income is its continued failure to give estimates of the gross national product, from which the net national income has very obviously been derived. Since there is a powerful school of thought which doubts how far reasonable net estimates can be prepared at all, there would be a justification for publishing the gross estimates also so that those who wish to do so may work on the basis of the gross figures. The failure of the white paper to provide any estimate of capital formation in the economy also needs to be noted because of the fundamental importance of such estimates.

The most important feature of the latest white paper is, of course, the provisional estimate of the national income for 1957-58 which it presents. In current prices, the net national income is estimated at Rs 113.6 abja, which is only Rs 0.5 abja higher than the estimate for the previous year. In fixed prices, however, the net national income is estimated at Rs 108.3 abja, which is lower by Rs 1.7 abja as compared with the previous year, though it is still higher by Rs 3.5 abja over the net national income for 1955-56, which was the last year of the First Plan.

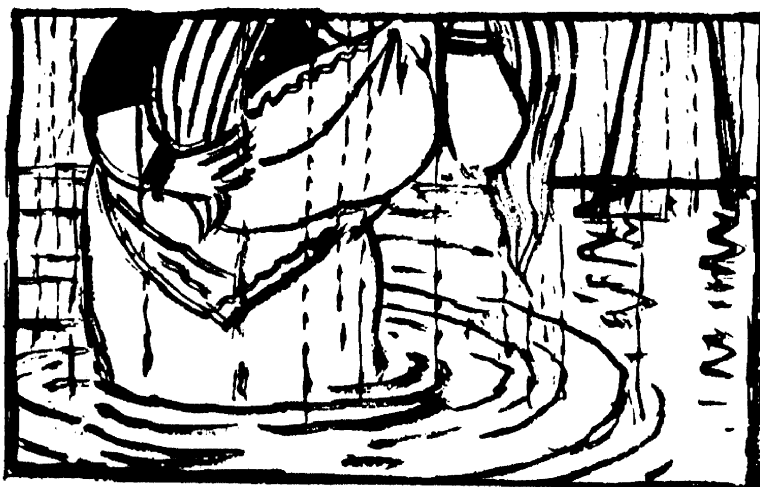
Sharp Fall In per Capita Income
The per capita income shows a fall at current prices from Rs 291.5 in 1956-57 to Rs 289.1 in 1957-58. In fixed prices, the fall is even sharper.....from Rs 283.5 to Rs 275.6. Since the per capita income in fixed prices for the last year of the First Plan was Rs 273.6, this implies that over the two years of the Second

Plan, the per capita real income has increased by only two rupees. How these per capita figures would be affected by differences between the actual figures of population and those adopted by the Central Statistical Organisation, it is difficult to say. It is obvious that if the population has been growing as rapidly as is generally believed, and if the

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overall income estimates are assumed to be unchanged, the per capita income figures will all be much lower than those given in the white paper,

On these assumptions, it is also likely that the per capita income in the second year of the Second Plan would not only be lower than in the previous year, but would also be lower, perhaps much lower, than the per capita income for the last year of the First Plan. This may or may not justify the conclusion that our rate of growth is already falling below the demographic rate. It would be difficult to generalise from the fall in real income during the current year; and without a complete series of figures, it is difficult to judge what the trends as a whole are. It is obvious that if the popu-

lation estimates change, some of the income estimates will also have to be revised: that the published estimates are clearly out of relation with reality makes any rational judgment in this respect impossible.

Any study of the reasons for the fall in real income between the first and second years of the Second Plan is made difficult by the fact that while a detailed distribution of the national income by industrial origin is given for the current price estimates for various years, only a broad distribution is given for the fixed price estimates.

These estimates have been reproduced in the statistical pages of this issue.¹ From the broad distribution, it is apparent that the fall in the net national income at fixed prices between 1956-57 and 1957-58 is entire-

ly due to a fall of output in agriculture, animal husbandry and ancillary activities from Rs. 52.5 abja in 1956-57 to Rs 49.3 abja in 1957-58, which is lower than that produced every year since 1953-54. (Incidentally, a comparison of the figures of output values in this sector in terms of fixed prices over the period from 1953-54 with those of the physical output figures for different crops would repay study, raising, as it would, questions regarding weightages of different crops in the indices of agricultural production.) The fall of KB 3.2 abja in this sector is partially offset by small increases in the mining, manufacturing and small enterprises sector, the commerce, transport and communications sector and the other services sector.

book Review

A Misleading Guide

Alamelu Aiyer

Elements of Statistics by Indira Bhanot. Acharya Book Depot, Baroda. 1958. Pp 327. Price Rs 9.

AN important cause of the lowering of educational standards in Indian Universities is the disturbing and enormous outflow of mediocre and time-serving publications masquerading as text books. These publications are specially prepared to suit the variety of student-clientele whom such authors would like to reach at various centres of learning in order that their sales are as high as possible.

The book under review is a text book written by a university teacher with a London degree in Statistics and with nearly ten years' teaching experience. A book from her should have been one which the students as well as teachers would welcome. The present reviewer also placed high hopes on it. But after going through it, the feeling that remains is that the author ought never to have made the attempt, if this is all that she is capable of doing. The students would be better off without such a text book and she would have maintained her reputation as a teacher of Statistics.

The book is intended primarily for students of Economics. Nine chapters are devoted to the methods of collection, presentation and classification of data by charts and graphs, frequency distribution, measures of location, dispersion and association. The author, however, fails to do justice to time series and index numbers, two branches of

Statistics which economists have to use so often in their empirical investigations. Mathematical techniques relevant to the subject are omitted completely. Nor does the author give to the students an adequate number of illustrations to explain the various uses to which time series and index numbers can be put. Time series particularly has been dealt with so cursorily that it could better have been left out. There are also chapters on official statistics and tests of significance of means.

The book abounds in errors. It would shock, for example, any student of Statistics at the failure of the book to define a histogram correctly. To say that a histogram is a set of rectangles with the height proportional to the frequency corresponding to the class intervals is absolutely wrong. Then the book mixes up a frequency curve and a Lorenz curve (pages 64-65). The fact that the author draws a frequency curve and describes it in great detail as Lorenz curve makes one highly suspicious of her credentials as a statistician.

A very serious error occurs in the Chapter on 'Tests of Significance of Means'. On page 218 the author discusses the 'degrees of freedom for t According to her, both means and variance have been calculated from a sample of size n .

Therefore two degrees of freedom are lost leaving $n-2$ degrees of freedom. To say that t is distributed with $n-2$ degrees of freedom is patently incorrect. The entire chapter proceeds on the above erroneous basis and deserves to be scrapped.

The book has an attractive cover, but it is carelessly bound. The printing errors are enormous, quite a few projecting themselves even in the lengthy Errata provided in place of an index! The Errata, of course, leave out so many errors and misprints. The academic level of the book is most manifest in its final part. Almost seventy pages, that is more than one fifth of the book, have been devoted to exercises and recent question papers of the Universities of Bombay and Baroda, as they purport to 'constitute a ready yardstick and standard' for the competence of the student'.

Such considerations apart, the book has very little to offer. The student of Economics should rather be wary. If he reads this book, he is likely to be misled and would emerge from his study of it as ignorant as he was before he embarked on the project of digesting this "treatise"—so it is termed—of three hundred and odd pages. Misleading as a guide, it would be a misnomer to call this publication a text-book.