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## AN ANALYSIS OF FLUCTUATIONS IN UNIT VALUES, QUANTUM AND EXPORT VALUES OF TEA

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### ABSTRACT

Tea has traditionally been an important item in India's export basket of agricultural commodities, but India's share in world's tea exports has been declining. An attempt has been made to examine the trends in unit values, quantum and export values of tea exports and to measure the extent of fluctuations in these in relation to general exports, home production and wholesale prices of tea. Two distinct trends in tea exports - one pertaining to the period 1957-58 to 1973-74 and the other to 1974-75 to 1988-89 are observed. A comparison of the compound annual rates of growth of unit values, quantum and export values of tea and general exports revealed that share of tea exports to total exports in terms of both quantity and value declined between 1957-58 to 1988-89. There is, however, a tendency for quantum of exports to increase in the recent period (1974-75 to 1988-89) though the growth rate is still negative. Production elasticities show a negative relationship between production and exports. The study reveals that increasing incomes, population and increasing tea consumption at home adversely affect quantum of tea exports.

India has traditionally been the world's largest exporter of tea. However, a look at India's exports of tea shows that its share in the world tea exports is declining year after year. From nearly 45 per cent in 1956, India's market share of tea declined to 33 per cent in 1970 and 14 per cent in 1987. Seen in the light of the growth in the world tea market during this period (total world imports of tea increased from around 748 thousand metric tonnes in 1970 to 1167 thousand metric tonnes in 1988) and the continuous growth in tea production in India over the years, this declining share of India in the world tea exports is a cause for concern. Since tea has been a major foreign exchange earner for India among plantation crops, this declining trend in exports needs to be thoroughly examined.

Like other agricultural commodities, production of a plantation crop like tea is also subject to short-term variations due to weather, pests and diseases, and so on. In the case of tea in India, exports are made only after meeting the domestic requirements (Singh, 1991; Roy, 1992). Consequently, variations in

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production and domestic consumption of tea result in more than proportionate variation in its exports. Since there are a few major producers and exporters of tea in the world and demand for agricultural commodities, in general, is price inelastic, any fluctuations in the production of a major exporting country of tea result in fluctuations and instability in per unit value.

Considering that tea has been a traditional export commodity of India and a major foreign exchange earner, the declining trend in tea exports needs to be investigated into. Several studies have attempted to examine the country's position in terms of tea production, consumption and exports (Bhowmik, 1984; Sarkar, 1984; Mitra, 1991; Reddy, 1991; and Singh, 1991). The present study examines the trends in unit values, quantum and export values of tea in relation to general exports and any tendency for the trend to change over time, the extent of fluctuations in unit values, quantum and export values of tea exports in relation to general exports, home production and wholesale prices of tea, and the factors affecting the quantum of tea exports.

### Methodology

The study utilises time series data on quantum and value of tea exports, general exports, wholesale prices and home production of tea for the period 1957-58 to 1988-89. All the variables used here are in terms of index numbers with base 1970-71. Index of general exports stands for exports of all commodities.

The indices of unit values and quantum of general exports have been taken from the various issues of "Statistical Abstract of India" published by the Central Statistical Organisation and "Economic Survey" published by the Ministry of Finance, Government of India. The indices of unit values and quantum of tea exports have been computed by the authors by a methodology similar to the one adopted by the Central Statistical Organisation in computing general indices.

Following the methodology used to compute general indices, the unit value (price) index numbers of tea exports ( $U_{cn}$ ) for the  $n$ th year is of Paasche's type and is given by:

$$U_{cn} = \frac{(P_n q_n / P_o q_n)}{P_o q_n} \times 100$$

where  $P_o$ ,  $P_n$  are the export prices of tea in the base period (1970-71) and the current period, respectively, and  $q_n$  is the quantity of tea exported in the current period.

The quantum indices are not computed directly but are derived from the unit value indices. The quantum index  $Q_{cn}$  for tea exported is obtained as follows:

$$Q_{cn} = \frac{V_n / V_o}{U_{cn} / 100} \times 100$$

where,  $V_o$  and  $V_n$  are the total values of trade in the base and current period, respectively, and  $U_{cn}$  is the unit value index as defined above. The formula corresponds to Laspeyres' type.

Export value of tea exports for the current year is given by

$$V_n = P_n \times q_n$$

Taking logs of each side of the above equation and differentiating with respect to time, it can be seen that the annual compound rate of growth of export value of tea is given by the sum of the annual compound rates of growth of its prices and quantum of exports.

The extent of fluctuations in the variables have been examined by computing the coefficients of variation of these variables and the maximum annual percentage increase or decrease over the previous year.

The quantum of exports of a commodity is affected by a number of factors like level of production in the home country and in other exporting countries, level of production in the importing country, level of net domestic product in the home country and importing country and export and domestic prices of the commodity. Since the objective of the study is to relate tea exports to general exports and domestic production and consumption, we hypothesize the following form of linear function:

$$Q_{cn} = b_o + b_1 O_{n-1} + b_2 (U_{cn} / W_{cn}) + e_n$$

where,

$Q_{cn}$  = quantity index of tea exports for nth year,

$O_{n-1}$  = domestic production of tea for the previous year,

$U_{cn}$  = export price index of tea exports for the nth year,

$W_{cn}$  = domestic index of wholesale price of tea for the nth year,

$e_n$  = stochastic error term.

The production elasticity ( $e_p$ ) and the relative price elasticity ( $e_r$ ) of tea exports were worked out at mean level as follows:

$$e_p = b_1 (\bar{O}/\bar{Q}_c) \text{ and}$$

$$e_r = b_2 (\bar{U}_c/\bar{W}_c)/\bar{Q}_c$$

where  $\bar{O}$ ,  $\bar{U}_c$ ,  $\bar{W}_c$  and  $\bar{Q}_c$  are the mean levels of the corresponding variables.

### Trends

The indices of unit values, quantum and export values of tea exports and general exports for the period 1957-58 to 1988-89 are presented in Table 1. Though fluctuating from year to year, unit values of tea exports and general exports did not show a significant rise till 1973-74 but thereafter export prices started rising mainly because of the frequent hike in oil prices by oil exporting countries during 1973-74 and afterwards, which had a rebound effect on tea prices and general exports. The frequent hikes in oil prices resulted in tremendous international inflationary pressures during 1973-74 and afterwards. Thus we discern two distinct trends in the data-one pertaining to the period 1957-58 to 1973-74 (Period I) and the other pertaining to 1974-75 to 1988-89 (Period II).

Table 2 presents the compound annual rates of growth of unit values, quantum and export value of tea and general exports for the two periods and for the entire period. The annual compound rate of growth of unit value of tea at 8.09 per cent during period II was much higher than that during period I at 2.05 per cent. However, the compound annual rate of growth of quantum of exports was negative for the entire period as well as for the two periods separately. It was observed that the compound annual rate of growth of quantum of exports during period I (-0.72 per cent), though negative, was lower than the growth during period II (-0.09 per cent) which is indicative of a slightly increasing trend. The higher rate of growth of unit values during period II may be attributed partly to the higher international inflationary pressures and partly due to the buoyant demand for tea in the international market in relation to its inelastic supply. World imports of tea, and implicitly, exports, in the eighties have stagnated. The negative though increasing rate of quantum of exports of India during period II, despite moderately stable growth rate of production (and higher export prices of tea) shows that increasing incomes and population at home have exercised pressures on the available supplies leading to a reduction in the exportable surplus. This is also evident from an examination of the ratios of domestic tea consumption and exports to

Table 1: Indices of Unit Values, Quantum and Export Values of Tea and General Exports for India - 1957-58 to 1988-89.

(1970-71 = 100)

| Year    | Tea Exports |         |               | General Exports |         |               |
|---------|-------------|---------|---------------|-----------------|---------|---------------|
|         | Unit values | Quantum | Export values | Unit values     | Quantum | Export values |
| 1957-58 | 82.0        | 101.5   | 83.2          | 57.5            | 71.7    | 38.9          |
| 1958-59 | 80.0        | 116.2   | 93.0          | 56.6            | 66.0    | 36.3          |
| 1959-60 | 81.0        | 108.1   | 87.5          | 57.5            | 67.9    | 38.1          |
| 1960-61 | 84.0        | 99.9    | 83.9          | 62.2            | 66.0    | 41.6          |
| 1961-62 | 81.0        | 103.5   | 83.8          | 62.2            | 69.8    | 38.9          |
| 1962-63 | 75.0        | 111.3   | 83.5          | 60.4            | 74.5    | 44.3          |
| 1963-64 | 85.0        | 105.4   | 89.5          | 59.4            | 83.9    | 46.0          |
| 1964-65 | 79.0        | 106.4   | 84.0          | 60.4            | 87.7    | 51.3          |
| 1965-66 | 123.0       | 99.2    | 122.0         | 64.1            | 83.0    | 53.1          |
| 1966-67 | 112.0       | 95.4    | 106.8         | 96.2            | 79.2    | 75.2          |
| 1967-68 | 119.0       | 102.1   | 121.5         | 96.2            | 81.1    | 76.2          |
| 1968-69 | 105.0       | 100.5   | 105.5         | 94.3            | 94.3    | 88.5          |
| 1969-70 | 96.0        | 87.5    | 84.5          | 98.1            | 94.3    | 92.0          |
| 1970-71 | 100.0       | 100.0   | 100.0         | 100.0           | 100.0   | 100.0         |
| 1971-72 | 101.0       | 104.4   | 105.4         | 101.8           | 100.9   | 104.4         |
| 1972-73 | 102.0       | 97.7    | 99.3          | 113.2           | 113.2   | 128.3         |
| 1973-74 | 101.0       | 96.8    | 97.7          | 137.7           | 117.9   | 164.6         |
| 1974-75 | 133.0       | 115.7   | 153.8         | 172.6           | 125.4   | 216.8         |
| 1975-76 | 150.0       | 106.5   | 159.7         | 176.3           | 138.6   | 263.7         |
| 1976-77 | 161.0       | 122.8   | 197.6         | 198.0           | 164.1   | 334.5         |
| 1977-78 | 341.0       | 112.7   | 384.2         | 222.5           | 158.4   | 352.2         |
| 1978-79 | 266.0       | 86.3    | 229.6         | 220.7           | 169.7   | 372.6         |
| 1979-80 | 242.0       | 102.5   | 248.0         | 222.5           | 187.7   | 420.4         |
| 1980-81 | 249.0       | 115.2   | 286.9         | 239.5           | 182.9   | 437.2         |
| 1981-82 | 248.0       | 107.5   | 266.5         | 275.2           | 186.9   | 508.0         |
| 1982-83 | 255.0       | 97.8    | 249.4         | 292.7           | 198.1   | 575.3         |
| 1983-84 | 368.0       | 94.4    | 347.4         | 334.8           | 191.9   | 642.5         |
| 1984-85 | 481.0       | 107.5   | 516.9         | 375.2           | 204.7   | 768.0         |
| 1985-86 | 409.0       | 103.3   | 422.5         | 379.6           | 188.6   | 715.9         |
| 1986-87 | 403.0       | 96.6    | 389.3         | 398.7           | 205.6   | 819.7         |
| 1987-88 | 391.0       | 103.5   | 404.7         | 434.2           | 237.3   | 1030.4        |
| 1988-89 | 421.0       | 97.4    | 410.1         | 516.0           | 257.8   | 1330.2        |

Table 2: Compound Annual Rates of Growth of Tea Exports, General Exports and Home Production of Tea-India.

| Item                   | Growth rates (per cent)  |                          |                          |
|------------------------|--------------------------|--------------------------|--------------------------|
|                        | 1957-58<br>to<br>1973-74 | 1974-75<br>to<br>1988-89 | 1957-58<br>to<br>1988-89 |
| <b>Tea Exports</b>     |                          |                          |                          |
| Unit values            | 2.05                     | 8.09                     | 6.45                     |
| Quantum                | -0.72                    | -0.09                    | -0.10                    |
| Export values          | 1.31                     | 7.09                     | 6.34                     |
| Home production        | 2.52                     | 2.33                     | 2.69                     |
| <b>General Exports</b> |                          |                          |                          |
| Unit values            | 5.60                     | 7.91                     | 7.90                     |
| Quantum                | 3.48                     | 3.93                     | 4.67                     |
| Export values          | 9.66                     | 11.90                    | 13.13                    |

Table 3: Trends in Planwise (Average) Production, Exports and Consumption of Tea

| Plan  | Ratio (per cent) of      |                              |
|---|--------------------------|------------------------------|
|   | Exports<br>To production | Consumption<br>to production |
| First Five Year Plan<br>(1951-52 to 1955-56)  | 68.7                     | 28.5                         |
| Second Five Year Plan<br>(1956-57 to 1960-61) | 62.6                     | 34.6                         |
| Third Five Year Plan<br>(1961-62 to 1965-66)  | 58.2                     | 40.8                         |
| Three Annual Plans<br>(1966-67 to 1968-69)    | 51.5                     | 47.6                         |
| Fourth Five Year Plan<br>(1969-70 to 1973-74) | 46.1                     | 53.1                         |
| Fifth Five Year Plan<br>(1974-75 to 1978-79)  | 40.8                     | 54.4                         |
| Annual Plan<br>(1979-80)                      | 38.9                     | 62.8                         |
| Sixth Five Year Plan<br>(1980-81 to 1984-85)  | 36.6                     | 64.9                         |

Source : Singh, 1991.

production (Table 3). While the ratio of tea consumption to production increased from 28.5 per cent in the First Plan Period (1951-52 to 1955-56) to 64.9 per cent in the Sixth Plan Period (1980-81 to 1984-85), the ratio of tea exports to production declined during the same period from 67.8 to 36.6 (Singh, 1991). Similar observations have been made by Reddy (1991) who found that for India, during 1974 to 1988, tea production recorded an annual compound rate of growth of 2.38 per cent while retention grew at an annual rate of 3.98 per cent. Thus, much of the decrease in the quantum of tea exports of India may be on account of its growing domestic consumption.

When the growth rate of quantum (or its value) of exports of an individual commodity is higher or lower than the growth of quantum (or its value) of general exports, its share in total quantum (or its value) increases or decreases, respectively. Share of tea exports in total exports in terms of both quantum and value decreased during both periods. Even considering the period as a whole from 1957-58 to 1988-89, the share of tea exports, in both quantum and value terms, decreased over time.

The compound annual rate of growth of the value of tea exports during period II (7.09 per cent) was higher than that during period I (1.31 per cent) mainly on account of increase in the unit values.

### Fluctuations in exports

It may be observed from Table 1 that unit values, quantum and export values of tea show sizable fluctuations from year to year. Table 4 presents the coefficients of variation (CV's) and the maximum annual fluctuations in unit values, quantum and export values of tea and general exports and also of the domestic output and wholesale prices of tea.

It may be observed from this table that the maximum annual percentage increase or decrease over the previous year of unit values, quantum and export values of tea was much higher than the corresponding variables of general exports and of domestic production of tea and its domestic wholesale prices. Considering the period as a whole (1957-58 to 1988-89), it can be seen that the CV of unit values of tea exports at 67 per cent is slightly lower than that of general exports (72 per cent) while the CV of quantum of tea exports (8 per cent) is considerably lower than that of general exports (43 per cent). The CV of domestic output of tea was 25 per cent while that of wholesale prices of tea stood at 71 per cent. The CV of export value of tea was also lower than that of general exports.



Table 4: Coefficients of Variation and Maximum Annual Fluctuations in Tea Exports, General Exports and Domestic Output and Wholesale Prices of Tea-India.

| Item                   | Coefficient of variation (%) |         |         | Maximum percentage increase or decrease over previous year |           |
|------------------------|------------------------------|---------|---------|--|-----------|
|                        | 1957-58                      | 1974-75 | 1957-58 | Year   | Magnitude |
|                        | to                           | to      | to      |  |           |
|                        | 1973-74                      | 1988-89 | 1988-89 |  |           |
| <b>Tea Exports</b>     |                              |         |         |  |           |
| Unit values            | 15.77                        | 36.16   | 67.03   | 1977-78  | +111.80   |
|                        |                              |         |         | 1978-79  | -21.99    |
| Quantum                | 6.40                         | 9.07    | 7.76    | 1974.75  | +19.55    |
|                        |                              |         |         | 1978-79  | -23.38    |
| Export values          | 13.49                        | 34.75   | 66.78   | 1977-78  | +94.43    |
|                        |                              |         |         | 1978-79  | -40.24    |
| <b>General Exports</b> |                              |         |         |  |           |
| Unit values            | 30.82                        | 35.06   | 72.00   | 1966-67  | +50.08    |
|                        |                              |         |         | 1962-63  | -2.89     |
| Quantum                | 18.80                        | 18.21   | 43.15   | 1976.77  | +18.40    |
|                        |                              |         |         | 1958-59  | -7.95     |
| Export values          | 51.95                        | 52.39   | 106.72  | 1966-67  | +41.62    |
|                        |                              |         |         | 1985-86  | -6.78     |
| <b>Domestic</b>        |                              |         |         |  |           |
| Tea output             | 12.98                        | 10.75   | 24.85   | 1961-62  | +10.29    |
|                        |                              |         |         | 1986-87  | -5.21     |
| Wholesale              | 16.98                        | 37.04   | 71.35   | 1983-84  | +53.13    |
| prices of tea          |                              |         |         | 1985-86  | -16.40    |

The coefficient of variation of unit values of tea exports and general exports for the recent period (period II) are of the same order. However the CV of export values and quantum of tea exports are lower than that of general exports. While the variation in domestic output of tea during period I as compared to period II has decreased slightly, the fluctuations in wholesale prices of tea are larger in period II as compared to period I.

The fluctuations in the quantum of tea exports are relatively low and may be explained in terms of fluctuations in home production and

increasing consumption of tea by the growing population. The fluctuations in unit values of tea may, however, be explained on account of fluctuations in the production of tea in major exporting countries of the world. The export value of an exported commodity is a function of its unit values and quantum of exports and hence fluctuations in export values are the combined effect of these two variables. The high coefficient of variation of export values of general exports may be attributed to the high fluctuations in the unit values and quantum of general exports and changes in exchange rates.

The quantum of tea exports increased by 20 per cent from 192 million kg in 1973-74 to 230 million kg in 1974-75. However tea exports declined by about 23 per cent from 224 million kg in 1977-78 to 172 million kg in 1978-79. Similarly, tea exports increased from 199 million kg to 206 million kg, when tea production increased from 321 million kg in 1960-61 to 354 million kg in 1961-62. This shows that the fluctuations in the quantum of tea exports are mainly due to fluctuations in the home production and consumption of tea.

Indices of unit values of tea exports increased by 112 per cent from 161 in 1976-77 to 341 in 1977-78 and then again fell to 266 in 1978-79. This may be attributed to the fact that in April 1977 the Government of India, with a view to check prices and to ensure availability of tea in the domestic market, levied an export duty of Rs. 5/- per kg. This severely depressed Indian tea exports in 1978-79. In addition to this, the net imports of the U.K. and U.S.A. in 1978 were about 25 per cent less than in the previous year as they had built up huge stocks of tea in 1976-77.

### Quantum of tea exports and home production

To examine the factors affecting quantum of tea exports, a linear regression function with quantity of tea exports as the dependent variable and level of tea production of the previous year and relative export price (ratio of export prices of tea to domestic wholesale prices of tea) as independent variables was fitted for the two periods 1957-58 to 1988-89 and 1974-75 to 1988-89 using the ordinary least squares technique. The following results were obtained:

Period 1957-58 to 1988-89:

$$Q_{cn} = 120.95 - 0.06 O_{n-1} - 10.97 (U_{cn} / W_{cn})$$

(0.06)    (9.16)

Period 1974-75 to 1988-89:

$$Q_{cn} = 161.90 - 0.35 * O_{n-1} - 9.66 (U_{cn} / W_{cn})$$

(0.15)      (13.89)

The above relationship reveals that one year lagged tea production had a negative but non-significant influence on exports of tea during the entire period, 1957-58 to 1988-89. However, the influence of lagged tea production was negative but significant during the recent period 1974-75 to 1988-89. It may be noted that while a unit increase in the index of tea production decreased the index of tea exports by 0.06 units during the whole period, exports decreased much more during the recent period (0.35 units) on account of a unit increase in tea production index. Relative price also had a negative and non-significant influence on the quantum of tea exports during both the periods.

While the negative relationship between production and exports may appear surprising, absolute data on tea exports shows that this might indeed be true. Tea exports from India have been stagnating at around 210 million kgs in recent years (Table 5). This may be so because the policy with respect to tea exports in India has been such that only the surplus over and above the domestic consumption level is allowed to be exported and, by rule of thumb, around 15 million kgs is added each year to the previous year's consumption to arrive at domestic consumption requirements (Roy, 1992). Such a policy places India at a disadvantage when compared to some of its major competitors in the world tea market such as Sri Lanka whose domestic consumption is very low. A second major reason for stagnant exports is the non-diversification by India in terms of markets. India has relied heavily on a single country, the former USSR, for its tea exports. The third major factor for India's sagging tea exports is the cost disadvantage of India as compared to some of the major exporters of tea. Table 6 shows that the export price of tea was highest for India as compared to China, Sri Lanka and Kenya. While this may be good in the sense that Indian tea commands a higher price in the international market, this may not be favourable in terms of competition in the world market and may adversely affect total tea sales from India.

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\*Significant at 5% level of significance.

Figures in parentheses are the standard errors of the estimates.

### Production and relative price elasticities of export

The production and relative price elasticities of tea exports were worked out at mean level and are presented in Table 7. The elasticities reveal that, on an average, when we take the period as a whole, a one per cent increase in the domestic production of tea leads to a 0.06 per cent decrease in the quantum of exports. The decrease is even more pronounced in the recent period (period II) in which a one per cent increase in the domestic production depresses the quantum of tea exports by 0.45 per cent.

### Conclusions and policy implications

Considering the period 1957-58 to 1988-89 as a whole, the compound annual rates of growth of unit values, quantum and export values of tea are lower than those of the corresponding variables of general exports, showing thereby that the share of tea exports in total quantum and value of exports have declined over time. However, in the recent period (period II), there is a tendency for the quantum of exports to increase though the growth rate is still negative. The compound annual rate of growth of unit values of tea was also much higher in the recent period.

Home production of tea was more or less stable during the entire period. Production elasticity of tea exports was higher for the recent period (-0.45) as compared to the entire period. Both facts suggest that of late, increasing incomes, population and a tendency towards increasing consumption of tea are putting pressures on the available supplies of tea, thereby reducing the exportable surplus.

Share of tea exports in total exports, in terms of value, decreased during both the periods. The decrease in share is due to the stagnation in the quantum of exports. The increase in the growth rate of export values of tea in period II over period I was due to an increase in the unit values.

The above analysis suggests that increasing incomes, population and consumption of tea at home exert considerable pressures on tea supplies which consequently reduce the exportable surplus. This has been particularly pronounced in the recent period. That tea consumption in India is on the increase can be seen from the NSS data on consumer expenditure on the consumption of beverages and refreshments (Table 8). Unit values, quantum and export values of tea exports suffer from chronic instability. While fluctuations in the quantum of tea exports from India may be explained in terms of fluctuations in home production and increasing domestic consumption, that of unit values may be explained

Table 5: Production and Exports of Tea - India.

| Year | Production<br>( <sup>000</sup> MT) | Exports<br>( <sup>000</sup> M T) |
|------|------------------------------------|----------------------------------|
| 1961 | 354                                | 206.3                            |
| 1965 | 366                                | 199.4                            |
| 1970 | 419                                | 200.2                            |
| 1975 | 487                                | 219.4                            |
| 1980 | 570                                | 224.0                            |
| 1981 | 560                                | 245.6                            |
| 1982 | 561                                | 189.9                            |
| 1983 | 581                                | 209.0                            |
| 1984 | 645                                | 217.0                            |
| 1985 | 657                                | 222.4                            |
| 1986 | 621                                | 195.5                            |
| 1987 | 682                                | 204.2                            |
| 1988 | 690                                | 221.5                            |

Source: Production - FAO Production Year book (various issues); Exports - FAO Trade Yearbook (various issues).

Table 6: Countrywise Tea Export Price

| Year | (Price per kg in \$) |       |           |       |               |
|------|----------------------|-------|-----------|-------|---------------|
|      | India                | China | Sri Lanka | Kenya | All Countries |
| 1975 | 1.33                 | NA    | 1.28      | 1.09  | NA            |
| 1980 | 2.44                 | 2.09  | 2.16      | 2.09  | 1.90          |
| 1981 | 2.08                 | 1.97  | 1.79      | 1.79  | 1.71          |
| 1982 | 1.98                 | 2.04  | 1.68      | 1.81  | 1.52          |
| 1983 | 2.45                 | 1.83  | 2.22      | 1.84  | 1.88          |
| 1984 | 3.00                 | 2.12  | 3.03      | 2.88  | 2.59          |
| 1985 | 2.63                 | 2.17  | 2.22      | 1.85  | 1.97          |
| 1986 | 2.27                 | 1.97  | 1.58      | 1.83  | 1.72          |
| 1987 | 2.44                 | 2.02  | 1.79      | 1.14  | 1.73          |
| 1988 | 2.19                 | 2.10  | 1.76      | 1.51  | 1.74          |

Source : Reddy, 1991.

Table 7: Production and Relative Price Elasticities of Tea Exports - India.

| Item           | Elasticity               |                          |
|----------------|--------------------------|--------------------------|
|                | 1957-58<br>to<br>1988-89 | 1974-75<br>to<br>1988-89 |
| Production     | -0.06                    | -0.45                    |
| Relative price | -0.11                    | -0.09                    |

Table 8: Changes in Home Consumption of Beverages and Refreshments in India

| Year    | Monthly per capita expenditure (Rs.) |       |
|---------|--------------------------------------|-------|
|         | Rural                                | Urban |
| 1977-78 | 1.72                                 | 6.09  |
| 1983-84 | 3.72                                 | 11.21 |

in terms of fluctuations in the production of major tea exporting countries of the world which influence world tea prices. Since fluctuations in the output of agricultural commodities, including tea, in the home country as well as other producing countries of the world are likely to persist, we may have to live with fluctuations in unit values, quantum and export values of tea exports. The level of fluctuations may be eased to some extent by the creation of a tea buffer stock, diversifying the export base in terms of countries exported to and relaxing the statutory controls on exports levied to ensure adequate domestic availability.

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