

A REJOINDER TO THE NOTE BY PROF. K. L. GUPTA ON "INCOME, CONSUMPTION AND SAVING IN URBAN AND RURAL INDIA"

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It is heartening to note that my article on "Income, Consumption and Saving in Urban and Rural India" has drawn the attention of Prof. K. L. Gupta of University of Alberta. However, some of his points call for further comments by me.

The most important point which needs to be noted about my paper is the definition and scope of the term "household" which has been defined in the footnote on p. 41 of the paper. Thus the scope of "urban household" and "rural household" sectors are wider than the conventional definition of "individuals only" and as such the savings behaviour within the sectors is likely to be different from what it would be for individual households only. It is, therefore, not surprising that the marginal propensity to save for the urban sector is high. As regards the negative marginal propensity to consume out of permanent income for urban households, it is important to note that the co-efficient is not significant and therefore, the question of its economic meaning does not arise.

Coming to the data used in the paper, the income series for urban and rural areas have been derived *not* on the basis of Rao's estimates only but on all relevant data, as has been pointed out in the text of the paper on pp. 41 and 42. Gupta's suggestion of taking the estimates of agricultural income only for the rural sector would exclude all income from other activities like household industries, trade, transport including highly organised railway transport, post and telegraph, electricity, professional services and public administration in the form of village panchayats, community developments, etc. As would be seen from the estimates, such activities form a substantial proportion of net domestic product originating in the rural areas. This conclusion is based on detailed analysis of all the available material, the first of which was published by me for the year 1952-1953 in "*Papers on National Income and Allied Topics*," Vol. I. (Asia Publishing House).

The above obviously means that Gupta's estimates of income have been underestimated for rural areas and overestimated for urban areas. It is, therefore, not surprising that he gets higher average and marginal propensities to save for rural areas and lower for urban areas than have been estimated in my paper. The moot point here is the relevance of such estimates when the basic data used are far from being realistic.

I have apparently not made myself sufficiently clear regarding the method applied for deflation of savings for urban and rural areas. Deflation has been undertaken separately for rural and urban savings after breaking them into savings in physical and financial forms in each case. The notes contained in the paper should make both the methodology and the derivation of series at constant prices separately for urban and rural areas clear. The overall series of savings have been obtained by aggregating the two for rural and urban areas.

It is also a misunderstanding that the estimates of total household wealth have been used as an independent variable for the urban household sector (See p. 51 of the paper.)

Coming to the actual results of the study and the suggestion for their improvement, it may be difficult to judge what is a "better procedure." Thus, for example, Gupta suggests that "a better procedure" would have been to include the rate of change of prices as a separate variable." However, according to the results presented by Gupta himself in tables (3), (5) and (7), the coefficient of the rate of change of prices ($\Delta P/P$) is not significant in any of the cases for overall and urban consumption and in two of the cases for rural consumption. However, for rural consumption, practically the whole of the consumption is explained by the current year's income only (even according to Gupta's results) and, therefore, the coefficient of ($\Delta P/P$) for rural consumption does not mean much. Thus Gupta himself disproves the point made by him.

As regards the alternative measurements of permanent income suggested by Gupta, it would be desirable to raise a few methodological questions even if one ignores the utility, practical applicability and economic significance of such abstract measurements.

Firstly, the problems of "multicollinearity" or "auto-correlation" seem to be ignored in Gupta's study. Thus for example, his derivation of the series of permanent income by three year moving averages not only reduces number of degrees of freedom but introduces greater order multicollinearity in the estimates and can also introduce autocorrelation in the random errors even if they are independent at the outset. Similarly his derivation of permanent income and price series by fitting either log-linear or semi-log functions and then using these derived series for carrying out regression analysis might break down the assumption regarding the independence of the errors and the variables. In such a case the use of the least squares method may not give consistent results. Such a situation is suggested by Gupta's results where the co-efficients of prices in tables (4), (6) and (8) are too large for any meaningful economic interpretation. For any satisfactory analysis of sufficient reliability it is desirable that tests of significance be carried out and for such tests the probabilities depend on the number of degrees of freedom which is in turn a function of the number of observations and the number of parameters estimated. Gupta's method raises doubts about the statistical validity of the results on each of the counts listed above.

Coming to his series of permanent income and prices, Gupta does not report the results of his estimates on the basis of log functions with reference to actual series of nominal income and prices. In the event of the series being too far away from the actuals is there much point in carrying out exercises using them as "permanent" income and prices? It is doubtful whether either income or prices in India would have in the past, or would in the future, behave the way suggested by his functions.

Why does Gupta use a log-linear function for permanent income defined by Y_{P_2} and a semi-log function for Y_{P_4} ? Similarly why do all alternatives of Y_{P_1} , Y_{P_3} , Y_{P_3} and Y_{P_4} not appear in his tables (6) and (8)? What is the economic interpretation of the co-efficients obtained by him?

Gupta gives no details of the period of coverage or the derivation of the series used in his analysis. He thus deprives his readers of the opportunity of judging the quality of the basic data used by him.