AN ESTIMATE OF THE VALUE OF STOCKS OF CONSUMER DURABLES IN INDIA IN MARCH 1979

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Introduction

The main object of this paper is to estimate the value of stocks of consumer durables in India as on March 1979 from time series consumption expenditure data. An attempt is also made to estimate the stock for the year 1965-66 and to compare it with the RBI estimate available for the year.

Recently an attempt has been made to estimate the stocks of some of the consumer durable goods in India in the year 1980 from time series data on production, imports and exports (Roy and Datta, 1981). But in the present study, the available time series on expenditure on consumer durables have been used.

Consumer durable is household asset that satisfies consumer wants and does not generate any further income. Durable goods consist of items like radios, gramaphone, sewing machines, clocks and watches, electric fans, furniture and fixture, utensils, jewellery and ornaments. These goods are expected to give service for a fairly long period of time although net additions to holdings of such durables have not been considered as capital formation (United Nations, 1953).

There have been few studies on consumer durables in India. Yet consumer durables analysis is currently receiving some attention. There are different estimates of stocks of consumer durables by Reserve Bank of India (1972), Mukherjee and Chatterjee (1966), etc. One reason why there are not many studies on consumer durables in India is the paucity of data. Besides, the data which are available are far from satisfactory.

Sources of Data

The main source of data for the present study is the National Accounts Statistics published by Central Statistical Organisation (CSO 1980) annually. The CSO publishes a time series of private consumer expenditure both at current and at constant 1970-71 prices with a number of breakdowns. The constant-price series are available from 1950-51 onwards. The constant-price series are taken for this estimation. CSO furnishes data on expenditure on consumer durables under only two breakdowns. These are under the heading of furniture, fixture, domestic equipments, etc., and personal transport equipment. It is probable that the first item has a broad coverage, including utensils, fans, sewing machines etc. The second item covers household cars, bicycles etc. Another source of data for this study is the monograph, International comparison of real product and purchasing power, United Nations International Comparison Project, Phase II published for the World Bank (1978). It has furnished further breakdowns of the Indian data, on consumption expenditure going into as many as 110 items. Some of the items in the ICP tabulation stand for consumer durables. In fact CSO gives only two items, while the ICP gives the following 17 items.

1. Furniture and fixture,
2. Refrigerators and freezers,
3. Washing appliances,
4. Cooking appliances,
5. Heating appliances,
6. Cleaning appliances,
7. Other household appliances,
8. Household utensils,
9. Personal automobiles,
10. Other personal transport,
11. Telephone and telegraph,
12. Radios, television and phonographs,
13. Major durable recreational equipment,
14. Other recreational equipment,
15. Stationary,
16. Toilet articles,
17. Other personal care goods.

It may be mentioned that while CSO furnishes national totals, the ICP estimates are given on a per capita basis.

Methods of Estimation

In the estimation of the stocks of some of the consumer durables, it is necessary to make an allowance for depreciation. Since statistical information needed to calculate depreciation is meagre, the choice of a particular method to be adoptd depends on the availability of information. The methodological deficiency springs from the gap in the required data.

There exists a large sector for which we do not have either regular accounts or survey estimates for depreciation. This is the unorganised part of

the economy as well as the households sector. Some information on the average life of durables is available through survey reports and pilot enquiries. Consumer durables are acquired by households and naturally come under this category. After obtaining some information on the age of some typical household durables, we can use some rule for computing their depreciation. We have used the straight line method for obtaining our estimates of depreciations. In the absence of any published data regarding depreciation allowance, it is necessary to use a method of this nature. It may be mentioned that the existing published data on depreciation provision in India is not considered as very reliable.

In the straight line method, the total depreciation is distributed uniformly over the whole life span of a durable. The amount of each annual deduction is the same and can be obtained simply by dividing the amount to be depreciated by the number of years of expected life. The straight line method of depreciation is explained below.

Let the life of a particular consumer durable be n years. If depreciation is linear, the rate of depreciation is $\frac{1}{n}$ per year. Let the amount of a consumer durable produced n years past by P_{-n}. The amount of depreciation in the current year at the rate of $\frac{1}{n}$ per year will be $n\frac{P-n}{n}$. Hence the remaining stock in the current year will be $P_{-n} - n\frac{P-n}{n} = 0$. Similarly if production (n – 1) years past be $P_{-(n-1)}$ the amount of depreciation will be $\frac{n-1}{n} \cdot P_{-(n-1)}$ and the stock in the current year of the durable good produced (n – 1) years past reduces to $P_{-(n-1)} - \frac{n-1}{n} \cdot P_{-(n-1)}$. Following the same process systematically we get a stock series of the following form:

$$S_{-n} = P_{-n} - n.\frac{P-n}{n} = 0$$

$$S_{-(n-)} = P_{-(n-1)} - \frac{n-1}{n} . P_{-(n-1)} = \frac{P_{-(n-1)}}{n}$$

$$\cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots$$
$$\cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots$$
$$\cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots$$

$$S_{-2} = P_{-2} - \frac{2}{n} P_{-2} = \frac{n-2}{n} P_{-2}$$

$$S_{-1} = P_{-1} - \frac{1}{n} P_{-n} = \frac{n-1}{n} P_{-1}$$

$$S_0 \qquad\qquad = P_0$$

where S_0, S_{-1}, S_{-2} . . . . S_{-n} represent stocks of the consumer durable produced 0, 1, 2 . . . n years past but enter into current year's stock. Therefore the stock in the year 0, that is in the current year will be

$$\sum_{i-0}^{-n} S_i = P_0 + \frac{n-1}{n} P_{-1} + \frac{n-2}{n} P_{-2} \ldots\ldots \frac{2}{n} P_{-(n-2)} + \frac{1}{n} P_{-(n-}$$

$$= \frac{1}{n} \left[P_0 + (n-1) P_{-1} + (n-2) P_{-2} \ldots\ldots + P_{-(n-1)} \right]$$

The Estimates

To estimate the stocks of consumer durables, the choice of age of a durable is a matter of crucial importance. Since there is no published information regarding the life of a durable, some information has been collected through pilot enquiry (Roy and Datta, 1981). There are different life span for different durables and we have used a weighted average of the life span of all the durables. This is found to be 14 years. We have, however, rounded off the figure to 15 years.

It should be noted that while CSO furnishes national total, the ICP estimates are given on per capita basis. We have computed the aggregates from the ICP data and found that the aggregate value of these 17 items works out at Rs. 977.40 crores (Table 2) which is almost exactly the total of the two items of consumer durables, covered by the CSO. The CSO time series data on private expenditure on consumer durables can, therefore, be taken to be reasonably comprehensive and can be used for working out an estimate of the stocks of consumer durables in the country on the assumption that their average age is 15 years. For this, we have naturally taken the figures at constant 1970-71 prices.

The estimate of consumer durables in India towards the end of 1978-79 works out at Rs. 9915 crores at 1970-71 prices. If this is inflated by the price index of gross capital formation furnished by the CSO, the estimate for end 1978-79 becomes Rs. 19830 crores (Table 1). This estimate is more than 5 times the estimate of the aggregate value of a few consumer durables presnted in Roy and Datta (1981), based largely on physical production data of the selected items. The later estimate is at slightly higher price of 1980. Our estimate is not far from 10 per cent of the RTW for the end of 1978-79.

The RBI has got an estimate of consumer durables for the end of 1965-66 and the figure is Rs. 6648 crores at current prices, or Rs. 9428 crores at 1970-71 prices, again using the gross capital formation deflator. In contrast our figure for the end of 1965-66 is only Rs. 3305 crores at 1970-71 prices, or roughly a third of the RBI estimate. This wide discrepancy shows that the RBI figure is likely to be somewhat over-estimated and is not consistent with CSO consumption expenditure series, even when we grant some error in our estimate of the age of assets. One reason of this may be the inclusion of stocks of precious metals, jewellery etc. in the RBI estimate. The CSO consumption expenditure series can conceivably cover only a small fraction of the value of household purchase of these items.

TABLE 1

Estimation of Stocks of Consumer Durable in March 1979

	Private consumption expenditure (Rs. crores) in		Contribution to stock in the end 1978-79 in Rs crores (1970-71 prices)		
Year	Furniture, furnishing household equipment etc. at 1970-71 prices	Personal transport equipment at 1970-71 prices	Furniture, furnishing household equipment (after depreciation)	Personal transport equipment (after depreciation	Total
(1)	(2)	(3)	(4)	(5)	(6)
1964-65	404	135	27	9	36
1965-66	397	156	53	21	74
1966-67	456	170	91	34	125
1967-68	484	192	129	51	180
1968-69	546	209	182	70	252
1969-70	595	225	238	90	328
1970-71	691	286	322	133	455
1971-72	843	295	450	157	607
1972-73	883	300	530	180	710
1973-74	855	337	570	225	795
1974-75	843	323	618	236	854
1975-76	876	342	701	274	975
1976-77	1064	417	922	361	1283
1977-78	1214	444	1133	384	1517
1978-79	1232	492	1232	492	1724
Stock of durables at 1970-71 prices.			7198	2717	9915
Stock of durables at 1978-79 prices.					19630

TABLE 2

Per Capita Expenditure in National Currencies on Some of the Items of Consumer Durables in
India 1970

Items	Per Capita Expenditure in Rs.
(1)	(2)
1. Furniture and fixture	.82
2. Refrigerators and freezers	0.57
3. Washing appliances	0.00
4. Cooling appliances	0.03
5. Heating appliances	0.05
6. Cleaning appliances	0.00
7. Other household appliances	1.40
8. Household utensils	5.14
9. Personal automobiles	.95
10. Other personal transport	1.30
11. Telephone and telegraph	1.15
12. Radios, television and phonograph	1.23
13. Major durable recreational equipment	.16
14. Other recreational equipment	.26
15. Stationary	.21
16. Toilet articles	2.41
17. Other personal care goods	2.42
	18.10
Total expenditure on consumer durables — 18.10 x 54 crores (population)	977.40

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