
A Comparative Study on Private Consumption Expenditure Estimates in India

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The estimates of private consumption expenditure are generated in India by two agencies, *viz.* Central Statistical Organisation (CSO) and National Sample Survey Organisation (NSSO). CSO estimates in National Account Statistics (NAS) are obtained using commodity flow approach, while NSSO estimates are based on Household Consumption Expenditure Surveys (HCES). The studies comparing two sets of estimates done earlier revealed that the gap between the two sets of estimates was widening over time. The present study is an exploration into the group level differences among the estimates and their contribution to the overall differences in the years 1972-73, 1977-78, 1983-84 and 1993-94, based on the earlier conducted studies. In 1972-73 and 1977-78 the major groups, which showed the difference, include 'food grains', 'fuel and light' 'sugar and gur', 'fruits and vegetables' 'transport' and 'recreation education and cultural services'. In 1993-94 the major contributors towards the divergence between the estimates of expenditure were 'fruits and vegetables', 'transport' and 'clothing and foot wear'. The important factors, which lead to the divergence, include the differential implicit prices of the consumer goods, varied reference periods, differences in the classification schemes, differences in the estimation procedure followed by two agencies, inclusion of notional elements in NAS estimate and possible discrepancy in the official and directly reported information.

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Introduction

In India, the private consumption expenditure is mainly estimated by the two Government organizations, *viz.*, Central Statistical Organisation (CSO) and National Sample Survey Organisation

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(NSSO), following two entirely different methodologies. The estimates of Private Final Consumption Expenditure (PFCE) are compiled annually as apart of the National Account Statistics (NAS) by CSO using commodity flow approach. This approach makes use of the estimates of quantum and value of different commodities produced and available, flowing finally into the consumption process of houses and the private Non-Profit Institution Serving Household (NPISH) during the accounting year, which is generally the financial year. The sum of the commodity-wise estimates gives the aggregate estimates of the PFCE. On the other hand, NSSO estimates are based on Household Consumption Expenditure Surveys (HCES), which are conducted in every five years with a much larger sample and annually with a relatively thin sample. In this sample survey, the consumption expenditure of a random sample of households is ascertained directly by canvassing a well-designed schedule of enquiry. Even though HCES directly does not provide the countrywide total consumption expenditure, the NSSO estimate of total household consumption expenditure of the domestic economy can be obtained as the product of estimates of annual per capita consumption expenditure and the population projections based on the population census.

Traditionally private consumption expenditure estimated by the two agencies differed. Factors attributed to the differences include coverage, reference time frames and concepts and methods of estimation in the very approaches employed by the two agencies. In the past, several attempts were made to compare the two sets of estimates. The studies comparing estimates in the disaggregate level - Minhas *et. al.*, (1986) and Minhas (1988; with 1972-73 and 1977-78 estimates), Minhas *et. al.*, (1990; with the estimates of 1983) and NSSO-CSO (2005; with estimates of 1993-94) - revealed that the gap between the two sets of estimates was widening over time. The study by Sundaram and Tendulkar (2001) also strengthened the results from the above-mentioned articles. The present paper is a survey to explore into the widening gap of these estimates at group level based on the studies by Minhas *et. al.* (1986), Minhas (1988), Minhas *et. al.* (1990) and NSSO-CSO (2005).

The paper is organised as follows. Section I presents the details of the methodological differences at the aggregate level. Item-group level differences of the selected common items are worked out and presented in Section II across four time points, *viz.*, 1972-73, 1977-78, 1983-84 and 1993-94 and analyzed in detail. Concluding remarks are presented in Section III.

Section I

Methodological Differences at the Aggregate Level

Minhas (1988) had done a comprehensive analysis of the limitations in comparing the two estimates. NSSO-CSO (2005) also discussed the matter in a detailed manner. Discussed below is a brief description of the differences in coverage, time periods, and concepts and estimation procedure adopted by two organisations in reaching their respective estimates of consumption expenditure.

Coverage

The HCES of NSSO excludes the houseless and the institutional population while the consumption of these persons is included in the NAS estimates. Also included in the NAS estimates is the consumption expenditure of non-profit institutions serving households (NPISH), which are not covered in HCES. This limitation is virtually of no consequence as proportion of houseless and institutional population in the total population is negligibly small. The share of NPISHs in the estimate of PFCE, owing to absence of data, are also believed to be small (NSSO-CSO, 2005).

Time Period

For HCES, the NSSO normally uses an agriculture year as the survey period. The NAS estimates, on the other hand, are compiled for the financial year. The data on the agricultural production used for national accounting, however, pertain to the agriculture year. The comparability will not be seriously affected by this factor, if the output of food crops of two successive years doesn't differ much. Otherwise, the magnitude of

discrepancy accounted for the difference in the time frames of NAS and NSSO estimates are to be assessed (Minhas *et. al.*, 1986).

Estimation Procedure

The NSSO collects the detailed item-wise consumption data in quantity and value terms for the last 30 days (365 days for durable items) from sample households by interviewing the head of the household. The survey period usually is divided into four sub rounds of 3 months duration each, to overcome the seasonal effects. The CSO consumption estimates are based on the production data of various consumer goods and services, which are compiled basically for the net domestic product for India. These are adjusted for exports and imports, intermediate services and changes in stock, to arrive at the availability of various goods and services for final consumption.

Inclusion of Notional Elements

Among the differences, the notional components in the NAS estimate, however, accounts for a substantial part of the divergence between the two estimates. Only the rent on dwellings actually paid is included in the NSSO estimate, while the NAS estimate includes all imputed rentals of owner-occupied dwellings. Other such notional component in the NAS estimate is the Financial Intermediation Services Indirectly Measured (FISIM). This is being included in PFCE since the 1980-81 series of national accounts.

Official Records versus Directly Reported Consumption

The NAS consumption estimates for various consumer goods are based on the official data of production, exports and imports, which lead to deliberate under recording of production of certain items. On the other hand, consumers are likely to report the purchases of all such items irrespective of whether or not their production was entered into records of the enterprise (Minhas, 1988).

Unmatched Classification Schemes

There are many differences in the classification scheme of the two data sets. As discussed in the subsequent section, it can be seen

that these differences are significant. Some of the differences cited in Minhas (1988) and also the NSSO-CSO (2005) are mentioned below.

Prior to 1980-81 series of NAS, the expenditure on hotels and restaurants was classified under non-food consumer services, while it was included in the food group in the NSSO estimate. Since 1980-81 it was included in food group for NAS estimates also. In NAS estimates, rice retained by farmers are put entirely under rice consumption, whether or not part of it are converted into rice products. But in the NSSO estimate, rice products are not included in estimates of rice. Expenditure on purchase and repairs of transport and equipment is classified as durables in NSSO estimates, while it is included in the transport group in PFCE. The expenditure on cooked food given to domestic servants is included under food group in the NSSO. In the NAS, on the other hand, all payments given to the domestic help are taken as expenses incurred for consumption of personal expenses.

Section II

Item-Group Level Differences of the Selected Common Items

Before examining the differences at micro level, let briefly elaborate the trend of aggregate differences. As per Table 1, quoted from the studies undertaken earlier, it can be noted that the gap between the two sets of estimates had been widening progressively. For example, 5.5 per cent difference in 1972-73 increased to 10.4 per cent in 1977-78; which further went up to 25.6 per cent and 38.1 per cent, respectively in 1983-84 and 1993-94. That is within a period of two decades the per cent difference increased almost seven fold. A divergence to this extent is indeed beyond expectations, taking into account that the NSSO estimates are based on quinquennial surveys and conducted on a larger sample.

Examination of subgroup level differences and their contribution to overall differences, based on the studies mentioned earlier is fraught with some difficulties due to the grouping of the items under different heads. Minhas (1988) has aggregated the

Table 1: Divergence between NSSO and NAS estimates (Rs. crore)

| Year | Source | Total Expenditure |
|----------|---------------------|-------------------|
| 1 | 2 | 3 |
| 1972-73 | NSSO | 33210 |
| | NAS | 35160 |
| | Per cent difference | -5.5 |
| 1977-78 | NSSO | 56530 |
| | NAS | 63080 |
| | Per cent difference | -10.4 |
| 1983 -84 | NSSO | 108668 |
| | NAS | 146084 |
| | Per cent difference | -25.6 |
| 1993-94 | NSSO | 355770 |
| | NAS | 574772 |
| | Per cent difference | -38.1 |

Per cent difference = (NSSO-NAS)/NAS expressed in percentage.

Source : NSSO-CSO (2005).

expenditure into nine broad groups under food and non-food categories. In NSSO-CSO (2005), there are 18 groups under food while the non-food category contains 10 groups. One of the major differences in the classification schemes followed by Minhas, *et. al.* (1986) and NSSO-CSO (2005) is that, the latter classifies pan, tobacco and beverages under food while Minhas, *et. al.* (1986) classifies it under non-food. However, for the present study, only those groups that contributed significantly towards the divergence in the estimates of total consumption expenditure are included.

Food Grains

The NSSO estimate of expenditure on food grains was considerably higher than NAS in 1972-73. The difference decreased in 1977-78. In 1983-84, the NAS estimate was found to be higher and the difference increased further in 1993-94.

As per Table 2, the per cent contribution of food grain consumption expenditure to the total consumption expenditure was declining over the years for both NSSO and NAS estimates. This reflected the changing pattern of food grain consumption in the overall

consumption basket of the people, as against the increase in per capita income. In 1972-73, the difference in the NSSO and NAS estimates of food grain consumption expenditure was -1.6 times than that of the difference of total consumption expenditure. In other words, the actual difference in the estimates of food grain consumption expenditure was more than that of the difference in the total consumption expenditure. The negative sign indicates that, when in total consumption expenditure, NAS estimate was more than NSSO estimate, the food grain consumption estimate was more in NSSO. The contribution of the difference in NSSO and NAS estimates of food grain consumption expenditure to the total consumption expenditure was 2.1 per cent in 1993-94. As argued by Minhas (1988), it is apprehended that adjustments for seeds, feeds wastages and other assumptions about certain ratios in NAS framework may had lead to systematic under estimation of private consumption of food grains in the CSO data set in 1972-73 and 1977-78. Since the subgroup of cereals and pulses have major shares in total consumption expenditure, it is necessary to undertake a comparison for cereals and pulses consumption.

Table 2: Difference² in the food grain consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates@ | Per cent contribution of food grain expenditure (NSSO) to total (NSSO)# | Per cent contribution of food grain expenditure (NAS) to total (NAS)\$ | Per cent contribution of the food grain difference in expenditure to total difference* |
|---------|--|---|--|--|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | 29.5 | 40.4 | 29.5 | -156.7 |
| 1977-78 | 9.9 | 34.1 | 27.8 | -26.6 |
| 1983-84 | -1.0 | 31.5 | 23.7 | 0.9 |
| 1993-94 | -5.0 | 24.2 | 15.7 | 2.1 |

² @ Per cent difference = $(\text{NSSO}-\text{NAS})/\text{NAS}$, expressed in percentage.

Per cent contribution NSSO = $\text{NSSO}_{\text{sub group}}/\text{NSSO}$, expressed in percentage.

\$ Per cent contribution NAS = $\text{NAS}_{\text{sub group}}/\text{NAS}$, expressed in percentage.

* Per cent contribution difference = $(\text{NSSO}_{\text{sub group}} - \text{NAS}_{\text{sub group}})/(\text{NSSO}-\text{NAS})$, expressed in percentage.

The similar notion is followed in all other Tables.

Cereals and Pulses

Table 3 gives a comparison of NSSO and NAS estimates of consumption expenditure of cereals. It also provides the per cent contribution of the difference in the cereals consumption expenditure, to the difference in total consumption expenditure estimated by NSSO and NAS.

The NSSO estimate for the cereals consumption expenditure was more than NAS estimate in 1972-73, 1977-78 and 1983-84, but it got reversed in 1993-94. Also the per cent contribution of cereals consumption expenditure to the total consumption expenditure was declining over the years for both NSSO and NAS estimates. In 1972-73 the difference in the NSSO and NAS estimates of cereals consumption expenditure was –1.3 times than that of the difference in the total consumption expenditure, which means that the actual difference in the estimates of cereals consumption expenditure was more than that of total consumption expenditure. The NAS estimates of the cereals was naturally on the lower side owing the exclusion of other rice products from the NAS estimates. The contribution to the difference in NSSO and NAS estimates of cereals consumption expenditure to the difference in total consumption expenditure was only 2.5 per cent in 1993-94.

In contrast to cereals, the contribution of pulses to total consumption expenditure had not witnessed any remarkable change

Table 3: Difference in the cereals consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of subgroup expenditure (NSSO) to total (NSSO) | Per cent contribution of subgroup expenditure (NAS) to total (NAS) | Per cent contribution of the subgroup difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | 27.7 | 35.9 | 26.5 | -132.3 |
| 1977-78 | 10.8 | 29.9 | 24.2 | -25.2 |
| 1983-84 | 0.9 | 28.1 | 20.7 | -0.8 |
| 1993-94 | -7.1 | 20.3 | 13.5 | 2.5 |

even though it reduced marginally (Table 4). The per cent difference between the NSSO and NAS estimates had come down over the years. But it still had a difference of 26 per cent in 1993-94. Another noticeable feature is that, for pulses NSSO estimate was always more than that of NAS estimate. The higher value of the NSSO estimate for pulses was due to higher implicit price in NSSO estimate and downward bias of NAS value estimate (NSSO-CSO, 2005).

Sugar and Gur

This item-group had shown consistently significant difference between the two sets of estimates of consumption expenditure for all the years compared. Table 5 provides the details of the difference between the estimates of sugar and gur over the years.

The difference between the NSSO and NAS estimates of sugar and gur consumption expenditure was significantly on the higher side in all the four years. In 1972-73, 52.6 per cent of the difference shown in the total consumption expenditure was due to the difference in consumption expenditure on this item-group. Since then, the per cent contribution to the total difference had decreased significantly. This was due to the fact that the total difference in the consumption expenditure between the two estimates had widened considerably over the years. The major factors responsible for the inter-agency

Table 4: Difference in the pulses consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of subgroup expenditure (NSSO) to total (NSSO) | Per cent contribution of subgroup expenditure (NAS) to total (NAS) | Per cent contribution of the subgroup difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | 55.0 | 3.8 | 2.3 | -22.7 |
| 1977-78 | 38.9 | 3.5 | 2.2 | -8.4 |
| 1983-84 | 30.9 | 3.1 | 1.7 | -2.1 |
| 1993-94 | 26.4 | 3.3 | 1.6 | -1.1 |

Table 5: Difference in the sugar and gur consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -45.4 | 3.7 | 6.4 | 52.6 |
| 1977-78 | -38.3 | 2.7 | 3.9 | 14.5 |
| 1983-84 | -54.2 | 2.7 | 4.4 | 9.4 |
| 1993-94 | -49.9 | 2.8 | 3.5 | 4.5 |

difference in the estimate for the group as a whole, as per the earlier studies, were the low ratio of intermediate consumption of sugar and gur used for deriving the NAS estimates, under reporting of consumption of sugar and gur in HECS and over estimation of sugarcane production.

Milk

For milk and milk products consumption, it can be seen from Table 6 that the per cent difference between NSSO and NAS estimates was about 28 per cent in 1993-94, which was below 10 per cent in 1972-73 and 1977-78. In 1983-84 it was showing a difference of 35 per cent. The contribution of the difference in the estimates of milk and milk products consumption expenditure to the total difference was lowest at 1993-94 even though the actual difference was remarkably high (Table 6).

The difference in the estimates of consumption expenditure between two agencies was mainly due to the overestimation of consumption of milk products by CSO. One reason for this could be the assumption regarding the part of milk used for butter and lassi production. This could infact be used as intermediate consumption in enterprises producing commodities like tea and coffee, hotel and restaurant services and sweets shops, consumption of which were estimated separately in the NAS (NSSO-CSO, 2005).

Table 6: Difference in the milk and milk products consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent Contribution of item-group expenditure (NAS) to total (NAS) | Per cent Contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -5.8 | 7.9 | 7.9 | 8.2 |
| 1977-78 | -9.1 | 8.4 | 8.3 | 7.3 |
| 1983-84 | -35.1 | 8.1 | 9.2 | 12.7 |
| 1993-94 | -27.6 | 9.5 | 8.1 | 5.9 |

Edible Oils

Table 7 provides the details regarding the difference in the consumption expenditure of edible oils. The per cent difference in the estimates by two agencies was found to be widening. The contribution of this difference to the total difference, however, had come down to a level of 3.4 per cent in 1993-94.

For this item-group, the estimates of both quantity and price differed widely. The difference in the quantity consumed could be due to the consumption of vanaspati and edible oils used in hotels and restaurants, which were included in NAS consumption expenditure but excluded from NSSO estimate (NSSO-CSO, 2005).

Table 7: Difference in the edible oils consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent Contribution of item-group expenditure (NAS) to total (NAS) | Per cent Contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -12.2 | 3.9 | 4.2 | 9.2 |
| 1977-78 | -27.1 | 3.9 | 4.9 | 12.7 |
| 1983-84 | -38.8 | 4.2 | 5.1 | 7.8 |
| 1993-94 | -32.5 | 4.4 | 4.0 | 3.4 |

Fruits and Vegetables

The NSSO estimate on the consumption expenditure of this item-group was always found to be considerably lower than the corresponding NAS estimate. The per cent contribution of the difference in the estimates of this group was found to be very high in 1972-73 (64.7 per cent). Even though this value had declined, the difference between two sets of estimates had increased (Table 8).

The item specific estimates from the two sources reveal that the difference between the estimates for this group was mainly due to the diverging estimates of fruit consumption. Part of this big difference was due to classification problem. On one hand, NAS estimate of fruit consumption appeared to be on higher side, while on other hand NSSO estimate seemed to suffer from under estimation due to the non-inclusion of after purchase wastages in HECS. In the case of vegetables, not only the difference between the NSSO and NAS estimates were smaller but also the former was higher than latter in 1993-94 (NSSO-CSO, 2005).

Meat, Fish and Egg

This is another item-group for which the estimates for 1993-94 from the two sources vary widely. In 1972-73 and 1977-78 the differences between the two estimates as well as the contribution of the item-group difference to the total difference were negligible. In

Table 8: Difference in the fruits and vegetables consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent Contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -40.8 | 5.5 | 8.8 | 64.7 |
| 1977-78 | -41.5 | 5.7 | 8.8 | 35.0 |
| 1983-84 | -36.3 | 6.3 | 7.4 | 10.4 |
| 1993-94 | -57.6 | 8.1 | 11.8 | 17.9 |

1983-84 the per cent difference rose nearly to 27, which further increased to 45 per cent in 1993-94.

The item-wise analysis reveals that this high level of discrepancy in 1993-94 was mainly because of the differences in the items – ‘chicken’, ‘egg and egg product’ and ‘fish’. The main reason for discrepancy could be that the intermediate consumption for most of these items were taken as nil in NAS, particularly for eggs and chicken, while large volumes of these were actually used as input in the food processing industries, hotels and restaurants (NSSO-CSO 2005).

Tobacco

This is yet another item-group for which the NAS estimates had always been higher than NSSO estimates. The year-wise comparison, provided in Table 10, reveals that the estimates for this item-group were diverging further apart.

The NSSO estimates were likely to be on the lower side since the data collected through interviews were expected to be adversely affected by under reporting resulting from inhibitions against consumption of tobacco. Also the member from whom data was collected could be unaware about the tobacco consumption habits of the other members of the household (NSSO-CSO, 2005).

Table 9: Difference in the meat fish and egg consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -2.6 | 2.7 | 2.6 | 1.2 |
| 1977-78 | -0.8 | 3.0 | 2.7 | 0.2 |
| 1983-84 | -26.7 | 3.2 | 3.2 | 3.4 |
| 1993-94 | -45.2 | 3.4 | 3.8 | 4.5 |

Table 10: Difference in the tobacco consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -45.2 | 1.9 | 3.2 | 25.9 |
| 1977-78 | -34.8 | 1.8 | 2.4 | 8.1 |
| 1993-94 | -52.3 | 1.7 | 2.1 | 2.9 |

Clothing and Footwear

The NSSO estimate of clothing and footwear had always been less than NAS estimate. In 1970s, the gap was low, but grew wider in the later periods to reach a per cent difference of 39 in 1993-94.

The difference between the two estimates in this item-group was mostly due to the difference in the clothing expenditure estimate, as it has the major share in this item-group.

Fuel and Light

For this item-group, the NSSO estimates of consumption expenditure were always high than that of NAS estimates as it is indicated by the sign of the values in the first column in Table 12.

Table 11: Difference in the clothing and foot wear consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -9.9 | 7.5 | 7.8 | 14.0 |
| 1977-78 | -12.3 | 9.7 | 9.9 | 11.7 |
| 1983-84 | -37.0 | 9.4 | 11.0 | 16.0 |
| 1993-94 | -38.9 | 6.0 | 6.1 | 6.2 |

Table 12: Difference in the fuel and light consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | 48.6 | 5.4 | 3.5 | -30.3 |
| 1977-78 | 61.8 | 6.1 | 3.4 | -20.0 |
| 1983-84 | 31.9 | 7.1 | 4.0 | -5.0 |
| 1993-94 | 14.7 | 6.9 | 3.7 | -1.4 |

The gap between the two estimates and the group level contribution to the total difference as seen in Table 12, had progressively narrowed down from 62 per cent in 1977-78 to 15 per cent in 1992-93.

Out of the difference in the estimates for fuel and light, the item 'other fuel' - which includes firewood and chips - accounted for the major portion of the difference in all the years. Since 1980s, however, the per cent difference came down to a large extent. This was mainly because, from 1980-81 NAS consumption expenditure estimate on firewood was based on the consumption data available from HCES of the NSSO. The reason for the differences in the electricity, LPG and kerosene estimates was because of the fact that NAS estimates were obtained based on official data and thus represented the prices set by regulatory authorities and NSSO estimates were the prices actually paid by the consumers (NSSO-CSO, 2005).

Furniture, Furnishing, Appliances and Services

For 1993-94, the NAS estimate for this item-group was found to be substantially higher than the NSSO estimate. In 1972-73 and 1977-78 also, the NAS estimate of this group was higher than NSSO estimate, but the difference between the two was less pronounced (Table 13).

The subgroup 'glassware tableware and utensils' was the main contributor towards the item-group level divergence between two sets

Table 13: Difference in the furniture, furnishing, appliances and services consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -35.0 | 2.0 | 2.9 | 18.0 |
| 1977-78 | -25.4 | 2.6 | 3.2 | 7.7 |
| 1993-94 | -65.9 | 1.7 | 3.1 | 5.3 |

of estimates in 1993-94. In addition, the subgroup ‘services’ also contributed to the difference in the group. The differences in this subgroup could be because of the following reasons. The estimate of expenditure on non life insurance services, which was considered by NAS, but was not included in HCES. The cooked meals served to the domestic servants were not recorded as consumption of services in the HECS. The wages paid in cash to the full time domestic servants, whom NSSO surveys treat as household members were included in NAS estimate (NSSO-CSO, 2005).

Transport

This was the one item-group that contributed highest to the overall difference in the estimates in 1993-94. The difference between NSSO and NAS estimates for this group was as high as 74 per cent in 1993-94. Divergence between the estimates for this group had been high even in the past. Table 14 provides the details of the divergence in the estimates in different years. As evident from the table, the per cent difference as well as the per cent contribution to overall difference was very large for this group across the years compared.

Since 1972-73, the per cent difference between two sets was above 60. The item-wise analysis revealed that ‘transport services’ was one of the main contributors for the divergence between the estimates. The difference in the estimates of taxi and auto rickshaw fare was so different that the NSSO estimate was only about one-

Table 14: Difference in the transport consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -63.0 | 1.8 | 4.7 | 52.9 |
| 1977-78 | -71.0 | 2.0 | 6.1 | 41.4 |
| 1983-84 | -70.2 | 2.5 | 6.1 | 16.8 |
| 1993-94 | -74.3 | 4.4 | 10.6 | 20.6 |

twentieth of the NAS estimate. In NAS, the estimate of transportation was based on the total passenger earnings for each mode and proportion of private consumption in total passenger earnings obtained from official sources. Reliability of these proportions could be a source of divergence in the estimates (NSSO-CSO, 2005). Another reason for the difference in the estimates is the possibility of the under estimation of the conveyance charges in HCES (Minhas 1988). Also the NSSO estimate excluded the expenses incurred for official and business purpose travels thus leaving aside the consumption of NPISHs. The item 'transport equipment and operational costs' also had a major share in the divergence in the transport group estimates. This item includes expenses for the purchase and repair of motor vehicles and parts, tyres and tubes, road tax and cost for petrol and diesel.

Recreation, Education and Cultural services

In all the years, for this item-group, the NAS estimates were found to be higher than NSSO estimates (Table 15).

The main contributor to the divergence between two agency estimates was 'education'. The NAS estimate covers the expenses of the NPISHs on education and related activities. Since NPISHs had fairly large share in educational activities, the NAS estimate was found to be higher than that of NSSO.

Table 15: Difference in the recreation, education and cultural services consumption expenditure in NSSO and NAS estimates

| Year | Per cent difference of NSSO and NAS estimates | Per cent contribution of item-group expenditure (NSSO) to total (NSSO) | Per cent contribution of item-group expenditure (NAS) to total (NAS) | Per cent contribution of the item-group difference (NSSO-NAS) to total difference |
|---------|---|--|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1972-73 | -57.0 | 1.8 | 4.0 | 41.0 |
| 1977-78 | -37.6 | 2.3 | 3.3 | 12.0 |
| 1993-94 | -33.0 | 3.3 | 3.1 | 2.7 |

In order to put the item-group level divergences together, Table 16 presents per cent difference between the two sets over two decades. Only those item-groups that have shown significant difference in the estimated figures are included in the table. It is observed that, almost all the item-group level estimates are showing a diverging trend. Few

Table 16: Item-group level per cent differences

| Item-Group | 1972-73 | 1977-78 | 1983-84 | 1993-94 |
|--|-------------|--------------|--------------|--------------|
| 1 | 2 | 3 | 4 | 5 |
| Food Grain | 29.5 | 9.9 | -1.0 | -5.0 |
| Sugar and Gur | -45.4 | -38.3 | -54.2 | -49.9 |
| Milk and Milk products | -5.8 | -9.1 | -35.1 | -27.6 |
| Edible Oils | -12.2 | -27.1 | -38.8 | -32.5 |
| Fruits and Vegetables | -40.8 | -41.5 | -36.3 | -57.6 |
| Meat, Fish and Egg | -2.6 | -0.8 | -26.7 | -45.2 |
| Tobacco | -45.2 | -34.8 | NA | -52.3 |
| Clothing and Foot wear | -9.9 | -12.3 | -37.0 | -38.9 |
| Fuel and Light | 48.6 | 61.8 | 31.9 | 14.7 |
| Furniture, Furnishing, Appliances and Services | -35.0 | -25.4 | NA | -65.9 |
| Transport | -63.0 | -71.0 | -70.2 | -74.3 |
| Recreation, Education and Cultural services | -57.0 | -37.6 | NA | -33.0 |
| Overall | -5.5 | -10.4 | -25.6 | -38.1 |

Per cent difference = (NSSO-NAS)/NAS expressed in percentage.

exceptions include, food grain, fuel and light and recreation, education and cultural services.

Section III

Concluding Observations

The discrepancy in the estimates of total consumption expenditure for households provided by NAS and NSSO was found to be increasing rapidly during the period considered. The NAS estimates were found to be moving at a faster rate than that of NSSO estimates. In this paper an attempt is made to examine the factors responsible for the divergence between the two sets of estimates of consumption expenditure based on the different studies undertaken earlier.

Comparison of group-wise estimates of consumption expenditure for the years 1972-73, 1977-78, 1983-84 and 1993-94 of NAS and NSSO estimates presented in this paper looks into the change in the underlying factors responsible for the divergence between two sets of estimates. In 1972-73 and 1977-78 the major groups contributed to the divergence in the total consumption expenditure included 'sugar and gur', 'fruits and vegetables' 'transport' and 'recreation education and cultural services'. In all these subgroups NAS estimates were more than NSSO estimates by huge margins. In contrast, NSSO estimates of 'food grains' and 'fuel and light' were remarkably higher than NAS estimates. In the case of food grains the difference between the estimates was even higher than the total difference. In 1993-94 the major contributors towards the divergence between the estimates of expenditure were 'fruits and vegetables', 'transport' and 'clothing and footwear'. Besides, the important factors, which lead to the divergence as per the earlier studies include, the inclusion of notional elements like imputed rent and FISIM in NAS estimate, differential implicit prices of the consumer goods, varied reference periods (especially in 1972-73 and 1977-78), differences in the classification schemes, differences in the estimation procedure followed by two agencies and possible discrepancy in the official and directly reported information.

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