An Analysis of International Trade in Tea

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This study analysed the trends in the growth of net exports of tea and also the of market shares of different countries in the world net exports of tea from 1955 to 1974. It is seen that the global net exports have grown at a sluggish rate of 1.8 per cent per annum. Various countries registered different rates of growth. The growth rates of newly developing countries have shown a phenomenal increase whereas that of India has shown a decline.

The cultivation of tea, largely because of climatic reasons, is confined to South Asian and African countries, which are mostly developing countries. Though more than 30 countries are growing tea, only a few are exporters of consequence. International trade in tea has been always important because of the value of the product. Like oil, almost all tea exports originate from the developing countries and about 90 per cent of them are consumed in the developed countries.

The world net exports of tea has increased from 445.1 million kg in 1955 to 678.6 million kg in 1974. Within this framework, the share of India and Sri Lanka in the International Market was 74.3 per cent in 1955, compared with 3.7 per cent for East Africa. However, by 1974 India's and Sri Lanka's share had declined to 55.3 per cent, while East African tea exports increased to 14.6 per cent of world tea exports. India's share de-clined more than that of Sri Lanka's. Whereas, India's share in world exports was 39.4 per cent in 1955-64, it was only 30.9 per cent in 1965-74. Sri Lanka's share has declined only from 34.8 per cent in 1955-64 to 32.4 per cent in 1965-74.

The main objectives of this study are: to analyse the trend in the net exports of tea of different countries/regions, to analyse the market shares of different countries/regions in the world net export of tea and to project the world net export of tea in 1980.

MATERIALS AND METHODS

The export trends have been analysed by means of a linear function of the form

$$Y(t) = a + bt$$

Where,

Y - net exports of tea in million kg

t - time measured in calendar years

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The above model was estimated by the method of ordinary least squares.

Growth Rates

The b values give an estimate of the constant amount of increase per annum in tea exports in terms of million kg. The composite annual growth rates for the different exporting countries/regions have then been calculated as:

$$r = b \cdot \frac{1}{y}$$

Where,

y – harmonic mean of Y. This growth rate is then expressed as percentage.

The period of analysis included the years 1955 to 1974. The required data were collected from the various issues of FAO Trade Yearbook. For the purpose of analysis the countries which are net exporters of tea were classified into six countries/regions based mainly on the geographical distribution and their importance in the world tea economy.

RESULTS AND DISCUSSION

Growth Rates: As export and import data on tea are relatively reliable, a regression analysis in regard to the pattern of net exports was undertaken. The estimated net exports-dependent linear regression equations and the computed growth rates from the above equations are summarized in Table I.

Thus it is seen that there were notable diversities in the rates of growth of the different series. The newly emerging East African and South American exporters recorded the greatest and the most sustained increase in net exports of tea. The export series of Sri Lanka, other Asia and Oceania and the world as a whole registered a moderate uptrend, while the trend of exports from India was slightly downward.

The linear growth rates obtained in this study for India and East Africa compare favourably with that obtained by Sarkar (1972) as – 0.3 per cent and 10.8 per cent, respectively. It is to be noted that the dependent variable is net exports in this study whereas Sarkar utilized total exports. However, there were no imports of tea into India from 1963. Thus, these two studies may be comparable for India alone. The period covered by Sarkar was 1953–67.

By far, the most spectacular rate of growth has been obtained by South America. This is because of their very small export during the base year which continued to rise during the period under consideration. The next exports of tea from this region increased to 21.3 million kg in 1974 from 0.3 million kg in 1955.

The growth rate for the world as a whole was only 1.8 per cent. This compares favourably with that of the same value reported by Elz (1970) for the period 1955-57 to 1965-67 and that of 1.75 per cent projected by the Marketing Research Corporation of India (1972).

TABLE I. Trends in Tea Exports, 1955-74

| Country/Region | Regression coefficients* | | $\bar{R}^2$ | Su | Linear annual growth rate (percentage) |
	Intercept	Slope**			
East Africa[1]	2.0805	4.5252 (0.3247)	0.91	8.40	12.4
Other Africa[2]	4.6916	1.3113 (0.0595)	0.96	1.53	8.8
India	211.0074	−0.7859 (0.6959)	0.01	17.95	−0.4
Sri Lanka	175.0968	1.8860 (0.5896)	0.33	15.20	1.0
Oth er Asia and Oceania[3]	83.0226	2.0631 (0.6334)	0.34	16.33	2.0
South America[4]	−3.8900	1.5171 (0.0935)	0.93	2.41	115.9
World	472.0089	10.5168 (0.7662)	0.91	19.76	1.8

* All slope coefficients except that of India are significant at 0.05 level.

** Figures in parentheses are the standard errors of the regression cofficients.

[1] Includes Kenya, Malawi, Tanzania and Uganda.

[2] Includes Burundi, Cameroon, Mauritius, Mazambique, Reunion, Rwanda and Zaire.

[3] Includes Bangladesh, Burma, China, Indonesia, Japan, Pakistan, Taiwan, Turkey, Vietnam and Papua and New Guinea.

[4] Includes Argentina, Brazil, Ecuador and Peru.

Growth in Market Shares: In view of the spectacular increase in ten exports of East Africa and decline registered by India during the period under consideration, it was decided to analyse the trends in this case also. The dependent variable was the market shares of East Africa and India expressed as a percentage of the world net exports. The estimated regression equations and the computed growth rates from the above equations are summarized in Table II.

It could be seen that the market share of East African countries has increased at a linear annual rate of 9.3 per cent, whereas the share of India has shown an annual rate of decline of 2.2 per cent during the period under consideration.

Equations used for projections: The market share-dependent equations of East Africa and India were used for projections purposes. This is because of their "better fit" in term of $\bar{R}^2$ and

TABLE II.   Trends in Market Shares, 1955-74

| Country/Region | Region coefficients* | | $\bar{R}^2$ | Su | Linear annual growth rate (percentage) |
	Intercept	Slope**			
East Africa	1.6979	0.6150 (0.0426)	0.92	1.10	9.3
India	43.1474	−0.7545 (0.0885)	0.79	2.28	−2.2

* All regression coefficients are significant at 0.05 level

** Figures in parentheses are the standard errors of the reg.ession cofficients.

standard error of estimates than the net exports-dependent equations of these countries. The very low $\bar{R}^2$ and very high standard error of estimates obtained in the net export-dependent equation for India precluded its use for any projection purposes. However, the market share-dependent equation for India has shown a reasonably high $\bar{R}^2$ with a low standard error of estimate. So also the market share-depenent equation for East Africa has shown marginally "better-fit" as compared to net equation to net exports-dependent equation.

Thus, it could be seen that, under ceteris paribus assumptions, the world's net exports will be 745.4 million kg by 1980. The share of East Africa will be 17.17 per cent whereas that of India will be 23.5 per cent. Thus, the East African countries will improve their share in the global net exports of tea from 3.7 per cent in 1955 to 17.7 per cent in 1980. Whereas India's share will decline from 37.3 per cent of the world net exports of tea in 1955 to 23.5 per cent in 1980. The world's exports of tea will increase

TABLE III.   Projections of World Net Exports and Market Shares, 1980

Country/ Retion	Projected net exports (million kg)	Projected market share (percentage)	Equation used in projection
World	745.4*	100.0	7 of Table I
East Africa	131.9**	17.7*	1 of Table II
India	175.2**	23.5*	2 of Table II

* Projected   ** Computed

from 445.1 million kg in 1955 to 745.4 million kg in 1980.

Incidentally, the world net exports of tea in 1980 projected in this study is close to that projected by the report of the Marketing Research Corporation of India (1972) as being 740.0 million kg. However, their projections are based on the rates of growth of consumption in individual countries of the world and also on the assumption of expected rise in world exports at a rate of 1.75 per cent per annum.

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